SENIOR SCHOOL CURRICULUM

2022-23

CENTRAL BOARD OF SECONDARY EDUCATION
Academic Unit, Shiksha Sadan, 17, Rouse Avenue, New Delhi-110 002

BIOLOGY (Code No. 044)
Classes XI & XII (2022-23)

The present curriculum provides the students with updated concepts along with an extended exposure to contemporary areas of the subject. The curriculum also aims at emphasizing the underlying principles that are common to animals, plants and microorganisms as well as highlighting the relationship of Biology with other areas of knowledge. The format allows a simple, clear, sequential flow of concepts. It relates the study of biology to real life through the developments in use of technology. It links the discoveries and innovations in biology to everyday life such as environment, industry, health and agriculture. The updated curriculum also focuses on understanding and application of scientific principles, while ensuring that ample opportunities and scope for learning and appreciating basic concepts continue to be available within itsframework. The prescribed syllabus is expected to:

- promote understanding of basic principles of Biology
- encourage learning of emerging knowledge and its relevance to individual and society
- promote rational/scientific attitude towards issues related to population, environment and development
- enhance awareness about environmental issues, problems and their appropriate solutions
- create awareness amongst the learners about diversity in the living organisms and developing respect for other living beings
- appreciate that the most complex biological phenomena are built on essentially simple processes

It is expected that the students would get an exposure to various branches of Biology in the curriculum in a more contextual and systematic manner as they study its various units.

BIOLOGY (Code No. 044)
COURSE STRUCTURE
CLASS XI (2022 -23) (THEORY)

Time: 03 Hours **Max. Marks: 70**

Unit	Title	Marks
I	Diversity of Living Organisms	15
II	Structural Organization in Plants and Animals	10
III	Cell: Structure and Function	15
IV	Plant Physiology	12
V	Human Physiology	18
	Total	**70**

Unit-I Diversity of Living Organisms

Chapter-1: The Living World

Biodiversity; Need for classification; three domains of life; taxonomy and systematics; concept of species and taxonomical hierarchy; binomial nomenclature

Chapter-2: Biological Classification

Five kingdom classification; Salient features and classification of Monera, Protista and Fungi into major groups; Lichens, Viruses and Viroids.

Chapter-3: Plant Kingdom

Classification of plants into major groups; Salient and distinguishing features and a few examples of Algae, Bryophyta, Pteridophyta, Gymnospermae (Topics excluded – Angiosperms, Plant Life Cycle and Alternation of Generations)

Chapter-4: Animal Kingdom

Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level (salient features and at a few examples of each category).
(No live animals or specimen should be displayed.)

Unit-II Structural Organization in Animals and Plant

Chapter-5: Morphology of Flowering Plants

Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of family Solanaceae

Chapter-6: Anatomy of Flowering Plants

Anatomy and functions of tissue systems in dicots and monocots.

Chapter-7: Structural Organisation in Animals

Morphology, Anatomy and functions of different systems (digestive, circulatory,respiratory, nervous and reproductive) of frog.

Unit-III Cell: Structure and Function

Chapter-8: Cell-The Unit of Life

Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system, endoplasmic reticulum, golgi bodies, lysosomes, vacuoles, mitochondria, ribosomes, plastids, microbodies; cytoskeleton, cilia, flagella, centrioles (ultrastructure and function); nucleus.

Chapter-9: Biomolecules

Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids; Enzyme - types, properties, enzyme action. (Topics excluded: Nature of Bond Linking Monomers in a Polymer, Dynamic State of Body Constituents – Concept of Metabolism, Metabolic Basis of Living, The Living State)

Chapter-10: Cell Cycle and Cell Division

Cell cycle, mitosis, meiosis and their significance

Unit-IV Plant Physiology

Chapter-13: Photosynthesis in Higher Plants

Photosynthesis as a means of autotrophic nutrition; site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.

Chapter-14: Respiration in Plants

Exchange of gases; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated; amphibolic pathways; respiratory quotient.

Chapter-15: Plant - Growth and Development

Seed germination; phases of plant growth and plant growth rate; conditions of growth; differentiation, dedifferentiation and redifferentiation; sequence of developmental processes in a plant cell; growth regulators - auxin, gibberellin, cytokinin, ethylene, ABA;

Unit-V Human Physiology

Chapter-17: Breathing and Exchange of Gases

Respiratory organs in animals (recall only); Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volume; disorders related to respiration - asthma, emphysema, occupational respiratory disorders.

Chapter-18: Body Fluids and Circulation

Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure.

Chapter-19: Excretory Products and their Elimination

Modes of excretion - ammonotelism, ureotelism, uricotelism; human excretory system – structure and function; urine formation, osmoregulation; regulation of kidney function - renin - angiotensin, atrial natriuretic factor, ADH and diabetes insipidus; role of other organs in excretion; disorders - uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant.

Chapter-20: Locomotion and Movement

Types of movement - ciliary, flagellar, muscular; skeletal muscle, contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.

Chapter-21: Neural Control and Coordination

Neuron and nerves; Nervous system in humans - central nervous system; peripheral nervous system and visceral nervous system; generation and conduction of nerve impulse

Chapter-22: Chemical Coordination and Integration

Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, adrenal, pancreas, gonads; mechanism of hormone action (elementary idea); role of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goitre, diabetes, Addison's disease.

Note: Diseases related to all the human physiological systems to be taught in brief.

PRACTICALS

Time: 03 Hours **Max. Marks: 30**

<table>
<tr><th colspan="2">Evaluation Scheme</th><th>Marks</th></tr>
<tr><td colspan="2">One Major Experiment Part A (Experiment No- 1,3,7,8)</td><td>5 Marks</td></tr>
<tr><td colspan="2">One Minor Experiment Part A (Experiment No- 6,9,10,11,12,13)</td><td>4 Marks</td></tr>
<tr><td colspan="2">Slide Preparation Part A (Experiment No- 2,4,5)</td><td>5 Marks</td></tr>
<tr><td colspan="2">Spotting Part B</td><td>7 Marks</td></tr>
<tr><td>Practical Record + Viva Voce</td><td rowspan="2">(Credit to the students' work over theacademic session may be given)</td><td>4 Marks</td></tr>
<tr><td>Project Record + Viva Voce</td><td>5 Marks</td></tr>
<tr><td colspan="2">Total</td><td>30Marks</td></tr>
</table>

A: List of Experiments

1. Study and describe locally available common flowering plants, from family Solanaceae (Poaceae, Asteraceae or Brassicaceae can besubstituted in case of particular geographical location) including dissection and display of floral whorls, anther and ovary to show number of chambers (floral formulae and floral diagrams), type of root (tap and adventitious); type of stem (herbaceous and woody); leaf (arrangement, shape, venation, simple and compound).

2. Preparation and study of T.S. of dicot and monocot roots and stems (primary).
3. Study of osmosis by potato osmometer.
4. Study of plasmolysis in epidermal peels (e.g. Rhoeo/lily leaves or flashy scale leaves of onion bulb).
5. Study of distribution of stomata on the upper and lower surfaces of leaves.
6. Comparative study of the rates of transpiration in the upper and lower surfaces of leaves.
7. Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.
8. Separation of plant pigments through paper chromatography.
9. Study of the rate of respiration in flower buds/leaf tissue and germinating seeds.
10. Test for presence of urea in urine.
11. Test for presence of sugar in urine.
12. Test for presence of albumin in urine.
13. Test for presence of bile salts in urine.

B. Study and Observe the following (spotting):

1. Parts of a compound microscope.
2. Specimens/slides/models and identification with reasons - Bacteria, *Oscillatoria, Spirogyra, Rhizopus*, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen.
3. Virtual specimens/slides/models and identifying features of - *Amoeba, Hydra,*liverfluke, *Ascaris*, leech, earthworm, prawn, silkworm, honey bee, snail, starfish, shark, rohu, frog, lizard, pigeon and rabbit.
4. Mitosis in onion root tip cells and animals cells (grasshopper) from permanent slides.
5. Different types of inflorescence (cymose and racemose).
6. Human skeleton and different types of joints with the help of virtual images/models only.

Practical Examination for Visually Impaired Students Class XI

Note: The 'Evaluation schemes' and 'General Guidelines' for visually impaired students as given for Class XII may be followed.

A. Items for Identification/Familiarity with the apparatus /equipments/animal and plant material / chemicals. for assessment in practicals (All experiments)

B. **Equipments** - compound microscope, test tube, petridish, chromatography paper, chromatography chamber, beaker, scalpel

Chemical – alcohol

Models – Model ofHuman skeleton to show – Ball and socket joints of girdles and limbs, Rib cage, Honey comb, Mollusc shell, Pigeon and Star fish, cockroach

Specimen/**Fresh Material** – mushroom, succulents such as *Aloe vera*/kalenchoe, raisins, potatoes, seeds of monocot and dicot- maize and gram or any other plant, plants of Solanaceae - Brinjal, Petunia, any other

C. List of Practicals

1. Study locally available common flowering plants of the family – Solanaceae and

identify type of stem (Herbaceous or Woody), type of leaves (Compound or Simple).

2. Study the parts of a compound microscope- eye piece and objective lens, mirror, stage, coarse and fine adjustment knobs.
3. Differentiate between monocot and dicot plants on the basis of venation patterns.
4. Study the following parts of human skeleton (Model): Ball and socket joints of thigh and shoulder
5. Rib cage
6. Study honeybee/butterfly, snail/sheik snail through shell, Starfish, Pigeon (through models).
7. Identify the given specimen of a fungus – mushroom, gymnosperm-pine cone
8. Identify and relate the experimental set up with the aim of experiment:
   For Potato Osmometer/endosmosis in raisins.

Note: The above practicals may be carried out in an experiential manner rather than only recording observations.

Prescribed Books:

1. Biology Class-XI, Published by NCERT
2. Other related books and manuals brought out by NCERT (consider multimedia also)

CLASS XII (2022-23) (THEORY)

Time: 03 Hours **Max. Marks: 70**

Unit	Title	Marks
VI	Reproduction	**16**
VII	Genetics and Evolution	**20**
VIII	Biology and Human Welfare	**12**
IX	Biotechnology and its Applications	**12**
X	Ecology and Environment	**10**
	Total	**70**

Unit-VI Reproduction

Chapter-2: Sexual Reproduction in Flowering Plants

Flower structure; development of male and female gametophytes; pollination - types, agencies and examples; out breeding devices; pollen-pistil interaction; double fertilization; post fertilization events - development of endosperm and embryo, development of seed and formation of fruit; special modes- apomixis, parthenocarpy, polyembryony; Significance of seed dispersal and fruit formation.

Chapter-3: Human Reproduction

Male and female reproductive systems; microscopic anatomy of testis and ovary; gametogenesis -spermatogenesis and oogenesis; menstrual cycle; fertilisation, embryo development upto blastocyst formation, implantation; pregnancy and placenta formation (elementary idea); parturition (elementary idea); lactation (elementary idea).

Chapter-4: Reproductive Health

Need for reproductive health and prevention of Sexually Transmitted Diseases (STDs); birth control - need and methods, contraception and medical termination of pregnancy (MTP); amniocentesis; infertility and assisted reproductive technologies - IVF, ZIFT, GIFT (elementary idea for general awareness).

Unit-VII Genetics and Evolution

Chapter-5: Principles of Inheritance and Variation

Heredity and variation: Mendelian inheritance; deviations from Mendelism – incomplete dominance, co-dominance, multiple alleles and inheritance of blood groups, pleiotropy;

elementary idea of polygenic inheritance; chromosome theory of inheritance; chromosomes and genes; Sex determination - in humans, birds and honey bee; linkage and crossing over; sex linked inheritance - haemophilia, colour blindness; Mendelian disorders in humans - thalassemia; chromosomal disorders in humans; Down's syndrome, Turner's and Klinefelter's syndromes.

Chapter-6: Molecular Basis of Inheritance

Search for genetic material and DNA as genetic material; Structure of DNA and RNA; DNA packaging; DNA replication; Central Dogma; transcription, genetic code, translation; gene

expression and regulation - lac operon; Genome, Human and rice genome projects; DNA fingerprinting.

Chapter-7: Evolution

Origin of life; biological evolution and evidences for biological evolution (paleontology, comparative anatomy, embryology and molecular evidences); Darwin's contribution, modern synthetic theory of evolution; mechanism of evolution - variation (mutation and recombination) and natural selection with examples, types of natural selection; Gene flow and genetic drift; Hardy - Weinberg's principle; adaptive radiation; human evolution.

Unit-VIII Biology and Human Welfare

Chapter-8: Human Health and Diseases

Pathogens; parasites causing human diseases (malaria, dengue, chikungunya, filariasis, ascariasis, typhoid, pneumonia, common cold, amoebiasis, ring worm) and their control; Basic concepts of immunology - vaccines; cancer, HIV and AIDS; Adolescence - drug and alcohol abuse.

Chapter-10: Microbes in Human Welfare

Microbes in food processing, industrial production, sewage treatment, energy generation andmicrobes as bio-control agents and bio-fertilizers. Antibiotics; production and judicious use.

Unit-IX Biotechnology and its Applications

Chapter-11: Biotechnology - Principles and Processes

Genetic Engineering (Recombinant DNA Technology).

Chapter-12: Biotechnology and its Applications

Application of biotechnology in health and agriculture: Human insulin and vaccine production, stem cell technology, gene therapy; genetically modified organisms - Bt crops; transgenic animals; biosafety issues, biopiracy and patents.

Unit-X Ecology and Environment

Chapter-13: Organisms and Populations

Population interactions - mutualism, competition, predation, parasitism; population attributes - growth, birth rate and death rate, age distribution. (Topics excluded: Organism and its Environment, Major Aboitic Factors, Responses to Abioitic Factors, Adaptations)

Chapter-14: Ecosystem

Ecosystems: Patterns, components; productivity and decomposition; energy flow; pyramids of number, biomass, energy (Topics excluded: Ecological Succession and Nutrient Cycles)

Chapter-15: Biodiversity and its Conservation

Biodiversity-Concept, patterns, importance; loss of biodiversity; biodiversity conservation; hotspots, endangered organisms, extinction, Red Data Book, Sacred Groves, biosphere reserves, national parks, wildlife, sanctuaries and Ramsar sites.

PRACTICALS

Time allowed: 3 Hours **Max. Marks: 30**

Evaluation Scheme		Marks
One Major Experiment 5		5
One Minor Experiment 2 & 3		4
Slide Preparation 1& 4		5
Spotting		7
Practical Record + Viva Voce	(Credit to the students' work over theacademic session may be given)	4
Investigatory Project and its Project Record + Viva Voce		5
Total		30

A. List of Experiments

1. Prepare a temporary mount to observe pollen germination.
2. Study the plant population density by quadrat method.
3. Study the plant population frequency by quadrat method.
4. Prepare a temporary mount of onion root tip to study mitosis.
5. Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.

B. Study and observer the following (Spotting):

1. Flowers adapted to pollination by different agencies (wind, insects, birds).
2. Pollen germination on stigma through a permanent slide or scanning electron micrograph.
3. Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides (from grasshopper/mice).
4. Meiosis in onion bud cell or grasshopper testis through permanent slides.
5. T.S. of blastula through permanent slides (Mammalian).
6. Mendelian inheritance using seeds of different colour/sizes of any plant.
7. Prepared pedigree charts of any one of the genetic traits such as rolling of tongue, blood groups, ear lobes, widow's peak and colour blindness.
8. Controlled pollination - emasculation, tagging andbagging.
9. Common disease causing organisms like *Ascaris, Entamoeba, Plasmodium*, any fungus causing ringworm through permanent slides, models or virtual images or specimens. Comment on symptoms of diseases that they cause.

10. Models specimen showing symbolic association in root modules of leguminous plants, Cuscuta on host, lichens.
11. Flash cards models showing examples of homologous and analogous organs.

Practical Examination for Visually Impaired Students of Classes XI and XII
Evaluation Scheme

Time: 02 Hours **Max. Marks: 30**

Topic	Marks
Identification/Familiarity with the apparatus	5
Written test (Based on given / prescribed practicals)	10
Practical Records	5
Viva	10
Total	**30**

General Guidelines

- The practical examination will be of two hour duration. A separate list of ten experiments is included here.
- The written examination in practicals for these students will be conducted at the time of practical examination of all other students.
- The written test will be of 30 minutes duration.
- The question paper given to the students should be legibly typed. It should contain a total of 15 practical skill based very short answer type questions. A student would be required to answer any 10 questions.
- A writer may be allowed to such students as per CBSE examination rules.
- All questions included in the question paper should be related to the listed practicals. Every question should require about two minutes to be answered.
- These students are also required to maintain a practical file. A student is expected to record at least five of the listed experiments as per the specific instructions for each subject. These practicals should be duly checked and signed by the internal examiner.
- The format of writing any experiment in the practical file should include aim, apparatus required, simple theory, procedure, related practical skills, precautions etc.
- Questions may be generated jointly by the external/internal examiners and used for assessment.
- The viva questions may include questions based on basic theory / principle / concept, apparatus / materials / chemicals required, procedure, precautions, sources of error etc.

Class XII

A. **Items for Identification/ familiarity with the apparatus for assessment in practicals (All experiments)** Beaker, flask, petriplates, soil from different sites - sandy, clayey, loamy, small potted plants, aluminium foil, paint brush, test tubes, starch solution, iodine, ice cubes, Bunsen burner/spirit lamp/water bath, large flowers, Maize inflorescence, model of developmental stages highlighting morula and blastula of frog, beads/seeds of different shapes/size/texture *Ascaris*, Cactus/*Opuntia*(model).

B. List of Practicals

1. Study of flowers adapted to pollination by different agencies (wind, insects).
2. Identification of T.S of morula or blastula of frog (Model).
3. Study of Mendelian inheritance pattern using beads/seeds of different sizes/texture.
4. Preparation of pedigree charts of genetic traits such as rolling of tongue, colour blindness.
5. Study of emasculation, tagging and bagging by trying out an exercise on controlled pollination.
6. Identify common disease causing organisms like *Ascaris* (model)and learn some commonsymptoms of the disease that they cause.
7. Comment upon the morphological adaptations of plants found in xerophytic conditions.

Note: The above practicals may be carried out in an experiential manner rather than recording observations.

Prescribed Books:

1. Biology, Class-XII, Published by NCERT
2. Other related books and manuals brought out by NCERT (consider multimedia also)
3. Biology Supplementary Material (Revised). Available on CBSE website.

Question Paper Design (Theory) 2022-23

Class XII

Biology (044)

Competencies	
Demonstrate Knowledge and Understanding	50%
Application of Knowledge / Concepts	30%
Analyse, Evaluate and Create	20%

Note:

- Typology of questions: VSA including MCQs, Assertion – Reasoning type questions; SA; LA-I; LA-II; Source-based/ Case-based/ Passage-based/ Integrated assessment questions.
- An internal choice of approximately 33% would be provided.

Suggestive verbs for various competencies

- **Demonstrate, Knowledge and Understanding**

  State, name, list, identify, define, suggest, describe, outline, summarize, etc.

- **Application of Knowledge/Concepts**

  Calculate, illustrate, show, adapt, explain, distinguish, etc.

- **Analyze, Evaluate and Create**

  Interpret, analyse, compare, contrast, examine, evaluate, discuss, construct, etc.

MATHEMATICS (XI-XII)

(Code No. 041)

Session – 2022-23

The Syllabus in the subject of Mathematics has undergone changes from time to time in accordance with growth of the subject and emerging needs of the society. Senior Secondary stage is a launching stage from where the students go either for higher academic education in Mathematics or for professional courses like Engineering, Physical and Biological science, Commerce or Computer Applications. The present revised syllabus has been designed in accordance with National Curriculum Framework 2005 and as per guidelines given in Focus Group on Teaching of Mathematics 2005 which is to meet the emerging needs of all categories of students. Motivating the topics from real life situations and other subject areas, greater emphasis has been laid on application of various concepts.

Objectives

The broad objectives of teaching Mathematics at senior school stage intend to help the students:

- to acquire knowledge and critical understanding, particularly by way of motivation and visualization, of basic concepts, terms, principles, symbols and mastery of underlying processes and skills.
- to feel the flow of reasons while proving a result or solving a problem.
- to apply the knowledge and skills acquired to solve problems and wherever possible, by more than one method.
- to develop positive attitude to think, analyze and articulate logically.
- to develop interest in the subject by participating in related competitions.
- to acquaint students with different aspects of Mathematics used in daily life.
- to develop an interest in students to study Mathematics as a discipline.
- to develop awareness of the need for national integration, protection of environment, observance of small family norms, removal of social barriers, elimination of gender biases.
- to develop reverence and respect towards great Mathematicians for their contributions to the field of Mathematics.

COURSE STRUCTURE

CLASS XI (2022-23)

One Paper Total Period–240 [35 Minutes each]

Three Hours **Max Marks: 80**

No.	Units	No. of Periods	Marks
I.	Sets and Functions	60	23
II.	Algebra	50	25
III.	Coordinate Geometry	50	12
IV.	Calculus	40	08
V.	Statistics and Probability	40	12
	Total	240	80
	Internal Assessment		20

*No chapter/unit-wise weightage. Care to be taken to cover all the chapters.

Unit-I: Sets and Functions

1. **Sets** **(20) Periods**

Sets and their representations, Empty set, Finite and Infinite sets, Equal sets, Subsets, Subsets of a set of real numbers especially intervals (with notations). Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement.

2. **Relations & Functions** **(20) Periods**

Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (upto R x R x R).Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions.

3. **Trigonometric Functions** **(20) Periods**

Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of

the identity sin2x + cos2x = 1, for all x. Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing *sin (x±y)* and *cos (x±y)* in terms of sin*x*, sin*y*, cos*x* & cos*y* and their simple applications. Deducing identities like the following:

$$\tan(x \pm y) = \frac{\tan x \pm \tan y}{1 \mp \tan x \tan y}, \cot(x \pm y) = \frac{\cot x \cot y \mp 1}{\cot y \pm \cot x}$$

$$\sin\alpha \pm \sin\beta = 2\sin\frac{1}{2}(\alpha \pm \beta)\cos\frac{1}{2}(\alpha \mp \beta)$$

$$\cos\alpha + \cos\beta = 2\cos\frac{1}{2}(\alpha + \beta)\cos\frac{1}{2}(\alpha - \beta)$$

$$cos\alpha - cos\beta = -2sin\frac{1}{2}(\alpha + \beta)sin\frac{1}{2}(\alpha - \beta)$$

Identities related to sin2*x*, cos2*x*, tan2 *x*, sin3*x*, cos3*x* and tan3*x*.

Unit-II: Algebra

1. **Complex Numbers and Quadratic Equations** **(10) Periods**

Need for complex numbers, especially $\sqrt{-1}$, to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane

2. **Linear Inequalities** **(10) Periods**

Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line.

3. **Permutations and Combinations** **(10) Periods**

Fundamental principle of counting. Factorial *n.* (n!) Permutations and combinations, derivation of Formulae for ${}^{n}P_{r}$ and ${}^{n}C_{r}$ and their connections, simple applications.

4. **Binomial Theorem** **(10) Periods**

Historical perspective, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, simple applications.

5. **Sequence and Series** **(10) Periods**

Sequence and Series. Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of *n* terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M.

Unit-III: Coordinate Geometry

1. Straight Lines (15) Periods

Brief recall of two dimensional geometry from earlier classes. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form, Distance of a point from a line.

2. Conic Sections (25) Periods

Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.

3. Introduction to Three-dimensional Geometry (10) Periods

Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points.

Unit-IV: Calculus

1. Limits and Derivatives (40) Periods

Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to scope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.

Unit-V Statistics and Probability

1. Statistics (20) Periods

Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data.

2. Probability (20) Periods

Events; occurrence of events, ‘not’, ‘and’ and ‘or’ events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of ‘not’, ‘and’ and ‘or’ events.

MATHEMATICS

QUESTION PAPER DESIGN

CLASS – XI (2022-23)

Time: 3 Hours **Max. Marks: 80**

S. No.	Typology of Questions	Total Marks	% Weightage
1	**Remembering:** Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. **Understanding:** Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	44	55
2	**Applying:** Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	20	25
3	**Analysing :** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations **Evaluating:** Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. **Creating:** Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions	16	20
	Total	80	100

1. *No chapter wise weightage. Care to be taken to cover all the chapters*
2. *Suitable internal variations may be made for generating various templates keeping the overall weightage to different form of questions and typology of questions same.*

Choice(s):

There will be no overall choice in the question paper.

However, 33% internal choices will be given in all the sections

INTERNAL ASSESSMENT	**20 MARKS**
Periodic Tests (Best 2 out of 3 tests conducted)	10 Marks
Mathematics Activities	10 Marks

Note: Please refer the guidelines given under XII Mathematics Syllabus:

CLASS-XII
(2022-23)

One Paper **Max Marks: 80**

No.	Units	No. of Periods	Marks
I.	Relations and Functions	30	08
II.	Algebra	50	10
III.	Calculus	80	35
IV.	Vectors and Three - Dimensional Geometry	30	14
V.	Linear Programming	20	05
VI.	Probability	30	08
	Total	240	80
	Internal Assessment		20

Unit-I: Relations and Functions

1. Relations and Functions **15 Periods**

Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and onto functions.

2. Inverse Trigonometric Functions **15 Periods**

Definition, range, domain, principal value branch. Graphs of inverse trigonometric functions.

Unit-II: Algebra

1. Matrices **25 Periods**

Concept, notation, order, equality, types of matrices, zero and identity matrix, transpose of a matrix, symmetric and skew symmetric matrices. Operation on matrices: Addition and multiplication and multiplication with a scalar. Simple properties of addition, multiplication and scalar multiplication. Non-commutativity of multiplication of matrices and existence of non-zero matrices whose product is the zero matrix (restrict to square matrices of order 2). Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).

2. Determinants **25 Periods**

Determinant of a square matrix (up to 3 x 3 matrices), minors, co-factors and applications of determinants in finding the area of a triangle. Adjoint and inverse of a square matrix. Consistency, inconsistency and number of solutions of system of linear equations by examples, solving system of linear equations in two or three variables (having unique solution) using inverse of a matrix.

Unit-III: Calculus

1. Continuity and Differentiability 20 Periods

Continuity and differentiability, chain rule, derivative of inverse trigonometric functions, $like\ \sin^{-1} x, \cos^{-1} x \text{ and } \tan^{-1} x$, derivative of implicit functions. Concept of exponential and logarithmic functions.

Derivatives of logarithmic and exponential functions. Logarithmic differentiation, derivative of functions expressed in parametric forms. Second order derivatives.

2. Applications of Derivatives 10 Periods

Applications of derivatives: rate of change of bodies, increasing/decreasing functions, maxima and minima (first derivative test motivated geometrically and second derivative test given as a provable tool). Simple problems (that illustrate basic principles and understanding of the subject as well as real-life situations).

3. Integrals 20 Periods

Integration as inverse process of differentiation. Integration of a variety of functions by substitution, by partial fractions and by parts, Evaluation of simple integrals of the following types and problems based on them.

$$\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^{2+bx+c}}}$$

$$\int \frac{px + q}{ax^2 + bx + c} dx, \int \frac{px + q}{\sqrt{ax^{2+bx+c}}} dx, \int \sqrt{a^2 \pm x^2}\, dx, \int \sqrt{x^2 - a^2}\, dx$$

$$\int \sqrt{ax^2 + bx + c}\, dx,$$

Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.

4. Applications of the Integrals 15 Periods

Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only)

5. Differential Equations 15 Periods

Definition, order and degree, general and particular solutions of a differential equation. Solution of differential equations by method of separation of variables, solutions of homogeneous differential equations of first order and first degree. Solutions of linear differential equation of the type:

$$\frac{dy}{dx} + py = q, \text{where p and q are functions of x or constants.}$$

$$\frac{dx}{dy} + px = q, \text{where p and q are functions of y or constants.}$$

Unit-IV: Vectors and Three-Dimensional Geometry

1. Vectors **15 Periods**

Vectors and scalars, magnitude and direction of a vector. Direction cosines and direction ratios of a vector. Types of vectors (equal, unit, zero, parallel and collinear vectors), position vector of a point, negative of a vector, components of a vector, addition of vectors, multiplication of a vector by a scalar, position vector of a point dividing a line segment in a given ratio. Definition, Geometrical Interpretation, properties and application of scalar (dot) product of vectors, vector (cross) product of vectors.

2. Three - dimensional Geometry **15 Periods**

Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, skew lines, shortest distance between two lines. Angle between two lines.

Unit-V: Linear Programming

1. Linear Programming **20 Periods**

Introduction, related terminology such as constraints, objective function, optimization, graphical method of solution for problems in two variables, feasible and infeasible regions (bounded or unbounded), feasible and infeasible solutions, optimal feasible solutions (up to three non-trivial constraints).

Unit-VI: Probability

1. Probability **30 Periods**

Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean of random variable.

MATHEMATICS (Code No. - 041)

QUESTION PAPER DESIGN CLASS - XII

(2022-23)

Time: 3 hours **Max. Marks: 80**

S. No.	Typology of Questions	Total Marks	% Weightage
1	**Remembering:** Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. **Understanding:** Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	44	55
2	**Applying:** Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	20	25
3	**Analysing :** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations **Evaluating:** Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. **Creating:** Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions	16	20
	Total	80	100

1. *No chapter wise weightage. Care to be taken to cover all the chapters*
2. *Suitable internal variations may be made for generating various templates keeping the overall weightage to different form of questions and typology of questions same.*

Choice(s):

There will be no overall choice in the question paper.

However, 33% internal choices will be given in all the sections

INTERNAL ASSESSMENT	**20 MARKS**
Periodic Tests (Best 2 out of 3 tests conducted)	10 Marks
Mathematics Activities	10 Marks

Note: For activities NCERT Lab Manual may be referred.

Conduct of Periodic Tests:

Periodic Test is a Pen and Paper assessment which is to be conducted by the respective subject teacher. The format of periodic test must have questions items with a balance mix, such as, very short answer (VSA), short answer (SA) and long answer (LA) to effectively assess the knowledge, understanding, application, skills, analysis, evaluation and synthesis. Depending on the nature of subject, the subject teacher will have the liberty of incorporating any other types of questions too. The modalities of the PT are as follows:

a) **Mode:** The periodic test is to be taken in the form of pen-paper test.

b) **Schedule:** In the entire Academic Year, three Periodic Tests in each subject may be conducted as follows:

Test	Pre Mid-term (PT-I)	Mid-Term (PT-II)	Post Mid-Term (PT-III)
Tentative Month	July-August	November	December-January

This is only a suggestive schedule and schools may conduct periodic tests as per their convenience. The winter bound schools would develop their own schedule with similar time gaps between two consecutive tests.

c) **Average of Marks**: Once schools complete the conduct of all the three periodic tests, they will convert the weightage of each of the three tests into ten marks each for identifying best two tests. The best two will be taken into consideration and the average of the two shall be taken as the final marks for PT.

d) The school will ensure simple documentation to keep a record of performance as suggested in detail circular no.Acad-05/2017.

e) **Sharing of Feedback/Performance**: The students' achievement in each test must be shared with the students and their parents to give them an overview of the level of learning that has taken place during different periods. Feedback will help parents formulate interventions (conducive ambience, support materials, motivation and morale-boosting) to further enhance learning. A teacher, while sharing the feedback with student or parent, should be empathetic, non- judgmental and motivating. It is recommended that the teacher share best examples/performances of IA with the class to motivate all learners.

Assessment of Activity Work:

Throughout the year any 10 activities shall be performed by the student from the activities given in the NCERT Laboratory Manual for the respective class (XI or XII) which is available on the link: http://www.ncert.nic.in/exemplar/labmanuals.htmla record of the same may be kept by the student. An year end test on the activity may be conducted

The weightage are as under:

- The activities performed by the student throughout the year and record keeping : 5 marks
- Assessment of the activity performed during the year end test: 3 marks
- Viva-voce: 2 marks

Prescribed Books:

1) Mathematics Textbook for Class XI, NCERT Publications
2) Mathematics Part I - Textbook for Class XII, NCERT Publication
3) Mathematics Part II - Textbook for Class XII, NCERT Publication
4) Mathematics Exemplar Problem for Class XI, Published by NCERT
5) Mathematics Exemplar Problem for Class XII, Published by NCERT
6) Mathematics Lab Manual class XI, published by NCERT
7) Mathematics Lab Manual class XII, published by NCERT

PHYSICS
Class XI-XII (Code No.42)
(2022-23)

Senior Secondary stage of school education is a stage of transition from general education to discipline-based focus on curriculum. The present updated syllabus keeps in view the rigor and depth of disciplinary approach as well as the comprehension level of learners. Due care has also been taken that the syllabus is comparable to the international standards. Salient features of the syllabus include:

- Emphasis on basic conceptual understanding of the content.
- Emphasis on use of SI units, symbols, nomenclature of physical quantities and formulations as per international standards.
- Providing logical sequencing of units of the subject matter and proper placement of concepts with their linkage for better learning.
- Reducing the curriculum load by eliminating overlapping of concepts/content within the discipline and other disciplines.
- Promotion of process-skills, problem-solving abilities and applications of Physics concepts.

Besides, the syllabus also attempts to

- Strengthen the concepts developed at the secondary stage to provide firm foundation for further learning in the subject.
- Expose the learners to different processes used in Physics-related industrial and technological applications.
- Develop process-skills and experimental, observational, manipulative, decision making and investigatory skills in the learners.
- Promote problem solving abilities and creative thinking in learners.
- Develop conceptual competence in the learners and make them realize and appreciate the interface of Physics with other disciplines.

PHYSICS (Code No. 042)
COURSE STRUCTURE
Class XI – 2022-23 (Theory)

Time: 3 hrs. **Max Marks: 70**

		No. of Periods	Marks
Unit–I	**Physical World and Measurement**	**08**	**23**
	Chapter–2: Units and Measurements		
Unit-II	**Kinematics**	**24**	
	Chapter–3: Motion in a Straight Line		
	Chapter–4: Motion in a Plane		
Unit–III	**Laws of Motion**	**14**	
	Chapter–5: Laws of Motion		
Unit–IV	**Work, Energy and Power**	**14**	**17**
	Chapter–6: Work, Energy and Power		
Unit–V	**Motion of System of Particles and Rigid Body**	**18**	
	Chapter–7: System of Particles and Rotational Motion		
Unit-VI	**Gravitation**	**12**	
	Chapter–8: Gravitation		
Unit–VII	**Properties of Bulk Matter**	**24**	**20**
	Chapter–9: Mechanical Properties of Solids		
	Chapter–10: Mechanical Properties of Fluids		
	Chapter–11: Thermal Properties of Matter		
Unit–VIII	**Thermodynamics**	**12**	
	Chapter–12: Thermodynamics		
Unit–IX	**Behaviour of Perfect Gases and Kinetic Theory of Gases**	**08**	
	Chapter–13: Kinetic Theory		
Unit–X	**Oscillations and Waves**	**26**	**10**
	Chapter–14: Oscillations		
	Chapter–15: Waves		
Total		**160**	**70**

Unit I: Physical World and Measurement 08 Periods

Chapter–2: Units and Measurements

Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. significant figures. Dimensions of physical quantities, dimensional analysis and its applications.

Unit II: Kinematics 24 Periods

Chapter–3: Motion in a Straight Line

Frame of reference, Motion in a straight line, Elementary concepts of differentiation and integration for describing motion, uniform and non- uniform motion, and instantaneous velocity, uniformly accelerated motion, velocity - time and position-time graphs. Relations for uniformly accelerated motion (graphical treatment).

Chapter–4: Motion in a Plane

Scalar and vector quantities; position and displacement vectors, general vectors and their notations; equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors, Unit vector; resolution of a vector in a plane, rectangular components, Scalar and Vector product of vectors.

Motion in a plane, cases of uniform velocity and uniform acceleration- projectile motion, uniform circular motion.

Unit III: Laws of Motion 14 Periods

Chapter–5: Laws of Motion

Intuitive concept of force, Inertia, Newton's first law of motion; momentum and Newton's second law of motion; impulse; Newton's third law of motion.

Law of conservation of linear momentum and its applications.

Equilibrium of concurrent forces, Static and kinetic friction, laws of friction, rolling friction, lubrication.

Dynamics of uniform circular motion: Centripetal force, examples of circular motion (vehicle on a level circular road, vehicle on a banked road).

Unit IV: Work, Energy and Power 14 Periods

Chapter–6: Work, Energy and Power

Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power.

Notion of potential energy, potential energy of a spring, conservative forces: non- conservative forces, motion in a vertical circle; elastic and inelastic collisions in one and two dimensions.

Unit V: Motion of System of Particles and Rigid Body 18Periods

Chapter–7: System of Particles and Rotational Motion

Centre of mass of a two-particle system, momentum conservation and Centre of mass motion. Centre of mass of a rigid body; centre of mass of a uniform rod.

Moment of a force, torque, angular momentum, law of conservation of angular momentum and its applications.

Equilibrium of rigid bodies, rigid body rotation and equations of rotational motion, comparison of linear and rotational motions.

Moment of inertia, radius of gyration, values of moments of inertia for simple geometrical objects (no derivation).

Unit VI: Gravitation 12 Periods

Chapter–8: Gravitation

Kepler's laws of planetary motion, universal law of gravitation.

Acceleration due to gravity and its variation with altitude and depth.

Gravitational potential energy and gravitational potential, escape velocity,

orbital velocity of a satellite.

Unit VII: Properties of Bulk Matter **24 Periods**

Chapter–9: Mechanical Properties of Solids

Elasticity, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear modulus of rigidity (qualitative idea only), Poisson's ratio; elastic energy.

Chapter–10: Mechanical Properties of Fluids

Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes), effect of gravity on fluid pressure.

Viscosity, Stokes' law, terminal velocity, streamline and turbulent flow, critical velocity, Bernoulli's theorem and its simple applications.

Surface energy and surface tension, angle of contact, excess of pressure across a curved surface, application of surface tension ideas to drops, bubbles and capillary rise.

Chapter–11: Thermal Properties of Matter

Heat, temperature, thermal expansion; thermal expansion of solids, liquids and gases, anomalous expansion of water; specific heat capacity; Cp, Cv - calorimetry; change of state - latent heat capacity.

Heat transfer-conduction, convection and radiation, thermal conductivity, qualitative ideas of Blackbody radiation, Wein's displacement Law, Stefan's law .

Unit VIII: Thermodynamics **12 Periods**

Chapter–12: Thermodynamics

Thermal equilibrium and definition of temperature zeroth law of thermodynamics, heat, work and internal energy. First law of thermodynamics,

Second law of thermodynamics: gaseous state of matter, change of condition

of gaseous state -isothermal, adiabatic, reversible, irreversible, and cyclic processes.

Unit IX: Behavior of Perfect Gases and Kinetic Theory of Gases 08 Periods

Chapter–13: Kinetic Theory

Equation of state of a perfect gas, work done in compressing a gas.

Kinetic theory of gases - assumptions, concept of pressure. Kinetic interpretation of temperature; rms speed of gas molecules; degrees of freedom, law of equi-partition of energy (statement only) and application to specific heat capacities of gases; concept of mean free path, Avogadro's number.

Unit X: Oscillations and Waves 26 Periods

Chapter–14: Oscillations

Periodic motion - time period, frequency, displacement as a function of time, periodic functions and their application.

Simple harmonic motion (S.H.M) and its equations of motion; phase; oscillations of a loaded spring- restoring force and force constant; energy in S.H.M. Kinetic and potential energies; simple pendulum derivation of expression for its time period.

Chapter–15: Waves

Wave motion: Transverse and longitudinal waves, speed of travelling wave, displacement relation for a progressive wave, principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics, Beats.

PRACTICALS

Total Periods: 60

The record, to be submitted by the students, at the time of their annual examination, has to include:

- Record of at least 8 Experiments [with 4 from each section], to be performed by the students.
- Record of at least 6 Activities [with 3 each from section A and section B], to be performed by the students.
- Report of the project carried out by the students.

EVALUATION SCHEME

Time 3 hours **Max. Marks: 30**

Topic	Marks
Two experiments one from each section	7+7
Practical record (experiment and activities)	5
One activity from any section	3
Investigatory Project	3
Viva on experiments, activities and project	5
Total	**30**

SECTION–A

Experiments

1. To measure diameter of a small spherical/cylindrical body and to measure internal diameter and depth of a given beaker/calorimeter using Vernier Callipers and hence find its volume.
2. To measure diameter of a given wire and thickness of a given sheet using screw gauge.

3. To determine volume of an irregular lamina using screw gauge.
4. To determine radius of curvature of a given spherical surface by a spherometer.
5. To determine the mass of two different objects using a beam balance.
6. To find the weight of a given body using parallelogram law of vectors.
7. Using a simple pendulum, plot its L-T^2 graph and use it to find the effective length of second's pendulum.
8. To study variation of time period of a simple pendulum of a given length by taking bobs of same size but different masses and interpret the result.
9. To study the relationship between force of limiting friction and normal reaction and to find the co- efficient of friction between a block and a horizontal surface.
10. To find the downward force, along an inclined plane, acting on a roller due to gravitational pull of the earth and study its relationship with the angle of inclination θ by plotting graph between force and Sinθ.

Activities

1. To make a paper scale of given least count, e.g., 0.2cm, 0.5 cm.
2. To determine mass of a given body using a metre scale by principle of moments.
3. To plot a graph for a given set of data, with proper choice of scales and error bars.
4. To measure the force of limiting friction for rolling of a roller on a horizontal plane.
5. To study the variation in range of a projectile with angle of projection.
6. To study the conservation of energy of a ball rolling down on an inclined plane (using a double inclined plane).
7. To study dissipation of energy of a simple pendulum by plotting a graph between square of amplitude and time.

SECTION–B

Experiments

1. To determine Young's modulus of elasticity of the material of a given wire.
2. To find the force constant of a helical spring by plotting a graph between load and extension.
3. To study the variation in volume with pressure for a sample of air at constant temperature by plotting graphs between P and V, and between P and 1/V.
4. To determine the surface tension of water by capillary rise method.
5. To determine the coefficient of viscosity of a given viscous liquid by measuring terminal velocity of a given spherical body.
6. To study the relationship between the temperature of a hot body and time by plotting a cooling curve.
7. To determine specific heat capacity of a given solid by method of mixtures.
8. To study the relation between frequency and length of a given wire under constant tension using sonometer.
9. To study the relation between the length of a given wire and tension for constant frequency using sonometer.
10. To find the speed of sound in air at room temperature using a resonance tube by two resonance positions.

Activities

1. To observe change of state and plot a cooling curve for molten wax.
2. To observe and explain the effect of heating on a bi-metallic strip.
3. To note the change in level of liquid in a container on heating and interpret the observations.
4. To study the effect of detergent on surface tension of water by observing capillary rise.
5. To study the factors affecting the rate of loss of heat of a liquid.
6. To study the effect of load on depression of a suitably clamped metre scale loaded at (i) its end (ii) in the middle.
7. To observe the decrease in pressure with increase in velocity of a fluid.

Practical Examination for Visually Impaired Students Class XI

Note: Same Evaluation scheme and general guidelines for visually impaired students as given for Class XII may be followed.

A. Items for Identification/Familiarity of the apparatus for assessment in practical's (All experiments)

Spherical ball, Cylindrical objects, vernier calipers, beaker, calorimeter, Screw gauge, wire, Beam balance, spring balance, weight box, gram and milligram weights, forceps, Parallelogram law of vectors apparatus, pulleys and pans used in the same 'weights' used, Bob and string used in a simple pendulum, meter scale, split cork, suspension arrangement, stop clock/stop watch, Helical spring, suspension arrangement used, weights, arrangement used for measuring extension, Sonometer, Wedges, pan and pulley used in it, 'weights' Tuning Fork, Meter scale, Beam balance, Weight box, gram and milligram weights, forceps, Resonance Tube, Tuning Fork, Meter scale, Flask/Beaker used for adding water.

B. List of Practicals

1. To measure diameter of a small spherical/cylindrical body using vernier calipers.
2. To measure the internal diameter and depth of a given beaker/calorimeter using vernier calipers and hence find its volume.
3. To measure diameter of given wire using screw gauge.
4. To measure thickness of a given sheet using screw gauge.
5. To determine the mass of a given object using a beam balance.
6. To find the weight of given body using the parallelogram law of vectors.
7. Using a simple pendulum plot L-T and L-T^2 graphs. Hence find the effective length of second's pendulum using appropriate length values.
8. To find the force constant of given helical spring by plotting a graph between load and extension.
9. (i) To study the relation between frequency and length of a given wire under constant tension using a sonometer.

(ii) To study the relation between the length of a given wire and tension, for constant frequency, using a sonometer.

10. To find the speed of sound in air, at room temperature, using a resonance tube, by observing the two resonance positions.

Note: The above practicals may be carried out in an experiential manner rather than recording observations.

Prescribed Books:

1. Physics Part-I, Textbook for Class XI, Published by NCERT
2. Physics Part-II, Textbook for Class XI, Published by NCERT
3. Laboratory Manual of Physics, Class XI Published by NCERT
4. The list of other related books and manuals brought out by NCERT (consider multimedia also).

Note:
The content indicated in NCERT textbooks as excluded for the year 2022-23 is not to be tested by schools.

CLASS XII (2022-23)

PHYSICS (THEORY)

Time: 3 hrs. **Max Marks: 70**

		No. of Periods	Marks
Unit–I	**Electrostatics**	**26**	**16**
	Chapter–1: Electric Charges and Fields		
	Chapter–2: Electrostatic Potential and Capacitance		
Unit-II	**Current Electricity**	**18**	
	Chapter–3: Current Electricity		
Unit-III	**Magnetic Effects of Current and Magnetism**	**25**	**17**
	Chapter–4: Moving Charges and Magnetism		
	Chapter–5: Magnetism and Matter		
Unit-IV	**Electromagnetic Induction and Alternating Currents**	**24**	
	Chapter–6: Electromagnetic Induction		
	Chapter–7: Alternating Current		
Unit–V	**Electromagnetic Waves**	**04**	**18**
	Chapter–8: Electromagnetic Waves		
Unit–VI	**Optics**	**30**	
	Chapter–9: Ray Optics and Optical Instruments		
	Chapter–10: Wave Optics		
Unit–VII	**Dual Nature of Radiation and Matter**	**8**	**12**
	Chapter–11: Dual Nature of Radiation and Matter		
Unit–VIII	**Atoms and Nuclei**	**15**	
	Chapter–12: Atoms		
	Chapter–13: Nuclei		
Unit–IX	**Electronic Devices**	**10**	**7**
	Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits		
Total		**160**	**70**

Unit I: Electrostatics 26 Periods

Chapter–1: Electric Charges and Fields

Electric charges, Conservation of charge, Coulomb's law-force between two-point charges, forces between multiple charges; superposition principle and continuous charge distribution.

Electric field, electric field due to a point charge, electric field lines, electric dipole, electric field due to a dipole, torque on a dipole in uniform electric field.

Electric flux, statement of Gauss's theorem and its applications to find field due to infinitely long straight wire, uniformly charged infinite plane sheet and uniformly charged thin spherical shell (field inside and outside).

Chapter–2: Electrostatic Potential and Capacitance

Electric potential, potential difference, electric potential due to a point charge, a dipole and system of charges; equipotential surfaces, electrical potential energy of a system of two-point charges and of electric dipole in an electrostatic field.

Conductors and insulators, free charges and bound charges inside a conductor. Dielectrics and electric polarization, capacitors and capacitance, combination of capacitors in series and in parallel, capacitance of a parallel plate capacitor with and without dielectric medium between the plates, energy stored in a capacitor (no derivation, formulae only).

Unit II: Current Electricity 18 Periods

Chapter–3: Current Electricity

Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, V-I characteristics (linear and non-linear), electrical energy and power, electrical resistivity and conductivity, temperature dependence of resistance, Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel, Kirchhoff's rules, Wheatstone bridge.

Unit III: Magnetic Effects of Current and Magnetism 25 Periods

Chapter–4: Moving Charges and Magnetism

Concept of magnetic field, Oersted's experiment.

Biot - Savart law and its application to current carrying circular loop.

Ampere's law and its applications to infinitely long straight wire. Straight solenoid (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields.

Force on a current-carrying conductor in a uniform magnetic field, force between two parallel current-carrying conductors-definition of ampere, torque experienced by a current loop in uniform magnetic field; Current loop as a magnetic dipole and its magnetic dipole moment, moving coil galvanometer-its current sensitivity and conversion to ammeter and voltmeter.

Chapter–5: Magnetism and Matter

Bar magnet, bar magnet as an equivalent solenoid (qualitative treatment only), magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis (qualitative treatment only), torque on a magnetic dipole (bar magnet) in a uniform magnetic field (qualitative treatment only), magnetic field lines.

Magnetic properties of materials- Para-, dia- and ferro - magnetic substances with examples, Magnetization of materials, effect of temperature on magnetic properties.

Unit IV: Electromagnetic Induction and Alternating Currents 24 Periods

Chapter–6: Electromagnetic Induction

Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Self and mutual induction.

Chapter–7: Alternating Current

Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LCR series circuit (phasors only), resonance, power in AC circuits, power factor, wattless current.

AC generator, Transformer.

Unit V: Electromagnetic waves 04 Periods

Chapter–8: Electromagnetic Waves

Basic idea of displacement current, Electromagnetic waves, their characteristics, their transverse nature (qualitative idea only).

Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.

Unit VI: Optics 30 Periods

Chapter–9: Ray Optics and Optical Instruments

Ray Optics: Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and optical fibers, refraction at spherical surfaces, lenses, thin lens formula, lens maker's formula, magnification, power of a lens, combination of thin lenses in contact, refraction of light through a prism.

Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.

Chapter–10: Wave Optics

Wave optics: Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts. Proof of laws of reflection and refraction using Huygen's principle. Interference, Young's double slit experiment and expression for fringe width (No derivation final expression only), coherent sources and sustained interference of light, diffraction due to a single slit, width of central maxima (qualitative treatment only).

Unit VII: Dual Nature of Radiation and Matter **08 Periods**

Chapter–11: Dual Nature of Radiation and Matter

Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light.

Experimental study of photoelectric effect

Matter waves-wave nature of particles, de-Broglie relation.

Unit VIII: Atoms and Nuclei **15 Periods**

Chapter–12: Atoms

Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model of hydrogen atom, Expression for radius of nth possible orbit, velocity and energy of electron in his orbit, of hydrogen line spectra (qualitative treatment only).

Chapter–13: Nuclei

Composition and size of nucleus, nuclear force

Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.

Unit IX: Electronic Devices **10 Periods**

Chapter–14: Semiconductor Electronics: Materials, Devices and Simple Circuits

Energy bands in conductors, semiconductors and insulators (qualitative ideas only) Intrinsic and extrinsic semiconductors- p and n type, p-n junction

Semiconductor diode - I-V characteristics in forward and reverse bias, application of junction diode -diode as a rectifier.

PRACTICALS

Total Periods 60

The record to be submitted by the students at the time of their annual examination has to include:

- Record of at least 8 Experiments [with 4 from each section], to be performed by the students.
- Record of at least 6 Activities [with 3 each from section A and section B], to be performed by the students.
- The Report of the project carried out by the students.

Evaluation Scheme

Max. Marks: 30

Time 3 hours

Two experiments one from each section	7+7 Marks
Practical record [experiments and activities]	5 Marks
One activity from any section	3 Marks
Investigatory Project	3 Marks
Viva on experiments, activities and project	5 Marks
Total	**30 marks**

Experiments **SECTION–A**

1. To determine resistivity of two / three wires by plotting a graph for potential difference versus current.
2. To find resistance of a given wire / standard resistor using metre bridge.
3. To verify the laws of combination (series) of resistances using a metre bridge.

OR

To verify the laws of combination (parallel) of resistances using a metre bridge.

4. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
5. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same.

OR

To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.

6. To find the frequency of AC mains with a sonometer.

Activities

1. To measure the resistance and impedance of an inductor with or without iron core.
2. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter.
3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source.
4. To assemble the components of a given electrical circuit.
5. To study the variation in potential drop with length of a wire for a steady current.
6. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram.

SECTION-B

Experiments

1. To find the value of *v* for different values of *u* in case of a concave mirror and to find the focal length.
2. To find the focal length of a convex mirror, using a convex lens.
3. To find the focal length of a convex lens by plotting graphs between *u* and *v* or between *1/u* and *1/v*.
4. To find the focal length of a concave lens, using a convex lens.
5. To determine angle of minimum deviation for a given prism by plotting a graph

between angle of incidence and angle of deviation.

6. To determine refractive index of a glass slab using a travelling microscope.
7. To find the refractive index of a liquid using convex lens and plane mirror.
8. To find the refractive index of a liquid using a concave mirror and a plane mirror.
9. To draw the I-V characteristic curve for a p-n junction diode in forward and reverse bias.

Activities

1. To identify a diode, an LED, a resistor and a capacitor from a mixed collection of such items.
2. Use of multimeter to see the unidirectional flow of current in case of a diode and an LED and check whether a given electronic component (e.g., diode) is in working order.
3. To study effect of intensity of light (by varying distance of the source) on an LDR.
4. To observe refraction and lateral deviation of a beam of light incident obliquely on a glass slab.
5. To observe diffraction of light due to a thin slit.
6. To study the nature and size of the image formed by a (i) convex lens, or (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror).
7. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses.

Suggested Investigatory Projects

1. To study various factors on which the internal resistance/EMF of a cell depends.
2. To study the variations in current flowing in a circuit containing an LDR because of a variation in

   (a) the power of the incandescent lamp, used to 'illuminate' the LDR (keeping all the lamps at a fixed distance).

(b) the distance of a incandescent lamp (of fixed power) used to 'illuminate' the LDR.

3. To find the refractive indices of (a) water (b) oil (transparent) using a plane mirror, an equiconvex lens (made from a glass of known refractive index) and an adjustable object needle.

4. To investigate the relation between the ratio of (i) output and input voltage and (ii) number of turns in the secondary coil and primary coil of a self-designed transformer.

5. To investigate the dependence of the angle of deviation on the angle of incidence using a hollow prism filled one by one, with different transparent fluids.

6. To estimate the charge induced on each one of the two identical Styrofoam (or pith) balls suspended in a vertical plane by making use of Coulomb's law.

7. To study the factor on which the self-inductance of a coil depends by observing the effect of this coil, when put in series with a resistor/(bulb) in a circuit fed up by an A.C. source of adjustable frequency.

8. To study the earth's magnetic field using a compass needle -bar magnet by plotting magnetic field lines and tangent galvanometer.

Practical Examination for Visually Impaired Students of

Classes XI and XII Evaluation Scheme

Time 2 hours **Max. Marks: 30**

Identification/Familiarity with the apparatus	5 marks
Written test (based on given/prescribed practicals)	10 marks
Practical Record	5 marks
Viva	10 marks
Total	**30 marks**

General Guidelines

- The practical examination will be of two-hour duration.
- A separate list of ten experiments is included here.
- The written examination in practicals for these students will be conducted at the time of practical examination of all other students.
- The written test will be of 30 minutes duration.
- The question paper given to the students should be legibly typed. It should contain a total of 15 practical skill based very short answer type questions. A student would be required to answer any 10 questions.
- A writer may be allowed to such students as per CBSE examination rules.
- All questions included in the question papers should be related to the listed practicals. Every question should require about two minutes to be answered.
- These students are also required to maintain a practical file. A student is expected to record at least five of the listed experiments as per the specific instructions for each subject. These practicals should be duly checked and signed by the internal examiner.
- The format of writing any experiment in the practical file should include aim, apparatus required, simple theory, procedure, related practical skills, precautions etc.
- Questions may be generated jointly by the external/internal examiners and used for assessment.
- The viva questions may include questions based on basic theory/principle/concept, apparatus/ materials/chemicals required, procedure, precautions, sources of error etc.

Class XII

A. Items for Identification/ familiarity with the apparatus for assessment in practicals (All experiments)

Meter scale, general shape of the voltmeter/ammeter, battery/power supply, connecting wires, standard resistances, connecting wires, voltmeter/ammeter, meter bridge, screw gauge, jockey Galvanometer, Resistance Box, standard Resistance, connecting wires, Potentiometer, jockey, Galvanometer, Lechlanche cell, Daniell cell [simple distinction between the two vis-à-vis their outer (glass and copper) containers], rheostat connecting wires, Galvanometer, resistance box, Plug-in and tapping keys, connecting wires battery/power supply, Diode, Resistor (Wire-wound or carbon ones with two wires connected to two ends), capacitors (one or two types), Inductors, Simple electric/electronic bell, battery/power supply, Plug-in and tapping keys, Convex lens, concave lens, convex mirror, concave mirror, Core/hollow wooden cylinder, insulated wire, ferromagnetic rod, Transformer core, insulated wire.

B. List of Practicals

1. To determine the resistance per cm of a given wire by plotting a graph between voltage and current.
2. To verify the laws of combination (series/parallel combination) of resistances by Ohm's law.
3. To find the resistance of a given wire / standard resistor using a meter bridge.
4. To determine the resistance of a galvanometer by half deflection method.
5. To identify a resistor, capacitor, inductor and diode from a mixed collection of such items.
6. To observe the difference between
   (i) a convex lens and a concave lens
   (ii) a convex mirror and a concave mirror and to estimate the likely difference between the power of two given convex /concave lenses.
7. To design an inductor coil and to know the effect of
   (i) change in the number of turns

(ii) Introduction of ferromagnetic material as its core material on the inductance of the coil.

8. To design a (i) step up (ii) step down transformer on a given core and know the relation between its input and output voltages.

Note: The above practicals may be carried out in an experiential manner rather than recording observations.

Prescribed Books:

1. Physics, Class XI, Part -I and II, Published by NCERT.
2. Physics, Class XII, Part -I and II, Published by NCERT.
3. Laboratory Manual of Physics for class XII Published by NCERT.
4. The list of other related books and manuals brought out by NCERT (consider multimedia also).

Note:
The content indicated in NCERT textbooks as excluded for the year 2022-23 is not to be tested by schools and will not be assessed in the Board examinations 2022-23.

QUESTION PAPER DESIGN

Theory (Class: XI/XII)

Maximum Marks: 70 **Duration: 3 hrs.**

S	Typology of Questions	Total Marks	Approximate Percentage
1	**Remembering**: Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers. **Understanding**: Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas	27	38 %
2	**Applying**: Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	22	32%
3	**Analysing :** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations **Evaluating:** Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria. **Creating**: Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.	21	30%
	Total Marks	70	100
	Practical	30	
	Gross Total	100	

Note:

The above template is only a sample. Suitable internal variations may be made for generating similar templates keeping the overall weightage to different form of questions and typology of questions same.

For more details kindly refer to Sample Question Paper of class XII for the year 2022-23 to be published by CBSE at its website.

CHEMISTRY (Code No. 043) (2022-2023)

Higher Secondary is the most crucial stage of school education because specialized discipline-based, content-oriented courses are introduced at this juncture. Students reach this stage after 10 years of general education and opt for Chemistry to pursue their career in basic sciences or professional courses like medicine, engineering, technology and study courses in applied areas of science and technology at the tertiary level. Therefore, there is a need to provide learners with sufficient conceptual background in Chemistry, which will make them competent to meet the challenges of academic and professional courses after the senior secondary stage.

The new and updated curriculum is based on a disciplinary approach with rigour and depth taking care that the syllabus is not heavy and at the same time it is comparable to the international level. The knowledge related to the subject of Chemistry has undergone tremendous changes during the past decade. Many new areas like synthetic materials, biomolecules, natural resources, and industrial chemistry are coming in a big way and deserve to be an integral part of the chemistry syllabus at the senior secondary stage. At the international level, new formulations and nomenclature of elements and compounds, symbols and units of physical quantities floated by scientific bodies like IUPAC and CGPM are of immense importance and need to be incorporated into the updated syllabus. The revised syllabus takes care of all these aspects. Greater emphasis has been laid on the use of new nomenclature, symbols and formulations, the teaching of fundamental concepts, application of concepts in chemistry to industry/ technology, logical sequencing of units, removal of obsolete content and repetition, etc.

OBJECTIVES

The curriculum of Chemistry at Senior Secondary Stage aims to:

- promote understanding of basic facts and concepts in chemistry while retaining the excitement of chemistry.
- make students capable of studying chemistry in academic and professional courses (such as medicine, engineering, technology) at tertiary level.
- expose the students to various emerging new areas of chemistry and apprise them with their relevance in future studies and their application in various spheres of chemical sciences and technology.
- equip students to face various challenges related to health, nutrition, environment, population, weather, industries and agriculture.
- develop problem solving skills in students.
- expose the students to different processes used in industries and their technological applications.
- apprise students with interface of chemistry with other disciplines of science such as physics, biology, geology, engineering etc.
- acquaint students with different aspects of chemistry used in daily life.
- develop an interest in students to study chemistry as a discipline.
- integrate life skills and values in the context of chemistry.

COURSE STRUCTURE

CLASS–XI (THEORY) (2022-23)

Time:3Hours **Total Marks70**

S.NO	UNIT	PERIODS	MARKS
1	Some Basic Concepts of Chemistry	18	7
2	Structure of Atom	20	9
3	Classification of Elements and Periodicity in Properties	12	6
4	Chemical Bonding and Molecular Structure	20	7
5	Chemical Thermodynamics	23	9
6	Equilibrium	20	7
7	Redox Reactions	9	4
8	Organic Chemistry: Some basic Principles and Techniques	20	11
9	Hydrocarbons	18	10
	TOTAL	**160**	**70**

Unit I: Some Basic Concepts of Chemistry **18 Periods**

General Introduction: Importance and scope of Chemistry. Nature of matter, laws of chemical combination, Dalton's atomic theory: concept of elements, atoms and molecules. Atomic and molecular masses, mole concept and molar mass, percentage composition, empirical and molecular formula, chemical reactions, stoichiometry and calculations based on stoichiometry.

Unit II: Structure of Atom **20 Periods**

Discovery of Electron, Proton and Neutron, atomic number, isotopes and isobars. Thomson's model and its limitations. Rutherford's model and its limitations, Bohr's model and its limitations, concept of shells and subshells, dual nature of matter and light, de Broglie's relationship, Heisenberg uncertainty principle, concept of orbitals, quantum numbers, shapes of s, p and d orbitals, rules for filling electrons in orbitals - Aufbau principle, Pauli's exclusion principle and Hund's rule, electronic configuration of atoms, stability of half-filled and completely filled orbitals.

Unit III: Classification of Elements and Periodicity in Properties **12 Periods**

Significance of classification, brief history of the development of periodic table, modern periodic law and the present form of periodic table, periodic trends in properties of elements -atomic radii, ionic radii, inert gas radii, Ionization enthalpy, electron gain enthalpy, electronegativity, valency. Nomenclature of elements with atomic number greater than 100.

Unit IV: Chemical Bonding and Molecular Structure **20 Periods**

Valence electrons, ionic bond, covalent bond, bond parameters, Lewis's structure, polar character of covalent bond, covalent character of ionic bond, valence bond theory, resonance, geometry of covalent molecules, VSEPR theory, concept of hybridization,

involving s, p and d orbitals and shapes of some simple molecules, molecular orbital theory of homonuclear diatomic molecules (qualitative idea only), Hydrogen bond.

Unit VI: Chemical Thermodynamics 23 Periods

Concepts of System and types of systems, surroundings, work, heat, energy, extensive and intensive properties, state functions. First law of thermodynamics -internal energy and enthalpy, heat capacity and specific heat, measurement of ΔU and ΔH, Hess's law of constant heat summation, enthalpy of bond dissociation, combustion, formation, atomization, sublimation, phase transition, ionization, solution and dilution. Second law of Thermodynamics (brief introduction) Introduction of entropy as a state function, Gibb's energy change for spontaneous and non- spontaneous processes, criteria for equilibrium. Third law of thermodynamics (brief introduction).

Unit VII: Equilibrium 20 Periods

Equilibrium in physical and chemical processes, dynamic nature of equilibrium, law of mass action, equilibrium constant, factors affecting equilibrium - Le Chatelier's principle, ionic equilibrium- ionization of acids and bases, strong and weak electrolytes, degree of ionization, ionization of poly basic acids, acid strength, concept of pH, hydrolysis of salts (elementary idea), buffer solution, Henderson Equation, solubility product, common ion effect (with illustrative examples).

Unit VIII: Redox Reactions 09 Periods

Concept of oxidation and reduction, redox reactions, oxidation number, balancing redox reactions, in terms of loss and gain of electrons and change in oxidation number, applications of redox reactions.

Unit XII: Organic Chemistry -Some Basic Principles and Techniques 20 Periods

General introduction, methods of purification, qualitative and quantitative analysis, classification and IUPAC nomenclature of organic compounds. Electronic displacements in a covalent bond: inductive effect, electromeric effect, resonance and hyper conjugation. Homolytic and heterolytic fission of a covalent bond: free radicals, carbocations, carbanions, electrophiles and nucleophiles, types of organic reactions.

Unit XIII: Hydrocarbons 18 Periods

Classification of Hydrocarbons

Aliphatic Hydrocarbons:

Alkanes - Nomenclature, isomerism, conformation (ethane only), physical properties, chemical reactions including free radical mechanism of halogenation, combustion and pyrolysis.

Alkenes - Nomenclature, the structure of double bond (ethene), geometrical isomerism, physical properties, methods of preparation, chemical reactions: addition of hydrogen, halogen, water, hydrogen halides (Markovnikov's addition and peroxide effect), ozonolysis, oxidation, mechanism of electrophilic addition.

Alkynes - Nomenclature, the structure of triple bond (ethyne), physical properties, methods of preparation, chemical reactions: acidic character of alkynes, addition reaction of - hydrogen, halogens, hydrogen halides and water.

Aromatic Hydrocarbons:
Introduction, IUPAC nomenclature, benzene: resonance, aromaticity, chemical properties: mechanism of electrophilic substitution. Nitration, sulphonation, halogenation, Friedel Craft's alkylation and acylation, directive influence of the functional group in monosubstituted benzene. Carcinogenicity and toxicity.

PRACTICALS

3 HOURS/ 30 Marks

Evaluation Scheme for Examination	Marks
Volumetric Analysis	08
Salt Analysis	08
Content Based Experiment	06
Project Work	04
Class record and viva	04
Total	**30**

PRACTICAL SYLLABUS **Total Periods: 60**

Micro-chemical methods are available for several of the practical experiments, wherever possible such techniques should be used.

A. Basic Laboratory Techniques

1. Cutting glass tube and glass rod
2. Bending a glass tube
3. Drawing out a glass jet
4. Boring a cork

B. Characterization and Purification of Chemical Substances

1. Determination of melting point of an organic compound.
2. Determination of boiling point of an organic compound.
3. Crystallization of impure sample of any one of the following: Alum, Copper Sulphate, Benzoic Acid.

C. Experiments based on pH

1. Any one of the following experiments:

- Determination of pH of some solutions obtained from fruit juices, solution of known and varied concentrations of acids, bases and salts using pH paper or universal indicator.

- Comparing the pH of solutions of strong and weak acids of same concentration. Study the pH change in the titration of a strong base using universal indicator.

2. Study the pH change by common-ion in case of weak acids and weak bases.

D. Chemical Equilibrium

One of the following experiments:

1. Study the shift in equilibrium between ferric ions and thiocyanate ions by increasing/decreasing the concentration of either of the ions.
2. Study the shift in equilibrium between $[Co(H_2O)_6]^{2+}$ and chloride ions by changing the concentration of either of the ions.

E. Quantitative Estimation

1. Using a mechanical balance/electronic balance.
2. Preparation of standard solution of Oxalic acid.
3. Determination of strength of a given solution of Sodium hydroxide by titrating it against standard solution of Oxalic acid.
4. Preparation of standard solution of Sodium carbonate.
5. Determination of strength of a given solution of hydrochloric acid by titrating it against standard Sodium Carbonate solution.

F. Qualitative Analysis

1. Determination of one anion and one cation in a given salt

Cation:

Pb^{2+}, Cu^{2+} As^{3+}, $A\ell^{3+}$, Fe^{3+}, Mn^{2+}, Zn^{2+}, Ni^{2+}, Ca^{2+}, Sr^{2+}, Ba^{2+}, Mg^{2+}, NH_4^+

Anions:

$(CO_3)^{2-}$, S^{2-}, $(SO_3)^{2-}$, $(NO_2)^-$, $(SO_4)^{2-}$, $C\ell^-$, Br^-, I^-, $(PO_4)^{3-}$, $(C_2O_4)^{2-}$, CH_3COO^-, NO_3^-

(Note: Insoluble salts excluded)

2. Detection of -Nitrogen, Sulphur, Chlorine in organic compounds.

G. PROJECTS

Scientific investigations involving laboratory testing and collecting information from other sources.

A few suggested Projects

- Checking the bacterial contamination in drinking water by testing sulphide ion
- Study of the methods of purification of water
- Testing the hardness, presence of Iron, Fluoride, Chloride, etc., depending upon the regional variation in drinking water and study of causes of presence of these ions above permissible limit (if any).
- Investigation of the foaming capacity of different washing soaps and the effect of addition of Sodium carbonate on it
- Study the acidity of different samples of tea leaves.
- Determination of the rate of evaporation of different liquids.
- Study the effect of acids and bases on the tensile strength of fibers.

- Study of acidity of fruit and vegetable juices.

Note: Any other investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.

PRACTICAL EXAMINATION FOR VISUALLY IMPAIRED STUDENTS

Note: Same Evaluation scheme and general guidelines for visually impaired students as given for Class XII may be followed.

A. **List of apparatus for identification for assessment in practical (All experiments)**

Beaker, tripod stand, wire gauze, glass rod, funnel, filter paper, Bunsen burner, test-tube, test-tube stand, dropper, test tube holder, ignition tube, china dish, tongs, standard flask, pipette, burette, conical flask, clamp stand, dropper, wash bottle

- Odour detection in qualitative analysis
- Procedure/Setup of the apparatus

B. **List of Experiments A. Characterization and Purification of Chemical Substances**

1. Crystallization of an impure sample of any one of the following: copper sulphate, benzoic acid

C. **Experiments based on pH**

1. Determination of pH of some solutions obtained from fruit juices, solutions of known and varied concentrations of acids, bases and salts using pH paper
2. Comparing the pH of solutions of strong and weak acids of same concentration.

D. **Chemical Equilibrium**

1. Study the shift in equilibrium between ferric ions and thiocyanate ions by increasing/decreasing the concentration of either ions.
2. Study the shift in equilibrium between $[Co(H_2O)_6]^{2+}$ and chloride ions by changing the concentration of either of the ions.

E. **Quantitative estimation**

1. Preparation of standard solution of oxalic acid.
2. Determination of molarity of a given solution of sodium hydroxide by titrating it against standard solution of oxalic acid.

F. **Qualitative Analysis**

1. Determination of one anion and one cation in a given salt
2. Cations - NH_4^+

Anions – $(CO_3)^{2-}$, S^{2-}, $(SO_3)^{2-}$, Cl^-, CH_3COO^-
(Note: insoluble salts excluded)

3. Detection of Nitrogen in the given organic compound.
4. Detection of Halogen in the given organic compound.

Note: The above practical may be carried out in an experiential manner rather than recording observations.

PRESCRIBED BOOKS:

1. Chemistry Part – I, Class-XI, Published by NCERT.
2. Chemistry Part – II, Class-XI, Published by NCERT.
3. Laboratory Manual of Chemistry, Class XI Published by NCERT
4. Other related books and manuals of NCERT including multimedia and online sources

Note:

The content indicated in NCERT textbooks as excluded for the year 2022-23 is not to be tested by schools.

CLASS XII (2022-23) (THEORY)

Time: 3 Hours **70 Marks**

S.No.	Title	No. of Periods	Marks
1	Solutions	15	7
2	Electrochemistry	18	9
3	Chemical Kinetics	15	7
4	d -and f -Block Elements	18	7
5	Coordination Compounds	18	7
6	Haloalkanes and Haloarenes	15	6
7	Alcohols, Phenols and Ethers	14	6
8	Aldehydes, Ketones and Carboxylic Acids	15	8
9	Amines	14	6
10	Biomolecules	18	7
	Total	**160**	**70**

Unit II: Solutions **15 Periods**

Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, Raoult's law, colligative properties - relative lowering of vapour pressure, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor.

Unit III: Electrochemistry **18 Periods**

Redox reactions, EMF of a cell, standard electrode potential, Nernst equation and its application to chemical cells, Relation between Gibbs energy change and EMF of a cell, conductance in electrolytic solutions, specific and molar conductivity, variations of conductivity with concentration, Kohlrausch's Law, electrolysis and law of electrolysis (elementary idea), dry cell-electrolytic cells and Galvanic cells, lead accumulator, fuel cells, corrosion.

Unit IV: Chemical Kinetics **15 Periods**

Rate of a reaction (Average and instantaneous), factors affecting rate of reaction: concentration, temperature, catalyst; order and molecularity of a reaction, rate law and specific rate constant, integrated rate equations and half-life (only for zero and first order reactions), concept of collision theory (elementary idea, no mathematical treatment), activation energy, Arrhenius equation.

Unit VIII: d and f Block Elements **18 Periods**

General introduction, electronic configuration, occurrence and characteristics of transition metals, general trends in properties of the first-row transition metals – metallic character, ionization enthalpy, oxidation states, ionic radii, colour, catalytic property, magnetic

properties, interstitial compounds, alloy formation, preparation and properties of $K_2Cr_2O_7$ and $KMnO_4$.

Lanthanoids –

Electronic configuration, oxidation states, chemical reactivity and lanthanoid contraction and its consequences.

Actinoids - Electronic configuration, oxidation states and comparison with lanthanoids.

Unit IX: Coordination Compounds **18 Periods**

Coordination compounds - Introduction, ligands, coordination number, colour, magnetic properties and shapes, IUPAC nomenclature of mononuclear coordination compounds. Bonding, Werner's theory, VBT, and CFT; structure and stereoisomerism, the importance of coordination compounds (in qualitative analysis, extraction of metals and biological system).

Unit X: Haloalkanes and Haloarenes. **15 Periods**

Haloalkanes: Nomenclature, nature of C–X bond, physical and chemical properties, optical rotation mechanism of substitution reactions.

Haloarenes: Nature of C–X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only). Uses and environmental effects of - dichloromethane, trichloromethane, tetrachloromethane, iodoform, freons, DDT.

Unit XI: Alcohols, Phenols and Ethers **14 Periods**

Alcohols: Nomenclature, methods of preparation, physical and chemical properties (of primary alcohols only), identification of primary, secondary and tertiary alcohols, mechanism of dehydration, uses with special reference to methanol and ethanol.

Phenols: Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols.

Ethers: Nomenclature, methods of preparation, physical and chemical properties, uses.

Unit XII: Aldehydes, Ketones and Carboxylic Acids **15 Periods**

Aldehydes and Ketones: Nomenclature, nature of carbonyl group, methods of preparation, physical and chemical properties, mechanism of nucleophilic addition, reactivity of alpha hydrogen in aldehydes, uses.

Carboxylic Acids: Nomenclature, acidic nature, methods of preparation, physical and chemical properties; uses.

Unit XIII: Amines **14 Periods**

Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines.

Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.

Unit XIV: Biomolecules **18 Periods**

Carbohydrates - Classification (aldoses and ketoses), monosaccharides (glucose and fructose), D-L configuration oligosaccharides (sucrose, lactose, maltose), polysaccharides (starch, cellulose, glycogen); Importance of carbohydrates.

Proteins -Elementary idea of - amino acids, peptide bond, polypeptides, proteins, structure of proteins - primary, secondary, tertiary structure and quaternary structures (qualitative idea only), denaturation of proteins; enzymes. Hormones - Elementary idea excluding structure.

Vitamins - Classification and functions.
Nucleic Acids: DNA and RNA.

Note:

The content indicated in NCERT textbooks as excluded for the year 2022-23 is not to be tested by schools.

PRACTICALS
3 HOURS/ 30 MARKS

Evaluation Scheme for Examination	**Marks**
Volumetric Analysis	08
Salt Analysis	08
Content Based Experiment	06
Project Work	04
Class record and viva	04
Total	**30**

PRACTICAL SYLLABUS **60 Periods**

Micro-chemical methods are available for several of practical experiments.

Wherever possible, such techniques should be used.

A. Surface Chemistry

(a) Preparation of one lyophilic and one lyophobic sol

Lyophilic sol - starch, egg albumin and gum

Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide.

(b) Dialysis of sol-prepared in (a) above.

(c) Study of the role of emulsifying agents in stabilizing the emulsion of different oils.

B. Chemical Kinetics

(a) Effect of concentration and temperature on the rate of reaction between Sodium Thiosulphate and Hydrochloric acid.

(b) Study of reaction rates of any one of the following:

(i) Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentrations of Iodide ions.

(ii) Reaction between Potassium Iodate, (KIO_3) and Sodium Sulphite: (Na_2SO_3) using starch solution as an indicator (clock reaction).

C. Thermochemistry

Any one of the following experiments

(a) Enthalpy of dissolution of Copper Sulphate or Potassium Nitrate.

(b) Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH).

(c) Determination of enthaply change during interaction (Hydrogen bond formation) between Acetone and Chloroform.

D. Electrochemistry

Variation of cell potential in $Zn/Zn^{2+}||\ Cu^{2+}/Cu$ with change in concentration of electrolytes ($CuSO_4$ or $ZnSO_4$) at room temperature.

E. Chromatography

(a) Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of Rf values.

(b) Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in Rf values to be provided).

F. Preparation of Inorganic Compounds

Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum. Preparation of Potassium Ferric Oxalate.

G. Preparation of Organic Compounds

Preparation of any one of the following compounds

i) Acetanilide ii) Di -benzalAcetone iii) p-Nitroacetanilide iv) Aniline yellow or 2 -Naphthol Anilinedye.

H. Tests for the functional groups present in organic compounds:

Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (Primary) groups.

I. Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given foodstuffs.

J. Determination of concentration/ molarity of $KMnO_4$ solution by titrating it against a standard solution of:

(a) Oxalic acid,

(b) Ferrous Ammonium Sulphate

(Students will be required to prepare standard solutions by weighing themselves).

K. Qualitative analysis

Determination of one anion and one cation in a given salt

Cation:

Pb^{2+}, Cu^{2+} As^{3+}, $A\ell^{3+}$, Fe^{3+}, Mn^{2+}, Zn^{2+}, Ni^{2+}, Ca^{2+}, Sr^{2+}, Ba^{2+}, Mg^{2+}, NH_4^+

Anions:

$(CO_3)^{2-}$, S^{2-}, $(SO_3)^{2-}$, $(NO_2)^-$, $(SO_4)^{2-}$, Cl^-, Br^-, I^-, $(PO_4)^{3-}$, $(C_2O_4)^{2-}$, CH_3COO^-, NO_3^-
(Note: Insoluble salts excluded)

INVESTIGATORY PROJECT

Scientific investigations involving laboratory testing and collecting information from other sources A few suggested Projects.

- Study of the presence of oxalate ions in guava fruit at different stages of ripening.
- Study the quantity of casein present in different samples of milk.
- Preparation of soybean milk and its comparison with natural milk with respect to curd formation, the effect of temperature, etc.
- Study of the effect of Potassium Bisulphate as a food preservative under various conditions (temperature, concentration, time, etc.)
- Study of digestion of starch by salivary amylase and effect of pH and temperature on it.
- Comparative study of the rate of fermentation of the following materials: wheat flour, gram flour, potato juice, carrot juice, etc.
- Extraction of essential oils present in Saunf (aniseed), Ajwain (carum), Illaichi (cardamom).
- Study of common food adulterants in fat, oil, butter, sugar, turmeric power, chilli powder and pepper.

Note: Any other investigatory project, which involves about 10 periods of work, can be chosen with the approval of the teacher.

Practical Examination for Visually Impaired Students of Classes XI and XII
Evaluation Scheme

Time Allowed: Two hours **Max. Marks:30**

Topic	**Marks**
Identification/Familiarity with the apparatus	5
Written test (based on given/prescribed practicals)	10
Practical Record	5
Viva	10
Total	**30**

General Guidelines

- The practical examination will be of two hours duration.
- A separate list of ten experiments is included here.
- The written examination in practicals for these students will be conducted at the time of the practical examination of all other students.
- The written test will be of 30 minutes duration.
- The question paper given to the students should be legibly typed. It should contain a total of 15 practical skill-based very short answer type questions. A student would be required to answer any 10 questions.
- A writer may be allowed to such students as per CBSE examination rules.

- All questions included in the question papers should be related to the listed practical. Every question should require about two minutes to be answered.
- These students are also required to maintain a practical file. A student is expected to record at least five of the listed experiments as per the specific instructions for each subject. These practicals should be duly checked and signed by the internal examiner.
- The format of writing any experiment in the practical file should include aim, apparatus required, simple theory, procedure, related practical skills, precautions etc.
- Questions may be generated jointly by the external/internal examiners and used for assessment.
- The viva questions may include questions based on basic theory/principle/concept, apparatus/materials/ chemicals required, procedure, precautions, sources of error etc.

1. Items for Identification/Familiarity of the apparatus for assessment in practical (All experiments)

Beaker, glass rod, tripod stand, wire gauze, Bunsen burner, Whatman filter paper, gas jar, capillary tube, pestle and mortar, test tubes, tongs, test tube holder, test tube stand, burette, pipette, conical flask, standard flask, clamp stand, funnel, filter paper

Hands-on Assessment

- Identification/familiarity with the apparatus
- Odour detection in qualitative analysis

2. List of Practicals

The experiments have been divided into two sections:

Section A and Section B.

The experiments mentioned in Section B are mandatory.

SECTION- A

A **Surface Chemistry**

1 Preparation of one lyophilic and one lyophobic sol - starch, egg albumin and gum
2 Preparation of one lyophobic sol– Ferric hydroxide

B **Chromatography**

Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of R_f values (distance values may be provided).

C **Tests for the functional groups present in organic compounds**:

(1) Alcoholic and Carboxylic groups.
(2) Aldehydic and Ketonic

D Characteristic tests of carbohydrates and proteins in the given foodstuffs.

E Preparation of Inorganic Compounds- Potash Alum

SECTION-B (Mandatory)

F Quantitative analysis

(1) (a) Preparation of the standard solution of Oxalic acid of a given volume

(b) Determination of molarity of $KMnO_4$ solution by titrating it against a standard solution of Oxalic acid.

(2) The above exercise [F 1 (a) and (b)] to be conducted using Ferrous ammonium sulphate (Mohr's salt)

G Qualitative analysis:

(1) Determination of one cation and one anion in a given salt. Cation –NH_4^+

Anions – CO_3^{2-}, S^{2-}, SO_3^{2-}, Cl^-, CH_3COO^-

(Note: Insoluble salts excluded)

Note: The above practical may be carried out in an experiential manner rather than recording observations.

PRESCRIBED BOOKS

1. Chemistry Part -I, Class-XII, Published by NCERT.
2. Chemistry Part -II, Class-XII, Published by NCERT.
3. Laboratory Manual of Chemistry, Class XI Published by NCERT
4. Other related books and manuals of NCERT including multimedia and online sources

QUESTION PAPER DESIGN CLASSES –XI and XII (2022-23)

S.No	Domains	Marks	%
1	**Remembering and Understanding:** Exhibit memory of previously learned material by recalling facts, terms, basic concepts and answers. Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions and stating main ideas.	28	40
2	**Applying:** Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	21	30
3	**Analyzing, Evaluating and Creating:** Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations. Present and defend opinions by making judgments about information, the validity of ideas or quality of work based on a set of criteria. Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.	21	30

For more details kindly refer to Sample Question Paper of class XII for the year 2022-23 to be published by CBSE at its website.

ENGLISH (CORE)

Code No. 301

(2022-23)

Background

Students are expected to have acquired a reasonable degree of language proficiency in English Language by the time they come to class XI, and the course aims, essentially, at promoting the higher-order language skills.

For a large number of students, the higher secondary stage will be a preparation for the university, where a fairly high degree of proficiency in English may be required. But for another large group, the higher secondary stage may be a preparation for entry into the professional domain. The Core Course should cater to both groups by promoting the language skills required for academic study as well as the language skills required for the workplace.

Competencies to be focused on:

The general objectives at this stage are to:

- listen and comprehend live as well as record in writing oral presentations on a variety of topics
- develop greater confidence and proficiency in the use of language skills necessary for social and academic purpose to participate in group discussions, interviews by making short oral presentation on given topics
- perceive the overall meaning and organisation of the text (i.e., correlation of the vital portions of the text)
- identify the central/main point and supporting details, etc., to build communicative competence in various lexicons of English
- promote advanced language skills with an aim to develop the skills of reasoning, drawing inferences, etc. through meaningful activities
- translate texts from mother tongue(s) into English and vice versa
- develop ability and acquire knowledge required in order to engage in independentreflection and enquiry
- read and comprehend extended texts (prescribed and non-prescribed) in the following genres: science fiction, drama, poetry, biography, autobiography, travel and sports literature, etc.
- text-based writing (i.e., writing in response to questions or tasks based on prescribed or unseen texts) understand and respond to lectures, speeches, etc.
- write expository / argumentative essays, explaining or developing a topic, arguinga case, etc. write formal/informal letters and applications for different purposes

- make use of contextual clues to infer meanings of unfamiliar vocabulary
- select, compile and collate information for an oral presentation
- produce unified paragraphs with adequate details and support
- use grammatical structures accurately and appropriately
- write items related to the workplace (minutes, memoranda, notices, summaries,reports etc.
- filling up of forms, preparing CV, e-mail messages., making notes from referencematerials, recorded talks etc.

The core course should draw upon the language items suggested for class IX-X and delve deeper into their usage and functions. Particular attention may, however, be givento the following areas of grammar:

- The use of passive forms in scientific and innovative writings.
- Convert one kind of sentence/clause into a different kind of structure as well as other items to exemplify stylistic variations in different discourses modal auxiliaries- uses based on semantic considerations.

A. Specific Objectives of Reading

Students are expected to develop the following study skills:

- skim for main ideas and scan for details
- refer to dictionaries, encyclopedia, thesaurus and academic reference material in any format
- select and extract relevant information, using reading skills of skimming and scanning
- understand the writer's purpose and tone
- comprehend the difference between the literal and the figurative
- differentiate between claims and realities, facts and opinions, form business opinions onthe basis of latest trends available
- comprehend technical language as required in computer related fields, arrive at personal conclusion and logically comment on a given text.
- Specifically develop the ability to be original and creative in interpreting opinion, develop the ability to be logically persuasive in defending one's opinion and making notes based on a text.

Develop literary skills as enumerated below:

- respond to literary texts
- appreciate and analyse special features of languages that differentiate literary texts from non-literary ones, explore and evaluate features of character, plot, setting, etc.
- understand and appreciate the oral, mobile and visual elements of drama. Identify the elements of style such as humour, pathos, satire and irony, etc.
- make notes from various resources for the purpose of developing the extracted ideas into sustained pieces of writing

B. Listening and Speaking

Speaking needs a very strong emphasis and is an important objective leading toprofessional competence. Hence, testing of oral skills must be made an important component of the overall testing pattern. To this end, speaking and listening skills are overtly built into the material to guide the teachers in actualization of the skills.

Specific Objectives of Listening & Speaking

Students are expected to develop the ability to:

- take organized notes on lectures, talks and listening passages
- listen to news bulletins and to develop the ability to discuss informally a wideranging issues like current national and international affairs, sports, business, etc.
- respond in interviews and to participate in formal group discussions.
- make enquiries meaningfully and adequately and to respond to enquiries for thepurpose of travelling within the country and abroad.
- listen to business news and to be able to extract relevant important information.
- to develop public speaking skills.

C. Specific Objectives of Writing

The students will be able to:

- write letters to friends, relatives, etc. to write business and official letters.
- open accounts in post offices and banks. To fill in railway/airline reservation forms.
- draft notices, advertisements and design posters effectively and appropriately
- write on various issues to institutions seeking relevant information, lodge complaints, express gratitude or render apology.
- write applications, fill in application forms, prepare a personal bio-data for admissioninto colleges, universities, entrance tests and jobs.
- write informal reports as part of personal letters on functions, programmes and activities held in school (morning assembly, annual day, sports day, etc.)
- write formal reports for school magazines/events/processes/ or in local newspapers about events or occasions.
- express opinions, facts, arguments in the form of speech or debates, using a varietyof accurate sentence structures
- draft papers to be presented in symposia.
- take down notes from talks and lectures.
- write examination answers according to the requirement of various subjects.
- summarise a text.

D. More About Reading

Inculcating good reading habits in children has always been a concern for all stakeholders in education. The purpose is to create independent thinking individualswith the ability to not only create their own knowledge but also critically interpret, analyse and evaluate it with objectivity and fairness. This will also help students in learning and acquiring better language skills.

Creating learners for the 21st century involves making them independent learners whocan learn, unlearn and relearn. If our children are in the habit of reading, they will learnto reinvent themselves and deal with the many challenges that lie ahead of them.

Reading is not merely decoding information or pronouncing words correctly. It is an interactive dialogue between the author and the reader in which the reader and the author share their experiences and knowledge with each other. Good readers are critical readers with an ability to arrive at a deeper understanding of not only the worldpresented in the book but also of the real world around them.

Consequently, they become independent thinkers capable of taking their own decisions in life rationally. Hence, a few activities are suggested below which teachers may use asa part of the reading project.

- Short review / dramatization of the story
- Commentary on the characters
- Critical evaluation of the plot, storyline and characters
- Comparing and contrasting the characters within the story, with other characters in stories by the same author or by different authors
- Extrapolating about the story read or life of characters after the story ends defending characters actions in the story
- Making an audio story out of the novel/text to be read aloud.
- Interacting with the author
- Holding a literature fest where students role-play as various characters to interact with each other
- Role playing as authors/poets/dramatists, to defend their works and characters
- Symposiums and seminars for introducing a book, an author, or a theme
- Creating graphic novels out of novel or short stories they read
- Dramatizing incidents from a novel or a story
- Creating their own stories
- Books of one genre to be read by the whole class.

Teachers may select books and e-books suitable to the age and level of the learners.Care ought to be taken to choose books that are appropriate in terms of language, theme and content and which do not hurt the sensibilities of a child.

Teachers may later suggest books from other languages by dealing with the same themes as an extended activity. The Project should lead to independent learning/reading skills and hence the chosen book should not be taught in class, but may be introduced through activities and be left for the students to read at their own pace. Teachers may, however, choose to assess a student's progress or success in reading the book by asking for verbal or written progress reports, looking at their diary entries, engaging in a discussion about the book, giving a short quiz or a work sheet about the book/short story. A befitting mode of assessment may be chosen by the teacher.

Methods and Techniques

The techniques used for teaching should promote habits of self-learning and reduce dependence on the teacher. In general, we recommend a multi-skill, learner-centred, activity based approach, of which there can be many variations. The core classroom activity is likely to be that of silent reading of prescribed/selected texts for comprehension, which can lead to other forms of language learning activities such as role-play, dramatization, group discussion, writing, etc., although many such activities could be carried out without the preliminary use of textual material. It is important that students be trained to read independently and intelligently, interacting actively withtexts, with the use of reference materials (dictionary, thesaurus, etc.) where necessary. Some pre-reading activity will generally be required, and the course books should suggest suitable activities, leaving teachers free to devise other activities when desired. So also, the reading of texts should be followed by post reading activities. It is important to remember that students should be encouraged to interpret texts in different ways.

Group and pair activities can be resorted to when desired, although many useful language activities can be carried out individually. In general, teachers should encourage students to interact actively with texts and with each other. Oral activity (group discussion, etc.) should be encouraged.

ENGLISH CORE
CODE NO. 301
CLASS – XI (2022-23)

Section A
Reading Skills

Reading Comprehension through Unseen Passage **18 Marks**

I. One unseen passage to assess comprehension, interpretation inference and vocabulary. The passage may be factual, descriptive or literary.

II. One unseen **case-based** passage with verbal/visual inputs like statistical data, charts etc.

Note: The combined word limit for both the passages will be 600-750.

Multiple Choice Questions / Objective Type Questions will be asked. **(10+8 = 18 Marks)**

III. Note Making and Summarization based on a passage of approximately 200-250 words.

i. Note Making: **5 Marks**
- Title: 1
- Numbering and indenting: 1
- Key/glossary: 1
- Notes: 2

ii. Summary (up to 50 words): **3 Marks**
- Content: 2
- Expression: 1

Section B

IV. Grammar **7 Marks**

i. Questions on Gap filling (Tenses, Clauses)

ii. Questions on re-ordering/transformation of sentences

(Total seven questions to be done out of the eight given).

V. Creative Writing Skills **16 Marks**

i. Short writing task – Classified Advertisements up to 50 words. One out of the two given questions to be answered **(3 Marks**: Format : 1 / Content : 1 / Expression : 1)

ii. Short writing task –**Poster** up to 50 words. One out of the two given questions to be answered.(**3marks:**Format : 1 / Content : 1 / Expression : 1)

iii. Writing a Speech in 120-150 words based on verbal / visual cues related to some contemporary / age-appropriate topic.

iv. Writing a Debate based on visual/verbal inputs in 120-150 words. The theme should be contemporary topical issues. One out of the two given questions to be answered. **(5 Marks**: Format: 1 / Content: 2 / Expression: 2)

Section C

This section will have variety of assessment items including Multiple Choice Questions, Objective Type Questions, Short Answer Type Questions and Long Answer Type Questions to assess comprehension, analysis, interpretation and extrapolation beyond the text.

VI. Reference to the Context

i. One Poetry extract out of two from the book **Hornbill** to assess comprehension, interpretation, analysis and appreciation. **(3x1=3 Marks)**

ii. One Prose extract out of two from the book **Hornbill** to assess comprehension, interpretation, analysis and appreciation. **(3x1=3 Marks)**

iii. One prose extract out of two from the book **Snapshots** to assess comprehension, interpretation and analysis. **(4x1=4 Marks)**

VII. Two Short answer type question (one from Prose and one from Poetry from the book **Hornbill**), out of four, to be answered in 40-50 words. Questions should elicit inferential responses through critical thinking. **(3x2=6 Marks)**

VIII. One Short answer type question, from the book **Snapshots,** to be answered I n 40- 50 words. Questions should elicit inferential responses through critical thinking. Any 1 out of 2 questions to be done. **(3x1=3 Marks)**

IX. One Long answer type question, from **Prose/Poetry Hornbill,** to be answered in 120-150 words. Questions can be based on incident / theme / passage / extract / event as reference points to assess extrapolation beyond and across the text. The question will elicit analytical and evaluative response from student. Any 1 out of 2 questions to be done. **(1x6=6 Marks)**

X. One Long answer type question, based on the chapters from the book **Snapshots** to be answered in 120-150 words to assess global comprehension and extrapolation beyond the text. Questions to provide evaluative and analytical responses using incidents, events, themes as reference points. Any 1 out of 2 questions to be done. **(1x6=6 Marks)**

Prescribed Books

1. **Hornbill:** English Reader published by National Council of Education Research andTraining, New Delhi
   - The Portrait of a Lady (Prose)
   - A Photograph (Poem)
   - "We're Not Afraid to Die… if we can be together
   - Discovering Tut: the Saga Continues
   - The Laburnum Top (Poem)
   - The Voice of the Rain (Poem)
   - Childhood (Poem)
   - The Adventure
   - Silk Road (Prose)
   - Father to Son
2. **Snapshots:** Supplementary Reader published by National Council of EducationResearch and Training, New Delhi
   - The Summer of the Beautiful White Horse (Prose)
   - The Address (Prose)
   - Mother's Day (Play)
   - Birth (Prose)
   - The Tale of Melon City

INTERNAL ASSESSMENT

Assessment of Listening Skills - 05 marks.
Assessment of Speaking Skills – 05 Marks
Project Work - 10 Marks

Question Paper Design 2022-23 English

CORE XI (Code No. 301)

Section	Competencies	Total marks
Reading Skills	Conceptual understanding, decoding,Analyzing, inferring, interpreting, appreciating, literary, conventions and vocabulary, summarizing and usingappropriate format/s.	26
Creative Writing Sills	Conceptual Understanding, application ofrules, Analysis, Reasoning, appropriacy of style and tone, using appropriate format and fluency, inference, analysis, evaluation and creativity.	23
Literature Text Books and Supplementary Reading Texts	Recalling, reasoning, appreciating literary convention, inference, analysis, creativity with fluency, Critical Thinking.	31
	TOTAL	**80**
	Assessment ofListening andSpeaking Skills	**10**
	Internal Assessment • Listening • Speaking • Project Work	 5 5 10
	GRAND TOTAL	**100**

ENGLISH CORE

CODE NO. 301

CLASS – XII 2022-23

Section A
Reading Skills

Reading Comprehension through Unseen Passage **20 Marks**

I. One unseen passage to assess comprehension, interpretation and inference. Vocabulary and inference of meaning will also be assessed. The passage may be factual, descriptive or literary. (**10x1=10 Marks)**

II. One unseen **case-based** passage with verbal/visual inputs like statistical data, charts etc. (**10x1=10 Marks)**

Note: The combined word limit for both the passages will be 700-750 words.

Multiple Choice Questions / Objective Type Questions will be asked.

Section B

III. Creative Writing Skills **20 Marks**

The section has Short and Long writing tasks.

i. Notice up to 50 words. One out of the two given questions to be answered.**(5 Marks**: Format : 1 / Organisation of Ideas: 1/Content : 2 / Accuracy of Spelling and Grammar : 1).

ii. Formal/Informal Invitation and Reply up to 50 words. One out of the two given questions to be answered. **(5 Marks**: Format : 1 / Organisation of Ideas: 1/Content : 2 / Accuracy of Spelling and Grammar :1).

iii. Letters based on verbal/visual input, to be answered in approximately 120-150 words. Letter types include application for a job with bio data or resume. Letters to the editor (giving suggestionsor opinion on issues of public interest) . One out of the two given questions to be answered . **(5 Marks**: Format : 1 / Organisation of Ideas: 1/Content : 2 / Accuracy of Spelling and Grammar :1).

iv. Article/ Report Writing, descriptive and analytical in nature, based on verbal inputs, to be answered in 120-150 words. One out of the two given questions to be . **(5 Marks**: Format : 1 / Organisation of Ideas: 1/Content : 2 / Accuracy of Spelling and Grammar :1).

Section C

This section will have variety of assessment items including Multiple Choice Questions, Objective Type Questions, Short Answer Type Questions and Long Answer Type Questions to assess comprehension, analysis, interpretation and extrapolation beyond the text.

IV. Reference to the Context **40 Marks**

i. One Poetry extract out of two from the book **Flamingo** to assess comprehension, interpretation, analysis and appreciation. **(6x1=6 Marks)**

ii. One Prose extract out of two from the book **Vistas** to assess comprehension, interpretation, analysis and appreciation. **(4x1=4 Marks)**

iii. One prose extract out of two from the book **Flamingo** to assess comprehension, interpretation and analysis. **(6x1=6Marks)**

V. Short answer type question **(from Prose and Poetry from the book Flamingo**), to be answered in 40-50 words. Questions should elicit inferential responses through critical thinking. Five questions out of the six given are to be answered. **(5x2=10 Marks)**

VI. Short answer type question, from **Prose (Vistas)**, to be answered in 40- 50 words. Questions should elicit inferential responses through critical thinking. Any 2 out of 3 questions to be done. **(2x2=4 Marks)**

VII. One Long answer type question, from **Prose/Poetry (Flamingo)**, to be answered in 120-150 words. Questions can be based on incident / theme / passage / extract / event as reference points to assess extrapolation beyond and across the text. The question will elicit analytical and evaluative response from student. Any 1 out of 2 questions to be done. **(1x5=5 Marks)**

VIII. One Long answer type question, based on the chapters from the book **Vistas**,to be answered in 120-150 words to assess global comprehension and extrapolation beyond the text. Questions to provide evaluative and analytical responses using incidents, events, themes as reference points. Any 1 out of 2 questions to be done. **(1x5=5 Marks)**

Prescribed Books

1. **Flamingo:** English Reader published by National Council of Education Research andTraining, New Delhi

(Prose)

- The Last Lesson
- Lost Spring
- Deep Water
- The Rattrap
- Indigo
- Poets and Pancakes
- The Interview
- Going Places

(Poetry)

- My Mother at Sixty-Six
- Keeping Quiet
- A Thing of Beauty
- A Roadside Stand
- Aunt Jennifer's Tigers

2. **Vistas:** Supplementary Reader published by National Council of Education Researchand Training, New Delhi

- The Third Level
- The Tiger King
- Journey to the end of the Earth
- The Enemy
- On the Face of It
- Memories of Childhood
    - The Cutting of My Long Hair
    - We Too are Human Beings

INTERNAL ASSESSMENT

Assessment of Listening Skills - 05 marks.
Assessment of Speaking Skills – 05 Marks
Project Work - 10 Marks

Question Paper Design 2022-23
Code No. 301
English CORE XII

Section	Competencies	Total marks
Reading Skills	Conceptual understanding, decoding, Analyzing, inferring, interpreting,appreciating, literary, conventions and vocabulary, summarizing and using appropriate format/s.	20
Creative Writing Sills	Conceptual Understanding, application ofrules, Analysis, Reasoning, appropriacy of style and tone, using appropriate format and fluency, inference, analysis, evaluation and creativity.	20
Literature Text Books and Supplementary Reading Texts	Recalling, reasoning, critical thinking, appreciating literary convention, inference, analysis, creativity with fluency.	40
	TOTAL	**80**
	Assessment ofListening andSpeaking Skills	**10**
	Internal Assessment • Listening • Speaking • Project Work	 5 5 10
	GRAND TOTAL	**100**

Annexure I

Guidelines for Internal Assessment

Classes XI-XII

ALS must be seen as an integrated component of all four language skills rather than a compartment of two. Suggested activities, therefore, take into consideration an integration of the four language skills but during assessment, emphasis will be given to speaking and listening, since reading and writing are already being assessed in the written exam.

Classes XI-XII Total Marks: 20

Assessment of Listening and Speaking Skills: (5+5=10 Marks)

i. Activities:

- Subject teachers must refer to books prescribed in the syllabus.
- In addition to the above, teachers may plan their own activities and create their own material for assessing the listening and speaking skills.

ii. Parameters for Assessment: The listening and speaking skills are to be assessed on the following parameters:

a. Interactive competence (Initiation & turn taking, relevance to the topic)

b. Fluency (cohesion, coherence and speed of delivery)

c. Pronunciation

d. Language (grammar and vocabulary)

A suggestive rubric is given below:

	1.	**2.**	**3.**	**4.**	**5.**
Interaction	• Contributions are mainly unrelated to those of other speakers • Shows hardly any initiative in the development of conversation • Very limited interaction	• Contributions are often unrelated to those of the other speaker • Generally passive in the development of conversation	• Develops interaction adequately, makes however minimal effort to initiate conversation • Needs constant prompting to take turns	• Interaction is adequately initiated and develop • Can take turn but needs little prompting	• Can initiate & logically develop simple conversation on familiar topics • Can take turns appropriately
Pronunciation	• Insufficient accuracy in pronunciation; many grammatical errors • Communication is severely affected	• Frequently unintelligible articulation • Frequent phonological errors • Major communication problems	• Largely correct pronunciation & clear articulation except occasional errors • Some expressions cause stress without compromising with understanding of spoken discourse.	• Mostly correct pronunciation & clear articulation • Can be clearly understood most of the time; very few phonological errors	• Can pronounce correctly & articulate clearly • Is always comprehensible ; uses appropriate intonation

	1.	2.	3.	4.	5.
Fluency & Coherence	• Noticeably/ long pauses; rate of Speech is slow • Frequent repetition and/or self- correction • Links only basic sentences; breakdown of coherence evident	• Usually fluent; produces simple speech fluently, but loses coherence in complex communication • Often hesitates and/or resorts to slow speech • Topics partly developed; not always concluded logically	• Is willing to speak at length, however repetition is noticeable • Hesitates and/or self corrects; occasionally loses coherence • Topics mainly developed, but usually not logically concluded	• Speaks without noticeable effort, with a little repetition • Demonstrates hesitation to find words or use correct grammatical structures and/or self-correction • Topics not fully developed to merit	• Speaks fluently almost with no repetition & minimal hesitation • Develops topic fully & coherently
Vocabulary & Grammar	• Demonstrates almost no flexibility, and mostly struggles for appropriate words • Uses very basic vocabulary to express view-points.	• Communicates with limited flexibility and appropriacy on some of the topics • Complex forms and sentence structures are rare; exhibits limited vocabulary to express new ideas	• Communicates with limited flexibility and appropriacy on most of the topics • Sometimes uses complex forms and sentence structures; has limited vocabulary to describe/ express new points	• Can express with some flexibility and appropriacy on most of the topics • Demonstrates ability to use complex forms and sentence structures most of the time; expresses with adequate vocabulary	• Can express with some flexibility and appropriacy on a variety of topics such as family, hobbies, work, travel and current events • Frequently uses complex forms and sentence structures; has enough vocabulary to express himself/ herself

iii. Schedule:

- The practice of listening and speaking skills should be done throughout the academic year.
- The final assessment of the skills is to be done as per the convenience and schedule of the school.

Project Work + Viva: 10 Marks

Out of ten marks, 5 marks will be allotted for the project report/script /essay etc. and 5 marks for the viva.

I. Schedule:

- Schools may refer to the suggestive timeline given in these guidelines for the planning, preparation and viva-voce of ALS based projects.
- The final assessment of the skills may be done on the basis of parameters suggested by the Board. Language teachers, however, have the option to adopt/ modify these parameters according to their school specific requirements.

II. Suggestions for Project Work:

- The Project can be inter-disciplinary in theme. The ideas/issues highlighted in the chapters/ poems/ drama given the prescribed books can also be developed in the form of a project. Students can also take up any relevant and age-appropriate theme.
- Such topics may be taken up that provide students with opportunities for listening and speaking.

Some suggestions are as follows:

a. Interview-Based research:

Example:

- Students can choose a topic on which to do their research/ interview, e.g. a student can choose the topic : " Evolving food tastes in my neighbourhood" or "Corona pandemic and the fallout on families." Read the available literature.
- The student then conducts interviews with a few neighbours on the topic. For an interview, with the help of the teacher, student will frame questions based on the preliminary research/background.
- The student will then write an essay/ write up / report etc. up to 1000 words on his/her research and submit it. He / She will then take a viva on the research project. The project can be done in individually or in pairs/ groups

b. Listen to podcasts/ interviews/radio or TV documentary on a topic and prepare a report countering or agreeing with the speakers. Write an 800 - 1000 words report and submit. Take a viva on the report.

c. Students create their own video/ Audio, after writing a script. Before they decide a format, the following elements can be taken into consideration:

- Theme/topic of the audio / video. Would the child like to pick a current issue or something artistic like theatre?
- What are the elements that need to be part of the script?
- Will the video/audio have an interview with one or more guests?
- Would they prefer to improvise while chatting with guests, or work from a script?
- What would be the duration?
- How would they present the script/report to the teacher, e.g. Can it be in the form of a narrative?

d. Write, direct and present a theatrical production, /One act play

This will be a project which will be done as a team. It will involve planning, preparation and presentation. In short, various language skills will be utilised. There will be researching, discussion, writing the script, auditioning and ultimately producing the play. The project will end with a presentation and subsequently a viva. Teachers will be able to assess the core language skills of the students and help them grow as 21st century critical thinkers.

III. <u>Instructions for the Teachers:-</u>

1. **Properly orient students about the Project work, as per the present Guidelines.**
2. **Facilitate the students in the selection of theme and topic.**
3. Create a rubric for assessment and share with the students before they start so that they know the parameters of assessment:
    - Teachers need to familiarize themselves with the method of assessing students with the <u>rubric</u>-- a table with different criteria and a grading scale.
    - Choose the criteria on which you will grade students and list them along the left side of the page.
    - Create an even number of columns along the top of the page. These columns will represent potential skill levels of the students.
    - Assessing students on four/five criteria is an easy way to begin. For each criterion, define the ability that a student would exhibit at each of the levels.
- The more detailed you make your criteria, the easier it will be to evaluate each student and define the level at which the student is presenting**.**

{Sample Rubric is attached at the end for reference}

IV. Parameters for Overall Assessment:-

1. Pronunciation:

- When evaluating the pronunciation of the students, teachers must listen for clearly articulated words, pronunciation of unusual spellings and intonation.
- Assess the students for the pronunciation skills and determine at which level the student needs improvement.

2. Vocabulary:

- After noting their pronunciation levels, evaluate the students on the use of extensive and appropriate **vocabulary** during the viva. Check if students are using vocabulary appropriate to the context about which they are speaking.

3. Accuracy:

- Grammar has always been an important component of language skills. As students speak/ answer the questions during the viva, listen to their **grammatical structures**. *Are they competent enough to use multiple tenses? Is their word order correct in a given sentence?* An effective speaker will automatically use the correct grammatical structures of his language.

4. Communication:

- Assessing the **communication skills** of the students means looking at more than language. Look at how creatively students use the language to make their points understood. Students with a low level of vocabulary and grammar may still have good communication skills if they are able to make the teacher understand their point of view.

5. Interaction:

- During the viva teachers need to ask the students some questions. Questions need to be based on the projects that have been suggested or chosen by the students.
- It is imperative for a teacher to read the essays/project reports before they can be ready to ask questions.
- Teachers need to observe how students answer the questions that are posed to them: *Are they able to understand and answer questions independently or can they answer only when the questions are translated into simpler words or repeated? Are they able to give appropriate responses in a conversation*?
- These elements of **interaction** are necessary for clear and effective communication. A student with effective interaction skills will be able to answer questions with relative ease and follow the flow of conversation.

6. Fluency:

- Fluency may be the easiest quality to judge in the students' speech: *How comfortable are they as they speak and express themselves? How easily do the words come out? Are there inappropriate pauses and gaps in the way a student speaks?*
- **Fluency** is a judgement of this communication and is an important criterion when evaluating speaking skills. These criteria: pronunciation, vocabulary, accuracy, interaction and fluency are all the hallmarks of a student's overall speaking abilities.
- Teachers must also remember that some **students may excel in one area and struggle in another**. Helping the students understand these issues will enable them to become effective speakers in future. Let your students know that you will be assessing them in these various areas when you evaluate their progress and encourage them to work and improve in these areas.
- **Finally,** teachers must remember that a proper evaluation of the students will take into consideration **more than just one oral interview on the final ASL** project. Teachers must take note of a student's progress throughout the academic year.

V. Project-Portfolio/ Project Report

The **Project-Portfolio/Project Report** is a compilation of the work that the students produce during the process of working on their ALS Project.

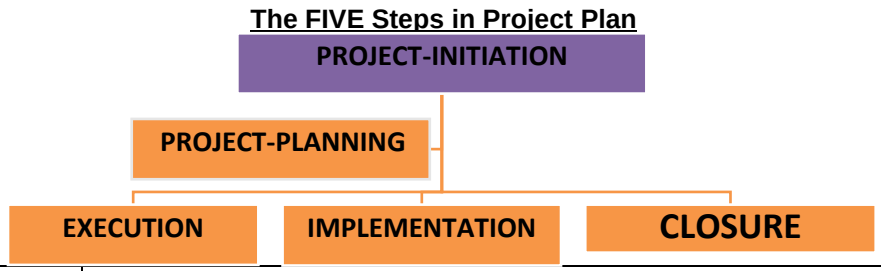
The Project-Portfolio may include the following:

- Cover page, with title of project, school details/details of students.
- Statement of purpose/objectives/goals
- Certificate of completion under the guidance of the teacher.
- Action plan for the completion of assigned tasks.
- Materials such as scripts for the theatre/role play, questionnaires for interview, written assignments, essays, survey-reports and other material evidence of learning progress and academic accomplishment.
- The 800-1000 words essay/Script/Report.
- Student/group reflections.
- If possible, Photographs that capture the positive learning experiences of the student(s).
- List of resources/bibliography.

The following points must be kept for consideration while assessing the project portfolios:

- Quality of content of the project
- Accuracy of information
- Adherence to the specified timeline
- Content in respect of (spellings, grammar ,punctuation)
- Clarity of thoughts and ideas
- Creativity
- Contributions by group members
- Knowledge and experience gained

VI. Suggestive Timeline:



Month	Objectives
Planning and Research for the Project Work **Preferably till November-December**	● Teachers plan a day to orient students about the ALS projects, details are shared with all stakeholders. ● Students choose a project, select team members and develop project- plan. ● Group meets (preferably online) and reports to the team leader about the progress: shortfalls and successes are detailed. ● Team leader apprises teacher-mentor. ● Students working individually or in pairs also update the teachers. ● A logical, deliverable and practical plan is drafted by the team/ pair/individual. Goals/objectives are clearly defined for all. ● Work is delegated to team members by the team leader. Students wishing to work alone develop their own plan of Action. ● Detailed project schedules are shared with the teacher.
December-January	● Suggestions and improvements are shared by the teacher, wherever necessary. ● Group members coordinate and keep communication channels open for interaction**.** ● Gaps (if any) are filled with the right skill sets by the Team Leader/ individual student.
	● The final draft of the project portfolio/ report is prepared and submitted for evaluation.
January-February	● Students are assessed on their group/pair/individual presentations on allotted days. Final Viva is conducted by the External/Internal examiner.
February-March or as per the timelines given by the Board	● Marks are uploaded on the CBSE website.

SAMPLE RUBRIC FOR ALS Project Work
(For Theatre/Role Play/Oral presentation/Interview/Podcast)

CATEGORY	1	2	3	4	5
TIME LIMIT	Presentation is less than or more than 5 minutes long	Presentation exceeded or less than specified time limit by 4 to 5 minutes	Presentation exceeded or less than specified time limit by 3 to 4 minutes	Presentation exceeded or less than specified time limit by 2 to 3 minutes	Student/ group adhered to the given time limit
CONTENT/SCRIPT/ QUESTIONNAIRE	Script is not related to topic or issue	Well written script/ content shows little understanding of parts of topic	Well written script/ content shows good understanding of parts of topic	Well written script/ content shows a good understanding of subject topic	Well written script/ content shows full understanding of subject topic
CREATIVITY	No props/costumes/ stage presentation lack-lustre	Some work done, average stage set- up and costumes	Well organized presentation, could have improved	Logical use of props ,reasonable work done, creative	Suitable props / honest effort seen/ considerable work done/ creative and relevant costumes
PREPAREDNESS	Student /group seems to be unprepared	Some preparedness visible, but rehearsal is lacking	Somewhat prepared, rehearsal is lacking	Good preparedness ,but need better rehearsal	Complete preparedness/ rehearsed presentation
CLARITY OF SPEECH	Lack of clarity in presentation many words mispronounced	Speaks clearly, some words are mispronounced	Speaks clearly 90% of the time/ a few mispronounced words	Speaks clearly and distinctly 95% of time/ few mispronounced words	Speaks clearly distinctly 95% of time/ fluency in pronunciation
USE OF PROPS (Theatre/Role Play)	Only 1/no relevant props used	1 to 2 relevant props used	2 to 3 relevant props used	3 to 4 relevant props used	4 to 5 relevant props used
EXPRESSION/ BODY LANGUAGE	Very little use of facial expressions/ body language, does not generate much interest	Little Use of facial expressions and body language	Facial expressions and body language are used to try to generate some enthusiasm	Facial expression and body language sometimes generate strong enthusiasm with the topic	Facial expression and body language generate strong enthusiasm with the topic
PORTFOLIO-PRESENTATION	Inadequate & unimpressive	Somewhat suitable & convincing	Adequate & relevant	Interesting, enjoyable & relevant	Brilliant, creative & exceptional

PHYSICAL EDUCATION (048)
Class XI (2022–23)

Theory **Max. Marks 70**

Unit I Changing Trends & Career in Physical Education

- Concept, Aims & Objectives of Physical Education
- Changing Trends in Sports- playing surface, wearable gears and sports equipment, technological advancements
- Career Options in Physical Education
- Khelo-India and Fit-India Program

Unit II Olympism

- Ancient and Modern Olympics
- Olympism – Concept and Olympics Values (Excellence, Friendship & Respect)
- Olympics - Symbols, Motto, Flag, Oath, and Anthem
- Olympic Movement Structure - IOC, NOC, IFS, Other members

Unit III Yoga

- Meaning & Importance of Yoga
- Introduction to Ashtanga Yoga
- Introduction to Yogic Kriyas (Shat Karma)

Unit IV Physical Education & Sports for CWSN (Children with Special Needs - Divyang)

- Concept of Disability and Disorder
- Types of Disability, its causes & nature (Intellectual disability, Physical disability)
- Aim & Objective of Adaptive Physical Education
- Role of various professionals for children with special needs (Counsellor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist & Special Educator)

Unit V Physical Fitness, Health and Wellness

- Meaning and Importance of Wellness, Health and Physical Fitness
- Components/Dimensions of Wellness, Health and Physical Fitness
- Traditional Sports & Regional Games for promoting wellness

Unit VI Test, Measurement & Evaluation

- Concept of Test, Measurement & Evaluation in Physical Education & sports.
- Classification of Test in Physical Education and Sports.
- Test administration guidelines in physical education and sports

Unit VII Fundamentals of Anatomy, Physiology in Sports

- Definition and Importance of Anatomy and Physiology in exercise and sports
- Functions of Skeletal system, classification of bone and types of joints.
- Function and Structure of Circulatory system and heart.
- Function and Structure of Respiratory system.

Unit VIII Fundamentals of Kinesiology and Biomechanics in Sports

- Definition and Importance of Kinesiology and Biomechanics in sports
- Principles of Biomechanics
- Types of Body Movements - Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination & Pronation
- Axis and Planes – Concept and its application in body movements

Unit IX Psychology & Sports

- Definition & Importance of Psychology in Physical Education & Sports
- Adolescent Problems & Their Management
- Team Cohesion and Sports

Unit X Training and Doping in Sports

- Concept and Principles of Sports Training
- Training Load: Over Load, Adaptation, and Recovery
- Concept of Doping and its disadvantages

Practical **Max. Marks 30**

01.	Physical Fitness Test: SAI Khelo India Test, Brockport Physical Fitness Test (BPFT)*	6 Marks
02.	Proficiency in Games and Sports (Skill of any one IOA recognised Sport/Game of Choice)**	7 Marks
03.	Yogic Practices	7 Marks
04.	Record File ***	5 Marks
05.	Viva Voce (Health/ Games & Sports/ Yoga)	5 Marks

* Test for CWSN (any 4 items out of 27 items. One item from each component: Aerobic Function, Body Composition, Muscular strength & Endurance, Range of Motion or Flexibility)

**CWSN (Children With Special Needs – Divyang): Bocce/Boccia , Sitting Volleyball, Wheel Chair Basketball, Unified Badminton, Unified Basketball, Unified Football, Blind Cricket, Goalball, Floorball, Wheel Chair Races and Throws, or any other Sport/Game of choice.

**Children With Special Needs can also opt any one Sport/Game from the list as alternative to Yogic Practices. However, the Sport/Game must be different from Test - 'Proficiency in Games and Sports'

***Record File shall include:**

- Practical-1: Labelled diagram of 400 M Track & Field with computations.
- Practical-2: Describe Changing Trends in Sports & Games in terms of changes in Playing surface, Wearable gears, Equipment, Technological advancements.
- Practical-3: Labelled diagram of field & equipment of any one IOA recognised Sport/Game of choice.

PHYSICAL EDUCATION (048)
Class XII (2022–23)

Theory **Max. Marks 70**

Unit I Management of Sporting Events

- Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling)
- Various Committees & their Responsibilities (pre; during & post)
- Fixtures and its Procedures – Knock-Out (Bye & Seeding) & League (Staircase & Cyclic)

Unit II Children & Women in Sports

- Common Postural Deformities - Knock Knee; Bow Legs; Flat Foot; Round Shoulders; Lordosis, Kyphosis, and Scoliosis and their corrective measures
- Special consideration (Menarche & Menstrual Dysfunction)
- Female Athletes Triad (Osteoporosis, Amenorrhea, Eating Disorders)

Unit III Yoga as Preventive measure for Lifestyle Disease

- Obesity: Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottansana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhan pranayama.
- Diabetes: Procedure, Benefits & Contraindications for Katichakrasana, Pavanmuktasana,Bhujangasana, Shalabhasana, Dhanurasana, Supta-vajarasana, Paschimottanasana, Ardha-Mastendrasana, Mandukasana, Gomukasana, Yogmudra, Ushtrasana, Kapalabhati.
- Asthma: Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansana, UttanMandukasana, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalbhati, Gomukhasana Matsyaasana, Anuloma-Viloma.
- Hypertension: Procedure, Benefits & Contraindications for Tadasana, Katichakransan, Uttanpadasana, Ardha Halasana, Sarala Matyasana, Gomukhasana, UttanMandukasana, Vakrasana, Bhujangasana, Makarasana, Shavasana, Nadi-shodhanapranayam, Sitlipranayam.

Unit IV Physical Education & Sports for CWSN (Children with Special Needs - *Divyang*)

- Organizations promoting Disability Sports (Special Olympics; Paralympics; Deaflympics)
- Advantages of Physical Activities for children with special needs.
- Strategies to make Physical Activities assessable for children with special needs.

Unit V Sports & Nutrition

- Concept of balance diet and nutrition
- Macro and Micro Nutrients: Food sources & functions
- Nutritive & Non-Nutritive Components of Diet

Unit VI Test & Measurement in Sports

- Fitness Test – SAI Khelo India Fitness Test in school:
  - Age group 5-8 yrs/ class 1-3: BMI, Flamingo Balance Test, Plate Tapping Test
  - Age group 9-18yrs/ class 4-12: BMI, 50mt Speed test, 600mt Run/Walk, Sit & Reach flexibility test, Strength Test (Abdominal Partial Curl Up, Push-Ups for boys, Modified Push-Ups for girls).
- Computing Basal Metabolic Rate (BMR)

- Rikli & Jones - Senior Citizen Fitness Test
    I. Chair Stand Test for lower body strength
    II. Arm Curl Test for upper body strength
    III. Chair Sit & Reach Test for lower body flexibility
    IV. Back Scratch Test for upper body flexibility
    V. Eight Foot Up & Go Test for agility
    VI. Six Minute Walk Test for Aerobic Endurance

Unit VII Physiology & Injuries in Sports

- Physiological factors determining components of physical fitness
- Effect of exercise on Muscular System
- Effect of exercise on Cardio-Respiratory System
- Sports injuries: Classification (Soft Tissue Injuries -Abrasion, Contusion, Laceration, Incision, Sprain & Strain; Bone & Joint Injuries - Dislocation, Fractures - Green Stick, Comminuted, Transverse Oblique & Impacted)

Unit VIII Biomechanics & Sports

- Newton's Law of Motion & its application in sports
- Equilibrium – Dynamic & Static and Centre of Gravity and its application in sports
- Friction & Sports
- Projectile in Sports

Unit IX Psychology & Sports

- Personality; its definition & types (Jung Classification & Big Five Theory)
- Meaning, Concept & Types of Aggressions in Sports
- Psychological Attributes in Sports – Self Esteem, Mental Imagery, Self Talk, Goal Setting

Unit X Training in Sports

- Concept of Talent Identification and Talent Development in Sports
- Introduction to Sports Training Cycle – Micro, Meso, Macro Cycle.
- Types & Method to Develop – Strength, Endurance and Speed
- Types & Method to Develop – Flexibility and Coordinative Ability

Practical **Max. Marks 30**

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04.	Record File ***	5 Marks
05.	Viva Voce (Health/ Games & Sports/ Yoga)	5 Marks

* Test for CWSN (any 4 items out of 27 items. One item from each component: Aerobic Function, Body Composition, Muscular strength & Endurance, Range of Motion or Flexibility)

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**Children With Special Needs can also opt any one Sport/Game from the list as alternative to Yogic Practices. However, the Sport/Game must be different from Test - 'Proficiency in Games and Sports'

***Record File shall include:**

- ❖ Practical-1: Fitness tests administration.
- ❖ Practical-2: Procedure for Asanas, Benefits & Contraindication for any two Asanas for each lifestyle disease.
- ❖ Practical-3: Anyone one IOA recognised Sport/Game of choice. Labelled diagram of Field & Equipment. Also mention its Rules, Terminologies & Skills.

Note: For PE (048) Curriculum, Handbooks are already available at Board's website. However, the revised version of these Handbooks would soon be available that include following topics at Board's Academic website www.cbseacademic.nic.in

Class XI Handbook:

Unit I Changing Trends & Career in Physical Education - Concept, Aims & Objectives of Physical Education; Development of Physical Education in India – Post Independence; Changing Trends in Sports- playing surface, wearable gears and sports equipment, technological advancements; Career Options in Physical Education; Khelo-India and Fit-India Program

Unit II Olympism - Olympism – Concept and Olympics Values (Excellence, Friendship & Respect); Olympic Value Education – Joy of Effort, Fair Play, Respect for Others, Pursuit of Excellence, Balance Among Body, Will & Mind; Ancient and Modern Olympics; Olympics - Symbols, Motto, Flag, Oath, and Anthem; Olympic Movement Structure - IOC, NOC, IFS, Other members

Unit III Yoga - Meaning & Importance of Yoga; Introduction to Ashtanga Yoga; YogicKriyas (Shat Karma); Pranayama and its types; Active lifestyle and Stress Management through Yoga

Unit IV Physical Education & Sports for CWSN (Children with Special Needs - Divyang) - Concept of Disability and Disorder; Types of Disability, its causes & nature (Intellectual disability, Physical disability); Disability Etiquettes; Aim & Objective of Adaptive Physical Education; Role of various professionals for children with special needs (Counsellor, Occupational Therapist, Physiotherapist, Physical Education Teacher, Speech Therapist & Special Educator)

Unit V Physical Fitness, Health and Wellness - Meaning and Importance of Wellness, Health and Physical Fitness; Components/Dimensions of Wellness, Health and Physical Fitness; Traditional Sports & Regional Games for promoting wellness; Leadership through Physical Activity and Sports; Introduction to First Aid – PRICE

Unit VI Test, Measurement & Evaluation - Concept of Test, Measurement &Evaluation in Physical Education & sports; Importance of Test, Measurement and Evaluation in Sports; Classification of Test in Physical Education and Sports; Test administration guidelines in physical education and sports; BMI, Waist-Hip Ratio, Skin fold Measures (3-site)

Unit VII Fundamentals of Anatomy, Physiology in Sports - Definition and Importance of Anatomy and Physiology in exercise and sports; Functions of Skeletal system, classification of bone and types of joints; Properties and Functions of Muscles; Function and Structure of Circulatory system and heart; Function and Structure of Respiratory system

Unit VIII Fundamentals of Kinesiology and Biomechanics in Sports - Definition and Importance of Kinesiology and Biomechanics in sports; Principles of Biomechanics; Kinetics and Kinematics in Sports; Types of Body Movements - Flexion, Extension, Abduction, Adduction, Rotation, Circumduction, Supination & Pronation; Axis and Planes – Concept and its application in body movements

Unit IX Psychology & Sports - Definition & Importance of Psychology in Physical Education & Sports; Developmental Characteristics at Different Stages of Development; Adolescent Problems & their Management; Team Cohesion and Sports; Introduction to Psychological Attributes: Attention, Resilience, Mental Toughness

Unit X Training and Doping in Sports - Concept and Principles of Sports Training; Training Load: Over Load, Adaptation, and Recovery; Warming-up & Limbering Down – Types, Method & Importance; Concept of Skill, Technique, Tactics& Strategies; Concept of Doping and its disadvantages

Class XII Handbook:

Unit I Management of Sporting Events - Functions of Sports Events Management (Planning, Organising, Staffing, Directing & Controlling); Various Committees & their Responsibilities (pre; during & post); Fixtures and its Procedures – Knock-Out (Bye & Seeding) & League (Staircase & Cyclic); Intramural & Extramural – Meaning, Objectives & Its Significance; Community Sports – Purpose and benefits

Unit II Children & Women in Sports - Exercise Guidelines of WHO for different age groups; Common Postural Deformities - Knock Knee; Bow Legs; Flat Foot; Round Shoulders; Lordosis, Kyphosis, and Scoliosis and their corrective measures; Women participation in Sports – Physical, Psychological and Social benefits; Special consideration (Menarche & Menstrual Dysfunction); Female Athletes Triad (Osteoporosis, Amenorrhea, Eating Disorders)

Unit III Yoga as Preventive measure for Lifestyle Disease - Obesity: Procedure, Benefits & Contraindications for Tadasana, Katichakrasana, Pavanmuktasana, Matsayasana, Halasana, Pachimottansana, Ardha – Matsyendrasana, Dhanurasana, Ushtrasana, Suryabedhan pranayama; Diabetes: Procedure, Benefits & Contraindications for Katichakrasana, Pavanmuktasana,Bhujangasana, Shalabhasana, Dhanurasana, Supta-vajarasana, Paschimottanasana, Ardha-Mastendrasana, Mandukasana, Gomukasana, Yogmudra, Ushtrasana, Kapalabhati; Asthma: Procedure, Benefits & Contraindications for Tadasana, Urdhwahastottansana, Uttan Mandukasana, Bhujangasana, Dhanurasana, Ushtrasana, Vakrasana, Kapalbhati, Gomukhasana Matsyaasana, Anuloma-Viloma; Hypertension: Procedure, Benefits & Contraindications for Tadasana, Katichakransan, Uttanpadasana, Ardha Halasana, Sarala Matyasana, Gomukhasana, Uttan Mandukasana, Vakrasana, Bhujangasana, Makarasana, Shavasana, Nadi-shodhanapranayam, Sitlipranayam; Back Pain and Arthritis: Procedure, Benefits & Contraindications of Tadasana, Urdhawahastottansana, Ardha-Chakrasana, Ushtrasana, Vakrasana, Sarala Matsyendrasana, Bhujangasana, Gomukhasana, Bhadrasana, Makarasana, Nadi-Shodhana Pranayam;

Unit IV Physical Education & Sports for CWSN (Children with Special Needs - *Divyang*) – Organizations promoting Disability Sports (Special Olympics; Paralympics; Deaflympics); Concept of Classification and Divisioning in Sports; Concept of Inclusion in sports, its need, and Implementation; Advantages of Physical Activities for children with special needs; Strategies to make Physical Activities assessable for children with special needs

Unit V Sports & Nutrition - Concept of balance diet and nutrition; Macro and Micro Nutrients: Food sources & functions; Nutritive & Non-Nutritive Components of Diet; Eating For Weight Control – A Healthy Weight, The Pit falls of Dieting, Food Intolerance & Food Myths; Importance of Diet in Sports and Pre, During and Post requirement

Unit VI Test & Measurement in Sports - Fitness Test – SAI Khelo India Fitness Test in school [Age group 5-8 yrs/ class 1-3: BMI, Flamingo Balance Test, Plate Tapping Test; Age group 9-18yrs/ class 4-12: BMI, 50mt Speed test, 600mt Run/Walk, Sit & Reach flexibility test, Strength Test (Abdominal Partial Curl Up, Push-Ups for boys, Modified Push-Ups for girls)]; Measurement of Cardio-Vascular Fitness – Harvard Step Test – Duration of the Exercise in Seconds x100/5.5 X Pulse count of 1-1.5 Min after Exercise; Computing Basal Metabolic Rate (BMR); Rikli & Jones - Senior Citizen Fitness Test - Chair Stand Test for lower body strength, Arm Curl Test for upper body strength, Chair Sit & Reach Test for lower body flexibility, Back Scratch Test for upper body flexibility, Eight Foot Up & Go Test for agility, Six Minute Walk Test for Aerobic Endurance; Johnsen – Methney Test of Motor Educability (Front Roll, Roll, Jumping Half-Turn, Jumping full-turn)

Unit VII Physiology & Injuries in Sports - Physiological factors determining components of physical fitness; Effect of exercise on Muscular System; Effect of exercise on Cardio-Respiratory System; Physiological changes due to aging; Sports injuries: Classification (Soft Tissue Injuries – Abrasion, Contusion, Laceration, Incision, Sprain & Strain; Bone & Joint Injuries - Dislocation, Fractures - Green Stick, Comminuted, Transverse Oblique & Impacted)

Unit VIII Biomechanics & Sports - Newton's Law of Motion & its application in sports; Types of Lever and its application in Sports; Equilibrium – Dynamic & Static and Centre of Gravity and its application in sports; Friction & Sports; Projectile in Sports

Unit IX Psychology & Sports - Personality; its definition & types (Jung Classification & Big Five Theory); Motivation, its type &techniques; Exercise Adherence: Reasons, Benefits & Strategies for Enhancing it; Meaning, Concept & Types of Aggressions in Sports; Psychological Attributes in Sports – Self Esteem, Mental Imagery, Self Talk, Goal Setting

Unit X Training in Sports - Concept of Talent Identification and Talent Development in Sports; Introduction to Sports Training Cycle – Micro, Meso, Macro Cycle; Types& Method to Develop – Strength, Endurance and Speed; Types& Method to Develop – Flexibility and Coordinative Ability; Circuit Training - Introduction & its importance

Informatics Practices (2022-23)
CLASS XI Code No. 065

1. **Prerequisite.** None

2**. Learning Outcomes**

At the end of this course, students will be able to:

- Identify the components of computer system.
- Create Python programs using different data types, lists and dictionaries.
- Understand database concepts and Relational Database Management Systems.
- Retrieve and manipulate data in RDBMS using Structured Query Language
- Identify the Emerging trends in the fields of Information Technology.

3. Distribution of Marks and Periods

Unit No	Unit Name	Marks	Periods Theory	Periods Practical	Total Period
1	Introduction to computer system	10	10	-	10
2	Introduction to Python	25	35	28	63
3	Database concepts and the Structured Query Language	30	23	17	40
4	Introduction to Emerging Trends	5	7	-	7
	Practical	30	-	-	-
	Total	100	75	45	120

4. Unit Wise syllabus

Unit 1: Introduction to Computer System

Introduction to computer and computing: evolution of computing devices, components of a computer system and their interconnections, Input/output devices.
Computer Memory: Units of memory, types of memory – primary and secondary, data deletion, its recovery and related security concerns.
Software: purpose and types – system and application software, generic and specific purpose software.

Unit 2: Introduction to Python

Basics of Python programming, Python interpreter - interactive and script mode, the structure of a program, indentation, identifiers, keywords, constants, variables, types of operators, precedence of operators, data types, mutable and immutable data types, statements, expressions, evaluation and comments, input and output statements, data type conversion, debugging.

Control Statements: if-else, for
loop

Lists: list operations - creating, initializing, traversing and manipulating lists, list methods and built-in functions.

Dictionary: concept of key-value pair, creating, initializing, traversing, updating and deleting elements, dictionary methods and built-in functions.

Unit 3: Database concepts and the Structured Query Language

Database Concepts: Introduction to database concepts and its need, Database Management System.

Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key

Advantages of using Structured Query Language, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL, Data Types

Data Definition: CREATE TABLE

Data Query: SELECT, FROM, WHERE.

Data Manipulation: INSERT

Unit 4: Introduction to the Emerging Trends

Artificial Intelligence, Machine Learning, Natural Language Processing, Immersive experience (AR, VR), Robotics, Big data and its characteristics, Internet of Things (IoT), Sensors, Smart cities, Cloud Computing and Cloud Services (SaaS, IaaS, PaaS); Grid Computing, Block chain technology.

Practical Marks Distribution

S.No.	Unit Name	Marks
1	Problem solving using Python programming language	11
3	Creating database using MySQL and performing Queries	**7**
4	Practical file (minimum of 14 python programs, and 14 SQL queries)	7
5	Viva-Voce	5
	Total	30

5. Suggested Practical List

5.1 Programming in Python

1. To find average and grade for given marks.
2. To find sale price of an item with given cost and discount (%).
3. To calculate perimeter/circumference and area of shapes such as triangle, rectangle, square and circle.
4. To calculate Simple and Compound interest.
5. To calculate profit-loss for given Cost and Sell Price.
6. To calculate EMI for Amount, Period and Interest.
7. To calculate tax - GST / Income Tax.
8. To find the largest and smallest numbers in a list.
9. To find the third largest/smallest number in a list.
10. To find the sum of squares of the first 100 natural numbers.
11. To print the first 'n' multiples of given number.
12. To count the number of vowels in user entered string.
13. To print the words starting with a alphabet in a user entered string.
14. To print number of occurrences of a given alphabet in each string.
15. Create a dictionary to store names of states and their capitals.
16. Create a dictionary of students to store names and marks obtained in 5 subjects.
17. To print the highest and lowest values in the dictionary.

5.3 Data Management: SQL Commands

18. To create a database
19. To create student table with the student id, class, section, gender, name, dob, and marks as attributes where the student id is the primary key.
20. To insert the details of at least 10 students in the above table.
21. To display the entire content of table.
22. To display Rno, Name and Marks of those students who are scoring marks more than 50.
23. To find the average of marks from the student table.

24. To find the number of students, who are from section ‘A’.
25. To display the information all the students, whose name starts with ‘AN’ (Examples: ANAND, ANGAD,..)
26. To display Rno, Name, DOB of those students who are born between ‘2005- 01-01’ and ‘2005-12-31’.
27. To display Rno, Name, DOB, Marks, Email of those male students in ascending order of their names.
28. To display Rno, Gender, Name, DOB, Marks, Email in descending order of their marks.
29. To display the unique section available in the table.

Suggested material

NCERT Informatics Practices - Text book for class - XI (ISBN- 978-93-5292-148-5)

Excluded topics

- Nested loop(Chapter -3, Section - 3.13)
- Loading and saving NumPy array in text files (Chapter-6, Sections- 6.10 and 6.11)

Informatics Practices
CLASS XII
Code No. 065
2022-2023

1. **Prerequisite:** Informatics Practices – Class XI

2. Learning Outcomes

At the end of this course, students will be able to:

- Create Series, Data frames and apply various operations.
- Visualize data using relevant graphs.
- Design SQL queries using aggregate functions.
- Import/Export data between SQL database and Pandas.
- Learn terminology related to networking and internet.
- Identify internet security issues and configure browser settings.
- Understand the impact of technology on society including gender and disability issues.

3. Distribution of Marks and Periods

Unit No	Unit Name	Marks	Periods Theory	Periods Practical	Total Period
1	Data Handling using Pandas and Data Visualization	25	25	25	50
2	Database Query using SQL	25	20	17	37
3	Introduction to Computer Networks	10	12	0	12
4	Societal Impacts	10	14	-	14
	Project	-	-	7	7
	Practical	30	-	-	-
	Total	100	71	49	120

4. Unit Wise syllabus

Unit 1: Data Handling using Pandas -I

Introduction to Python libraries- Pandas, Matplotlib.

Data structures in Pandas - Series and Data Frames.

Series: Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; Selection, Indexing and Slicing.

Data Frames: creation - from dictionary of Series, list of dictionaries, Text/CSV files; display; iteration; Operations on rows and columns: add, select, delete, rename; Head and Tail functions; Indexing using Labels, Boolean Indexing;

Importing/Exporting Data between CSV files and Data Frames.

Data Visualization

Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph,

histogram

Customizing plots: adding label, title, and legend in plots.

Unit 2: Database Query using SQL

Math functions: POWER (), ROUND (), MOD ().

Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (),
LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM ().

Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME ().

Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*).

Querying and manipulating data using Group by, Having, Order by.

Unit 3: Introduction to Computer Networks

Introduction to networks, Types of network: LAN, MAN, WAN.

Network Devices: modem, hub, switch, repeater, router, gateway

Network Topologies: Star, Bus, Tree, Mesh.

Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP.

Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website.

Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.

Unit 4: Societal Impacts

Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software (FOSS), cybercrime and cyber laws, hacking, phishing, cyber bullying, overview of Indian IT Act.

E-waste: hazards and management.

Awareness about health concerns related to the usage of technology.

Project Work

The aim of the class project is to create tangible and useful IT application. The learner may identify a real-world problem by exploring the environment. e.g. Students can visit shops/business places, communities or other organizations in their localities and enquire about functioning of the organization, and how data are generated, stored, and managed.

The learner can take data stored in csv or database file and analyze using Python libraries and generate appropriate charts to visualize.

If an organization is maintaining data offline, then the learner should create a database using MySQL and store the data in tables. Data can be imported in Pandas for analysis and visualization.

Learners can use Python libraries of their choice to develop software for their school or any other social good.

Learners should be sensitized to avoid plagiarism and violation of copyright issues while working on projects. Teachers should take necessary measures for this. Any resources (data, image etc.) used in the project must be suitably referenced.

The project can be done individually or in groups of 2 to 3 students. The project should be started by students at least 6 months before the submission deadline.

Practical Marks Distribution

S. No.	Unit Name	Marks
1	Programs using Pandas and Matplotlib	8
2	SQL Queries	7

3	Practical file (minimum of 15 programs based on Pandas, 4 based on Matplotlib and 15 SQL queries must be included)	5
4	Project Work (using concepts learned in class XI and XII)	5
5	Viva-Voce	5
	TOTAL	30

5. Suggested Practical List

5.1 Data Handling

1. Create a panda's series from a dictionary of values and a ndarray
2. Given a Series, print all the elements that are above the 75th percentile.
3. Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. Group the rows by the category and print the total expenditure per category.
4. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions
5. Filter out rows based on different criteria such as duplicate rows.
6. Importing and exporting data between pandas and CSV file

5.2 Visualization

1. Given the school result data, analyses the performance of the students on different parameters, e.g subject wise or class wise.
2. For the Data frames created above, analyze, and plot appropriate charts with title and legend.
3. Take data of your interest from an open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library.

5.3 Data Management

1. Create a student table with the student id, name, and marks as attributes where the student id is the primary key.
2. Insert the details of a new student in the above table.
3. Delete the details of a student in the above table.
4. Use the select command to get the details of the students with marks more than 80.
5. Find the min, max, sum, and average of the marks in a student marks table.
6. Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by.
7. Write a SQL query to order the (student ID, marks) table in descending order of the marks.

Mainstreaming
Health and Physical Education

Central Board of Secondary Education
Preet Vihar, Delhi - 110092

Contents / Index

CHAPTER 1: INTRODUCTION / PREAMBLE

Curriculum reform is a global issue and drives education policy directives around the world. The broad framework is usually provided by a national apex body, the narrower focus is around the syllabi based on the disciplines and the learning outcomes expected at age appropriate levels.

1.1 RATIONALE

1.1.1 Health and Physical Education is concerned with total health of the learner and the community. Besides physical health, it includes mental and emotional health of the learners. Health is often a state of physical, mental, emotional, social and spiritual well-being and not merely the absence of disease or infirmity.

1.1.2 The aim of Mainstreaming Health and Physical Education is to enable the student to attain an optimum state of health, by incorporating each of the aforementioned aspects.

1.1.3 In this respect, it is a truism to say that the practice of healthy living will serve as the foundation for Physical Education. It is envisaged that any effort to promote aesthetic values at the school level will include a natural esteem for physical well-being. The mastery of the body, its powers and qualities, requires knowledge, methodical training and exercise. The skills and capacities need to be developed, the muscles and nerves trained, the senses cultivated and hygienic and proper dietary habits inculcated for this purpose.

1.1.4 Therefore, provision has to be made much more systematically than before, in the school curriculum for Health and Physical Education imbued with Life Skills

1.1.5 Research has demonstrated that there is a positive correlation between brain development and exercise which also has an impact on cognitive development thus helping to improve academic grades.

1.1.6 A comprehensive view of Health and Physical Education includes and encompasses the three areas of Health Education, Physical Education and Yoga as integral to achieving holistic health (physical, mental, intellectual, emotional, social and spiritual). Given the interdisciplinary nature of this subject, it needs to be transacted in innovative ways across the curriculum.

1.1.7 The ubiquitous digital presence can be an added resource for the student, teacher educator and the teacher. It provides endless possibilities of resorting to online resources to add value to PE.

1.1.8 At the Secondary level acquisition of the habits of healthy living and participation in games and sports and athletics for neuromuscular coordination and physical fitness are the aims which should be taken care of while developing any syllabus of Health and Physical Education.

1.1.9 While at the Senior Secondary level, through the integrated PE approach, students will acquire the knowledge, skills, right attitudes and values towards the pursuit of a lifelong physically active and healthy lifestyle.

With these aims in mind, the overall and specific objectives for a HPE curriculum are outlined below:

1.2 Overall Objectives of Health and Physical Education:

1.2.1 To develop awareness regarding the importance of physical fitness in individual and social life including Life Skills.

1.2.2 To bring the overall awareness of values with regard to personal health and fitness, and to inculcate among students the desired habits and attitudes towards health to raise their health status.*

1.2.3 To make the pupils physically, mentally and emotionally fit and to develop such personal and social qualities that will help them to be good human beings.*

1.2.4 To take action individually and collectively to protect and promote (i) own health (ii) health of family members: and (iii) health of the surrounding community and seeking help when required from available community resources.*

1.2.5 To develop interest in exercise, sports and games for self-satisfaction and make it a part of life;

1.2.6 To enable an individual to enhance inner qualities - self-mastery, discipline, courage, confidence and efficiency.*

1.2.7 To enable an individual to display a sense of responsibility, patriotism, self-sacrifice and service to the community *

1.2.8 To develop awareness of the importance of self-defence.*

1.2.9 To create awareness among children about rules of safety in appropriate hazardous situations to avoid accidents and injuries. To acquaint them with first-aid measures about common sickness and injuries. *

1.2.10 To help children learn correct postural habits in standing, walking, running, sitting and other basic movements so as to avoid postural defects and physical deformities. *

1.2.11 To help children grow as responsible citizens by inculcating in them certain social and moral values through games, sports, Red Cross, Scouts and Guides etc. *

1.2.12 To inculcate values and skills in children in order to promote self-control, concentration, peace and relaxation to avoid the ill effects of stress, strain and fatigue of routine everyday life. *

1.2.13 To address the physical, psycho-social needs of CWSN (Children with Special Needs) in an integrated fashion. *

1.2.14 To seek in instilling self-worth thus helping students to become confident, assertive, emotionally stable, independent and self-controlled. *

1.2.15 To help release of emotional stress, anxiety and tension, leading to a reduced risk of depression. *

1.2.16 To help strengthen peer relationships, social bonding, buddy mentorship and team camaraderie.

1.2.17 To develop more positive attitude towards challenges, winning and losing, thus preparing students for life and for the workplace.*

*** Values Integrated across HPE**

1.3 Mainstreaming HPE

1.3.1 With the above objectives in mind, the CBSE in consultation with MHRD and Ministry of Sports, Govt. of India has attempted to integrate and mainstream Health and Physical Education across the secondary and senior secondary levels. This is to ensure that the Physical Education component which will continue to be assessed internally, is taken up as a cross-curricular, interdisciplinary discipline across the four strands.

1.3.2 Mainstreaming would require the coming together of the Class Teacher, PE teacher and teachers of other disciplines.

1.3.3 The mandatory nature of this discipline needs all students to participate in an innovative way through the strands detailed hereafter.

1.3.4 It will be mandatory for the **school to upload a report of work accomplished across the strands of grade X and XII in the prescribed manner, for enabling students to sit for the Board exam.**

1.3.5 The stipulation is to ensure all schools take this aspect seriously so as to ensure lasting and lifelong benefits for their students.

1.3.6 **The following subjects of internal assessment are being subsumed in Health and Physical Education from session 2018-19 onwards:**

Class IX-X

i. Work Education (500)
ii. Health and Physical Education (506)

Class XI-XII

i. Work Experience (500)
ii. Physical and Health Education (502)

As the above subjects of internal assessment are being subsumed in Health and Physical Education, so the schools should not allocate any period to these above-mentioned subjects from session 2018-19 onwards. The same periods should be allocated to Health and Physical Education.

CHAPTER 2: FOUR STRANDS

2.1 Introduction

2.1.1 The new format of HPE envisions that each student will undertake activities categorized under four strands

2.1.2 The work education aspect of the syllabus is subsumed under this format, hence there will be no need to take it up as a separate subject

2.1.3 This format is to be compulsorily implemented for classes IX, X, XI and first half of the year for class XII

2.1.4 **This is an essential requirement for writing the Board examination.**

2.1.5 Unless schools undertake HPE seriously and are ready with records of all strands as well as Health and Activity Cards for all students, they will not be allowed to register their candidates for Board examinations

2.1.6 All schools need to fill in the HPE School Report for the ongoing session before registering their candidates in classes IX and XI. The report should reflect the activities undertaken under each strand separately for each class right from class IX to XII. The format of the HPE School Report is given in the Annexure

2.1.7 No theory classes will be taken as a part of this format

2.1.8 The class teacher shall be responsible for ensuring that each child participates in all strands

2.1.9 The class teacher shall also guide and facilitate strand 3 and strand 4

2.1.10 In the absence of a sports/games teacher, the class teacher may facilitate strand 1 and 2 also and ensure that all children participate in the games/sports of their choice.

2.1.11 Internal assessment is to be jointly done by the class teacher and the sports/games teacher

2.1.12 From Strand 1, at least one activity is to be taken up by each student as a class or as an individual. The choice will be left to the students and the class teacher will facilitate each child to decide, based upon the sports facilities available at the school. Schools are encouraged to provide more options by adding to the infrastructure each year

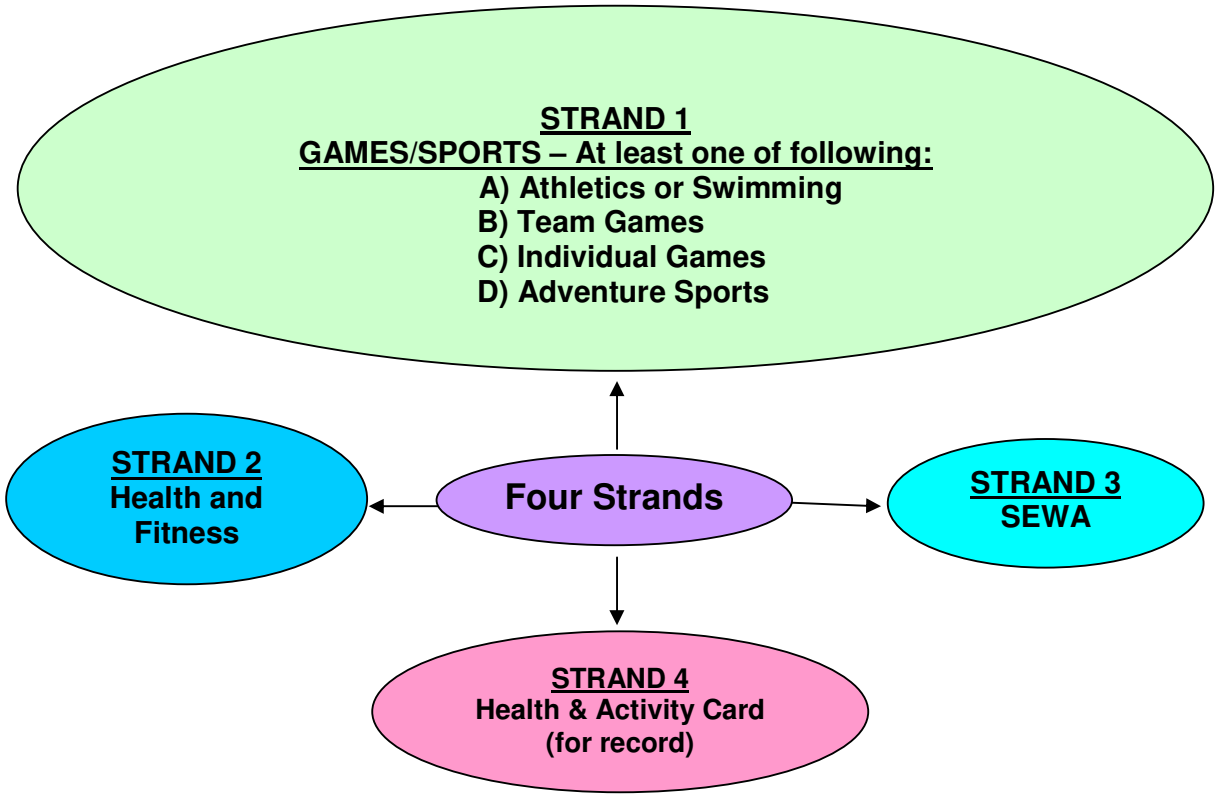
2.1.13 Children are free to choose more than one activity from strand 1, as long as the school sports infrastructure supports it.

2.1.14 Children are also free to change their choices during the course of a year

2.1.15 A class as a whole could be encouraged to take up any one team game and/or invasion game, by delineating the role of each student of the class. Roles should be decided by students among themselves. Roles could include player, captain, umpire, cheer leaders, commentators, event manager, coach, organizers, reporters for school magazines, etc.

2.1.16 The Board will be inspecting records for Strand 1 and 2 such as attendance and participation by all students. Evidences such as Portfolios, Journals, Essays, Video recordings etc. in case of SEWA may be kept ready for scrutiny by the CBSE at any time during the year.

2.1.17 Schools are encouraged to place the activities they undertake under various strands on their own website under the 'Sports Corner' which should be updated at regular intervals.



2.2 THE OBJECTIVES:

Regular, high quality PE programs should also provide all students with opportunities to develop:

2.2.1 An inclination towards, and strong motivation for lifelong maintenance of health and fitness *

2.2.2 Cardiovascular fitness, muscular endurance, muscular strength and flexibility to meet the demands of everyday life *

2.2.3 Agility, balance, coordination, reaction time, power and speed to be able to perform a wide range of daily tasks *

2.2.4 The techniques necessary to become a skillful performer and competitor in different sports and activities *

2.2.5 Such traits of character as self-mastery, discipline, courage, determination and confidence *

2.2.6 Good sportspersonship, fair play and ability to be an informed spectator *

2.2.7 An ability to perform in different activity – related roles such as attacker, defender, supporter, supported, referee, leader, captain *

* Values integrated across HPE

TABLE 1.1

DISTRIBUTION OF MARKS FOR INTERNAL ASSESSMENT

Strand	**Marks**	**Periods** (Approx)	**Levels***
1. GAMES **A)** Athletics/ Swimming **B)** Team Games **C)** Individual Games/ Activity **D)** Adventure Sports	50 marks	90 periods	**Upto 25 marks:** Learning **26-40 marks**: Proficiency **41-50 marks**: Advanced
2. Health and Fitness	25 Marks	50 periods	**Upto 12 marks:** Learning **13-20 marks**: Proficiency **21-25 marks**: Advanced
3. SEWA	25 Marks	50 periods	**Upto 12 marks:** Learning **13-20 marks**: Proficiency **21-25 marks**: Advanced
4. Health and Activity Card	No Marks	10 periods	**-**
Total	**100 Marks**	**200 Periods**	**-**

*The grades/levels obtained under the first three Stands will be reflected in the report cards.

CHAPTER 3:
STRAND 1: GAMES / SPORTS

Any one or more games or activity out of Athletics/ Swimming, Team Games, Individual Games and Adventure Sports must be taken up by each student as an individual, or as a class team or as a school team.

3.1 Athletics / Swimming

3.1.1 **Example Activities (illustrative only)**: Track and field events that require physical strength, speed/skill, such as, racing against own best timing and with others over different distances; relay races; marathons, cross country running, race walking, throwing for distance and aiming onto/at targets; jumping for height; jumping for distance; swimming against own best timing and with others, over different distances.

3.1.2 **Inclusion**: Allow students to use standing starts or rolling starts if using a wheel-chair. Use visual signs to start race so that students with hearing impairments can be involved. The students must find unique and creative ways to include CWSN who are their classmates. Though few of the strategies for inclusion have been outlined for some games in boxes attached below, if movement is not possible at all, then aided umpiring or aided cheering should be considered for CWSN. If some learning is possible, let the CWSN learn about the intricacies of the game. If they are interested in art work or music, let them create their own version of the game in art or music or any other form. Students are free to innovate their own mechanisms for inclusion under the guidance of their class teachers.

3.1.3 **Life Skills Imbibed/ Acquired**:

- Learning the techniques
- Learning about sports/games through other formats such as fine arts

3.1.4 **Outcomes/ Values imbibed:**

- Going further, higher, faster
- Being able to set and meet personal targets
- Being able to focus, concentrate and practice to improve
- A commitment to training and an ability to set and meet personal targets
- Learning as a team and from others

Category of Activity: Athletic Activities

Name of Activity: Long Jump

Long jump is an individual event included as a track and field event under the term 'Athletics'. It requires participants to combine speed and lift to produce forward flight and maximum lift through the air. It combines an approach run with a take-off followed by a period of flight through the air that concludes in a landing. The event requires technical efficiency in order to gain the maximum distance possible.

At competency level students should learn and practice the different components of the long jump from standing positions and short run ups. They will also need to learn and be able to perform the correct sequence of movements if they have to perform the long jump efficiently.

At proficiency level students should be able to long jump with a high level of skill, competing against themselves and others in competitions and events where the outcome is performing at one's maximum level.

Rules of Long Jump

- Take off must be behind a line.
- The distance of the jump is measured from the jump line to the nearest break in the sand.
- The tape is placed at zero on the jump line.
- Performers take a number of jumps, of which the best is used for determining event winners and positions.
- A tie is settled by taking the second best attempt.
- A 'fault jump' is recorded when a performer places his/her foot beyond the jump line when approaching the take off board.

History of Long Jump

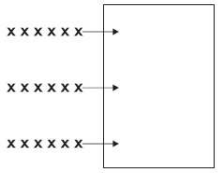
The Long Jump event can be traced back to the ancient Greek Olympic Games. At this time it was part of an event called the 'Pentathlon' which included 5 different events that one competitor undertook. It was the only jumping event that was included in the original Greek Olympic Games and as such it is one of the oldest and most important of the track and field events. To perform the long jump athletes had to run a short distance with a weight in each hand called 'halteres'. As they prepared to jump, they swung the weights forwards and pulled back in order to gain momentum and height.

Facts about Long Jump

- The current world record for men is 8.95 metres and for woman 7.52 metres. How far can you jump?
- The most popular style of jump uses the 'hitch kick' in which jumpers appear to walk in the air.
- Anju Boby George became the first ever Indian to win a World Championship medal. In 2005 she was ranked 5th in the world for long jump.
- Amritpal Singh holds the Indian men's national record in the long jump with a leap of 8.08 meters done at the Federation Cup Athletics Championship in Delhi in March, 2004.

Basic Requirements/ Equipment

- A playing area that has a safe surface for running and jumping.
- A long jump pit that is well dug and free of objects.
- Low barriers for jumping over.
- A line or board to show the take off position.
- Boxes or benches from which students can jump.
- Students should be suitably dressed to undertake the activity safely.
- Lime Powder, Measuring tape.
- When working with large numbers of students use the landing pit lengthwise:



Including all Students

Space • Task • Equipment • People

Use STEP to modify long jump activities so that all students are included. Try these modifications or devise your own.

Space

- Increase or decrease the run up.
- Give students time to assess and determine the length of run up needed for them to reach the take off point consistently.

Task

- Establish balance and weight transference skills before introducing jumping
- Some students will be successful at long jump if they are able to perform jumps from standing positions.
- In the initial stages allow students to swing their arms and take off from two feet and land on two feet (standing broad jumps).
- Wheelchair users can take one push of their wheelchair and record the distance travelled.
- Substitute jumping upwards by placing targets at distances to increase the length of time in the air.

Equipment

- Use mats instead of a pit, crash mats for landing.
- Allow students to use support to help them achieve a jumping action. For example help them to push down on a chair to jump upwards.
- Jump over small plastic hurdles with one leg.
- Tie elastic ropes and jumps.
- Used sport step ladder for different jump drills.

People

Find a way of ensure that all students play an active role in the jumping activity. All students can improve their own ability to perform at their maximum level through jumping activities regardless of the distances or ways in which they might jump.

Physical & Health Education /Games

Links to assessment frame work for classes IX and X

- An appreciation and understanding of the physical fitness requirements of athletic activities.
- An involvement in sports/physical education programmes.
- Team work.
- A knowledge of different athletic events and their rules.
- Skills of agility, balance and coordination.
- Motivation and commitment to take part in athletics.
- Ability to lead others as a team captain, coach, timekeeper or judge.
- An awareness of rules of safety.
- An evidence of being self disciplined.

Life Skills

- Listen actively.
- Takes criticism positively.
- Communicate using appropriate words, intonation and body language.
- Identifies one's own strengths and weaknesses.

STEP

Atheletic Activities

Long Jump

Class IX - X

PROFICIENCY LEVEL

Purpose of the activity

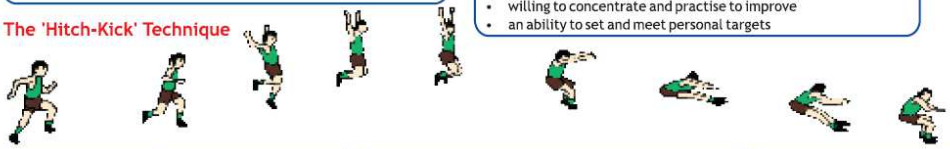
To participate in events that require students to go further, higher and faster.

Outcome of the activities

The outcomes of participating in these activities will be

- a commitment to training
- willing to concentrate and practise to improve
- an ability to set and meet personal targets

The 'Hitch-Kick' Technique



The Approach

- Approach the board at full speed after taking a usual number of steps so that the strong foot falls on the take off board.

Take off

- Attack the board and slap foot on it propelling the body upwards and outwards. The free knee and the arm above planted leg should be thrust forward.

Flight

- Extend bent knee and pull it backward. At the same time pull the opposite arm backward. 'Cycle in the air'.
- Circle the other arm behind body and up over head. Kick the planted leg forward so it points straight ahead.
- Bring the trailing leg forward and extend it so both legs point forward in a piked position. Swing both arms forward and down so they move past legs and behind body.

Landing

- On landing lean forwards in the sand. Avoid falling backwards. This loses distance.

Here are some practices

Approach run

- Run and jump from different starting points over 10-20m attempting to strike the same take off point.
- Place a marker to show the starting points.
- Develop an accurate run up, arriving at the take off point at maximum speed.

Atheletic Activities

Long Jump

Class IX - X

PROFICIENCY LEVEL

Jumping and bounding activities

Practise sequences of jumps using 'same', 'same', 'same' (hopping), 'other', 'other', 'other' (leaping) and other combinations. Call out different sequences that students perform:

Same, same, other; other, other, both; same, same, other, both, etc.

Set up plyometric circuits using jumping, hopping and bounding drills:

- Astride jumps onto and off a bench.
- Squat jumps: ½ squat, jump up into a tuck position, land and repeat.
- Double footed bounds:½ squat, swing arms forward and up as jump forward. Land on two feet and repeat.
- Alternate foot bounds: repeated leaps forward from one foot to the other.

Flight

Begin with left foot forward, heel on the ground, toes raised and weight on the right foot. Take off from the left foot, hold the position and land in the same split leg position.

Take off on left leg and land on the opposite leg, upper body straight.

With an approach of 5-7 strides take off with a good drive and knee lift and then change the position of the legs before bringing them together to land.

Jump off raised surfaces to help improve flight techniques

Try these challenges

Compete in different jumping competitions. For example

- A 3-jump aggregate competition.
- A competition against yourself. How much have you improved? How can you improve further?
- An aggregate of a jump from right foot and left foot competition.
- A team competition by adding all team members jump distances together.

Now make up your own games and have some fun

- Compete against yourself combining the total distance of a 'hang' jump with a 'hitch' kick jump.
- Compete against others in athletic competitions organised by students. Can you act as 'take off' officials, 'pit' officials and recorders?
- Can you create a new jumping competition? What other ways might you combine and approach with a take off, flight and a landing?

Assessment

Knowledge (4)	• History of the activity • Facts	• Rules of long jump
Skills (6)	• The approach • Flight	• Take off • Landing
Application of skills (10)	• Effective approach run • 'Hitch kick' technique • Distance of the jump	• Lift at take off • Controlled landing

Links to NCERT syllabus

Theme: Orientation to physical education and sports education: sports and games

Links to other subjects

Maths : Volumes, using the dimensions of a rectangular pit and the level of sand in the pit (weight) the volume of the cuboidal pit and surface area can be calculated.

Language: Use of conditionals, students are asked to examine their performance and comment using conditionals. For example, 'unless I have stamina.....'.

Category of Activity: Athletic Activities

Name of Activity: Running

Races over short distances are called sprints. They are among the oldest running competitions in the world. Sprinting requires athletes to begin from a stationary position and reach and sustain their quickest possible running speed. Sprint races take place over distances of 100, 200 and 400 metres. Indoor sprints take place over 60 metres. The man and woman who run the fastest time over 100m is often named 'the fastest man/woman in the world'.

At competency level students should learn and practice to improve their running technique so that they are able to run efficiently over short distances. They should be able to start a race correctly and be able to run at their maximum speed over short and longer distances.

At proficiency level students should be able to run over different distances with high levels of proficiency, be able to start races appropriately and take part in relay events. They should be committed to training and regular practice to help them increase cardio vascular efficiency, muscle strength and endurance.

Rules of Running

- Any runner found guilty of obstructing the path of another runner is disqualified.
- Sprinters are not permitted to run inside the inner curve of the track.
- Any sprinter with a false start even once is disqualified.
- Competitors are allowed to run with spiked shoes.
- No points are awarded if the sprinter fails to finish the race.
- The time is recorded to 1/100th of a second in photo finish.
- Time is recorded to 1/10th of a second . (Hand time watch)

History of Running

The original Ancient Olympic Games held in Olympia, Greece had just one event - the 'stadion' race. This was a simple race from one end of the stadium to the other. It was a race over a distance of about 200 meters. Sprint races have been included in all Olympic Games from 1896. Woman took part in sprinting events from 1928. Now sprinting events for men and woman include individual and relay events and sprints over hurdles.

Facts about Sprints

- It is only possible to maintain near maximum speed for not more than 30 seconds.
- The winner of a sprinting event is the athlete whose torso reaches the closest edge of the finish line first.
- Usain Bolt is currently the world's fastest man, setting a world record for the 100m of 9.58 seconds.
- Abdul Najeeb Qureshi, an Indian sprinter from Hyderabad, ran the 100m at the Commonwealth Games in 2010 in 10.30 seconds.

Basic Requirements/ Equipment

- An area that has a safe surface for running.
- Students should be appropriately dressed to participate safely in running events.
- A starting line and a finishing line.
- Cones or markers.
- Stop watches/measuring tapes.

Including all Students

Space • Task • Equipment • People

Use STEP to modify running activities so that all students are included. Try these modifications or devise your own.

Space

- Increase or decrease the distances over which students run. Keep the finishing line in the same position but change the position of the start.
- Visual impaired students can run with a sighted runner guiding them.

Task

- Students should explore different ways of moving. For example can they cover the distance by walking, pushing themselves, using sticks?
- Allow students to use standing starts, or 'rolling starts' if using a wheelchair.
- Use visual signals (e.g. a flag) to start races with students who have hearing impairments.

Relay races

- Use a touch changeover.
- Experiment with different ways of carrying the baton. Carry it in two hands or let wheelchair users carry it in their lap.
- Use adjacent lanes for takeovers.
- Use verbal guidance for outgoing runners.

Equipment

- Participating in running activities is easier if the surface is flat and even.
- Running on grass makes the activity more difficult, particularly for wheelchair users and those who use other mobility aids.

People

- Find a way of ensure that all students play an active role in the running activities. All students can improve their own ability to perform at their maximum level through moving in their own ways regardless of the distances or ways in which they might move.

Links to continuous and comprehensive assessment frame work for classes IX and X

Physical & Health Education /Games

- An appreciation and understanding of the physical fitness requirements of athletic activities
- An involvement in sports/physical education programmes
- Team work
- A knowledge of different athletic events and their rules
- Skills of agility, balance and coordination
- Motivation and commitment to take part in athletics
- Ability to lead others as a team captain, coach, timekeeper or judge
- An awareness of rules of safety
- An evidence of being self disciplined

Life Skills

- Raise questions, identify and analyse problems
- Get along well with others
- Communicate using appropriate words, intonation and body language
- Identifies one's own strengths and weaknesses

STEP

Atheletic Activities Running — Class IX - X — PROFICIENCY LEVEL

Purpose of the activity

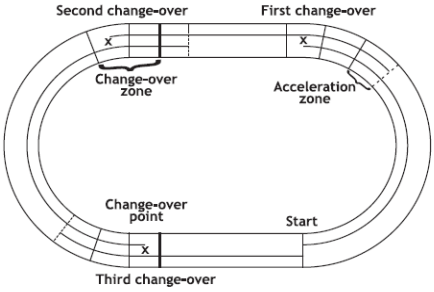
To participate in events that require students to go further, higher and faster.

Outcome of the activities

The outcomes of participating in these activities will be

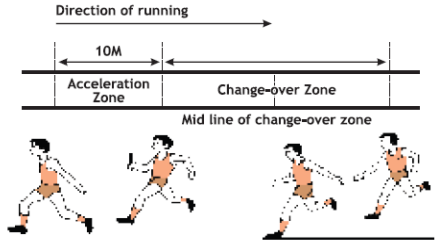
- a commitment to training
- willing to concentrate and practise to improve
- an ability to set and meet personal targets

Relay Races



Who will run when?

- The most popular strategy of running a relay race is to run in this order: the second best runner runs first; the fastest runner runs last; the slowest runner third and the other runner second. Is this best for your team?
- What other strategies might you use to win the race? What strategies work best for your team?



Baton Changeover

- Blind exchange technique to be practiced (4x100 mts.) an visual exchange (4x400 mts.) relay.
- The baton must be exchanged when both runners are running at maximum speed.
- Use the downsweep method of passing the baton, passing it from right hand to left hand.
- Outgoing runner holds the hand high and flat to receive the baton.
- Incoming runner uses a downward sweeping movement to place the baton firmly into the receiver's hand.

Here are some practices

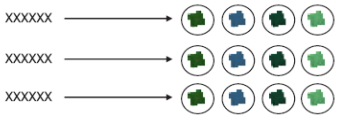
Short relays

Try 4 x 25 metre and 4 x 50 metre relay races where changeovers are more important than running speed using straight tracks

Atheletic Activities Running — Class IX - X — PROFICIENCY LEVEL

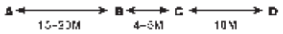
Pick up Relay

Set objects like bean bags or cones, inside hoops or chalked circles, at regular intervals from the start line. Runner 1 collects each object, one at a time, returning them to the start line. The next runner takes one object at a time and sets them out again in their original position. Runner 3 collects them and so on until all runners have had their turn.



The Relay Race

Set up a running area with cones like this:



No. 1 starts at cone A; No. 2 starts at cone C. When No. 1 reaches cone B; No. 2 sprints off and attempts to reach cone D before being tagged by No. 1.

Increase distance between B and C so that both athletes reach D at the same time.

Try this challenge

- In teams of 10. Each athlete runs as far as they can in 10 seconds. Combine the 10 individual distances to produce a team score. Which team covered the furthest distance?

Make up your own challenges and have some fun

- Organise individual and relay races over different times and distance against classmates and other schools. Include fun events. For example include a dribbling race. Runners from one school or class dribble a ball as fast as they can over 50 metres. Runners from another school or class begin 3 seconds after the first runners and try to beat the front runner to the finish line.

Assessment

Knowledge (4)	• History of the activity • Facts	• Rules of running
Skills (6)	• Acceleration at approach • Change over compete within zone • Position of hand of outgoing runner • Effective downsweep and passing of baton by incoming runner	
Application of skills (10)	• Efficient running style • Efficient relay change over's	• Running at near maximum speed • 4 x 100m relay race times

Links to NCERT syllabus

Theme: Orientation to physical education and sports education: sports and games

Links to other subjects

Science: The topic of motion may taught, particularly the concepts of distance, displacement, speed and velocity. The time taken by each runner may be recorded and using the data students may calculate distance and displacement, and also speed and velocity.

Maths: By using the recorded time taken by each runner in covering 100m or 200m or 400m, students may be asked to represent these as frequency distribution table and bar graph.

Language: Students may be asked to write a brief biography of sprinters like P. T. Usha. They may also write a piece on rules of relay races.

Social Science: The planning and using strategy in a relay race may be used for explaining the role of a District Magistrate or Chief of Gram Panchayat, especially how to evolve a suitable strategy for successful implementation of policies and programmes.

Category of Activity: Athletic Activities

Name of Activity: Putting the Shot

Shot put is a track and field event, which involves putting (throwing in a pushing motion). A heavy metal spherical ball called 'Shot', as far as possible. The shot is generally made of solid iron or brass although any metal not softer than brass may be used. The shot is thrown from inside a circle which is 2.135 mts. (7 ft.) in diameter having a 10 cm high stop board in front of the circle. The distance is measured from inside of the circumference of the circle to the nearest mark made on the ground by the fall of the shot. Distance is rounded off to the nearest centimeter.

Rules of the Event

- Thrower must rest the shot close to the neck.
- Shot must be kept tight to the neck through out the motion.
- Shot must be released above the shoulder, while using only one hand.
- Thrower must not touch the top or outside ground of the circle or stop board. His limbs may however extend over the lines of the circle.
- Shot must land in the sector of the throwing area (34.92°).
- Thrower must exit from the back of the circle, after the shot has landed.
- Thrower must start his throwing motion within 60 seconds of calling his/her name.
- Usually three attempts will be given to all participants & best 8 will be given 3 more attempts. Best throw will be used for performance ranking.

History of the Event

Shotput originated from ancient Greece in 776 BCE. It is believed that the game originated from the Scottish stone throw to kill Romans. It is also believed that originally the event was done by using stone balls to the British Isles. In Scotland stone throwing events were organised in pre-christian times, as a way of determining which Clieftain was most powerful and had most military might. This eventually became a part of actual Highland games programmes, organised every August in Scotland since 11th century.

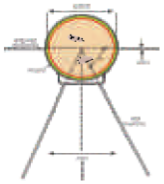
In the middle ages there is enough evidence to show that an event closely related to this sport existed, where participants hurled canon balls as a feat of strength. It seems the word 'Shot' came from the canon balls and 'Putt' must have come from the throwing style that was used. The sport remained popular among soldiers throughout 18th century there have been a few changes in the style of throwing in all these years. In the olden times the thrower used to stand on a wooden rectangle to throw, if he went out of it he fouled and his throw was discounted. At that time standing throw was only option untill rectangle was replaced by a seven feet circle, the glide technique developed and then it was Randy Barnes one of the best shot putters who introduced rotational type of throw in 1976 at Montreal Olympics.

Facts about the Event

- Shotput competitions are being held in Olympic games for men since its inception in 1896.
- The event for women was added in 1948 Olympic program.
- Men's shot weighs about 7.260 kg. (16.01 lbs) and women's shot weighs about 4 kg. (8.8 lbs).
- Throwing a shot not only involves much technique and strength but also a few physics concepts.
- It needs good initial velocity and release of shot at 40° approx. to reach the farthest.

Basic Requirements/ Equipment

- A throwing area that has a safe surface for throwing.
- A shotput arena having a circle with an iron rim.
- High barriers for throwing over.
- A stop board.
- Boxes or benches on which students can sit.
- Students should be suitably dressed to undertake the activity safely.
- Lime Powder, Measuring tape.
- When working with large numbers of students use the landing area with great caution.



Including all Students

Space • Task • Equipment • People

Use STEP to modify Shotput activities so that all students are included. Try these modifications or devise your own.

Space

- Increase or decrease the diameter of the circle good throwers should use smaller circles and swift movement, lesser able students should use larger circles and gain momentum.
- Give students enough time to practice each type of throw, the momentum needed for them to push the shot with a greater effort.

Task

- Establish balance and weight transference skills before introducing throw.
- Some students will be successful at throws if they are able to perform throw from standing positions.
- In the initial stages allow students to push the shot standing position with facing the throwing arena.
- Wheelchair users can also take the throw while being stationery or by moving the chair within the scheduled arena.
- Substitute throwing upwards by placing barriers of different height to increase the parabolic angle of the shot in air.

Equipment

- Use objects of different shapes, sizes and weights.
- Use medicine balls.
- Allow students to support to help them in achieving throwing action.

People

- Find a way of ensure that all students play an active role in the throwing activity.
- All students can improve their own ability to perform at their maximum level through throwing activities regardless of the distances or ways in which they might throw.

Physical & Health Education /Games

Links to continuous and comprehensive assessment frame work for classes IX and X

- An appreciation and understanding of the physical fitness requirements of athletic activities.
- An involvement in sports/physical education programmes.
- Team work.
- A knowledge of different athletic events and their rules.
- Skills of agility, balance and coordination.
- Motivation and commitment to take part in athletics.
- Ability to lead others as a team captain, coach, timekeeper or judge.
- An awareness of rules of safety.
- An evidence of being self disciplined.

Life Skills

- Listen actively.
- Takes criticism positively.
- Communicate using appropriate words, intonation and body language.
- Identifies one's own strengths and weaknesses.

STEP

Atheletic Activities

Putting the Shot

Class IX - X

PROFICIENCY LEVEL

Purpose of the activity

To participate in events that require students to go further, higher and faster.

Outcome of the activities

The outcomes of participating in these activities will be

- a commitment to training
- willing to concentrate and practise to improve
- an ability to set and meet personal targets

Rotational Technique

Grip and Hold

- Grip the shot on the base of your fingers not on the palm. Spread your fingers slightly.
- Hold the shot closer to the ear.
- Thumb under the shot.
- Throwing elbow pointed outward away from your body.

Stacne

- Stand at the back of the circle.
- Facing away from the target.
- Feet shoulder width apart body upright.
- Head up, extend your left arm.

Wind up

- Rotate your body about ¼ turned to the right.
- Your right elbow will point towards the target.
- Keep shoulder level as you rotate, pivot on your right foot. Keeping the left foot flat on the ground.
- Rotate the left leg so that your knee moves slightly towards right.
- Balance on the ball of your left foot.
- Move your left arm in sync with your left leg.

Entry phase I

- Shift your weight to your left as you pivot on, and turn your left foot.
- Bend your left knee slightly and flatten your left foot as you transfer the center of gravity to your left side.
- Begin push off with your right foot.
- So that you are on the ball of the foot.

Entry Phase II

- As your center of gravity shifts to your left side. Continue pushing with your right foot.
- Lift your left foot of the ground and begin sweeping it anti clockwise.
- Pivot and turn your left leg.
- Go back on the ball of your left foot as you pivot moving your upper and lower body together.
- Keep your left arm extended to counter balance the sweeping right leg. Which will extend past the right side of the circle.

Drive Phase I

- Continue sweeping your right leg around until it lands in the center of the circle towards the right foot.
- Your right elbow will be pointed towards the target and your right knee bent.
- Bend your left arm at the elbow. Bring your forearm closer to the body.
- Left your left leg and circle it towards the front of the ring. Do not slow down.

Atheletic Activities

Putting the Shot

Class IX - X

PROFICIENCY LEVEL

Drive Phase II

- Left leg lands in the center of the circle. Your foot should be flat & your leg firm with very little bend in the knees.
- Left arm extend towards target, then reaches up lifting your left shoulder.

Power Position

- Left arm should be pointed towards the target with your left leg straight and right knee bent.
- Right shoulder should be lower than the left, with your right forearm roughly parallel to the ground.
- Your weight should be over your right foot.
- Do not stop in this position.
- Continue rotating, because your rotation's momentum helps to power the shot.

Delivery

- As your left foot lands continue shifting your weight on the left foot.
- As you do so, punch your throwing arm up at approx. 45° angle, pushing off with your right leg as you release the shot forward.

Follow Through

- Good follow through is essential to maintain your momentum through out the delivery and keeping your balance afterwards.
- As you push off with your right foot, lift your left leg and pivot on your left foot.
- When your foot lands, hope on the foot and keep spinning.
- Keep your balance otherwise every thing you have done so far will be wasted if you fall out of the circle and foul.

Now make up your own games and have some fun

- Compete against yourself combining the total distance of glide and spin throw.
- Compete against others in athletic competitions organised by students. Can you act as judge, umpire, referee and recorders?
- Can you create a new throwing competition? What other ways might you combine and approach with the throw?

Assessment

Knowledge (4)	• History of the activity • Rules of Shot putt • Facts	
Skills (6)	• Grip • Style	• Stance • Follow through
Application of skills (10)	• Effective approach • Peri - O - Berian technique • Pivot • Controlled follow through • Distance of the throw	

Links to NCERT syllabus

Theme: Orientation to physical education and sports education: sports and games

Links to other subjects

Maths: Trigonometry can be applied to calculate horizontal distance, picture of release angles.

Science: Preliminary swings shows, how to break the inertia, circular movements generates centrifugal and centripetal forces, transformation of energy from body to the shot. Newton laws can be best understood by observing throws.

3.2 Team Games

3.2.1 Examples of team games (illustrative only):

- **Invasion Games:** Basketball, Hockey, Kabaddi, Netball, Gallery, Football, Water Polo, Judo, Karate/ Self Defence
- **Net Games:** Lawn Tennis, Table Tennis, Badminton, Squash Volleyball
- **Inning Games:** Cricket, Kho-Kho, Rounders, Softball, Stoolball
- **Target Games:** Archery, Boccia, Bowls, Golf

3.2.2 **Inclusion**: Use bright colours which will help the participation of students with vision impairment. The teacher has to modify each skill as per the percentage of impairment of the child. The students must find unique and creative ways to include CWSN who are their classmates. Though few of the strategies for inclusion have been outlined for some games in boxes attached below, if movement is not possible at all, then aided umpiring or aided cheering should be considered for CWSN. If some learning is possible, let the CWSN learn about the intricacies of the game. If they are interested in art work or music, let them create their own version of the game in art or music or any other form. Students are free to innovate their own mechanisms for inclusion under the guidance of their class teachers.

3.2.3 Life Skills Imbibed/ Acquired:

- Cooperating with others to use individual skills and team strategies to beat the opposition and win the game (Interpersonal and Intrapersonal Skills)
- Playing individually or with a partner and strategizing to beat the opponent and win the game (Critical Thinking, Decision Making)
- Using individual skills and team strategies to cooperate with others to score points and win the game (Creative and Critical Thinking)
- Competing individually or as a team to score the most points (as in archery) or the least number of points (as in golf) and win the game
- Understanding that including all is more important than winning (Intrapersonal Skills)
- Learning about sports/games through other formats such as fine arts (Creative Thinking)

3.2.4 Outcomes/ Values Imbibed:

- Team spirit and loyalty
- Sportsmanship
- Communicating with others
- Competing and winning fairly
- Fraternity

Category of Activity: Invasion Games

Name of Activity: Basketball

Basketball is a fast, free-flowing, high-scoring invasion game. The rules allow all players to move freely around the court and occupy any position on the court. All players have an equal opportunity to score goals. The way in which the game is re-started after a point is scored or a rule infringement makes it a fast game with few breaks in play. Dribbling allows players the opportunity to create advantageous scoring opportunities.

At competency level students should learn and practice the basic skills of dribbling, sending, receiving and shooting. They should play simple games using one to one marking, learning how to keep possession by dribbling effectively and moving the ball accurately and speedily between players. As they progress skills should become more consistent and efficient and players should be introduced to set play situations and different strategies of play.

At proficiency level students should be able to attain high degree of proficiency at most individual skills and should understand the more complex strategies and systems of play demanded by the game such as zone marking, man to man or press defence.

Rules of the Game

Basketball is played by teams of 5 players. It usually has a high target, or basket, in which goals are scored.

- Semi body contact game.
- No running while holding the ball.
- A player may dribble the ball to move from one position to another but only one dribble (continuous actions) is allowed.
- Any player can get the ball if it is in play and all players can occupy any part of the playing area.
- Any player may shoot from any part of the court.

History of Basketball

Basketball was invented in December 1891 by Jaims Naismith at Springfield College in Springfield, Massachusetts people wanted a game that could be played indoors and in a relatively small space. While trying to make lessons more appealing one of the teaching staff introduced various recreational games that included Football, American Football and Lacrosse but each game was difficult to play in the small space of the gymnasium. So the staff members decided to take different aspects of each of the games and combine them to produce a new game. The main features of the original game were: It was played indoors, with a ball that was easy to handle and difficult to conceal, no tackling was allowed. Players were not permitted to run with the ball. The target was placed above head height to make shooting a skillful action. The ball may be thrown in any direction with one or both hands. The ball may be batted in any direction with one or both hands (never with the fist). The ball must be held in or between the hands; the arms or body must not be used for holding it. The time shall be two 15-minute halves, with five minutes' rest in between.

Facts about Basketball

- The first game of Basketball was played in December 1891.
- The Basketball Federation of India was formed in 1950. Its first World Championship was played in 1950.
- The Indian national basketball team is known as the Young Cagers.
- The first Indian National Championship for men was conducted in 1934 in New Delhi. The Basketball Federation of India (BFI), which controls the game in India was formed in 1950.

Basic Requirements/ Equipment

- Any suitable indoor or outdoor space that can accommodate the group.
- A range of different size balls that bounce.
- Target(s) for shooting at or into to score points. Wherever possible these targets should be elevated and above head height.
- Bands or bibs that can be worn by different teams.

Including all Students — Space • Task • Equipment • People

Use STEP to modify basketball activities so that all students are included. Try these modifications or devise your own.

Space

- Increase or decrease the space between the sender and the receiver; for example, if players are closer together it improves the accuracy of the pass; if they are farther apart, it provides more reaction time.
- Increase the playing space to encourage more movement; reduce the size of the space to encourage the development of passing skills.

Task

Passing & receiving

- Some young people find it easier to catch (receive) a larger ball, but throw (send) a smaller ball; therefore, in some cases, it may be necessary for these individuals to practice the skills of sending and receiving separately until their competency has improved (see also 'Equipment').

Dribbling

- Begin with static dribbling before introducing movement.
- Some students who have mobility or coordination impairments can move a short distance carrying the ball, bounce from a static position, and then continue moving.
- Wheelchair users can dribble according to wheelchair basketball rules; two pushes with the ball on the lap allowed then the player must bounce, pass or shoot the ball.

Scoring

- Use targets placed at different heights: chalked onto walls, basketball rings or use buckets or hoops. Increase the size of the target to make it easier. Increase the distance from a target to make it more difficult.

Equipment

- Provide students with a range of balls that bounce; players can initially practise with the size of ball they find they can control best.
- A brightly-coloured ball may help the participation of students who have vision impairment.

People

- Team numbers can be varied; for example, in order to balance a game, it may be best to play 4 v 2, where four players who are developing their skills play against two more competent players.
- Have one or more unmarked players per side who are always ready to receive a pass.
- Some players might act as 'link' players, carrying the ball between attacking and defensive zones.
- End Line / Ball game.
- Instead of targets, each team can have a Catcher; the team scores a point if they can successfully pass the ball to the catcher.

Physical & Health Education /Games

Links to continuous and comprehensive assessment frame work for classes IX and X

- An appreciation and understanding of the physical fitness requirements of games playing
- An involvement in sports/physical education programmes
- Team work
- A knowledge of different games and rules of the games
- Skills of agility, balance and coordination
- Motivation and commitment to take part in the game
- Ability to lead others as a team captain, coach or referee
- An awareness of rules of safety
- An evidence of being self disciplined

Life Skills

- Listen actively
- Takes criticism positively
- Communicate using appropriate words, intonations and body language
- Identifies one's own strengths and weaknesses

Invasion Games Basketball

Class IX - X

PROFICIENCY LEVEL

Purpose of the activity

To cooperate with others to use individual and team skills and strategies to invade the space of the opposition to score points and win the game.

Outcome of the activities

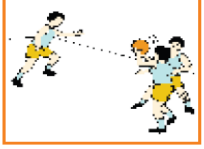
The outcome of participating in these activities will be:

- team spirit • cooperation • communication • focus on winning

Skills

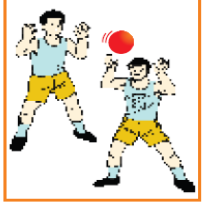
Passing the ball

- Check team mate is ready to receive
- Keep the ball under control and be ready to pass
- Look at receiver without making it obvious to the opposition
- Pass in front of the receiver and to the target made by the receiver
- Use short, quick passes (3.5 - 4 metres) as much as possible in a direct line between passer and receiver



Receiving the ball

- Move to receive the ball
- Signal readiness for the ball using a clear signal to the passer with one or both hands
- Prior to moving check team mate is ready to pass
- Get free by moving towards the ball, away from the ball and then going towards the ball (feinting)
- Keep possession while dodging an opponent protecting the ball by keeping body between the ball and opponent.



Dribbling

Passing a player

- Control the ball by spreading the fingers around it
- Keep the hand on top of the ball to ensure it rebounds accurately back to the hand
- The head should be up and the player should be aware of both opponents and team mates
- The player should protect the ball by keeping his/her body between ball and opponent

Scoring

Lay up shots

Technique (for right handed shot)

- At the end of the dribble, hold the ball with both hands
- Look at the target
- Ground the right foot and continue forward by stepping onto the left foot
- Jump from the left foot upwards towards the basket
- As the jump is made, take the ball up in front of the body and turn it so that the shooting hand is behind the ball
- Release the ball with the shooting arm and hand at full stretch
- Place the ball softly against the backboard so that it drops into the basket

Jump shots

- Ball position should be in front and above the head.
- Take a jump from both feet & try to stay in air.
- After reaching maximum height, throw the ball towards basket.

Invasion Games Basketball

Class IX - X

PROFICIENCY LEVEL

Here are some practices

Passing and Receiving

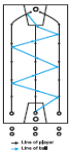
Bull in the Ring

Six or seven players stand in a circle with one/two defender in the middle of the circle. Players on the outside of the circle try to pass the ball across the circle so that the defender cannot intercept the pass. A player who makes a pass that is intercepted changes places with the defender in the middle of the circle. Condition the game so that players must pass using:

- chest pass, hook pass, one handed side pass etc
- pass using a different pass to the one received

Passing and moving

Play in three's with one ball. Pass the ball from player 1, to 2, to 3 while travelling from one end of a playing area to another. Once at the far end one player dribbles in for a lay-up shot or attempt at a target. Change the position of the players each time.



Play using:

- different passes
- both hands to dribble

Increase the difficulty of the game by adding defending players who try to intercept the ball as it is moved down the playing area.

Shooting

Practice lay up shooting from the left and right side of the basket

Shoot for goal

Play in teams of 10

Make a single file of players facing the basket. Give the ball to the player at the front of the line. Player shoots using a lay up shot, runs in for own rebound and passes out to the next player in the line.

Jump Shots

Practice jump shots from different positions on the court and from the free throw line.

Combine dribbling with jump shots without and with opposition.

Set up shooting competitions against other teams. First team to score 10, 20 points wins the game. Use lay up shots and jump shots.

Set up challenges that involved dribbling, sending and receiving and shooting using a large playing area. Which is the first team to score 10, 20 points?

The game of Basketball

- Condition the game to reinforce skill learning. For example pass without losing the ball. The team in possession must make 6 successful passes before attacking the basket.
- Teach different systems of play: 'man to man' marking, 'zone' marking,' half court press', explaining when and how they are used.
- Set up knock out or league competitions that allow teams to play together often and get to understand each other's strengths and weaknesses.
- Teach students how to officiate and keep score. Begin by looking for and penalising just one or two obvious infringements in practice tasks and small sided games. For example, double dribble, shifting.

Now make up your own games and have some fun

Decide a playing area. Mark it out in some way. How many players will be in each team? What rules will you have? How will you start the game? How long will your game last? How will you make sure that everyone is involved in the game? Who will referee your game, time it and keep score?

Assessment

Knowledge (4)	• History of the game • Facts	• Rules
Skills (6)	• Dribbling • Shooting	• Sending and receiving • Dodging/marking
Application of skills (10)	• Use of dribbling to dodge and move • Ability to pass and receive accurately and on the move	• Ability to make space and use space • Ability to mark and defend

Links to NCERT syllabus

Theme: Orientation to sports skills, proficiency in sports and motor skills

Links to other subjects

Science : Experiences of this activity may be used to teach the Law of Reflection and Types of Bonding by using the processes and skills in paasing, catching and dribbling (rebounding) the ball

Maths : Drawing comparisons, students will collect the scores (data) of both teams. The data will be used to compare the performances of two teams by drawing frequency polygons. Measures of central tendency (i.e. median, mean, mode) can also be calculated from the data.

Category of Activity: Invasion Games

Name of Activity: Hockey

Hockey is a fast, exciting invasion game requiring high levels of skill, tactical awareness and mental and physical fitness. It involves two teams of players using curved sticks to try and score goals and beat the opposition. It can be played indoors or outdoors on any flat surface. It can also be played as a mini game or on Ice. Hockey is played by both men and women.

At competency level students should learn and practice the basic skills of rolling dribbling, passing, receiving, stopping and shooting. They should play simple, small sided games so that all players are involved in the games. They should learn how to attack and score goals and how to work with others to defend and stop goals being scored. To do this they will need to learn how to keep possession by dribbling effectively and moving the ball accurately and speedily between players. As they progress, skills should become more consistent and efficient and players should be introduced to set play situations and different strategies of hockey.

At proficiency level students should be able to perform most individual skills proficiently and should understand the more complex strategies and systems of play demanded by the game. They should also understand and know their roles when involved in set play situations. For example when taking penalty corners.

Rules of the Game

Hockey is played by teams of up to 16 players, 11 of whom are permitted to be on the pitch at any one time.

- Only the flat side of the stick can be used to hit or control the ball. The stick must be held and not used in a dangerous way.
- The ball must not be played with any part of the stick when it is above shoulder height.
- The game is started and restarted after a goal is scored, with a pass back from the centre.
- Goals can only be scored from inside the shooting circle.
- Players must not play the ball dangerously or in a way which leads to dangerous play.

History of Hockey

Games like hockey, played with curved sticks and a ball have been played throughout history, in many countries, particularly in Asia. The modern game of field hockey grew from the game played in English public schools in the early 19th century. The game was first played in India, in Calcutta in 1885.

Since 1976 i.e. Montreal Olympic Games synthetic turfs are now mandatory for all the national & international competitions.

The FIH or federation international de hockey is the world hockey governing body, and has its headquarter at Lausanne Switzerland. The major international tournament are the World Cup, Olympic Games, Asian Games and the Champions Trophy.

Facts about Hockey

- The name 'hockey' comes from an old French word 'hoquet' meaning a shepherd's crook.
- Hockey was first played in the Olympic Games in 1908.
- In the Olympic Games in 1928 India won all five of its games without conceding a goal, going on to win gold in 1932, 1936, 1948, 1952, 1956, 1964 and 1980.
- The Indian Hockey Federation was formed at Gwalior in 1925.
- The first Indian sports teams to ever set foot in Australia/New Zealand (1926), Europe (1928) and Japan/USA (1932) were the Indian hockey teams.
- Sansarpur, a tiny village on the outskirts of Jalandhar has the distinction of producing 9 Olympians.

Basic Requirements/Equipment

- Any suitable indoor or outdoor space that can accommodate the group.
- A hockey stick and pair of shin guards.
- A range of different size balls that can be used for hitting and dribbling. Hard hockey balls should only be used when students have the skills to be able to control and play the ball safely.
- Goals for shooting at or into to score points.
- Bands or bibs that can be worn by different teams.
- Cones, markers, lime powder.
- Whistle.
- Students should be dressed so that they can play the game safely.

Including all Students

Space • Task • Equipment • People

Use STEP to modify hockey activities so that all students are included. Try these modifications or devise your own.

Space

- Increase or decrease the space between the sender and the receiver; for example, if players are closer together it improves the accuracy of the pass; if they are further apart, it provides more reaction time.
- Increase the playing space to encourage more movement; reduce the size of the space to encourage the development of passing skills.

Task

Passing & receiving

- Find the most appropriate way of passing the ball for each individual.

Dribbling

- Begin with static dribbling before introducing movement.
- Some students who have mobility or coordination impairments can move a short distance carrying the ball, drop it or throw it into play, and then continue moving.
- Wheelchair users may be able to dribble by holding the hockey stick in one hand and pushing the wheelchair with the other.

Scoring

- Increase the size of the goal to make it easier. Increase the distance from a target to make it more difficult.

Games playing

Have one or more unmarked player per side - always 'free and ready for a pass'

Some players can act as 'link' players, carrying the ball between attacking and defending zones.

Let a player move up and down the sidelines, receiving a pass from inside the playing area and passing it back in to a player inside the area. This might allow a player to feel safe and enable them to join in the game.

Create zones with students of similar abilities playing with and against each other in the zones.

Set up tackle-free zones.

Equipment

- Provide students with a range of balls that can be used for hitting; players can initially practise with the size of ball they find they can control best.
- A brightly-coloured ball may help the participation of students who have vision impairment.
- Provide a range of different sized and weight hockey sticks. Students should use one that suits their height.
- Plastic hockey sticks and balls/pucks might be advantageous when students are learning the game of hockey.

People

- Team numbers can be varied; for example, in order to balance a game, it may be best to play 4 v 2, where four players who are developing their skills play against two more competent players.
- Have one or more unmarked players per side who are always ready to receive a pass
- Have different games playing at the same time, some involving large groups of students, some involving small numbers of students.
- Set up games in which all players have the opportunity of participating. For example do not always use a goalkeeper.

Physical & Health Education /Games

Links to continuous and comprehensive assessment frame work for classes IX and X

- An appreciation and understanding of the physical fitness requirements of playing games
- An involvement in sports/physical education programmes
- Team work
- A knowledge of different games and rules of the games
- Skills of agility, balance and coordination
- Motivation and commitment to take part in the game
- Ability to lead others as a team captain, coach or referee
- An awareness of rules of safety
- An evidence of being self disciplined

Life Skills

- Listen actively
- Take criticism positively
- Communicate using appropriate words, intonation and body language
- Identifies one's own strengths and weaknesses

STEP

Invasion Games Hockey

Class IX - X

PROFICIENCY LEVEL

Purpose of the activity

To cooperate with others to use individual and team skills and strategies to invade the space of the opposition to score goals and win the game.

Outcome of the activities

The outcome of participating in these activities will be:

• team spirit • cooperation • communication • focus on winning

Skills

Dribbling

Indian Dribble

- Drag the ball from left to right
- Roll the hands and wrists, generally the left hand controls the twisting and rotation.
- The right hand controls and stabilizes the ball.

Passing

The Flick

This is used to lift the ball into the air.

- Hands apart on the stick.
- Step into the action.
- Left leg and shoulder point into the shot
- Body crouched and knees bent at start of the action.
- Lift the ball into the air, straightening the legs to help lift the ball.

The Jab Tackle

- Hold the stick in the left hand.
- Lunge at the ball, jabbing at it.
- Use the right hand to provide support.

Here are some practices

Dribbling

Set up dribbling practices requiring students to:

- Indian dribble, while stationary, while walking, jogging and running.
- Change speed, change direction.
- Dribble against opposition.

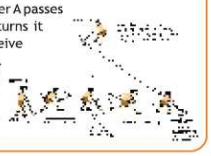
Set up dribbling relay challenges:

- Dribbling around cones
- Combining dribbling in different directions and dribbling and shooting

Passing and receiving a ball : In groups of 10 players:

'In and Out'

Player B runs to a cone. Player A passes the ball to Player B who returns it and runs forwards to receive another pass from Player A. Player B passes the ball to Player A and then sprints to the end of the playing area. Player C begins.



Invasion Games Hockey

Class IX - X

PROFICIENCY LEVEL

Gate Challenge

Player A dribbles the ball through Gate 1 and passes to player B. Player B dribbles the ball through Gate 2 and passes the ball back to Player A who has returned to position. Player C begins.

Return Pass

Player B stands in the middle of two cones. Player A passes the ball to the right and then to the left. Player B runs to recieve and return the pass each time. How many passes in 20 seconds? Player C goes next.

Flicking the ball

Place a low barrier between two players. Flick the ball over the barrier.

Set up practices combining dribbling and flicking. For example, dribble the ball around markers and flick it over a low barrier to try and score a goal or hit a target.

Dodging and feinting

Players A and B stand facing players C and D. Players A and B dribble the ball to Players C and D dodging past them to score a point.

Once the Jab Tackle is known use the above practice asking the defender to attempt a Jab Tackle when approached by the attacking player.

Shooting

Teach students to develop an effective shooting technique and how to create goal scoring opportunities.

Set up gates around the perimeter of the circle area. Players dribble the ball to one

The game of Hockey

- Condition the game to reinforce skill learning. For example pass without losing the ball. The team in possession must make 6 successful passes before attempting to score.
- Teach different systems of play: 5-3-2-1, 4-4-2-1, 4-2-4-1, explaining when and how they are used.
- Set up knock out or league competitions that allow teams to play together often and get to understand each other's strengths and weaknesses.
- Teach students to umpire and keep score. Begin by looking for and penalising just one or two obvious infringements in practice tasks and small sided games. For example, hitting the ball with the reverse side of the stick.

Now make up your own games and have some fun

Decide a playing area. Mark it out in some way. How many players will be in each team? What rules will you have? How will you keep your game safe? How will you start the game? How long will your game last? How will you make sure that everyone is involved in the game? Who will officate your game?

Assessment

Knowledge (4)	• History of the game • Rules • Facts
Skills (6)	• Dribbling • Passing and receiving • Shooting • Dodging/marking/tackling
Application of skills (10)	Use of dribbling to dodge and move Ability to pass and receive accurately and on the move Ability to make space and use space Ability to mark and defend Use of more advanced techniques and strategies

Links to NCERT syllabus

Theme: Orientation to sports skills: proficiency in sports and motor skills

Links to other subjects

Maths : Impossible event, introduce this concept during a games lesson before teaching it in the classroom. Students are given 5 chances of scoring from a penalty shot. Ask them to decide the probability that they will be successful with all 5 chances. This information can be used in the classroom to help student's understand theoretical probabilities.

Language: Writing biosketches, when students' understand the tactics and strategies of the game of hockey they watch a video of a famous hockey player. They identify the qualities of good sportspeople and write a bio sketch of the player they have observed.

Category of Activity: Invasion Games

Name of Activity: Kabaddi

Kabaddi is an invasion indiginious game of India. The game originated in South Asia, as a form of combat recreational activity. The two teams occupy opposite halves of a field and takes turn in sending a 'Raider' into the other half. Inorder to win points by tagging members of the opposite team and tries to return to his own half, holding his breath and chanting Kabaddi, Kabaddi..... The tagged members are declared out and are sent temporarily out of the field. The Raiding team earns one point for each player tagged. Defending team tries to refrain the raider from going back to his half individually or collectively. The Raider is considered out if he takes a breath before returning to his half or he or his any body part crosses/touches boundary line. In such an event the defending team earns a points. Team which earns most points in stipulated time is declared winner. Its not a power game as generally perceived. Its a game which needs reflexes, intelligence and judgement.

Rules of the Game

- The ground shall be leveled and soft.
- 13 mts. x 10 mts. space, is divided by a middle line, creating two halves.
- Each half 10 x 6.25 mts. is divided by a middle line known as court.
- Baulk line is 3 mts. from the center line.
- There shall be stripped of 1 mt. on each side of the play field called the Lobby.
- Each team has 12 players, 7 takes the ground at a time, 5 are reserved.
- If anti or anties who have gone out of bounds, holding the raider, raider is not out. On the contrary anti or anties are declared out.
- Players are revived in the same order in which they have gone out.
- Maximum duration of the match is two halves of 20 minutes each with a 5 minutes of break in between.
- Lona comprises of 2 bonus points. Team which scores most number of points, wins.

Facts about the Game

- The game as introduced in Indian Olympic Games in 1938 at Kolkata.
- KFI formerly known as AKFI was formed in 1950.
- Its a national game of Bangladesh.
- Its a state game of Tamilnadu, Andhra Pradesh and Punjab.
- First asian championship organised in 1980.
- Introduced in asian games for the 1st time in Bejing 1990.
- 1st Kabaddi world cup was played in 2004.

History of the Game

The game known as Hu Tu Tu in western India, Hu-Do-Do in eastern India and Bangladesh, Chedu-Gudu in southern India and Kaun-Bada in Northern India existed in this part of the world and has change through ages. It is also believed that this game is a version of Chakravyuha, an ancient war strategy and defensive formation used in Mahabharata. The game was demonstrated for the first time at the international level during 1936 Berlin Olympics by Hanuman Vyayam Pracharak Mandal Amravati, Maharashtra. The game has been in existance for over 4000 years. One school of thought is that this must have developed during prehistoric times when the man was forced to defend himself from sudden attacks from ferocious beasts. They used to form groups of individuals and attacked animals.

Basic Requirements/ Equipment

- Playing area
- Stop watch
- Marble powder
- Measuring tape
- Markers
- Cones
- Whistle

Including all Students

Space • Task • Equipment • People

Use STEP to modify Kabaddi activities so that all students are included. Try these modifications or devise your own.

Space

- Increase/decrease the area of the ground.
- Change the shape of the playing area.
- Loose surface sand.
- Different surfaces such as clay, synthetic, colourful, etc.
- 10 x 13 mtrs. of space for man & 10 x12 mts. for woman.

Task

- One for one as defensive technique.
- Raider could take a breath.
- Two raider at a time.
- Time of raid/game can be increased or decreased.
- For Not tagging a player negative points could be given.

Equipment

- Instead of tagging by hand, paper or sticks of various sizes and shapes could be used.
- Tagging only by hand or foot may be applied.
- Blind Fold

People

- Team Number of player in a team could be varied.
- Instead of tagging players, any specific part could be tagged.
- Having one/two marked players.
- Tagging marked players will earn bonus points.
-

Physical & Health Education /Games

Links to continuous and comprehensive assessment frame work for classes IX and X

- An appreciation and understanding of the physical fitness requirements of games playing
- An involvement in sports/physical education programmes
- Team work
- A knowledge of different games and rules of the games
- Skills of agility, balance and coordination
- Motivation and commitment to take part in the game
- Ability to lead others as a team captain, coach or referee
- An awareness of rules of safety
- An evidence of being self disciplined

Life Skills

- Listen actively
- Takes criticism positively
- Communicate using appropriate words, intonation and body language
- Identifies one's own strengths and weaknesses

Invasion Games **Kabaddi** | Class IX - X | PROFICIENCY LEVEL

Purpose of the activity

To cooperate with others to use individual and team skills and strategies to invade the space of the opposition to score points and win the game.

Outcome of the activities

The outcome of participating in these activities will be:

- team spirit • cooperation • communication • focus on winning

Skills

Side Kick

- Take sideward right leg stance.
- Bend right knee.
- Balance yourself on right leg.
- Kick left leg sidewards to tag the defender's nearest body part.

Back Kick

- On the pretext of coming back raider stops near the baulk line facing the mid line.
- Raider stops suddenly, bends forward and moves his one leg back to touch the defender coming on to catch him.
- Raider falls down to touch the center line.

Ankle Hold

- Apply the hold when raider tries to apply toe touch.
- Defender bends down and tries to catch the ankle of the stationery leg after diving.
- After taking the hold, pull the raider towards you to de-stablise and breaking off cant.

Knee Hold

- Defender takes the position and put his left hand under the right knee and right hand catches and ankle of the same leg.
- Change the direction.
- Pull the attacker to de-stablise and break his cant.

Catching the Hand/Wrist

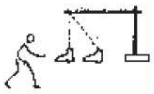
- Defensive skill, when raider tries to touch with hand, defender quickly grapples his wrist.
- Pull the raider towards you, so that raider looses balance, falls and breaks his cant.

Here are some practices

Players asked to perform this practice by count
1) Approach 2) Holding the ankle
3) Lifting the leg up
Reduce the number of counts and let the players perform by increasing the speed.

Each player will hold both the ankles of the player in front and move forward to reach the cone as shown in the figure and return to final position.

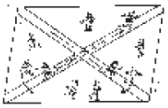
Player is asked to try to hold the moving object from hanger designed specially for ankle hold to improve catching accuracy.



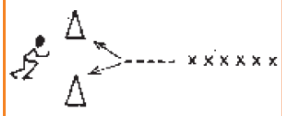
Invasion Games **Kabaddi** | Class IX - X | PROFICIENCY LEVEL

Here are some practices

Side/Back Kicks/Raiding : A raiding path is made as shown in the figure with three raiders who are required to move only in the path. The rest of players try to assemble in one zone. They are prevented by the raiders who execute side kick to touch on them. In case they are touched they will have to take the raider's place. While the raider takes his place with the other, who tried to gather in one zone.



Ankle Hold : The raider will be asked to take 5 leg touches on the targets while the anti tries to hold his ankle and prevent his escape. The number of successes and failures are counted by changing the partners. This can be a competitive practice.



Knee Hold : The raider tries to executes hand touch / toe touch / side kick / back kick on the three antis in different zones with natural run forward and one of the defender tries to take on the raider with knee hold.

The players stand in players as one raider and the other as a defensive player. The raider tries to touch the toe of the anti from the starting point. This will improve the reach and the accuracy of the raider.

The game of Kabaddi

- Condition the game to reinforce skill learning. For example .....
- Teach different systems of play: .....
- Set up knock out or league competitions that allow teams to play together often and get to understand each other's strengths and weaknesses.
- Teach students to referee and keep score. Begin by looking for and penalising just one or two obvious infringements in practice tasks and small sided games. For example.....

Now make up your own games and have some fun

Decide a playing area. Mark it out in some way. How many players will be in each team? What rules will you have? How will you start the game? How long will your game last? How will you make sure that everyone is involved in the game? Who will referee your game, time it and keep score?

Assessment

Knowledge (4)	• History of the game • Rules • Facts
Skills (6)	• Side Kick • Back Kick • Ankle Hold • Knee Hold • Catching the Hand/Wrist
Application of skills (10)	• Use of kicking for tagging the defenders. • Ability to make space and use space • Ability to hold knee and ankle strongly. • Ability to catch the attacker by hand/wrist

Links to NCERT syllabus

Theme: Knowledge and Proficiency in Sports and Motor Skills Acquisition-Kabaddi

Links to other subjects

Science :

Maths : A Kabaddi Event may be used to develop speaking competencies as well as abilities for analytical writings. Some of them may be engaged in providing running commentary to the audience as experts of the game and others may be asked to prepare an analytical write up highlighting the specific skills used by individual players.

Category of Activity: Invasion Games

Name of Activity: Soccer

Soccer is world's most exiting and popular game. It is played between two teams of eleven players each on a rectangular field of grass or artificial surface having same size goals in the middle of each end line. One player acts as goalkeeper and other ten players act as field players. The goal keeper is generally allowed to touch the ball with hands or arms whereas field player use their feet to kick the ball into specific places, occasionally using their head or torso to intercept the ball in mid air. The main aim of the game is to score maximum number of goals by driving the ball in two oponent's goal.

Soccer is a very emotional game full of joy and despair, triumph and tragedy, often it swings widely between these extremes in the course of a single match, bringing drama and exhilaration in to the lives of million across the globe. What makes soccer to play and watch is the flow of the game and to end play. It's goals, spectacular saves, near misses and other goal mouth incidents.

Rules of the Game

- Soccer field measures 90-120 mts. in length and 45-90 mts. in width.
- Each goal measures 7.32 mts. in length and 2.44 mts. in height.
- Diameter of the centre circle is 18.30 mts.
- Penalty spot is 11 mts. from the middle of the goal perpendicularly.
- Deliberate handling of the ball by field players is not allowed.
- Duration of the game is 90 min., with 15 min. brake after 45 minutes.

History of Soccer

The origin of soccer can be found in every part of the globe. Almost every culture has reference to history of soccer. In china the games seems to have been played as far back as 3000 yrs ago. Recorded facts support that Romans and Greeks use to play ball for fun and frolic. It is believed that modern soccer started in England. In the old form of soccer ill practices like kicking, biting and punching were allowed. King Edward III band soccer in 1365. World's oldest football club 'Shefield Football Club' was established on 27th Oct. 1857. Football and Rugby association split in 1863, that laid the foundation of soccer in 1869. Soccer popularly spread rapidly in 1800's by British Sailors, Traders and Soldiers in different parts of the world. Despite the ban, soccer became to grow in medieval England and then it was introduced in English public schools in order to keep boys fit. Slowly game started becoming more organised with well defined teams, positions and training masters. Cobb, Morley is considered as the father of modern soccer. The game came to India also through british people. Initially matches were played between army teams. The game is played extensively in the country with a maximum of fan following in Goa, Kerela, West Bengal, Mizoram, Manipur and Sikkim. The oldest tournament of soccer was played in 1898 which was organized in Shimla by the name of 'Durrand Cup'. 1951-1962 was the golden period of Indian Soccer. When India won top honours in 1951 and 1956 Asian Games held in New Delhi and Jakarta and became the first Asian Nation to make it to the Olympic semifinals in 1956 at Melbourne.

Facts about Soccer

- Officially there are 17 laws of the game.
- Game is governed world over by FIFA. Which was constituted in 1906.
- FIFA (Federation De International Football Association) has their headquarters in Switzerland.
- Soccer is commonly known as Football.
- Soccer is a religion for more than a billion soccer lovers.
- Europeans have reached the final of each world cup except in 1930 and 1950.
- Until 1913 goal keepers wore same coloured jerseys as their team mates.
- 8 countries have won the world cup till now.
- Uruguay, Brazil, Argentina, Italy, Germany, France, England and Spain.
- Most Numbers of Goals scored in a match by one player is Ronaldo from Brazil.
- Most famous soccer players in the world are Pele, Beckham, Maradona and Ronaldo.
- Spain is the only country who won the Euro 2008 and World Cup 2010.

Basic Requirements/Equipment

- Football
- Markers
- Cones
- Bibs
- Sports Gear (Shin Guard, Jersey / Shorts, Gloves for the Goal Keeper)
- Marble Powder

Including all Students

Space • Task • Equipment • People

Use STEP to modify soccer activities so that all students are included. Try these modifications or devise your own.

Space

- Increase or decrease the space between the sender and the receiver; for example, if players are farther it improves the accuracy of the pass; if they are closer, it provides more reaction time.
- Increase the playing space to encourage more movement; reduce the size of the space to encourage the development of passing skills.

Task

Passing & receiving
- Find the most appropriate way of kicking the ball for each individual.

Dribbling
- Begin with static dribbling before introducing movement.
- Some students who have mobility or coordination impairments can move a short distance dribble the ball, drop it or throw it into play, and then continue moving.

Scoring
- Increase the size of the goal to make it easier. Increase the distance from a target to make it more difficult.

Games playing

Have one or more unmarked player per side - always 'free and ready for a pass'

Some players can act as 'link' players, carrying the ball between attacking and defending zones.

Let a player move up and down the sidelines, receiving a pass from inside the playing area and passing it back in to a player inside the area. This might allow a player to feel safe and enable them to join in the game.

Create zones with students of similar abilities playing with and against each other in the zones.

Set up tackle-free zones.

Equipment

- Provide students with a range of balls that can be used for kicking; players can initially practise with the size of ball which they find they can control best.
- A brightly-coloured ball may help the participation of students who have vision impairment.
- Provide a range of different sized and weight football. Students should use one that which suits their age group.

People

- Team numbers can be varied; for example, in order to balance a game, it may be best to play 4 v 2, where four players who are developing their skills play against two more competent players.
- Have one or more unmarked players per side who are always ready to receive a pass
- Have different games playing at the same time, some involving large groups of students, some involving small numbers of students.
- Set up games in which all players have the opportunity of participating. For example do not always use a goalkeeper.

Physical & Health Education /Games

Links to continuous and comprehensive assessment frame work for classes IX and X

- An appreciation and understanding of the physical fitness requirements of games playing
- An involvement in sports/physical education programmes
- Team work
- A knowledge of different games and rules of the games
- Skills of agility, balance and coordination & Speed
- Motivation and commitment to take part in the game
- Ability to lead others as a team captain, coach or referee
- An awareness of rules of safety
- An evidence of being self disciplined

Life Skills

- Listen actively
- Takes criticism positively
- Communicate using appropriate words, intonation and body language
- Identifies one's own strengths and weaknesses

Invasion Games Soccer — Class IX - X — PROFICIENCY LEVEL

Purpose of the activity

To cooperate with others to use individual and team skills and strategies to invade the space of the opposition to score goals and win the game.

Outcome of the activities

The outcome of participating in these activities will be:

- team spirit • cooperation • communication • focus on winning

Skills

Trapping with the sole of the foot

- Lift your foot not too high with toe pointing upwards.
- Allow the ball to wedge itself under your shoe.
- Develop soft touch.
- Trap the ball dead.

Controlling the ball with inside of the foot

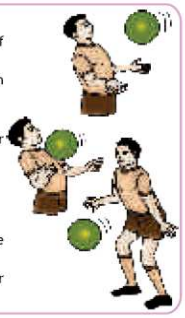
- Have good balance position.
- Raise your foot to receive the ball.
- Move your foot backward to absorb the shock.
- Longer your foot stays in contact with the ball.
- More control you will have.

Controlling your thigh

- To be used when the ball comes to you on an awkward height.
- Lean slightly backward to receive the ball.
- Bend your supporting leg.
- Balance yourself.

Controlling on chest

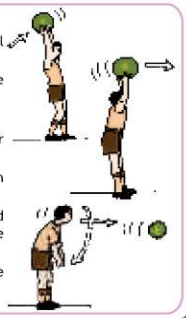
- Square your body towards the flight of the ball.
- Extend your arms and meet the ball with your chest pushed outwards.
- Balance your self.
- Avoid the ball hitting or your arms or hands.
- Arch your back and push your chest.
- Don't tense your muscles.
- Move back to absorb the shock.
- Move your shoulder down as you bring the ball down to your feet.
- Make sure your knees and bent and your feet are wide apart to maintain balance.



Throw in

is awarded when opposing team kicks the ball outside the touch line/side line.

- Throw must be taken from the place where ball has crossed line.
- Stand or run-up to line before you throw.
- Take ball over your head, spread your fingers around the ball.
- Take the ball back behind your head, arch your back.
- Bring your weight on your front leg and whip your body forward as you throw the ball.
- Use body weight to add power to the throw.



Invasion Games Soccer — Class IX - X — PROFICIENCY LEVEL

Fetching the Ball

- 12 players, numbered from 1 to 4, sit in a circle, in the centre of which there are 4 balls. A number from 1 to 4 is called out i.e. 2. All players with the number 2 run clock wise around the circle and back into the circle through their former space. They grab a ball, which they take back to their place via the same route as before. The first one to arrive is awarded 2 points.

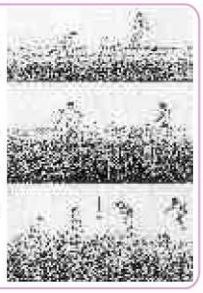
Destroying the Wall

- The field is divided into 2 halves separated by a narrow strip. The teams are balanced out. Each has a player from the opposite team amongst them. The players have to try to kick the ball to their own man on the opposite side. A feat which requires him to break free cleverly while his own side passes him the ball at just the right moment.

  If he succeeds, the player who passed him the ball then joins him on the other side, so that there are now 2 teammates among the opponents.

Football Tennis

- The game involved applying the acquired techniques in playing from under competition conditions. The rules are adopted at the technical level:
- The ball bounces once per player.
- Once on the pitch the second player plays directly.
- 4 against 4 the ball can only one bounce on the field, otherwise it has to be played directly.
- Just like volleyball, football-tennis only allows contact with the ball on three occasions.
- The ball may not bounce.



Now make up your own games and have some fun

Decide a playing area. Mark it out in some way. How many players will be in each team? What rules will you have? How will you keep your game safe? How will you start the game? How long will your game last? How will you make sure that everyone is involved in the game? Who will umpire your game?

Assessment

Knowledge (4)	• History of the game • Rules • Facts
Skills (6)	• Dribbling • Controlling the ball • Trapping • Throw in
Application of skills (10)	Use of dribbling to dodge and move Ability to pass and receive accurately and on the move Ability to make space and use space Ability to mark and defend Use of more advanced techniques and strategies

Links to NCERT syllabus

Theme: Knowledge and Proficiency in Sports and Motor Skills Acquisition-Football

Links to other subjects

Mathematics: This activity can be used in a number of ways for transaction of Mathematics. For example, by observing football field, the concept of symmetry, or concept of area and perimeter of the rectangular field can be explained; Or The experiences can also be used for teaching of surface area & volume and mid-point theorem.

Language: This activity can be utilized for developing various language abilities, such as use of Articles and Prepositions, identification of Subject and Predicate correctly, and write a sequence in active and passive voice.

Social Science: Teachers of Social Sciences can us the experiences in a number of ways while teaching the concepts like seasonal winds or ocean currents.

Category of Activity: Net/Wall Games

Name of Activity: Badminton

Badminton is a racquet sport played by either two opposing players (singles) or two opposing pairs (doubles), who take positions on opposite halves of a rectangular court that is divided by a net. Each team/player tries to score points by grounding the shuttle on the opponent's court. The game is played to a predetermined number of points (i.e. 21). If the player/team who reaches 21 earliest wins the game. If the points become 20 all, then the game is to be won by difference of 2 points upto 28. How so ever the score becomes 29 all, then the player/team who scores 30th point wins the game. Badminton is a rebound game. It is not permitted to drag the shuttle on the racquet. Because of this rule it is essential for the players to hit the shuttle at the right time. If the shuttle is not hit in a control manner, the points is awarded to the opponent.

At competency level students should learn and practice Basic fundamental skills of Grip & Stance (serving and receiving), High Serve, Low serve and Overhead clears. As the progress skills should become more consistent and efficient. And the players should be able to anticipate the path of the shuttle and the action of the opponent.

At proficiency level students should be able to attain high variation of service(flick, drive, short),Fore hand and back hand clear (attacking and defensive), Net & Drop shot and Smash. At this point player should understand both offensive and defensive play using different strokes.

Rules of the Game

- The game of Badminton is of 21 points and best of three set for both men and women.
- When the score becomes 20 all, the side which gains a two point lead first, shall win game. If the score becomes 29-all, the side scoring the 30th point shall win that game.
- The server and receiver stand diagonally. The serve is legal when it falls with in the specified court i.e. left / right service court.
- When scores are even i.e. 0,2,4,6 service must be done from right to right 'court' and visa versa.
- Both feet of the server and the receiver shall remain in contact with the surface of the court in a stationary position from the start of the service until the service is delivered.
- The head of the racket must contact with the shuttle below the waist line during service.

History of Badminton

Badminton quickly spread from England to the United States, Canada, Australia and New Zealand, and made big strides in Europe. Although men first played it, women became enthusiastic about it, and interest now is about equally divided. The first All-England championship for men was held in 1899 and in 1900 the pioneer tournament for women was arranged. These, however, were regarded as "unofficial" and 1904 marked the beginning of the official All-England matches. Organized shuttle badminton in India started in the year 1934 with the formation of all India badminton association whish has been subsequently remained as "Badminton Association of India" most of the states formed their association and got affiliated to the National Association. The first All India Badminton championship was held at earlier calcullta in 1934. Mr. VA Madgaonkar won the honour of being the first Badminton champion of India. In 1934, the International Badminton Federation (IBF) was organized with nine members - Canada, Denmark, England, France, Ireland, Netherlands, New Zealand, Scotland and Wales.

Facts about Badminton

- Badminton is an Olympic Sport played first in the 1992 Olympic Games in Barcelona.
- The number of feather in shuttlecock is fixed i.e. 16.
- Only two Indian won the All England Championship till date

  Prakash Padukone 1980

  Pullela Gopichand 2001.

  Saina Nehwal since 2003 has won 16 titles at International level.

Basic Requirements/ Equipment

- Any suitable indoor or outdoor space that can accommodate the group
- A net or rope, placed at 5 feet height
- Racquets and Shuttle Cocks.
- Lime powder to create playing areas

Including all Students

Space • Task • Equipment • People

Use STEP to modify badminton activities so that all students are included. Try these modifications or devise your own.

Space

- Increase the playing space to encourage more movement; reduce the size of the space to encourage the development of overhead shot skills.
- Play on different shaped courts. For example make the courts long and narrow to encourage longer hits in less space, or make the courts wide and shorter to encourage players to use peripheral vision and play the shuttle wide.
- Vary the size of the courts depending on the ability of the students. For example increase the playing area for a competent player when playing against those still developing their skills.

Task

Passing & receiving

- Some players will find it easier for them to join in the game if they are able to hit the shuttle hard.
- Some players find it easier to play with a lighter and wider racquet. In some cases it may be necessary for these individuals to practice the skill of sending and receiving separately untill competency has improved.
- Some players may need to spend more time practicing individual skills before they are able to play in a game situations.
- Allow players to serve the shuttle high and low from inside the court and from back gallery.

Equipment

- Provide players with a range of shuttle cocks. Players can initially practise with the shuttle they find can be controlled best.
- A brightly-coloured shuttle or shuttle with a sound may help the participation of students who have vision impairment.
- Hitting balloon or a beach ball with hand will may slow down the game and allow more time for decision making.
- Use some adjustable vertical stands with a ring on top to develop precision and control in high and low serving.

People

a) Team numbers can be varied; for example, in order to balance a game, it may be best to play 1 v 2, 1 v 3 or 2 v 3, 2 v 4 where larger group who are developing their skills play against more competent players.

b) Play the game seated. Reduce the court area and increase or decrease the height of the net. Players must remain seated and cannot lift their seats when hitting the shuttle.

Physical & Health Education /Games

Links to continuous and comprehensive assessment frame work for classes IX and X

- An appreciation and understanding of the physical fitness requirements of games playing
- An involvement in sports/physical education programmes
- Team work
- A knowledge of different games and rules of the games
- Skills of agility, balance and coordination
- Motivation and commitment to take part in the game
- Ability to lead others as a team captain, coach or referee
- An awareness of rules of safety
- An evidence of being self disciplined

Life Skills

- Listen actively
- Communicate using appropriate words, intonation and body language
- Gets along with others.
- Takes criticism positively
- Identifies one's own strengths and weaknesses

Net/Wall Games Badminton — Class IX-X — PROFICIENCY LEVEL

Purpose of the activity

Playing individually or with a partner to beat the opponents and win the game

Outcome of the activities

The outcome of participating in these activities will be:

- Team spirit • Cooperation • Communication • Focus on winning.

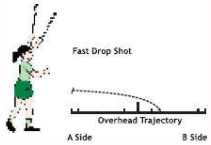
Skills

Backhand grip

- Hold the racket as you would on a forehand grip.
- Turn the racket anti-clockwise so that the V shape moves leftwards.
- Place your thumb against the back level of the handle for greater leverage and power.
- The racket handle shall also rest loosely in your fingers.

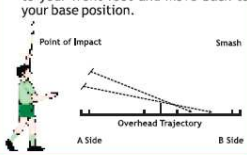
Forehand Drop Shot

- Bend your elbow and lock your wrist preparing to swing forward.
- Raise your non-racket hand and point at the shuttle and contact the shuttle as high as possible and out in front of your forehead.
- Slice or tap the shuttle as you hit it, reducing the speed of the racket head.
- Follow through with your racket and shift your weight from your rear foot to your front foot.



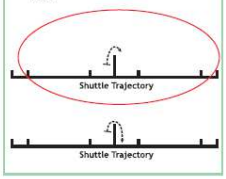
Smash

- Turn your body and stand sideways to the net with your non-racket shoulder facing the net.
- Raise your non-racket hand and point at the shuttle Contact the shuttle as high as using a strong throwing action as if you are going to throw your racket high and forward through the air.
- Snap down your wrist at the point of impact giving the shuttle extra power and angle towards your opponent's court.
- Follow through with your racket and shift your weight from your rear foot to your front foot and Move back to your base position.



Net Shot

- Play with forehand grip for forehand shots or the backhand grip for backhand shots.
- Extend the racket arm and keep the racket high to ensure the shuttle is hit as early as possible. The racket face shall be parallel to the floor and let the shuttle bounce off the racket face.
- Lunge movement and the parallel racket face will cause the shuttle to tumble over the net.



Here are some practices

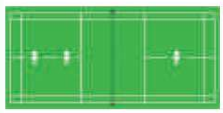
- The feeder stands at short service line and lift the shuttle towards the end line for practice of drop shot.
- The student take the position at the center of the court and feeder lift the shuttle for smash.
- Student take stance at the center and practice for net shot.
- Students can play competitive game by using the smash, drop shot and net shot.
- In absence of or no partner one can practice against the wall.

Net/Wall Games Badminton — Class IX-X — PROFICIENCY LEVEL

Drills

2 Versus 1

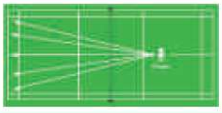
Two players on one side of the court must assume a front back position and play as they would in a singles match. On the other side, there will be only one player. This will create a very tough and pressured condition, that will enable the individual to enhance his competency.



Multiple Shuttles - Overhead Strokes

The feeder plays the shuttles into different areas of your backcourt. You will then use your forehand, backhand or around the head to play the clears, drop shots or smashes. Return to your base position after each shot.

This badminton drill is meant to improve speed and accuracy in executing overhead strokes.



The game of Badminton

- Condition the game to reinforce skill learning. For example pass using specific passes only, or set up zoned areas in which only player can move.
- Teach different systems of play: Front back, Side ways, and how they will rotate. Explaining when and how these are used. Try different attacking formations.
- Set up knock out or league competitions that allow players to play together often and get to understand each other's strengths and weaknesses.
- Teach students hoe to officiate and keep score. Begin by looking for and penalising just one or two obvious infringements in practice tasks and small sided games. For example, net faults.

Now make up your own games and have some fun

How many players will play at a time? What rules will you have? Which type of racquet will you use? How will you start the game? How long will you play for? How will you make sure that everyone is involved in the game?

Assessment

Knowledge (4)	• History • Basic rules and skills • Facts
Skills (6)	• Backhand Grip • Forehand Drop shot • Smash • Net Shot
Application of skills (10)	• Drop Shot land before the short service line. • Execution of smash and Net shot. • Positioning on the court.

Links to NCERT syllabus

Theme: Games and Sports : Badminton

Links to other subjects

Science : Physics: Laws of lever (to grip the racket), Laws of friction (for appropriate foot movement in court), Laws of motion (To break inertia and action and reaction for smash), **Biology:** (Knowledge of various body systems for proper training and Conditioning and what are the various effects of exercises on the system)

Mathematics : The experiences of Badminton may be utilised, especially the counting of score, marking of court with the help of Pythagoras theorem for diagonal.

Social Science:

Geography : (To locate the position and condition of the countries who play Badminton).

Category of Activity: Net Games

Name of Activity: Table Tennis

The game is also known as ping-pong. In which two or four players hit a light weight hollow ball back and forth using Table Tennis rackets. The game is played on a table divided by a net, except for the initial serve, players must allow the ball played towards them only after one bounce on their side of the table and must return in such a way that it bounces on the opposite side. Point has scored if the player is not able to send the ball across within the rules. The game is fast and demands quick reactions. Skilled player can apply several varieties of spin to the ball, altering its trajectory and limiting opponents options. You need to be able to hit the ball well and keep it low over the net. You also need to learn to hit the ball accurately and hard at the same time. The game required highest degree of physical fitness and mental concentration. Fred Perry world's mens single's champion in 1928-29, later achieved greater fame at Wimbledon, perhaps it would not be quite true to say that he move to the larger court when his game became too slow for the table but certainly it will be true to say that no sport requires faster reaction and more delicate muscular co-ordination than Table Tennis

Rules of the Game

- Table Tennis Table is 9 ft. long, 5 ft. wide and 2.5 ft high.
- Net is 6 inches high from the table.
- A game of Table Tennis is played upto 11 points.
- A player or the pair who first scores 11 points wins unless both players or pairs score 10 points then the game is won by the player or pairs who gains 2 point lead.
- If a player cause the table to move whilst the ball is in play, player losses a point.
- A player shall score a point if his opponents free hand touches the playing surface or the net assembly.
- Service receiving and end are decided by toss. Game start with legal service.

History of Table Tennis

The game of Table Tennis probably descended from the game of **'Royal Tennis'**, which was played in the medieval era (12th century A.D.) Table Tennis was probably played with improvised equipment in England during the last quarter of 19th century. Evidences show that DAVID FOSTER in England patented an action game of Tennis on Table in 1890. One year later John Jaques came out with a game called GOSSIMA. None of these game were successful due to ineffective rubber ball and cork, both had wild bounce. In 1900 a celluloid ball was introduced by Jaques and the name was given as 'Ping-Pong'. The game quickly caught on with the public under many names but Ping-Pong and Table Tennis were two most popular names. Ping-Pong was a trademarks of parker brothers of US and they wanted a large amount of money for their trademark. So, all settled with the name, Table Tennis. China the current olympic champion, they won all the gold medals at Beijing olympics. The game was brought to India during Ist half of 20th century. Initially, it was an after dinner amusement for British Officers in India until Table Tennis Federation of India came into existance in 1937.

Facts about Table Tennis

- Table Tennis is controlled by ITTF worldwide.
- ITTF (International Table Tennis Federation) was founded in 1926 with headquarters in Berlin.
- Introduced in olympics in 1988 in Seyol South Korea.
- First world championship was held in London in 1926.
- TTFI was formed in 1937 at Calcutta now known as Kolkata.
- Table Tennis ball was not really hollow, it is slightly pressurised by a Gas.
- Certain top players can putup upto 900 rpm of spin to Table Tennis balls.
- Table Tennis was banned in Soviet Union from 1930-1950. It was believed to be harmful to eyes.
- Table Tennis is the most popular rackets sport in the world.
- Jackie Bellinger and List Lomas created a record of hitting the ball back and forth 173 times in one minute.
- China, Sweden and South Korea are the wrold powers in Table Tennis currently.
- Until 2001 Table Tennis was played upto 21 points.
- After sydney olympics in 2000, the ball size was increase to 40mm for improved TV viewing.

Basic Requirements/Equipment

- Table Tennis Tables
- T.T. Rackets and Balls
- A Hall to acomodate students
- Open space marked with lines
- Wall marked with Straight line at the height of 76 cm.

Including all Students — Space • Task • Equipment • People

Use STEP to modify Table Tennis activities so that all students are included. Try these modifications or devise your own.

Space

- Increase the playing space to encourage more movement; reduce the size of the space to encourage the development of forehand and backhand strokes.
- Play on different tables. For example the school tables can be used by keeping the books at the center of the table for service practice.
- Vary the size of the tables depending on the ability of the students. For example the length and height of the table could be increase or decreased at the competency of the player develops.
- For practice of strokes and task wall can be used.

Task

Passing & receiving

- Some players will find it easier for them to join in the game if they are able to hit the ball softly.
- Some players find it easier to play with a lighter and wider racquet. In some cases it may be necessary for these individuals to practice the skill of sending and receiving separately untill competency has improved.
- Some players may need to spend more time practicing individual skills before they are able to play in a game situations.
- Allow players to serve the ball from near/further from the table.

Equipment

- Provide players with a range of balls. Players can initially practice with the tennis balls, plastic balls and while using their palm as racquets.
- A brightly-coloured bigger/larger balls with a sound may help the participation of students who have vision impairment.
- Polly racket could be introduced for initiating the game.
- Use some adjustable vertical stands with a ring on top to develop precision and control in high and low serving.

People

a) Team numbers can be varied; for example, in order to balance a game, it may be best to play 1 v 2, 1 v 3 or 2 v 3, where larger group who are developing their skills play against more competent players.

b) Play the game seated. Reduce the table area, use miniature table and increase or decrease the height of the net. Players must remain seated and cannot lift their seats when hitting the ball.

Physical & Health Education /Games

Links to continuous and comprehensive assessment frame work for classes IX and X

- An appreciation and understanding of the physical fitness requirements of games playing
- An involvement in sports/physical education programmes
- Team work
- A knowledge of different games and rules of the games
- Skills of agility, balance and coordination
- Motivation and commitment to take part in the game
- Ability to lead others as a team captain, coach or referee
- An awareness of rules of safety
- An evidence of being self disciplined

Life Skills

- Listen actively
- Communicate using appropriate words, intonation and body language
- Gets along with others.
- Takes criticism positively
- Identifies one's own strengths and weaknesses

STEP

Netwall Games Table Tennis — Class IX - X — PROFICIENCY LEVEL

Purpose of the activity

Playing individually or with a partner to beat the opponents and win the game

Outcome of the activities

The outcome of participating in these activities will be:

- team spirit • cooperation • communication • focus on winning

Skills

Forehand Drive

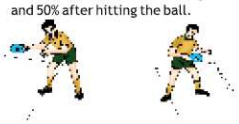
- Keep arm close to the torso.
- Forearm make 90° with the upperarm.
- Draw the forearm back to another 45°.
- Let the waist turn naturally along with the arm and shift your weight towards the right foot.
- Swing forward with a slight upward motion while shifting your weight back to left foot.
- Elbow should be used as a pivot point and should only move a little forward in the follow throw.

Backhand Drive

- From ready position.
- Waste turn left with Racket towards 9 O'clock position.
- Contact with the ball is made in the front of the body slightly after the top of the bounce.
- Elbow acts again as pivot point.
- Snap the forearm forward in slightly upward direction.
- Power comes with the flick of the wrist.
- Follow through until the racket points after the ball.

Blocking is a backup shot, when there isn't enough time for a full drive or loop. Stroke allows player to use opponent force against him/her.

- Adjust the racket angle according to the severity of topspin. More the spin, the more one should close the racket.
- Involve a little backspin and follow through.
- Execute immediately after the bounce to keep control and speed.
- Hit the ball as it is rising of the surface of the table on your side using 50% of the stroke action before hitting the ball and 50% after hitting the ball.



Drive is a light topspin stroke that produces a low ball trajectory. It is primary offensive stroke and is applied to force opponent to make an error. The complete body is used for consistency and power.

Returning with Spin : Easiest return is that which keeps spin in the same direction.

Topspin to Backspin : Topspin service tumbles forward, if you chop downwards you are playing in the same direction as the spin.

Backspin to Topspin : Backspin service tumbles backward, if you play up and over the ball you are playing in the same direction as the spin.

Netwall Games Table Tennis — Class IX - X — PROFICIENCY LEVEL

Smash is the hardest drive you can play. It is a put away stroke and is generally applied to any ball that is high and close enough to the opponent's side. It combines waist, forearm, wrist, movement to the full extent. It is similar to drive and can be applied in both ways forehand and backhand. But the difference is

- Longer back swing, greater way transfer during swing.
- Faster and more intense snapping of forearm while contacting the ball.
- Depending on the weight, the racket is closed more than usual to keep the ball on the table.
- Keep a longer follow through and please remember to keep an open racket against backspin and a closed one against topspin.

Here are some practices

Rounder's Play is a table tennis lead up game, which is played by using backhand push only. On one table as many as ten players could play this game. Players should stand around the table, one player will serve across and call the opposite player standing diagonally, who will return the ball with backhand to the backhand of the player who standing next to the player who have served earlier. This way all players will keep rotating around the table and pushing the ball with the backhand across the net. The player who misses will earn a point, the game is played for a specific scheduled time i.e. 2 minutes. Player who earns the least number of points becomes ultimate leader.

Wall Practice : Half table is arranged against the wall, and two players are made to practice against the wall, individually and simultaneously. We may use forehand and backhand push against the wall. The target areas in different dimensions can be marked on the wall with circles and squares. For forehand push players will chop the ball at the right side of the body and thereafter will follow will same as done from the backhand.

Now make up your own games and have some fun

Decide a playing area. Mark it out in some way. How many players will play at a time? What rules will they follow? How will you keep your game safe? How will you start the game? How long will your game last? How will you make sure that everyone is involved in the game? Who will umpire your game?

Assessment

Knowledge (4)	• History of the game • Rules • Facts
Skills (6)	• Drives • Blocking • Smash
Application of skills (10)	Ability to hit the drive with forehand and backhand. Ability to deliver the return of powerful strokes of opponent with forehand and backhand blocks. Ability to kill the high ball with forehand and backhand smashes. Use of variation in drives like top spin, loop & side spin.

Links to NCERT syllabus

Theme: Orientation to sports skills: proficiency in sports and motor skills

Category of Activity: Net/Wall Games

Name of Activity: Volleyball

Volleyball is a net game that involves two teams of twelve players (six playing and six substitutes). Each team works together to hit an inflated ball over a high net. Each team tries to score points by grounding the ball on the other team's court. Games are played to a predetermined number of points (i.e. 25 points). They must be won by a lead of 2 points. Volleyball is a rebound game. it is not permitted to catch or hold the ball; every contact must be a rebound action. Because of this rule, it is essential for the player to be in the right place at the right time if the ball is to be played in a controlled manner. Therefore, good anticipation and movement skills should be taught to participants.

At competency level students should learn and practice the basic skills of sending and receiving a ball over a high net. They should play simple 3 touch volleyball games working as a team to keep the ball in play and ground it on the opponent's side of the court. As they progress skills should become more consistent and efficient players should be able to anticipate the path of the ball and the actions of the other members of the team and their opponent.

At proficiency level students should attain high proficiency at most individual skills and should understand both offensive and defensive play and be able to use different strategies and tactics when playing competitive games.

Rules of the Game

Volleyball is a fast game played by two teams of 6 players each. It can be played indoors or outdoors. A player on one of the teams begins a 'rally' by serving the ball from behind the back line of the court, over the net, and into the opponent's court. The receiving team must not let the ball be grounded within their court. The rally continues, with each team allowed up to three consecutive touches, until either a team grounds the ball on the opponent's court and wins the rally or a team commits a fault and loses the rally. The team that wins the rally is awarded a point, and serves the ball to start the next rally.

The ball is usually played with the hands or arms, but players can legally strike or push the ball with any part of the body.

Common faults include:

- catching and throwing the ball;
- two consecutive contacts with the ball made by the same player, except while blocking.
- four consecutive contacts with the ball made by the same team.
- touching the net during play
- crossing the centre line.
- causing the ball to touch the ground outside the opponents' court or without first passing over the net;
- Violation of rotation.

History of Volleyball

Volleyball was created by a physical education director in the United States. He created a new game based on some elements of tennis, handball and basketball. Originally named Mintonette it was created as a gentle indoor sport for older players to be able to exert a bit of athletic effort by keeping the ball in the air.

The idea of using a net was borrowed from tennis. It was raised to a height above the average man's height.

During a demonstration game, someone remarked that the players seemed to be volleying the ball back and forth over the net, and perhaps "volleyball" would be a more descriptive name for the sport.

Facts about Volleyball

Facts about Volleyball

- The first game of Volleyball was played in 1885
- It is the second most popular sport in the world, exceeded only by soccer
- Volleyball is an Olympic sport
- Beach Volleyball, played by two people is also an Olympic sport

Basic Requirements/ Equipment

- Any suitable indoor or outdoor space that can accommodate the group
- A net or rope, placed at above head level height
- A range of different size light balls that can be volleyed
- Lime powder to create playing areas

Including all Students

Space • Task • Equipment • People

Use STEP to modify volleyball activities so that all students are included. Try these modifications or devise your own.

Space

- Increase the playing space to encourage more movement; reduce the size of the space to encourage the development of passing skills.
- Play on different shaped courts. For example make the courts long and narrow to encourage longer pass in less space, or make the courts wide and shorter to encourage players to use peripheral vision and play the ball wide.
- Vary the size of the courts depending on the ability of the students. For example increase the playing area for a team of more competent players when playing against those still developing their skills.

Task

Passing & receiving

- Some players will find it easier for them to join in the game if they are able to catch the ball or if they are permitted to touch the ball more than once before it is passed. This will allow them to maintain control of the ball before passing it.
- Some players find it easier to retrieve a larger ball, in some cases, it may be necessary for these individuals to practice the skills until their competency has improved (see also 'Equipment').
- Some players may need to spend more time practicing individual skills before they are applied to game situations.
- Allow players to serve the ball from inside the court, throw or volley the ball in order to get the game started easily.

Equipment

- Provide students with a range of different weight/size. Players can initially practise with the ball they find can be controlled best.
- A brightly-coloured ball may help the participation of students who have vision impairment.
- Use angular adjustable stands with heavy material with a ball tied with a string to improve smashing and jumping skills.
- Use adjustable vertical stands with a ring on top to develop and control passing skills.

People

a) Team numbers can be varied; for example, in order to balance a game, it may be best to play 9 v 4, 6 v 3 or 4 v 2, where larger group who are developing their skills play against more competent players.

b) Play the game seated. Reduce the court area and lower the net. All players must remain seated and cannot lift their seats when playing the ball.

Physical & Health Education /Games

Links to continuous and comprehensive assessment frame work fore classes IX and X

- An appreciation and understanding of the physical fitness requirements of games playing
- An involvement in sports/physical education programmes
- Team work
- A knowledge of different games and rules of the games
- Skills of agility, balance and coordination
- Motivation and commitment to take part in the game
- Ability to lead others as a team captain, coach or referee
- An awareness of rules of safety
- An evidence of being self disciplined

Life Skills

- Listen actively
- Communicate using appropriate words, intonation and body language
- Gets along with others.
- Takes criticism positively
- Identifies one's own strengths and weaknesses

Net/Wall Games Volleyball

Class IX-X PROFICIENCY LEVEL

Purpose of the activity

To cooperate with others to use individual and team skills and strategies to overcome the opposition

Outcome of the activities

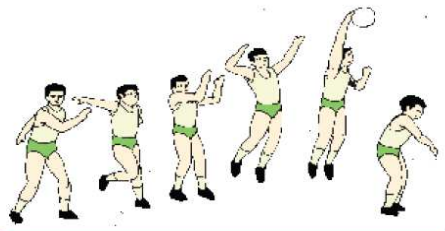
The outcome of participating in these activities will be:

- Team spirit • Cooperation • Communication • Focus on winning.

Skills

The Smash

- Run and approach as per the height, distance and speed of the ball.
- Swing the arms back behind the body. Bend slightly and jump off both feet.
- Hit the ball between the head and the hitting shoulder, in front of the body with an outstretched arm.
- Land in a balanced position on both feet and shift weight from toe to heel. Flex knees to avoid injury.



The Block

- Block is the first line of defence against the smash. It may be performed by one, two or three front-row players who jump at the net.
- Stand in a balanced position about half a metre from the net, feet shoulder width apart.
- Watch the opposition while developing their attack and move quickly to where it is anticipated.
- Use side steps or cross steps to move along the net.
- Coordinate with the timings of the jump of attacker and raise hands above and across the net to block the smash.

Here are some practices

Set up sending and receiving practices requiring students to:

- Overhead pass, underhand pass the ball.
- Keep the ball in the air. Play in a circle or small group: how long can you keep the ball in the air?
- Move to receive passes: from a ready position players should move right or left to receive a pass and return it.
- Play simple games that combine serving, overhead pass and underhand passes.

Net/Wall Games Volleyball

Class IX-X PROFICIENCY LEVEL

The Smash

Striking the ball against the wall

Player A strikes the ball on the surface keeping in view the force and direction in a manner that the ball hit the wall and deflects within the reach of Player B and the rally goes on.

Blocking action

Mark a chalk line on the wall. Practice the blocking action. Jump using vigorous knee extension and controlled arm movement. Both hands and must touch the wall or fence.

Practice blocking at the net with one, two or three players.

Now make up your own games and have some fun

How many players will be in each team? What rules will you have? What equipment will you use? How will you start the game? How long will you play for? How will you make sure that everyone is involved in the game?

Assessment

Knowledge (4)	• History of the game • Facts	• Rules
Skills (6)	• Ready position • Overhead pass, underhand pass, serve • Smash, block	
Application of skills (10)	• Ability to send the ball using overhead pass and underarm pass • Successful serves	• Accuracy of passes • Positioning on court • Attacking and defensive play

The game of Volleyball

- Condition the game to reinforce skill learning. For example pass using specific passes only, or set up zoned areas in which only specified players are permitted.
- Teach different systems of play: 4-2, 5-1, explaining when and how they are used. Try different attacking formations. For example have the setter in the middle of the net with a potential striker on either side.
- Set up knock out or league competitions that allow teams to play together often and get to understand each other's strengths and weaknesses.
- Teach students how to officiate and keep score. Begin by looking for and penalising just one or two obvious infringements in practice tasks and small sided games. For example, net faults.

Links to NCERT syllabus

Theme: Orientation to sports skills: proficiency in sports and motor skills

Links to other subjects

Maths : Applications of trigonometry: using smash and block skills students will be told about the line of sight to the angles of elevation and depressions and factors using them to calculate height and distance.

Science : Effects of force: using the techniques of passing, smashing and blocking students will be helped to understand the effects of force. For example speed of the moving body, bringing the body to rest, changing the direction of the moving body.

3.3 Individual Games

3.3.1 Example Activities (only illustrative): Gymnastics, Skating, Judo, Wrestling, Boxing, Fencing, etc.

3.1.1 Inclusion: Efforts should be made that each child participates. Let each child choose a sport of his/her liking and modify the activity as per his/her requirement. Use visual signs to start game so that students with hearing impairments can be involved. The students must find unique and creative ways to include CWSN who are their classmates. Though few of the strategies for inclusion have been outlined for some games in boxes attached below, if movement is not possible at all, then aided umpiring or aided cheering should be considered for CWSN. If some learning is possible, let the CWSN learn about the intricacies of the game. If they are interested in art work or music, let them create their own version of the game in art or music or any other form. Students are free to innovate their own mechanisms for inclusion under the guidance of their class teachers.

3.1.2 Life Skill Imbibed/ Acquired:

- Learning to Excel, Self-Awareness, Empathy
- Learning about sports/games through other formats such as fine arts

3.1.3 Outcomes/ Values Imbibed:

- Taking responsibility for one's involvement in activity (Self-Awareness)
- Personal satisfaction, self reliance and self accountability
- Improved self esteem and confidence
- A desire to compete for oneself

CATEGORY OF ACTIVITY : INDIVIDUAL SPORTS

The focus of work in gymnastics is to help students understand how to combine movements and actions together accurately to produce outcomes that are aesthetically pleasing to observe and engaging for audiences.

Examples of activities through which students can learn how to accurately repeat actions, sequences and phrases include are:

- **Jump rope**
- **Gymnastics**
- **Diving**
- **Rhythmic gymnastics**
- **Synchronised swimming**
- **Trampolining**
- **Ice skating**
- **Juggling and circus skills**
- **Cheerleading**

The focus of learning should be around the way in which student's progress in their application of the required skills in more challenging, intricate and complex routines. Learning should include:

- Developing skills and using them in increasingly complex routines and performances(DS),
- Using different compositional ideas to create interesting routines and performances(CI),
- Having the physical fitness and mental capacity needed to carry out the demands of the activity (P&M),
- Knowing what they do well and what they need to practice in order to improve further (IM).

As students progress in their understanding of these elements of gymnastics they should focus on the specific knowledge, skills and understanding that will help them to improve the overall success of a performance. For example students should understand and develop aspects of fitness that will enable them to complete performances showing fluency, quality and control throughout. They should also develop a sufficiently wide movement vocabulary so that they can select actions and movements that produce the best aesthetically pleasing and engaging outcomes for audiences.

The outcomes of learning about, and participating in these activities will be:

- Taking responsibility for one's own involvement in activity
- Personal satisfaction
- Self reliance and self accountability
- Improved self esteem

Students should also be able to make informed choices about whether they wish to engage in activities requiring them to perform routines and sequences as part of their own healthy lifestyle management.

Category of Activity: Individual Sports

Name of Activity: Gymnastics

Gymnastics is a graceful and artistic sport involving the performance of movements and balances. It requires a combination of physical strength, flexibility, agility, coordination, balance, and grace. It combines individual movements together to produce routines and performances for the purposes of competitions and displays. All of the gymnastic sports are governed by the Fédération Internationale de Gymnastique (FIG) with each country having its own national governing body affiliated to FIG, Gymnastics Federation of India.

At competency level students should learn and practice the correct way of performing different movements and balances. These might include some of the more recognised skills like forward rolls, handstands and cartwheels. These skills should be linked to produce short routines and displays that show quality, control and fluency. As gymnasts become stronger the skills should be performed with quality and control.

At proficiency level students should attain high proficiency in individual skills, performing them consistently with control and grace. They will also be able to use their movement vocabulary to perform with others and to participate in similar sports like rhythmic gymnastics and sports acrobatics.

Do's and Don'ts

Do's

- Gymnasts must be dressed appropriately so that clothing does not hinder the activity or cause any issues of safety.
- Mats should be used to protect gymnasts when moving and balancing.
- Gymnasts should always warm up before performing skills and actions. They should focus on strengthening muscles and flexibility.
- Equipment such as boxes and pommels should only be used with expert supervision
- Always perform under the guidance, supervision and assistance of Expert coaches.

Don'ts

- Do not wear jewellery
- No eatables while you are inside the gymnasium i.e. chewing gums, toffees
- No talking during performance.
- Don't do without supervision
- Do not perform tricks on cemented floor
- Do not attempt skills you cannot do by yourself safely

Facts about the Game

- Gymnastics was included in the first modern Olympic Games held in 1896
- Women first competed in gymnastics in the 1928 Olympic Games
- Gymnastics came of age in India, when at the 2010 Commonwealth Games, Ashish Kumar won the first-ever medal in gymnastics for India. He won a silver & bronze medal.
- The Gymnastics Federation of India (GFI), pioneer of Gymnastics in India, came in existence in the year 1951.

History of the Game

Gymnastics dates back to the time of ancient Greece. The early Greeks practiced gymnastics to prepare for war. Activities like jumping, running, discus throwing, wrestling, and boxing helped develop the muscles needed for hand-to-hand combat. During this period the term 'gymnast' described those who participated in these activities.

Gymnastics became a central component of ancient Greek education and was mandatory for all students. Gymnasia, buildings with open-air courts where the training took place, evolved into schools where gymnastics, rhetoric, music, and mathematics were taught.

It was in the early 19th century that the introduction of Ling's Swedish form of free gymnastics and Jahn's apparatus-based gymnastics became the standards form of gymnastics taught and performed in competitions.

Basic Requirements/ Equipment

- Gymnasts should wear clothing that will keep them safe and not impede movement
- Make sure the conditions of the floor will allow a gymnast to land or fall safely

Including all Students

Space • Task • Equipment • People

Use STEP to modify Gymnastic activities so that all students are included. Try these modifications or devise your own.

Space

- Create tactile pathways to enable students who have a visual impairment to make transitions or move around independently. For example stick tape over string on the floor to create tactile pathways.
- Give a student time to explore the space of a mat or piece of apparatus so that they know its boundaries, height etc.

Task

- Find out what is possible for each student and what skills you can introduce them to and what they can improve.
- Allow students to use support in order to be able to perform skills. For example let them perform against a wall, from a chair or while being supported by a partner.
- Help students to find the most effective way of linking individual movements. For example let them crawl, roll or slide across the floor or mat or travel by walking or pushing in a wheelchair.
- Some students may need to improve specific skills before they are linked together.
- Some students may find it difficult to sequence movements and actions together. If so, reduce the number of movements that are linked or let somebody tell the student what to do next so that they don't get stuck.

Equipment

- Allow students to use equipment to help support them. For example let them balance while holding onto the back of a chair.
- Let them explore equipment and find ways in which they can use equipment safely.
- Some students may be able to perform balances using large exercise balls:

People

- Students should work with different individuals and in different sized groups. They should learn to help, support each other and to be supported.

Physical & Health Education /Games

Links to continuous and comprehensive assessment frame work for classes IX and X

- An appreciation and understanding of the physical fitness requirements of gymnastics
- An involvement in sports/physical education programmes
- Team work (where applicable)
- A knowledge of different sports, particularly those relating to gymnastics
- Skills of agility, balance and coordination
- Motivation and commitment to take part in gymnastics
- Ability to lead others as a captain, coach or judge
- An awareness of rules of safety of both self, the equipment and working area
- An evidence of being self disciplined

Life Skills

- Listen actively
- Takes criticism positively
- Be original, flexible and imaginative in the creation of exciting routines
- Communicate using appropriate words, intonation and body language
- Identifies one's own strengths and weaknesses

Individual Sports **Gymnastics** | Class IX - X | PROFICIENCY LEVEL

Purpose of the activity

To participate for oneself in activity that is enjoyable and rewarding.

Outcome of the activities

- taking responsibility for one's involvement in activity
- personal satisfaction, self reliance and self accountability
- improved self esteem and confidence • desired to compete for one self

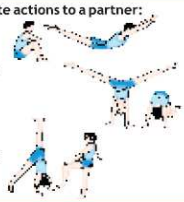
Try these partner balances

Perform different balances:

- Facing a partner
- Next to a partner
- Back to back with a partner

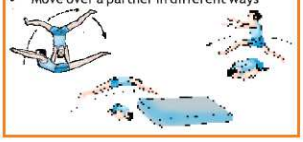
Perform opposite actions to a partner:

- High/low
- Large/small
- Fast/slow
- Still/moving



Perform movements over a partner:

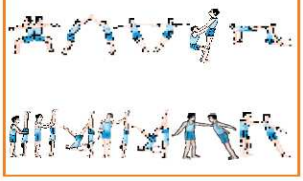
- Make different shapes for a partner to move over
- Move over a partner in different ways



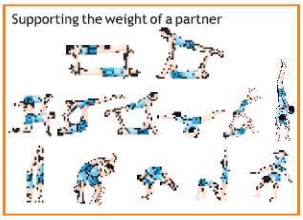
Try these counter balances

Partly supporting a partner's body weight

Counter balance and counter tension



Supporting the weight of a partner



Individual Sports **Gymnastics** | Class IX - X | PROFICIENCY LEVEL

Try these Sports Acrobatic balances

Two make the same shape and one makes a different shape

All three in different shapes

In larger groups

Try this challenge

Compose, practice and refine pair, trio and/or group displays and perform them to audiences of classmates and parents. Include different pair/trio balances and changes in direction, body shape, speed and levels to add variety and interest to the routines. Include different partner formations:

SPATIAL VARIATIONS

following meeting parting passing alongside over/under around circling

Now make up your own sequences, balances and have some fun

Decide a working area. Mark it out in what ways and sequences, the group will perform. How long will you perform the sequences? How will you make sure that everyone is involved in the performance?

Assessment

Knowledge (4)	• History of the game • Do's and Don'ts • Facts
Skills (6)	• Working with partners • Working opposite partners • Acrobatic balances
Application of skills (10)	• Using different positions with or without partners • Ability to make same or different shapes with partners using acrobatic balances.

Links to NCERT syllabus

Theme: Knowledge and Proficiency in Sports and Motor Skills Acquisition-Gymnastics

Links to other subjects

English: This activity can be utilized for developing the ability of creative writing. Based on the observation of various movements, and specially the rhythmic movements, students may asked to prepare a write up reflecting the artistic dimensions of the activity.

Science: The actions of this activity may be suitably utilized while transacting the lesson on motion, especially the concepts of uniform and non-uniform motion along a straight line, acceleration-uniform and uniformly accelerated motion and uniform circular motion.

3.4 Adventure Sports

3.4.1 **Example Activities (illustrative only)**: Trekking; Nature Bathing (walking in natural surroundings, such as forests, mountains, alongside rivers, etc.), wall/rock climbing; rappelling; camping; rafting; mountain biking; skiing; personal survival and lifesaving, first-aid, etc.

3.4.2 **Inclusion**: Provide a buddy to help the Child with Special Needs to do the activity or to accomplish as much of the given task as possible. Include students by using a wheel-chair, if required. The students must find unique and creative ways to include CWSN who are their classmates. If some learning is possible, let the CWSN learn about the natural surroundings. Teach them survival skills specifically adapted to them. If they are interested in art work or music, let them create their own version of the adventure sports in art or music or any other form. Students are free to innovate their own mechanisms for inclusion under the guidance of their class teachers.

3.4.3 **Life Skills Imbibed/ Acquired**:

- Solving problems and having the courage to overcome fear/ anxieties in challenging situations and environments (Problem Solving, Decision Making)
- Team spirit (Interpersonal and Intrapersonal Skills)
- Courage

3.4.4 **Outcomes/ Values Imbibed:**

- Sense of achievement and satisfaction
- Knowing one's own limitations and taking risks safely
- Closeness to nature
- Nature bathing

SECONDARY PHYSICAL EDUCATION CURRICULUM CARDS (SPECC)

CATEGORY OF ACTIVITY : ADVENTURE

When involved in adventure activities students should learn how to solve problems and overcome challenges presented by themselves, others and the environment safely and effectively. Students should progress from undertaking challenges in and around familiar surroundings to unfamiliar environments. An unfamiliar environment might be a local park, a different school site or sports centre site, a water environment as well as more challenging wooded and hilly regions.

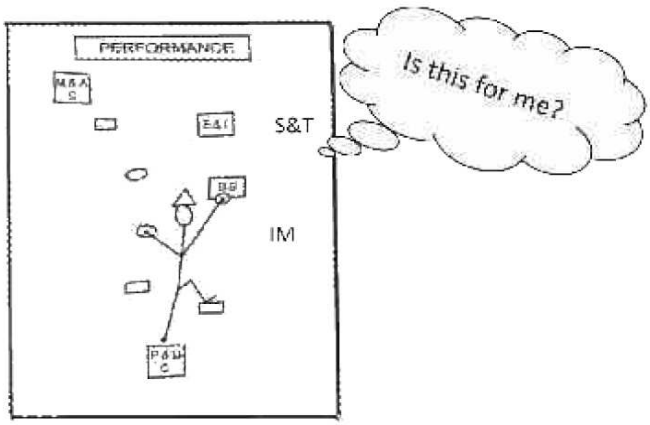
Examples of adventure activities are:

- Orienteering
- Personal survival
- Life saving
- Climbing
- Rappling
- Rafting
- Mountain biking
- Skiing
- Expeditions by different modes of transport for example walking, boating, cycling
- Camping

The focus of learning should be around the way in which student's progress in their application of the required skills in more challenging and complex situations and activities. Learning should include:

- Developing skills and using them in familiar and unfamiliar environments and increasingly challenging adventure situations (DS)
- Using different strategies to bring about successful outcomes(ST)
- Having the physical fitness and mental capacity needed to carry out the demands of the activity (P&M)
- Knowing what they do well and what they need to do to practice in order to improve further (IM)

As student's progress in their understanding of the skills and knowledge required to overcome challenges they should focus on the specific knowledge, skills and understanding that will help them to improve the overall success of an outcome. For example students should understand and develop individual skills and techniques so that they can use them effectively when involved in adventurous activities. They should also improve aspects of fitness that will enable them to overcome challenges safely and effectively. Students will also need to learn to work with others to solve problems which will require them to learn to take responsibility for the roles, engagement and support they choose to give the rest of their group, team or partner.



The outcomes of learning about, and participating in these activities will be:

- Sense of achievement and satisfaction
- Knowing one's own limitations and taking risks safely
- Closeness to nature

Students should also be able to make informed choices about whether they wish to engage in activities requiring them to solve problems and overcome challenges presented by themselves, other's and the environment as part of their own healthy lifestyle management.

Category of Activity: ADVENTURE

Name of Activity: Team building and solving problems

Team building activities are challenging problem-solving tasks designed to help group members develop their capacity to work effectively together. The activities range from simple, straightforward challenges to more elaborate tasks that can involve ropes courses, night-time activities and exercises lasting several days. They require students to think, to try out ideas and to come up with solutions that can be tried and reviewed. An important part of team building activities is participants' reflection and discussion about the activity, how they approached the situation, and possible points of learning. Students should have time to reflect on the strengths and weaknesses of team members and their contributions to the success, or otherwise of the activity.

These activities provide opportunities for students:

- To learn how to work with others effectively including:
  - Listening to other's ideas and suggestions.
  - Making collective decisions and acting on these decisions.
  - Generating original, flexible and imaginative ideas.
  - Raising questions, identifying and analyzing problems in order to solve them.
  - Elaborating and building on ideas and suggestions.
- To consider the contribution they make to their team including:
  - The ideas they contribute.
  - The way they listen and respond to other's ideas and suggestions.
  - The support they provide to all team members.
- To consider aspects of safety when engaged in problem solving activities.

At competency level students should be given simple problems that can be solved with minimum of equipment. They should spend time reflecting and talking about how they went about solving the problem, why there were, or were not, successful and how each member of the team contributed to the decisions that were made.

At proficiency level students should be placed in challenging situations and unfamiliar environments that demand high levels of skill, team work and the ability to solve problems through the appropriate selection of solutions and the necessary skills to bring about those solutions.

Team Building: some do's and don't

- Do give students time to talk about the solutions they will put into practice.
- Do let students make mistakes (safely) so that they are able to learn about trying out solutions, making changes and reflecting on what strategies are successful and why.
- Do keep the groups small. Everybody should have the opportunity to contribute and be fully involved in the challenge.
- Do ensure the area is safe from objects and remove any that might cause a hazard.
- Don't rush students. Give them the time they need to make the mistakes and think through the solutions.

Basic Requirements/Equipment

- This will depend on the activity being undertaken. Any equipment should be safe to use and used safely by students. It is possible to use improvised equipment but it must be used safely. Part of the process of solving the problem should be helping students to consider the safe implications of the equipment choices they make.
- Students will need to be dressed appropriately to be able to participate safely and fully.

Including all Students — Space · Task · Equipment · People

Use STEP to modify Team Building and Problem Solving activities so that all students are included. Try these modifications or devise your own.

Space
- Create a safe area for the activity.
- Outline or highlight the boundaries of the play area with brightly coloured tape for students with low vision or attention difficulties.
- Use brightly coloured or highly visible items to mark boundaries.
- Increase the playing space to encourage more movement; reduce the size of the space when activities involve stepping onto objects.

Task
- Simplify the instructions to make the task easier.
- Provide suggestions or ask questions to guide student's thinking.
- Give time for all students to think, discuss and try out ideas.
- Let students solve problems in their own ways. If their solutions fail help them to think of other ways of solving the problem.
- Help students to support each other when they are working as teams, recognising the strengths and weaknesses of all team members.
- When orienteering, teach students to turn their body round the map so it shows what is in front of them.

Equipment
- Lower or increase the height of barriers.
- Use smaller targets or objects to make the task harder and larger targets or objects to make the task easier.
- To increase the difficulty of an orienteering course, place controls on identical features.

People
- Allocate specific roles so that all members of the team have to be involved.
- Ensure the whole group listen to all members of the team and give consideration to all ideas and suggestions.

Physical & Health Education /Games

Links to the continuous and comprehensive assessment framework for classes XI and X

- An appreciation and understanding of the physical fitness requirements of adventure activities.
- An involvement in sports/physical education programmes.
- Team work.
- A knowledge of different sports and their etiquettes.
- Skills of agility, balance and coordination.
- Motivation and leadership.
- Ability to lead others as a team captain, coach or referee.
- An awareness of safety as it relates to adventure activities.
- An evidence of being self disciplined.

Life Skills

Adventure activities provide exciting, real environments and contexts in which students are able to develop life skills. These include:

Thinking skills
- Original, flexible and imaginative
- Raise questions, identify and analyse problems.
- Implement a well thought out decision and take responsibility.
- Generate new ideas with fluency.
- Elaborate/build on new ideas.

Social skills
- Identify, verbalise and respond effectively to others' emotions in an empathetic manner.
- Get along well with others.
- Takes criticism positively.
- Listen actively.
- Communicate using appropriate words, intonation and body language.

Emotional skills
- Identifies one's own strengths and weaknesses
- Be comfortable with one' own self and overcome weaknesses for positive self-concept
- Ability to express and respond to emotions with an awareness of the consequences

Adventure Activities
Team Building and Problem Solving : Orienteering

Class IX - X | **PROFICIENCY LEVEL**

Purpose of the activity

To solve problems and overcome challenges presented by themselves, others and the environment safely and effectively and, in doing so, to overcome fear/anxieties in challenging situations and environments.

Outcome of the activities

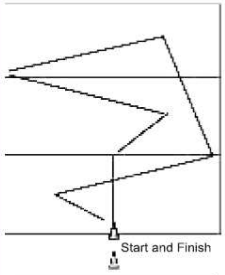
The outcomes of participating in these activities will be

- a sense of achievement and satisfaction
- knowing one's own limitations and taking risks safely
- closeness to nature

Try these challanges

Line Orienteering

- Set out 6 to 10 control points around an area. At each control point place a number or letter. Give each pair or small group a map of the area with a route drawn on it that takes in a number of the control points (which should not be marked on the map). Ask students to follow the route and find the control points. They should mark each control point on the map once they find it.



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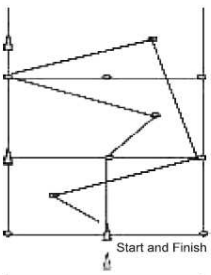


1	2	3	4	5	6	7	8

Score Orienteering

- Set out as many control points as possible. At each control point place a number, letter or simple task. Give students a specific amount of time (say 10 minutes) to visit as many controls as possible. Controls may be visited in any order. Control cards should be marked to show they have been visited.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

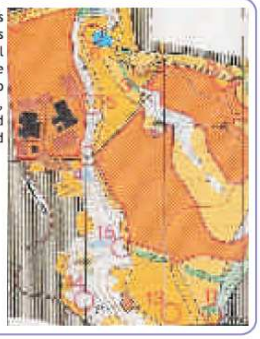
Adventure Activities
Team Building and Problem Solving : Orienteering

Class IX - X | **PROFICIENCY LEVEL**

Orienteering courses

Set up orienteering challenges on the school site using maps created by teachers or students. Maps should show the main features of the school grounds and include a key to the symbols used. The control points should be shown on the maps. Allow students to visit the controls in any order and to choose their own routes.

Take part in orienteering challenges in unfamiliar surroundings. Courses should include at least 10 control points. To complete these challenge students will need to be able to interpret maps, orientate them, know their position at all times and be able to adjust their plans and routes as necessary.



Try these challenges

Now try some timed challenge

Take part in timed orienteering events which include between 6 and 12 controls. Do this either in familiar or unfamiliar surroundings. Students should copy the control points from a master map onto their own maps and plan their route to visit them. How long does it take each student (or pair) to complete the course?

Assessment

Knowledge (4)	• Symbols and keys • Map scale • Rules of orienteering • Safety rules
Skills (6)	• Orientation of map to terrain • 'Thumbing' maps • Knowing position at all times • Route planning
Application of skills (10)	• Accuracy of copying control points/route planning • Speed and accuracy • Recognising and following features • Fitness to complete the courses • Overall time for the event

Links to NCERT syllabus

Theme: Orientation to Sports Skills: proficiency in sports and motor skills

Links to other subjects

Language: Students may write a brief report on the experiences of the activities highlighting the challenges faced and solutions found by the teams.

Social Science: The experiences of teams in map reading, students may be asked to locate rivers, national highways, important cities, forest areas in the geographical map of a State.

CHAPTER 4
STRAND 2: HEALTH AND FITNESS

4.1 Exemplar Activities (illustrative only): It should be ensured that all students participate in Mass P.T. / Yoga. Any other activity, which leads to a connection of the physical body with the mind and with the inner workings of the body, and also leads to an improvement in overall health and fitness, can also be taken up, such as Aerobics, Dance, Calisthenics, Jogging, Cross Country Run, working out using weights/gym equipment, Tai-Chi etc. Children who are ready for it, may in addition, also participate in learning the nuances of meditation and its impact on stress management.

4.2 Inclusion: Efforts should be made that each child participates. Modify the activity as per his/her requirement. Class mates can come up with creative ways for inclusion. If movement is not possible at all, then aided movement can be considered for CWSN (Children with Special Needs). If some learning is possible, let the CWSN learn about the intricacies of the activity. Meditation can be taken up. If they are interested in art work or music, let them create their own version of the game in art or music or any other form. Students are free to innovate their own mechanisms for inclusion under the guidance of their class teachers.

4.3 Life Skills Imbibed/ Acquired:

Exercising regularly and safely for personal well being

4.4 Outcomes/ Values Imbibed:

- A commitment to exercising safely and effectively for the benefit of personal health and wellness.
- Learning about how body responds to health and fitness interventions.
- An understanding of the connection with the inner workings of the body and how the body responds to external stimuli

Category of Activity: Health and Fitness

Name of Activity: Aerobics

The word aerobics means 'with oxygen'. It is a type of physical exercise that combines rhythmic aerobic exercise with stretching and strength training routines with the objective of improving all elements of fitness (flexibility, muscular strength, and cardio-vascular fitness). It is usually performed to music and may be practiced in a group setting led by a teacher, although it can be done solo and without musical accompaniment. The goal of aerobics is the prevention of illness and the promotion of physical fitness.

At competency level students should learn and practice low-Impact aerobics. Routines should include basic floor-based rhythmic exercises combined with stretching and some strength training.

At proficiency level students should attain high proficiency in high-impact/high Intensity aerobics which features lots of foot movements that involve lifting off the ground, jumping, hopping and jogging. In addition routine could include additional steps, the use of exercise balls and/or dumbbells.

Etiquettes of Aerobics

- It is very important to warm up and cool down before and after exercise to permit a slow build up to an individuals target heart rate for aerobic training and to avoid injury to muscles, tendons and ligaments.
- When lifting weights, students should not train the same muscle groups on consecutive days. Allow at least one or two days of rest between training sessions.
- Always pay careful attention to one's posture while lifting weights.
- Always wear comfortable well fitting footwear that cushions the feet and offers good ankle support.
- Try to take moderate exercise three or four times a week rather than intensive exercise intermittently.
- Be careful while exercising outside. Avoid very hot weather conditions and don't exercise in deserted areas.
- If at any time during the exercise you feel dizzy, nauseous, faint or in pain stop exercising immediately.

History of the Game

The term 'Aerobics' was devised by Dr. Kenneth H. Cooper, an exercise physiologist for the San Antonio Air Force Hospital, Texas, to describe the system of exercise that he devised to help prevent coronary heart disease. Dr. Cooper originally formulated aerobic exercises specifically for astronauts, but soon realized that the same set of exercises are useful for the general public as well, especially those who are overweight, who are more likely to develop various heart diseases and other circulatory disorders.

Facts about the Game

- Aerobic movements should be rhythmic and repetitive. The movements should involve the large muscle groups of the arms and legs.
- Aerobic activity should be undertaken for at least 20 minutes to be beneficial to health.
- Aerobic activities include swimming, running, cycling and walking.
- Aerobic activity improves the heart, lungs and cardiovascular system.

Basic Requirements/ Equipment

- Any suitable indoor flooring (preferably wooden)
- A music system
- Floor/exercise mats for vigorous training and toning
- Dumbbells for adding variety in different upper body exercises and strengthening core muscles
- Exercise balls to increase muscle strength and strengthen all of the principle muscle groups
- An elevated platform (e.g. a step) to add variety. The height for beginners should be no more than 10cms rising to 30cms for more experienced participants.

Including all Students — Space • Task • Equipment • People

Use STEP to modify fitness and aerobics activities so that all students are included. Try these modifications or devise your own.

Space
- Perform the stepping patterns and actions in a confined space, almost staying on the same spot.
- Include actions and movements that take students off the spot moving forwards, backwards and sideways in the space.
- Ensure there is sufficient turning and stopping space for students who have mobility impairments.
- Make sure the area is free of obstructions for students who have visual, mobility or coordination difficulties.

Task
- Increase/decrease the number of actions in a routine
- Simplify the movements or increase the intensity by adding arm or other body movements
- Students in wheel chairs can create simple routine to the beats of the music
- Movement skills may be performed more effectively with support from such things as a chair, wall, the floor or a partner.
- Teach students the step formations so that they can apply perform them in sequence and to the beat of music.
- Provide frequent rest periods, or the opportunity to be seated for some part of the session.
- Include a different action that provides a similar challenge. For example shoulder shrugs may provide a similar challenge to hopping or jumping for students who have physical impairments.

Equipment
- Provide students with DUMBELLS or Exercise Balls to add variety to program
- Lower or increase the height of platforms for stepping onto and off.
- Use any type of platform or a raised surface instead of bench.

People
- Let students create their own movements, stepping patterns and actions.
- Work in pairs to create routines.
- Lead others through routines that students have created themselves
- Work with a partner who is able to offer support to another student.

Physical & Health Education /Games

Links to continuous and comprehensive assessment frame work for classes IX and X
- An appreciation and understanding of the physical fitness requirements of Aerobics
- An involvement in sports/physical education programmes
- Team work
- A knowledge of different fitness activities and the etiquettes of participating
- Skills of agility, balance and coordination
- Motivation and commitment to take part in Aerobics
- Ability to lead others
- An awareness of rules of safety
- An evidence of being self disciplined

Life Skills
- Be original, flexible and imaginative in creating routines that are enjoyable and increase heart rates sufficiently
- Generate new ideas with fluency
- Elaborate/build on new ideas
- Listen attentively
- Be comfortable with one's own self and overcome weaknesses for positive self-concept

Health and Fitness Aerobics

Class IX - X

PROFICIENCY LEVEL

Purpose of the activity

To exercise regularly and safely for personal well-being

Outcome of the activities

understanding the place of regular activity as part of an overall healthy lifestyle. Commitment to exercising safely and effectively for the benefit of personal health and well being.

Floor workout

It is possible to combine moves learnt at competency level along with these moves to make choreography little challenging

Skills

Mambo

- To start with Mambo move step forward and back, forward and back with the same foot. Repeat with the other foot.

Shading indicates transfer of body weight.

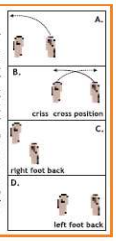
Cha-Cha-Cha

- With a Cha-Cha-Cha, you're just doing three steps really fast - instead of one, two, it's one,two,three.

Shading indicates transfer of body weight.

Jazz Square

- Start with your feet together. Cross your right foot over your left, step back with your left foot, step your right foot out to the side, then step forward on your left.Each step takes up two counts of music.



Kick Ball Change

- To do a kick ball change, kick your right foot out in front of you or across your body.

Tap the ball of your right foot down on the ground and shift your weight onto it, then immediately step back onto your left foot. This is the "ball change" portion of the move.

Try putting these steps and actions together with music

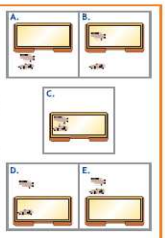
- Step touch(x2) • V-step(x2) • Jazz square (x2) • Kick ball change (x2) • Grapevine • Kick ball change • V-step • Cha-cha-cha

Learn these step patterns

Over the top

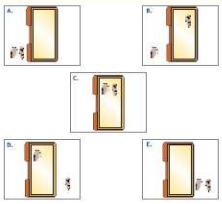
- With your bench in front of you, position yourself to the far left end of the bench.
- Turn your body to the right; your bench should now be on your left side.
- Step up with the left foot, and then step up with the right foot so that both feet are on top of the bench together.
- Step down to the left with your left foot; follow with the right foot.
- Reverse back over the step to start position.

NOTE- For added intensity, add a hop when at the top of the step bench.



A-step

- With the bench vertically oriented, stand to the lower left corner of the bench.
- Shift body weight to the left foot and step up to the front of the step with the right foot.
- Bring the left foot up so that it is also on the bench.
- Step down and back off the bench with the right foot, followed by the left making letter A on the bench.



continue the same with the left leg lead

Health and Fitness Aerobics

Class IX - X

PROFICIENCY LEVEL

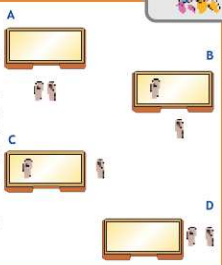
Turn step

- A turn step traces the shape of an upside-down letter U. Start with standing on left side of bench and facing sideways.
- Step with the left foot onto the nearest end of the bench, turning the entire body 180 degrees to the left.
- Place the right foot on the opposite end of the bench.
- Finally turn the entire body to the left again and step down and off the near side of the bench at the other end, leading with your right foot.

Reverse the steps, leading off with your right foot and rotating 180 degrees to the right as you get on and off the bench, to return to your starting position.

L-step

- With your bench in front of you, position yourself to the far right end of the bench.
- Step up on the bench with the left foot. Lift the right knee in the air and step out wide to the right side of the bench placing the right foot on the floor followed by the left foot down next to the right.
- Do the reverse steps back to start position to complete the L step.



Try using the steps in these different combinations

- Basic step(2x) • V-step (x2) • L-step • Over the top • A-step (x2) • Turn step • Over the top • Knee up • Basic step (x2)
- L-step • Step tap (x2) • A step • Challenge your coordination by combining moves with different type of music. • Change the order of the steps. • Can you add your own steps? • Can you make your routine longer? • Can you add arm actions to make the routine more challenging? • Try making up your own routines and teach them to each other.

Assessment

Knowledge	Maximum 4 marks	• Importance of physical activity as part of a healthy lifestyle • Importance of wellness • Effect of exercise on various body systems and their functioning • Calculation of Target Heart Rate(THR)
Application of skills	Maximum 16 marks	• Different high intensity floor movements • Different high intensity moves using platforms • Co-ordination of movements with music • Co-ordination of body movements • Ability to work within target heart rate zone • Ability to work aerobically for sustained periods of time • Ability to create routines at the correct intensity • Ability to lead routines and aerobic workouts

Links to NCERT syllabus

Theme: Fitness: concept of fitness

Links to other subjects

Science: the muscles: understanding of the accumulation of lactic acid in muscles due to a lack of oxygen leading to fatigue (tiredness) after aerobic activities.

Language Rhyming words: students create their own raps using rhyming words that they put to music or sing while performing aerobic routines.

YOGA

Over a prolonged period of time, too much stress leads to too much cortisol being released in our bodies, which in turn lowers the immune functions and metabolism, leading to rapid weight gain, susceptibility of body to pathogens, osteoporosis, blood pressure imbalance, muscle weakness, etc. It is proven that long term stress also has links to insomnia, chronic fatigue syndrome, depression, thyroid disorders, etc. Modern research accepts three aspects of yoga (*Asanas, Pranayama* and meditation) as one of the best methods for moderating the production of cortisol, thereby managing the stress response of the body. By reducing cortisol levels, yoga therefore raises the immunity levels of the body. Secondly, when we hold our body in a yoga posture for a few breaths/counts, our parasympathetic nervous system is stimulated, which in turn lowers our BP to enable a better post-stress response. Thirdly, exercise in the gym or outdoors cannot massage our internal organs, which are nothing but muscles performing a particular function. Yoga keeps these muscles exercised and active. Fourthly, yoga is able to enhance the body's natural defense mechanism against free radicals. There are many more benefits of Yoga, that students may like to research on themselves.

Category of Activity : Yoga

Name of Activity: Yoga

The word Yoga comes from Sanskrit word 'Yuj' that means bonding of connection, join or unite. This implies joining or integrating all aspects of the individual - Body, Mind & Spirit, to achieve a happy balanced & useful life, and spiritually uniting the individual with the 'Supreme'. Yoga is considered as one of the six branches of classical philosophy and is referred to throughout the 'Vedas'. Ancient indian scriptures, the oldest texts in existance. Yoga is a spiritual quest. It's purpose is to help each one of us achieve our highest potential and to experience enduring health and happiness. While practicing Yoga we can extend our healthy productive years far beyond the excepted norms and at the same time, improve the quality of life.

Yoga is truly a science of human personality. It has a very efficient system of postural and breathing exercise, which promotes the complete health including physical, physiological, emotional , behavioural , environmental and social aspects.Yoga is very helpful for school going students because now a days school children are suffering from physical, mental and emotional problems.Yoga helps school children to overcome stress, strain, anxiety, tension and provides relaxation. Yoga is not a single exercise, it has many aspects like Suryanamaskar , Yogasana ,Pranayama and Meditation. These exercises are very effective for maintaining physical purity by reducing obesity and mental tension. It also contributes in developing moral and ethical values to lead a happy and contented life.

Rules of Yoga

- Yoga should be practiced empty stomach
- Wear loose and comfortable clothes for practicing yoga
- Use thin yoga mat or thick bed sheet for yoga
- Food should be taken after ½ hour of practicing yoga
- Girls should not practice yogasana during menstruation
- Like any other workout you must begin with easy poses
- Relax for 10 second atleast after yoga exercise
- Duration of each posture should be increased gradually
- Practice yoga preferably close to nature

History of Yoga

The history of yoga is indeed very old .Nothing can be said firmly , about the origin of yoga . Only it can be alluded that yoga originated in India . The available evidences ahow that history of yoga is related to the Indus valley civilisation.

Yoga is also mentioned in Mahabharata, Ramayana and Upanishads. Sage Patanjali also wrote about yoga in 147 BC . During this period , yoga had been developed enough . Even Kabir, Tulsidas and Surdas mentioned about yoga in their writings.

Facts about Yoga

- **Yoga has Eight steps:**
- Yama (Social discipline) - refraining from violence, telling lies, casual sex and stealing.
- Niyma 'Observance' - purity, contentment and tolerance.
- Asanas - Physical Exercise (Postures).
- Pranayama - Breathing techniques.
- Pratyahara - Control over senses.
- Dharna 'Concentration' - able to hold mind on an object.
- Dhyana 'Meditation' - ability to focus on one thing or nothing without divergence.
- Samadhi 'Absorption' - realisation of essential nature of self and the divine pleasure.

Basic Requirements/ Equipment

- Any suitable well ventilated indoor or outdoor accomodation for yoga
- Soft mat and comfortable dress.

Health & Fitness : Yoga

Class IX-X

PROFICIENCY LEVEL

Purpose of the activity

To exercise regularly and safely for personal well-being and to enhance physical flexibility, mental balance increased attention span.

Outcome of the activities

Understanding the place of regular activity as part of an overall healthy lifestyle, greater physical and mental coordination, harmony with nature leading to inner transformation of consciousness.

Skills

Asanas

Open the energy channels, chakras and physhic centers of the body. They not only purify and strengthen the body but also control and focus mind. They are one of the eight limbs of classical yogas.

Asana should be steady and comfortable, firm yet relaxed. They promote muscle flexibility, bone strength, heart tissue strength, messages the internal organs and brings various internal and glandular functions into balance.

Pranayam

Is an aspect of yoga that deals with breathing. It is the control of the motion of inhalation, exhalation and retention of vital energy. Proper breathing brings more oxygen to the blood and to the brain, and controls the vital life energy.

Ujjayi : In this breathing is done through your throat instead of nose. Sit erect in any comfortable posture, Spine erect. Inhale slowly drawing air by both nostrils in such a way that while inhaling the touch of air is experienced in the throat and some sound is produced. During inhalation do not bulge the abdomen, let chest expand. Exhale slowly and during this process chest should go inside, abdomen remain steady.

Meditation

is a form of stress management that allows our heart and mind to experience and oasis of peace and love within our heart and mind. It creates positive and peaceful thoughts to bring peace to our mind. It is one of the best method to bring about transformation and nurture the natural qualities within. While practice of meditation one has to be very patient and the mind does not want to focus.

One should increase duration of meditation and shift focus from gross body to subtle breathing.

Here are some practices of Pranayama

Bhastrika : Bellow Breathing : Bhastrika means Bellows in Sanskrit. Air is drawn in and out of the abdomen just as blacksmith uses his bellows. Sit in a comfortable position/ Asanas breath in through both notrils till the lungs are full and diaphgram is stretched. Breath out gently.

Anuloma-Viloma

- Lung expansion
- Rhythmic breathing
- Inner and outer retention
- Neuro muscular lockes
- Breathing ratio 1:2:4 (inhale:retention:exhale)

Health & Fitness : Yoga

Class IX-X

PROFICIENCY LEVEL

Try some of these yogic asanas

Sarvang asana (Shoulder Stand)

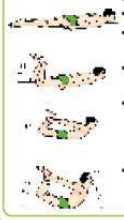
- Lie in Supine position
- Raise your feet upwards
- Take the support of hands on the back and let the elbows rest on the ground
- Keep whole body state upwards, body weight remains on shoulders and neck. Let chin touch the chest. Hold, return slowly and relax.

Pavanamuktasana (Gas release pose)

- Lie in supine position. Raise your legs upwards
- Slowly bring the knees closer to your chest
- Lock knees by bringing both arms together
- While exhaling raise head to the knees.
- Hold, return slowly and relax.

Dhanurasana

(Bow Pose)



- Lie in prone position
- Fold your knees and bring them closer to your hips
- Hold ankles with both hands
- Lift body weight by pulling the legs and neck upwards and pose like a bow
- Hold 20-30 seconds with normal breathing return back slowly

Kapalbhati (Blowing in Firm Pose) : Kapal means skull, Bhati means shine. This pranayam cleanses the respiratory system, particularly the nasal passage in the skull. This is done in a sitting position. The muscle of the stomach should be moved freely in this process, thereby throwing large quantity of CO_2 outside resulting in more oxygen absorption in the body. This increases O_2 in blood, hence the need for O_2 is lessened and breathing centre is calmed down.

Kneel and sit on your heels pointing outward. Keep your back straight and rest your hands on your thighs. Relax the muscles in your face in stomach.

Slowly breathe in deeply through your nostrils until your abdominal muscles contract like your stomach is sucked in. Breathe without any additional effort until your lungs are full.

Then exhale forcefully through your nostrils as well. You can do ten repetitions of this breathing exercise and make sure to take a break between each round especially if you feel a bit lightheaded.

Now design your own postures based on observation of nature and have fun.

- How you will choose your object.
- How will you create that shape using your body.
- Find out the focus area.

Assessment

Knowledge (4)	• History of the yoga • Rules • Facts
Skills (6)	• Yogic asanas • Meditation • Suryanamaskar • Pranayama
Application of skills (10)	• Beginning of each pose • Breath control • Ability to concentrate • Finishing

Links to NCERT syllabus

Theme: Health and physical fitness and orientation to sports skills

CHAPTER 5
STRAND 3: SEWA (Social Empowerment through Work Education and Action)

5.1 Introduction

Several years ago, the noted educationist *Paulo Freire* pointed out that there is no such thing as neutral education. Any education, to be meaningful, has to fit into the context of the society in which it is given and which is relevant to the times. In the context of the multiplicity and the rapidity of the changes that are taking place, the students need to know and understand the contexts in which they are living today and the demands that will be made on them, in the immediate future, to fit into the changing patterns of society.

SEWA aims to develop a whole person in their intellectual, personal, social, emotional and social growth. Learners engaged in this program are expected to be life-long learners and through experiential learning develop as active citizens and caring and compassionate humans. The experiential and constructive modes of learning emphasize the immediate personal experience of the learner and view learning as a process.

SEWA takes learning beyond the walls of the classroom and sometimes even beyond the boundaries of the school, building bridges with the authentic and real world in meaningful and positive ways. The following maybe noted with regard to SEWA:

- SEWA is an integral component of HPE.
- This aspect aims to focus on the mental/emotional and social health of the child
- All students of classes IX to XII (for XII, only till end of the first semester/ term) will participate in SEWA program around the year.

5.2 Objective:

There is an urgent need to foster strong mental and social health amongst today's children so that they can connect with their peers, their elders, the community, the environment, etc. The main objective of the SEWA projects is to direct children's mind in constructive activities with positive outcomes through the facilitation of creative and critical thinking. This would help them to develop self-confidence and self-esteem.

Another objective of this programme is to underline the significance of the interdependence of all human beings and our dependence on the environment in this shrinking global village. Students must acknowledge that they have a responsibility towards the less privileged, the disadvantaged, the CWSN (Divyang), the society, and the environment. The principle of giving to society has to become second nature to them.

5.3 The SEWA Philosophy

SEWA is all about social or community service; it can include environmental, civic responsibilities or democracy or health and fitness related projects, international and other projects too, as long as the project is able to connect the child to his surroundings or to a cause, and is able to generate a sense of responsibility towards it (even if it is towards health and fitness of the class itself). The Social Empowerment component to a large extent inspires SEWA philosophy, which in the Indian environment refers to the concept of service to the community.

5.4 Note to Class Teachers

SEWA has been designed to integrate social awareness into the regular curriculum of the students. The teacher must be careful in facilitating the child's activities so as to provide a suitable learning environment. This in turn would also give a boost to a positive school environment.

The teachers need to create opportunities for students to engage with learning activities to develop core competencies such as:

a) Social Awareness, Self Awareness and Empathy
b) Self Management and Leadership Skills
c) Creative and Critical Thinking
d) Interpersonal Skills and Effective Communication Skills
e) Responsible Decision-making through Problem Solving

The teachers need to be open-minded about errors committed by learners while implementing the SEWA programme. The learners may find themselves in ambiguous situations and sometimes suffer from moral conflicts. As adults, we need to facilitate the widening of the scope for the learner so that they find alternative ways of making informed decisions. Here, one cannot undermine the responsibility of the school as a community. Thus, one can develop and establish a caring community encouraging collaborative learning activities by weaving Self-empowerment into their daily school activities.

5.5 The learning outcomes expected to be developed and fostered through participation in SEWA are experiential:

The Learner:

- Develops Life Skills of **Self-Awareness and Empathy**. *
- Develops Creative and Critical Thinking Skills. *
- Becomes a **caring and compassionate** individual.*
- Responds as a socially empowered change maker. *
- Acquires the skills to be an active leader and initiator of change.
- Plans, implements and delivers projects connected to the real world.
- Visualizes and participates in a world going beyond the classroom and often/ sometimes beyond the boundaries of the school.
- Formulates strategies to deliver meaningful programs and projects
- Critiques premises as a **reflective enquirer**.
- Demonstrates fair play and **non-judgmental ethical behavior**. *
- Actively engages in SEWA activities as an individual and at a team level.
- Participates in various activities in **age appropriate ways across disciplines**.
- Selects and applies skills, facts and compositional ideas.
- **Competes with oneself** to improve **self-performance** and **evaluate strategies** for further enhancement. *
- Knows, understand and applies rules.

  ***** Integrated values across HPE

The integrated SEWA program helps to acquire the following learning skills:

- Plan, initiate and implement activities
- Learn to work in teams and collaborate through organizing activities/events in terms of skills, interest, motivation and professional growth
- Identify and nurture areas of strength and identify areas requiring further growth
- Engage with issues of social concern in the community, society, state and nation
- Develop new life skills and strategies and become lifelong learners.

5.6 Guidelines for Schools

- School can Design and announce school SEWA policy.
- School can also decide on yearly focus theme for SEWA and class-wise sub themes.
- Each class as a whole can decide to take up one SEWA activity for the entire year
- The choice of activity can be left to the students of the class, with guidance and facilitation by the class teacher and will depend upon the school policy too.
- Schools are encouraged to allow children to suggest SEWA themes for the year.
- Once a SEWA activity is decided for a particular school/class/year, the class students themselves will decide upon the role of each student of the class.
- Orient parents about SEWA and seek support from stakeholders.
- Appoint School SEWA Mentor and Class-wise SEWA Mentors, if required. Mentors could also be from amongst the parents or teachers.
- Arrange administrative support for the activities involving government and outside agencies.
- Dedicate day/s for SEWA exhibition or presentation day at the end of the year or as suitable.
- Ensure that each child in a class actively participates in his/her assigned role of SEWA.
- Arrange training and create support structure for all involved as required.
- Ensure 100% dedicated involvement.

5.7 Guidelines for Students

- Discuss how they can improve/impact the community/ environment/ health and fitness of the students and choose the focus area for the project.
- Brainstorm and create mind-maps on the chosen area
- Identify the causes they want to support and choose one/or more ways of carrying it forward.
- Outline the objectives of the projects they have chosen and present plans for the implementation as well as ways of measuring the success of the project.
- Assign roles to each member of the class community by consensus. Ensure each and every child is included.
- Learn to research on the chosen area of SEWA
- Seek guidance from the teacher when they need it.
- Learn how to plan, implement, review and take responsibility for their decisions.
- Examine the effect of their intervention and support for the causes they have chosen and present them to the rest of the class/school.
- Capture the hours spent as well as documents as evidence wherever required in the student Portfolio/dossier
- Share the impact of the SEWA work undertaken as Power Point with the school community and as part of a special exhibition at the end of the year, clearly highlighting the role of each student in the class.

5.8 What forms a Social Empowerment activity?

The activities conducted 'in school' as part of Eco-clubs, Sports Club, Literacy Clubs or 'out of school' as community outreach activities etc. can be considered as Social Empowerment activities. It may range from a small role as 'volunteer' and a 'contributor' to running an entire project over the year. Social Empowerment activities are bound to germinate some thought process in young minds.

The class may decide to take up any innovative social empowerment activity every year; students may decide the role of each child; at the end of each year the class as a whole may present its project report.

Even sports activities can be taken up as a SEWA project by the class. Some of the activities under sports that can be taken up are as follows (illustrative list):

- Organizing sports meet for CWSN (Children with Special Needs)
- Planning, organizing and delivering a League tournament (Basketball, Cricket, Football)
- Planning and holding a friendly cricket match between alumni and the current grade XI and XII
- Organizing sports competition for primary school
- Organized Inter-class/ Inter-school sporting activities (basketball, volleyball, swimming, hockey, netball, squash, cricket and boxing)
- Long distance runs (half and full marathons) for a cause
- Researching on Yoga, Running/Jogging, Dance, Trekking/ Hiking/Biking/Cycling, Camping, Military training as part of planned projects.

There are multiple other possibilities of projects that can be taken up under SEWA, such as (illustrative list):

- Organizing a fund raising Musical Extravaganza for school
- Holding an Art Exhibition for fund raising
- Inviting professionals from industry to develop career pathways (App on mobile)
- Running school café with focus on nutrition
- School gardening project
- Collaborating as part of Photography Club and create Exhibitions across the city with a social message.
- Projects on social awareness or cross curricular themes initiated, planned and implemented by students with teacher as initiator.
- As volunteer for **'in school activities'** such as organizing a school-based event based on Life Skills.
- Participating or volunteering in Youth Parliament or mock UN Sessions
- Activities from 'Revised School Health Manual **(see under Resources)**
- Life Skills Activities (Creative and Critical Thinking, Problem Solving and Decision Making, Effective Communication, Self Awareness and Empathy) **(see under Resources)**
- 'Buddies' or 'Peer Mentors' for **Adolescence Education**, **School Health Program**, **Life Skills Program** etc.

- Anti Bullying or Anti Ragging Committee and awareness raising
- As volunteer for charities **'outside of school'** such as orphanages, old-age homes
- Collecting and distributing used and unused books and clothes to the underprivileged
- **Volunteer work** with stray animals and organizations connected with the same cause
- Helping to raise funds for beneficiaries involving natural disasters (flood, earthquake victims)
- Adopting an old age home for interactive activities
- Adopting an orphanage for conducting joyful activities
- **Online volunteering** for counseling peers for raising awareness regarding career pathways.
- **Enrichment Activities** of different Ministries can be taken up in project mode, such as **Swachhta Abhiyan for neighbouring community**, **Ek Bharat Shrestha Bharat** (upto Oct 2018), **Paryatan Parv – creating awareness about historical sites and tourist spots in your city,** etc.
- Organising and volunteering for various 'in-school activities' and Language Club, Theatre and Dramatics Club, Social Science Club, Dance club, Science Club, Science Fairs, Heritage Club, Nature Clubs.

5.9 Activities complying with SEWA Criteria

SEWA activities require involvement and interaction. When students assume a passive role and no contributory service is performed, it cannot be defined as a SEWA activity/project.

Activities which do NOT fall under SEWA:

- An activity through which a student attains financial or some other type of benefit (unless this benefit is passed on in full to a worthy cause).
- Getting involved in effortless, monotonous, and repetitive work – like returning library books to the shelves.
- Work experience that only benefits an individual student.
- Activities that cause division among different groups in the community.
- Activities with a bias to any religion or cultural sector which may hurt the sentiment of any other person in any form.
- Regular recreational or community activities of a temporary nature - like a visit to a museum, the theatre, concert, or sports event unless it clearly inspires work in a related activity in which a student is already engaged.
- Any unsupervised or recorded activity where there is no guide or responsible adult onsite to evaluate and confirm student performance and evaluate accordingly.

5.10 Guidelines for Class Teacher/Mentor for conduct of SEWA

- Support students in identification and selection of the causes they want to support and take up as projects, brainstorm and create mind-maps.
- Provide supervision, consultation, guidance to students and create support structures required whenever they need it including for research.
- Intervene positively to ensure participation of each and every child in the class, including CWSN
- Guide students on how to plan, implement, review and take responsibility for their decisions.

- Guide students on upkeep of Portfolio/dossier, making a report, analyzing data, creating presentations, video films, channels on social media, websites.
- Plan and prepare SEWA exhibition or presentation day at the end of the year.

5.11 Procedures

1. Fill out a My SEWA promise form. The description of the activity needs to be in complete simple sentences and describe the SEWA activity intended to be taken up by the class.
2. Each student in consultation with the teacher and parents decide and create an hourly schedule of activities in accordance with role assigned. This form must be signed by a parent and submitted before the activity begins to the school's SEWA Mentor.
3. Fill out 'Reflective Musings' at the end of every 4 hours given to the project and keep attaching it to the SEWA dossier. (The time is given in hours and not in periods with the intention that if the child does any additional work outside school hours, it can be reflected here).
4. SEWA hours will be accounted for both in school as well as out of school activities, provided they are agreed upon by the mentor.
5. It is expected from a SEWA volunteer that they would be honest in recording their activities.
6. Complete your SEWA classes/periods before the last date.
7. All the forms must be completed and signed and attached with relevant evidences, together with a Self-Appraisal Form for classes IX-XII and a summary list of the SEWA projects/hours as items of SEWA dossier/scrapbook.
8. The visual evidence (photographs, videos, etc.), testimonials and certifications must be there to support the project.

5.12

My SEWA Promise Form (illustrative)

Dear Student,

SEWA is a firm step to prepare you for life. It is a voluntary project experience. You have to complete **My SEWA Promise Form** and obtain prior approval for the activity/project. Selection of a SEWA activity, development, implementation of the proposal and evaluation of the activity is the responsibility of each student. Signature of the parent indicates review and approval of this proposal.

Student's Name: _____ Class: _____

(Print or type)

Brief Description of the Activity:

Duration (Days and Time):_____ Estimated Hours:_____

Name of Mentor Teacher:_____

Student Signature: _____Date:_____

Parent Signature: _____ Date: _____

5.13 SEWA Hourly Schedule (illustrative)

Hour Count	Date and Day	Proposed Activity Plan
Hour 1		
Hour 2		
Hour 3		
Hour 4		
Hour 5		
Hour 6		

5.14

SEWA Hour Log (illustrative)

STUDENT NAME: _____

PROJECT: _____

Date	Activity	Hours	Mentor's Signature

Mentor's Observation (Suggestive)

Attendance: _____

Involvement: _____

Regularity: _____

Commitment: _____

Additional Comments: _____

_____

_____

The activity/project was (circle appropriate response):

Satisfactorily completed Not Satisfactorily completed

_____ _____

Activity/Project Mentor's signature

Name

Seal of school

5.15 SEWA Self Appraisal Form (illustrative)

The following questions should be addressed at the end of each activity/project. These are guiding questions. Candidates can either answer on this form or write a reflective, continuous text incorporating responses to these questions.

My Name_____

My Activity / Project_____

My Commitment Towards the Project/ Activity

_____

_____

This Activity/ Project has been a great learning experience because

_____

_____

I initially felt that the project could not have achieved its outcomes because

_____

_____

The project has definitely changed me as a person in terms of behaviour, attitude and life skills because

_____

_____

The details of beneficiary(ies). Any significant comment received from them; please quote

_____

_____

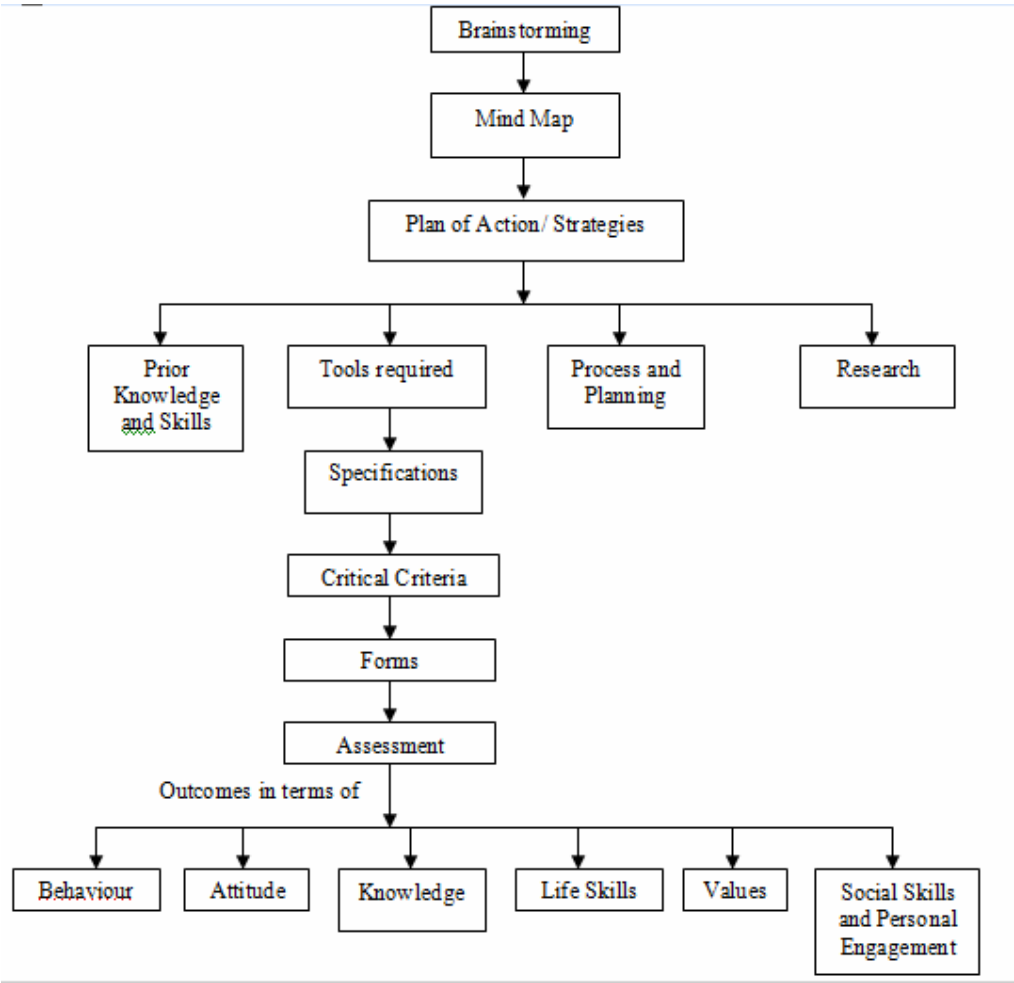
The challenges I faced and the things I might do differently next time so as to improve?

_____

_____

5.16 Illustrative Flow Chart for Conducting a Project/Report/ Event

(Can be Quarterly/ Bi-Annual / Annual)



5.17 Assessment and Evaluation

The following strategies may be taken up for assessing the individual/ group projects. In case of group, they all get marked the same way.

Tools, Techniques and Strategies:

1. For activities being done, a portfolio or dossier may be maintained individually by each student.
2. Report at the end of the project may be assessed through a rubric developed by teachers and students.
3. Rubric for assessing will depend on the project/ activity being taken up.

5.18 Exemplar Projects under Social Empowerment sub-strand of SEWA

(These may be taken up in age-appropriate ways across IX - XII)

The projects given here are only exemplar projects and are illustrative/ suggestive in nature. These are given so that the child/class may able to understand the topic/ activity. This will help the child/class to plan the activity / project accordingly. The child/class may take/ choose any other project/ activity which has a positive impact on the environment, community, society, the disadvantaged, etc.

Project-1: 'Swachcha Vidyalaya Swachcha Bharat'

Project Focus- Cleanliness and Sanitation

Duration- Term/Annual

Key Objectives:
Learner will:

- identify clean and dirty places.
- bring attitudinal change towards cleanliness and sanitation.
- be able to distinguish between benefits of cleanliness and the disadvantages of uncleanliness, including the health hazards.
- make the community aware of the result of not practising cleanliness.
- know the importance of cleanliness in neighbourhoods, parks, market places, roads and cities.
- know how to appeal for clean places.
- be aware of unclean and unhealthy surroundings as breeding ground of epidemics and diseases.
- be able to highlight cleanliness as an important value in day-to-day life.
- Develop a creative methodology to create awareness in community and test it

SE Component

- To be able to take care of personal hygiene and being organized with belongings.
- To learn to keep household items and personal belongings in proper place (before and after photos).
- To be able to live life of cleanliness through word and example.
- To learn the art of **proper waste disposal and be able to sensitize other people about it.**

  "We must get obsessed about the cleanliness of our city."

Role of Mentor/ Teacher:

- Initiate a project in consultation with students
- Act as an initiator and motivate learners to be ever vigilant in maintaining cleanliness at all public places such as markets, parks, gardens, bus stands, railway stations, movie halls, and malls, etc., as well as while using public transport, public utilities.
- Focus on the tidiness of Class Room, Library, Assembly Hall and Computer Room.
- Respect National property.
- Generate awareness of health and hygiene amongst the slum dwellers.

Project Process:

Prepare:

• Brainstorming and discussion sessions to be organised for students.
• Identify the area to focus on and prepare **a road map** to achieve targets.

The following ideas can be further explored (illustrative only):

a) Disposal of human waste properly and safely

b) Creating sensitization amongst community members about personal hygiene
c) Spreading awareness about sanitized and clean toilets and contribution required to maintain public utilities
d) Proper garbage disposal
e) School Sanitation
f) Personal Hygiene
g) Drinking Water Testing
h) Green and Blue Bins
i) Recycling
j) Water Conservation
k) Water Table
l) Interacting with City Sanitary Workers
m) Spending a day with sanitary workers
n) Visiting a city water works
o) Adopt a Park/ Lake/ Pond

Collect the above data and read prepared report of the class, then segregate the areas where 'Mission Cleanliness' can be accomplished. Reflect and form groups and get the project rolling.

Suggestions: (May be done in groups under the supervision of a Mentor/ Adult/ Peer Mentor)

Organize Cleanliness Month:

- For cleanliness drive arrange advertisement competition for students' in schools.
- Identify surroundings or a locality which need assistance by doing a field survey of the surrounding community area.
- Create awareness and take up projects to ensure cleanliness of water sources like lakes, rivers, ponds and other such bodies that are getting polluted due to insensitivity of human beings.
- Segregate groups who can provide solutions to most aspects of cleanliness through researching articles, TV programmes, and video on YouTube or by speaking to the authorities and residents.
- Students can prepare Street Plays and present them to community members, using creative medium like-posters, placards for slogan march to generate awareness.
- Project on 'Cleanliness Drive' of a nearby public place may be taken up in groups.
- Don't miss to click the photographs of the area before the cleanliness drive and after that.

Reflective Musings:

- Discussions will be held in class on the activities of the project. The students will think, talk and write about what they have learned and observed.
- Questions will be discussed in class about their experiences and response of the community; e.g.,
    - Describe what have you learned and felt about your project?
    - How far was the activity beneficial for you?

- What have you learned about yourself and your surroundings from this project?
- How do you think we can solve problem of cleanliness and sanitation? Where did you find maximum dirt and squalor?
- How can we make the project more effective?

- The students will be given a Proforma to fill in (Self Assessment) so that they can assess their own learning from the project.
- Share and Celebrate
- An assembly can be arranged to award all participants.
- The students will display the charts and models on school notice-board.
- Certificates can be awarded to students.
- The students can make future plans about continuing the activities/projects by taking them to the community.
- The class room can also be decorated with charts and models.
- The students can also keep imparting information regarding cleanliness through practical demonstration to other students.
- The report of the project may be published in the newspapers and the school's magazine.

Activity Report for Cleanliness/ Sanitation Drive (illustrative only):

S. No.	Identified Locality	Steps taken for cleaning up	Awareness generated	Solutions recommended

Student to write and update their activity report:

Date	Activity	Learning Experience	Outcome

Students to give details of their learning experience:

Learning Outcomes

Learner will:

- learn that they must keep their surrounding areas and themselves clean.
- raise awareness among other students and their community members about personal hygiene and keeping their surrounding environment clean.
- become aware citizens and will be able to spread awareness amongst the people around them.
- go through the process of initiating, planning and implementing a project based on cleanliness and sanitation.

Key Messages

- Share your knowledge, experience and skills with others.
- Take utmost care of both personal hygiene and environmental hygiene.
- Do not throw garbage or litter at public places.
- Keep your surrounding areas clean in order to make your environment pleasant.

Assessment

Rubric may be developed in consultation with teachers

Project - 2: "Dignity of Labour"

Project Focus – Empathy and Compassion

Target Point- As individuals we should encourage students to respect all jobs and understand the value and dignity of work. Sweepers, shoe makers, laborers and launderers contribute to comfortable living.

We should respect people for their perseverance, hard work and effort. If we have to accord dignity to labour, social services must be commended and community has to be sensitive to individuals and learn to understand and respect them.

Key Objectives:
Learner will:

- understand the value of toil.
- understand the importance of different occupations in our social system – such as, ice-cream lorry, balloon man, chai stall, kite seller, bangle seller, knife sharpener, food lorry, etc.
- learn to respect people from different vocations of life. *
- understand and value of Human Rights.
- be empathetic and compassionate. *
- respect people despite nature of work involved in their vocations. *
- instill love for labour. *

* values integrated across SEWA

Role of mentor teacher / Peer Mentor:

- Initiate and brainstorm a collaborative project.
- Deducing inferences from comparative study of life situations.
- Discussing consequences of disliking a type of work and attitudinal problems related to it.
- Suggest remedies.
- Instill respect for all types of work.
- Be able to support discussions with anecdotes and examples from the life of great people (M.K. Gandhi, Abraham Lincoln, Martin Luther King, Lal Bahabhur Shastri), who believed in dignity of labour and practised it as well.

Project Process:

- Divide students in groups of around ten.
- Organise brainstorming sessions with the students.
- Collect quotations and quips.
- Collect Newspaper cuttings indicating both - respect for Human Rights and violation of Human Rights.
- Share stories and anecdotes highlighting the theme.
- Prepare an action plan and roadmap to achieve it.
- Analyze the action plan.
- Collect views of elders/parents/other adults.

- Organise outing in specific area to identify and correlate the project.

Suggestive Activities:

- One group could contribute to community work by regularizing and facilitating the job of people from different walks of life in their respective areas/ apartment complexes by making them aware of hygiene, etc.
- Collect funds in cash / kind to recognize and reward the contribution of helpers on special occasions like New Year / Labour Day. Keep proper records of this collection.
- Organise a discussion in class where people were victimised due to their profession and how Human Rights were violated in such situations.
- Celebrate World Human Rights Day (10th December) and Labour Day (1st May).
- Address the issue through creative arts, perform street plays, interviews of the school helpers (getting to know them better).
- Understand the importance of knowing how to work with the hand.

Reflective Musings:

- Discussion sessions will be organized to have a better understanding of Human Rights.
- Students can discuss about the importance of different vocations in a social structure.
    - Why must a human being be seen and treated beyond his/her occupation.
    - Basic courtesies that should be extended to one and all.
    - How do they need to change their attitude and behaviour to be more humane compassionate and empathetic.
    - What are the social or mental problems that arise from lack of respect for labour in different categories?
    - How can we appreciate the contribution of helpers?
    - Develop a code of personal behaviour consistent with the social and physical aspects.
    - In a Journal explore the life skills you have developed in the process.
- Elucidate the ideas you have gathered from your preparation on the value of 'Dignity of Labour'.

"It is dignity for a man to labor in his vocation."

Interview Questionnaires

- Understand the problems of ten different community helpers.
- Share experiences in class discussion and dissect problems and threats.

S. No.	Name and address	Occupational problems and threats	Assistance required	Suggestions

Activity reports (to be updated by students):

Date	**Name and address**	**Activity**	**Outcome/s**	**Change in attitude**

Assessment
Rubric may be developed in consultation with teachers

Project - 3: "Empathy”

Project Focus- Facilitating inclusivity

Target Point- The concern about the fate of others, the ability to realize another person’s insecurities and fears and ability to put oneself in their shoes and willingness to extend a supportive hand makes for empathy.

Individuals, communities, countries will not be able to get socially empowered without EMPATHY.

It is also ability to appreciate, understand and accept other person's emotions. It improves inter-personal relations especially with people of different abilities, backgrounds, regions and nationalities.

Key Outcomes:
Learner will:

- be sensitive to the needs of others
- support inclusivity and develop a positive attitude
- develop compassion and value human life
- support and help people in distress
- develop a humane outlook
- express love, care and compassion towards the disadvantaged and CWSN (Divyang)
- be able to communicate the value of empathy
- understand the importance of inclusivity and support it
- sensitize peers as well as community members about inclusivity and help prepare a conducive environment for the same
- develop skills of self awareness and critical thinking towards the under privileged

Role of Mentor/ Teacher:

The mentor/teacher should:

- help students understand implications of life situations -discrete difference between sympathy and empathy;
- guide students to communicate value of empathy through examples;
- organize rotation mentoring of CWSN (Divyang)
- support and create conducive environment for promoting inclusivity.
- Initiate, brainstorm, plan, organize and collaborate with students.

<u>Project Process</u>

Prepare: (Suggestive ideas)

- Organise brainstorming sessions with the students
- Discuss the scope of project and prepare a road map
- Draft an action plan
- Make 'who needs my help' worksheet

- Participate in prayer services. Express feelings in form of poem/ story.
- Write letters to sick or distressed or visit old age homes / orphanages (read to them or play with them)
- Role-play, creating situations which call for a manifestation of empathy.
- Identify or compose a poem on the subject and read it to the class.
- Ask them to work on 'who needs my help' worksheets prepared during the 'Prepare' phase. They can depict it through words or drawing thinking about the needs of others and provide assistance without being asked. (Show the writings and pictures)
- Discuss how we can help CWSN, fighting with terminal diseases like Cancer, belong to disadvantaged groups.
- Plan their interaction, on rotation, with CWSN.

Reflective Musings:

- Talk about empathy with students, ask them to discuss it within their peer group and family.
- Discussions will be held in class on the activities of the project. The students will think, talk and write about what they have learned and observed.
- Questions will be discussed in class about their experiences and response of the community; e.g.

  "I believe empathy is the most essential quality of civilization."

  - Describe what have you learned and felt about your project?
  - How far was the activity beneficial for you?
  - What have you learned about inclusivity from this project?

- The students will be given a Proforma to fill in so that they can assess their own learning from the project.
- The teacher will also fill the Proforma to assess and rate the performance of the students.

Share and Celebrate

- Students share awards and certificates for practicing the value after relating situations and elaborating on them.
- An assembly can be arranged to award the outstanding students.
- The report of the project may be published in the newspapers and the school's magazine.

Assessment

Rubric may be developed in consultation with teachers

Project - 4: Care for Homeless Children

Project Focus- Child Rights

Target Point- Groups as community volunteers participate in a programme to give happiness to children living in shelters. This would also increase awareness about the issue of homelessness. This SE project will also focus on every child's right for special protection and care. Children have the right to an adequate standard of living, health care, education and services, and to play and recreation.

Learning Outcomes:

Learner

- understands and appreciates every child's right to an optional standard of living, health care, education and services, and to play and recreation. These also include a balanced diet, a warm bed to sleep in, and access to schooling.
- is aware about issues of homelessness.
- develops empathy for other children who may be less privileged than them but not less creative or talented.
- expands their horizon of society and develop an understanding of child rights.
- assesses impact of one's work.
- supports underprivileged children.
- helps create a social environment that supports and respects every child's rights.
- develops deep insight into the living conditions of underprivileged children.

Role of mentor/ teacher:

The teacher/ Mentor/Initiator

- help students develop an action plan.
- provide them with an understanding of Child Rights.
- help them with all support in terms of logistics.
- facilitate the process and provide them all scaffolding required.

Project Process:

- help students in identifying a shelter for children.
- guide students to understand the complexities involved by a few pre-project activities.
- brainstorm and ask what they think their objective is.
- coordinate with the authorities concerned and complete any official formalities required in the school and in the shelter.

Suggestive activities

- Plan to clean a shelter. The improved aesthetics will add cheer to the House.
- Identify needs of various Shelters in the community (Read the concept and complete the Survey Form). Look up which Shelter has the direst need to be painted. Steps for painting the Shelter:

a) A group of students may go and take measurement of the area to be painted- the rooms, the compound wall and the outside wall.
b) Discuss the budget that will be involved in purchasing the paints and discuss how to arrange for any donation from the community.
c) Organise a donation drive.
d) Meet the local authorities.
e) Get budget allocated for cleaning

Reflective Musings:

- Discussions will be held in the class on the activities of the project. The students will think, talk and write about what they have learned and observed.
- Questions will be discussed in class about their experiences and response of the community; e.g.:
    i. Describe what you have learned and felt about your project.
    ii. How far was the activity beneficial for you?
    iii. What have you learned about child rights from this project?
- What can be your future plans about continuing to support such children in terms of their other basic requirements?

Share and Celebrate

- An assembly can be arranged to award the outstanding students.
- The students may display activity pictures (before and after) on school notice-board.
- Certificates can be awarded to all students.
- The report of the project be published in the newspapers and the school's magazine.

Survey Form - Suggestive

1. Please read the following concept and complete the survey:

A group of students from _____(School's name) are interested in giving a makeover to a House like yours. These children have decided to bring happiness to a group of their friends by adding colour to their life and be friends with them. However, as the resource is limited, they are interested to find out which of the Shelters have the urgent need for it.

Survey form to identify Shelter for Makeover

i) Select how you feel about the qualities of your Shelter:

Quality/Scale Low_____ High 1, 2, 3, 4, 5

Maintenance of rooms
Maintenance of bathrooms
Number of games played
Colour of your room-wall
Classes conducted

ii) After reading the above service description, how interested would you be in using the described service?

- Not at all interested
- Not very interested
- Neither interested nor uninterested
- Somewhat interested
- Extremely interested

iii) Which features are the most valuable in the above description?

_____

_____

_____

_____

_____

_____

_____

_____

iv) Do you find anything unappealing in the concept? Please Write.

_____

_____

_____

_____

_____

v) How often do you get such opportunities from other community groups?

- Once in a year
- Once in two years
- Less often
- Never seen

vi) Do you want us to do anything more for you in addition to what we offering? List any three in order of you preference.

_____

_____

_____

_____

Alternate Suggestive Activities:

- Celebration of festivals with children in Orphanages.
- Adopting an Orphanage/Slum/Village and help to skill children (Communicative Skills, Etiquette, Exploring viable job opportunities)

Assessment

Rubric may be developed in consultation with teachers

Project - 5: Being Safe and Responsible

Project Focus - First Aid/ Health Club; Disaster Prevention and Mitigation

Target Point - To bring awareness in the society about safety concern, reactions to different types of dangers and how to give first aid during emergencies.

Learning Outcomes:
Learner will

- understand importance of being safe and responsible.
- understand the importance of first aid, dealing with cuts and bruises, heat exhaustion and heat stroke, breathing difficulties, cuts nosebleeds, choking, basic sports injuries
- practice first aid skills in order to empower them to help people in emergencies.
- learn to prepare a first aid kit.

Cross-Curricular Linkages

- The students will learn basics of first aid.
- The students will be trained practically about first aid skills.

Project Process

- The students will be provided tips for facing danger.
- Informative lecture-demonstration sessions will be arranged with doctors from different hospitals including a dentist.
- The students will be provided first aid boxes.
- The students will be divided into four groups for conducting the project. A project manager from within the group will check the progress of the students for their field work. The project manager will bring a camera to make video of first aid provision to others.
- After collecting data about the topic, the students will discuss various dangers in the classroom and will come up with life saving and precautionary reactions. They will be asked the following questions:
    - What is your very first response to danger?
    - Why is first aid not a common practice?
    - How can it be made common practice among people of the community?
    - Can you explain different situations in which first aid is required?
    - What can be your first reaction towards an injured person?
    - What will you do, if you see an unconscious person lying in a pool of blood?
    - What can be done to make first aid a common practice?

- The students will go to the hospitals in order to attend lectures of the doctors about first aid. Each group of students will visit 3 doctors. The students will also make videos of the sessions held with the doctors. ‘First aid’ videos will be shown to students.
- Practice of first aid will be done in the classroom.

- The students will learn how to check temperature and blood pressure of a person.
- Charts and models will be prepared by students.
- The students will perform first aid in real life. They will treat the injured students and their community members. They will keep a record of those who will be treated.
- The students will teach students of lower class about different first aid techniques.

Reflective Musings:

- Students will share their experience of working on the project with their teachers and class fellows.
- Students will be asked the following questions about their project and present it in the form of a report:
  - What did you learn after conducting this project?
  - Did you feel that this project made a difference to your life and the lives of others?
  - What problems did you face during the project?
  - Do you think that the project was successful?

- The students will develop a proforma to fill in, so that they can assess and judge their performance.
- The teacher will also develop a proforma to assess and rate the performance of the students.
- Each student will present a Report.

Share and Celebrate:

- Health Mela: A Health Mela can be organised to sensitize people about the importance of first aid. Demonstrations and lectures on administering first-aid can be presented.
- Exhibition: An exhibition will be held during the Mela. Charts and models made by the students can be displayed in the exhibition.
- Speeches: Speeches/ Lecture-demonstrations can be done by the students to spread awareness about first aid.
- Publicity: The report of the project may be published in the school's magazine and newspapers.

Assessment

Rubric may be developed in consultation with teachers

Project - 6: Environment Conscious Citizens as Part of Eco Clubs

Project Rationale -

Our world is changing, and changing fast. Our environment is pressured due to over-exploitation of our finite natural resources, climate change, and rapidly changing economic and social situations. This is leading to us leaving behind a complicated and difficult mess for our future generations to deal with. Unless the young generation does not build an appreciation for nature and see value in its preservation, we will continue to deplete our natural resources, causing irreparable damage to our planet.

Our education systems must ensure our children develop an understanding of the environmental systems and learn new skills and new ways of living sustainably with respect for themselves, each other, their communities and their surrounding environment.

Education has been globally recognized as a key solution to achieving sustainability in development and current lifestyle approaches. To achieve this, it is important to target all the stakeholders by empowering them to take conservation action. Classes IX to XII are the most crucial years of laying foundation for professional life, thus an intervention at this stage is most impactful in shaping the society.

Project Focus-

This is a leadership building exercise and will help the students to become a thinking and environmentally conscious individual. It is a journey of self-evaluation and personal and professional growth.

Target Point-

The following activities that the senior secondary school (Classes IX to XII) students of all the CBSE schools, can undertake through its Social Empowerment through Work Education and Action (SEWA) programme. You can choose 1 activity from each section.

6.1. SELF HELP

6.1.1 Learning Outcomes:

Students will –

1. Connect with nature
2. Adopt practices that will benefit the environment
3. Prepare a plan and suggest steps your family can take to become a sustainable household.
4. Manage domestic waste produced in their homes

6.1.2 Activities –

Did you know that nature has a therapeutic effect on us? It has been scientifically proven that, being in the proximity of nature encourages physical activity, reduces negative

emotions, enhances recovery from illness and eventually has positive effects on physical and mental health. Nature can be an individual's first step to achieving holistic well being.

6.1.2.1 Connecting with Nature

a) Go on a walk in a park/garden/forest nearby. Choose a time when there is a likelihood of minimum disturbance.
b) Take a deep breath and feel the air (warm/cool).
c) Visit regularly and observe different kinds of trees that grow there.
d) Compare their size, kinds of leaves, flowers, seeds, bark, canopy etc.
e) Observe different kinds of birds, insects any other animal that you see on the walk.
f) Look closely at the birds and insects having an affinity to a particular kind of tree. Find out if there is a symbiotic relationship.
g) Choose a plant and observe it closely to find some additional information about the tree such as flowers, fruits, seeds, bark, trunk, any special adaptation, size, kind of soil it grows on etc.
h) Find the name of the tree, its importance in nature and for humans.
i) Collect or draw pictures of its leaves, fruit, flower and other prominent parts.
j) Create herbariums with fallen leaves, flowers and twigs of the tree.
k) Look for a special feature that helps the plant adapt in the climate of your region.
l) Make a list of books and publications that you referred for additional information on the tree.
m) Prepare a portfolio for the tree capturing detailed information about the tree.
n) Read National/International publications and websites on environmental themes regularly.

- **Refer to field guides on the Indian Landscape on** Birds, Mammals, Reptiles, Trees and Marine life

6.1.2.2 Set up a small kitchen/herb garden at your school. This can be your first step to healthier living while conserving resources. If possible, take help from a gardener or a visit a nursery nearby.

a) Identify a space in your school, where you can start your kitchen garden. You can grow vegetables/herbs in pots as well.
b) Ensure that it gets enough sunlight.
c) Analyze the space available and decide upon the herbs/vegetables you can grow.
d) Choose the herbs/vegetables that are easy to grow and are seasonal.
e) Procure the seeds, soil, pots (optional), manure and basic gardening tools.
f) Water your garden regularly.
g) Consult a gardener on the steps to be taken to care for the plants.
h) Harvest the vegetables/herbs and cook your favourite dishes with them.
i) Involve others in looking after the garden.

6.1.2.3 Prepare a plan to make the households of all students and teachers of a class more efficient and sustainably functioning unit.

a) Prepare a chart to evaluate the monthly household expenditure on various items used by your family and the waste generated. Talk to your parents and other family members to collect the information.

Items	Monthly Expenditure	List of waste generated
Groceries	INR	Packaging material- Plastic bags, tetra packs, cartons, plastic bottles etc.
Fruits & Vegetables	INR	Food waste
Clothing (monthly average)	INR	Old clothes, buttons, bed sheets, old shoes etc.
Electricity	INR	
Transport	INR	
Cooking Gas	INR	
Water	Litres	Waste water from kitchen, laundry etc.

b) A sustainable household should have minimal impact on the environment. For this, it should use minimal resources and generate as less waste as possible. To ensure this, suggest ways in which use of resources and generation of household waste can be minimized.

c) Reuse grey water or waste water from the kitchen and laundry for gardening or floor cleaning.

d) Repair, Reuse and Recycle household waste as much as possible.

e) Reduce the use of electricity and cooking gas

f) Use eco friendly means of transport such as public transport or CNG vehicles.

g) Practice the above ways and review the chart to measure the extent to which your household has become low cost and sustainable.

6.1.2.4 Segregation and proper disposal of waste in every household will help combat the issue of waste management in out towns and cities by reducing the burden on its landfills. It is important to segregate waste at source itself. Sensitize family members of households and start segregating waste at each selected home.

a) Keep separate containers for dry and wet waste in the kitchen.

b) Keep two bags for dry waste collection- paper and plastic, for the rest of the household waste

c) Keep plastic from the kitchen clean and dry and drop into the dry waste bin. Keep glass/plastic containers rinsed of food matter. Give away the recyclable waste items to the kabadiwala/junk dealers or rag pickers.

d) Send kitchen waste to the community compost pits. You may sensitize and encourage your community to start composting wet waste from the kitchen.

6.2 COMMUNITY OUTREACH ACTIVITIES

6.2.1 Learning Outcomes:

Students will –

1. Conduct awareness campaigns in School and neighbourhood community.
2. Conduct survey on utilization of resources, quality of soil, water, air and sanitary conditions
3. Prepare a report based on the survey and inform the local authorities about the issues.
4. Adopt a neighbourhood community for greening and cleanliness.
5. Suggest innovative solutions for sensitization of the community and dealing with local environmental issues.

6.2.2 Activities –

6.2.2.1 Start a Birding club in your school

a) Find a group of nature enthusiasts (conservation leaders) in your school who volunteer to be the core working committee for the Birding club. Give an interesting name to your club.

b) Organize the Birding club core committee meeting to plan the activities of the club. Arrange for some binoculars, if possible.

- Conduct regular nature walks especially during winters.
- To start with looking at some common birds.
- Be attentive to the different kinds of bird calls you hear during the walk.
- Observe their size, colour of feathers, colour of the eyes and beak and claws if possible.
- Try to find out the different kinds of nests birds make.
- Follow some basic rules during birding walks such as, maintaining a distance from nests and nesting colonies to ensure that there is no stress caused to the birds.
- Learn some interesting facts and stories about birds and share them among your birding community members.
- Refer to books
- Conduct regular meetings for the core committee to share knowledge and gain from each other's experience.
- Conduct presentations for others in the school to sensitize them about issues concerning the birds.

6.2.2.2 In the 21st century, it has become utmost essential for the schools to become green entities and undertake activities that will empower their students and teachers to take conservation action and become leaders for nature conservation. Prepare an annual calendar of activities that will offer them opportunities to explore, learn and practice sustainable living. Student committees can be formulated to undertake following activities during the year.

- Publish quarterly e-newsletter on Sustainability and Conservation of environment, "The Green Gene". Students will design e-newsletter. The following are the suggested sections; however, students may use their own creativity to design it. –
    i. Editor's Column
    ii. News Alert
    iii. New species discovered
    iv. People for the Planet (Conservationists, scientists, authors for nature etc.)

v. Sustainable practices – Try at Home
vi. Activity section (Crossword, Quiz, picture quiz, puzzles etc.)
vii. Reader's Column (Nature art, posters, stories, poems, photographs etc. contributed by the readers)
viii. Circulate the newsletter to all the stakeholders.

- Suggest methods to reuse of greywater in school. Share the ideas with the school authorities and support them in the implementation.
- Track journey of waste in your school from source to destination
- Segregate waste in your classroom and prepare a plan to dispose each kind of waste sustainable. Attempt to become a zero waste classroom and showcase your classroom as a model classroom for others to follow.

6.2.2.3 Survey your local community to find out the environmental issues. Prepare a set of questions that you will need to ask to collect relevant information on sanitary conditions, quality of air, soil and practices that have a negative impact on the environmental health.

Prepare a report on the above with respect to your school/community highlighting the issues and its impact on them. Draft a letter to the school/local authorities informing them about the issue and send the letter to them along with the report.

6.2.2.4 Make a School Compost pit- Organic waste constitutes 35-40% of the municipal solid waste generated in India. This waste can be recycled by the method of composting. Composting ensures that this waste is not carelessly thrown or left to rot but nutrients are recycled and returned to the soil.

a) A group of students may conduct a survey on the kind of waste produced in the school.
b) Identify a cool, shady corner in your school compound or garden where a pit can be dug. Cover the pit with a net or mesh to keep away flies and birds.
c) Start a waste segregation project in the school. Install two dustbins in the school for biodegradable and non-biodegradable waste.
d) Put a layer of biodegradable waste (Bits of paper, leaves, twigs, fruit peels, leftover food etc.) into the pit and cover it with a thin layer of soil or dried leaves to prevent bad odour.
e) Turn the waste over and over once every three days. In about 45 days, the pure, rich and organic waste will be ready to be used in the school's garden.

6.2.2.5 Plan an awareness campaign for water conservation/plastic free school/neighbourhood in your school and execute it.

a) Create a poster to dissuade the local community members from using plastic bag or waste water and display the posters in public places.
b) Write slogans against use of plastic bags/water wastage/pollution.
d) Have these community members take pledge to avoid using plastic bags/ prevent water wastage.

6.2.2.6 Form groups of volunteers in your neighbourhood for making it greener and cleaner. Undertake any of the following activities in the locality-

a) Conduct cleanliness drives in the locality
b) Carry out plantation drive in the locality

c) Install dustbins in the area
d) Write a letter to the local authorities to ban plastics
e) Run anti fire cracker campaigns in the locality.
f) Encourage community households to segregate waste and educate them about proper disposal of waste.

6.3 PRE VOCATIONAL AND SKILL DEVELOPMENT ACTIVITIES

6.3.1 Learning Outcomes:

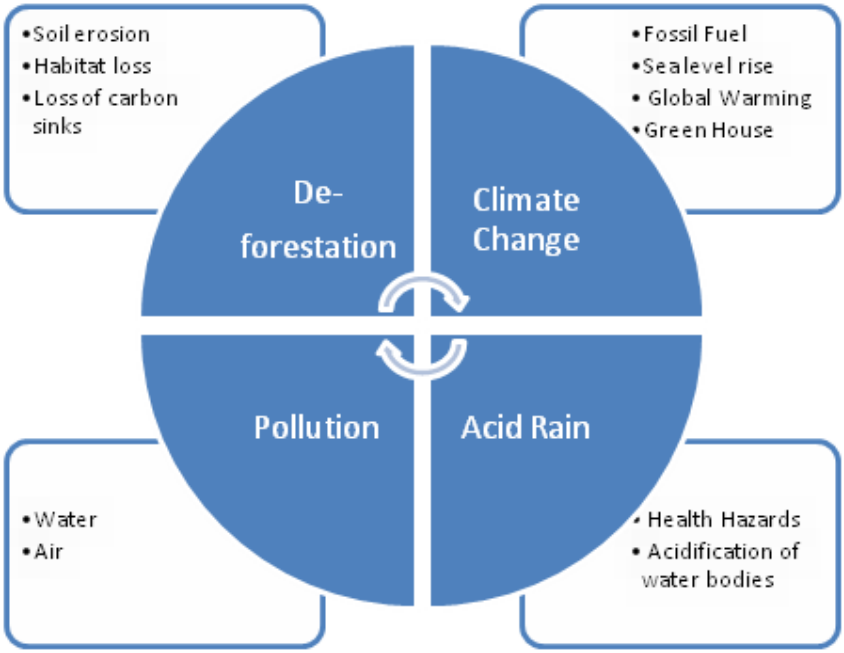
Students will –

1. Prepare a plan to start a small scale eco-friendly business (Entrepreneurship)
2. Set up Vermicompost pits/compost bins, Upcycle (Paper, Glass bottles, plastic), installing vertical gardens for earning profits.

6.3.2 Activities –

6.3.2.1 As more consumers demand that companies behave in a socially responsible way, it's becoming more common for businesses to implement environment friendly practices. You can take this initiative one step further by starting an eco friendly business and scale it.

- Prepare a mind- map of desirable and sustainable future in local community or neighbourhood. For example, following is the map for describing environmental issues-



- List the changes needed in the local community to ensure that the business does not harm or degrade the environment in any way. Each required change is a business opportunity.
- The business can be service/product based.
- Fix upon a business based on your knowledge and skills.
- Describe your business idea. (What to sell? How to sell? Where to sell? Who will buy? Why will he buy?)

- Find the investment on the basis of operational and human resource costs. Fix the pricing.
- Plan a fundraising activity (refer to next activity).
- Analyze the risks & threats. Prepare a strategy to overcome it.
- Analyze strengths and opportunities and plan to use them for running your business.
- Build your network. Promote your product/service (Make a poster advertisement for your product/service).
- Few eco friendly businesses are- Selling upcycled (paper bags, cloth bags etc.) or energy efficient products, garden products, nursery, environmental radio programme etc.

6.3.3. Fund- Raising for Eco Friendly businesses-

- Explain who you are, what you are all about and why someone should support you in 15 seconds.
- Remember fundraising is not just about raising money, it's also about building relationships with your community for the longer term.
- Tell the prospective supporters following things.

- Share a report of expenditure with your donors/supporters to ensure transparency and credibility in your efforts.

6.3.4. Environmental consciousness and sustainability should infuse in every aspect of our living. This will require every individual to develop certain skills that will enable them to manage their resources more efficiently.

a) Make a list of skills that are required to manage resources in a more sustainable way such as vermicomposting, paper recycling, gardening, rainwater harvesting etc.
b) Find an expert and invite him/her to conduct a workshop.
c) Organize the workshop in the school.
d) Have students form groups and undertake the project.
e) Organize an exhibition to display the projects.

Project - 7: Reduce, Recycle, Reuse (most important 3R's) and Now Respect

Project Focus – Conservation, Caring for the Planet, Segregation of garbage

Target Area - It enables children to learn about the original source of material and also which materials can be recycled.

Every living organism is important in this world, be it an elephant, a banyan tree, a rabbit, an insect, a mustard plant, or inanimate resources such as water, air or soil. They are members of one or the other food chain and are dependent on one another. Every food chain starts from a plant source and man is the last consumer in almost all the food chains. But with increasing population the resources are depleting. We need to establish a balance between human populations and available resources so that renewable sources find sufficient time to renew themselves and others can be recycled and reused.

Learning Outcomes:
Learners-

- learn about the original source of material goods such as glass, aluminium, iron, paper, plastic, petroleum, coal.
- learn the importance of segregating garbage.
- learn which materials can be recycled. .
- learn to coordinate between plan and action, within the volunteer group as well as with the target group.
- find new ways of cooperating with each other.
- learn social skills and ability to solve problems in a group.
- understand the importance of conserving resources.
- explore and internalize the importance of Reduce, Recycle, Reuse.
- learn to use resources judiciously.

Project Process: Prepare:

- Students will make a rough layout and plan the activities to practically implement the project.
- Conduct a class discussion. Discuss the meaning of recycling. (The teacher may tell a story with a message - "There is enough for everyone's need but not for their greed)".
- Students will make a list of things that can be recycled at home or at school.
- Discuss the reasons for recycling. Ask students if they know what the source of the original material is.
- Many students do not know the actual origin of materials and how material is recycled. Prepare and use the resource sheets to sequence the steps from original product to recycling for each material.
- Draw story boards about where materials come from. Display stories.
- Identify locality or target area for the execution of the project.
- Form groups of 10 to 12 students and elect a group leader for each group. The students in each group should preferably be from the same residential area to make it practically easy for them to target their project area.

- Divide larger areas into smaller target areas, and allot them to each group accordingly.
- Do a door to door survey to find out things that are needed to be recycled by the people living in the neighbourhood and collect data to fill in the provided survey sheet.
- Talk to the local area welfare society and arrange a presentation.
- Conduct a survey an environmental hygiene of your school (classroom, corridors, washroom, public spaces) and suggest solutions.
- Prepare a presentation to :-
    - spread awareness about Reuse and Recycling.
    - sensitize people about conservation of nature by recycling.
    - make residents aware about the benefits of segregating the trash.
    - tell them about the various benefits of understanding the origin of various goods so that recycling becomes easy for them..
- Ask students to prepare two lists by following the steps given below:
    - Make a list of all man-made things around them.
    - Try to find out where they come from.
    - The materials, about which they have a doubt (its origin), will be marked in the list.
    - The teacher will help them find the origins of these materials.
- Share the list prepared by you with the residents and prepare a consent list of those who would agree to segregate the trash in order to facilitate the garbage disposal.
- Prepare an evaluation sheet after monitoring and taking feedback from the residents to make a record of people to know how they have benefitted from the project.

Reflective Musings:

- After the collection of the data from survey, ask students to assemble all the collected data at one place.
  We have to start caring about our planet. That is why we should recycle. "Why should we recycle? To talk is good, to act is better."
- Guide students to research and prepare two lists- one with the materials that can be recycled and another one with the materials that cannot be recycled.
- Guide students to prepare a presentation highlighting the following:

    - Meaning of Recycling.
    - The need for reuse.
    - Does it help in easy disposal if the garbage is segregated?
    - Why do some materials need to be recycled while others cannot?
    - Why does man need to control greed and utilise Mother Earth's resources thoughtfully?
    - Why do we need to respect the resources provided by nature?
    - What should be reduced and why?

- Discussions will be held in class on the activities of the project. The students will think, talk and write about what they have learned and observed.
- Questions will be discussed in class about their experiences and response of the community; e.g.,

- Describe what you have learned and felt about your project:
- How far was the activity beneficial for you?
- What have you learned about yourself and your surroundings from this project?
- How do you think we can sensitize people about conserving and respecting resources?
- How can we make the project more effective?

- The students will be given a Performa to fill in so that they can assess their own learning from the project.

Share and Celebrate:

- An assembly can be arranged to award the outstanding students.
- The students will display the charts and models on school notice-board.
- Certificates can be awarded to all students.
- The classroom can also be decorated with charts and models.
- The students can also keep imparting information regarding cleanliness through a practical demonstration to other students.
- The report of the project may be published in the newspapers and the school's magazine.

Survey Sheet

SN	Name	Residential Address	People who started segregating garbage	People who did not start segregating garbage	People who were benefitted (Those who Changed)

Student Evaluation Sheet to be filled by the Mentor after the completion of each activity:-

Scheduled Activity	Proposed Date	Suggested number of hours	Hours invested	Date of completion of the activity	Learning Outcomes achieved	Skills developed

Self Assessment

1. The experience was a great learning experience because
   _____
   _____
2. The next time, i will ensure
   _____
   _____
3. The community needs that were fulfilled
   _____
   _____
4. The community needs that were not addressed include
   _____
   _____
5. The things that i would do differently next time include
   _____
   _____
6. I think we can be better equipped for future involvement in the community by
   _____
   _____

Overall Assessment

Rubric may be developed in consultation with teachers

Activities under SEWA?

Activities leading to 'Physical Fitness' as an outcome and contributing to a healthy lifestyle will fall under SEWA.

The assessment criteria will be evidence based taking the readings from Health Card (**Fitnometer, Actometer and Nutrometer)**. These will be used as scientific evidence towards fulfilling the weighting assigned to this component. These activities need to be taken up in larger groups and organized as a motivational and aspirational tool of outreach to the community.

The illustrative list of activities suggested under this theme are as under:

- Being part of **adventure camps** either at school or as part of collaboration with uniformed services, this is in addition to the 'adventure' activities under the strand
- Part of '*Swachh Bharat*' activities such as cleaning and clearing fields and other initiatives of Ministries.
- Creating leagues of Sporting activities (basketball, volleyball, swimming, hockey, netball, squash, cricket and boxing) as interclass, school, city, district or even at national levels
- Long distance runs (half and full marathons). 'Fun runs' for a cause
- Yoga, Running/ Jogging with fitness trackers with a goal in mind at the end of the year.
- Dance and choreography in groups
- Trekking/ Hiking/ Biking/ Cycling as meaningful fitness activities with a goal in mind at the end of the year.
- Camping, Military training with a goal in mind at the end of the year.
- Gardening and creating herb gardens/medicinal gardens/vegetable garden
- Disciplined and responsible dietary habits as outcome-based fitness projects

Managing Sport Events: An Exemplar Activity:
All participation in any of the above activities or those under scheme of games and sports must be consistent and on a daily basis. The **by-product and outcome** of these will be **health and wellness and overall fitness**. **Physical fitness** also leads to choosing **good dietary practices**, thus ensuring **good nutrition habits**.

Organizing and managing sport events are complex. It includes integration of modern management skills like budgeting, sponsorship management, venue management logistic management, facility management are required.

Learning outcomes:
The learner:

- Creates court/ground marking as per specifications
- Learns to use equipment for marking such as nails, ropes, pegs, hammer, measuring tape, chalk powder
- Prepares fixtures as per the specifications:

- Maintains props and equipment as per the requirement e.g. pressure for various balls, plans budgets, organizes venue, logistics
- Implements to make it a positive learning experience
- Marks restricted area around the field servings, area, pitch, scorers table
- Uses chalk powder to make a 5 cm line as per the dimension of the field depending on the game.
- Understands cross curricular linkages through concept of dimensions (Length, breadth, depth on height), radius, diameter
- Understands the methods of conducting a league and implements them

League Format

League is a way of conducting a tournament where each team plays against all the teams or within a group. In league format, teams play all the pre-fixed matches and get the advantage to recover even if the team losses the first or second match.

For example, in a tournament, if 4 groups are made and each group has 4 teams in each group, one team may play against 3 other teams.

Likewise, the champion of all 4 groups move to the next level. In the next level, the group champion teams may play against each other (all the teams) and the winner is decided based on the maximum number of wins. This method is known as league-cum-league.

The other method is league-cum-knockout where in the champion team of a group plays with the other group champion and the winners play the final.

The method of league or league-cum-knockout solely depends on the organizers. Organizers decide on the basis of time availability, no. grounds available, funds and no. of teams.

In a league format, the total no. of matches is calculated as **n (n-1)/2**

'n' is the total number of teams.

Each group has 4 teams. So the total no. of matches in each group will be

$$n(n-1)/2$$

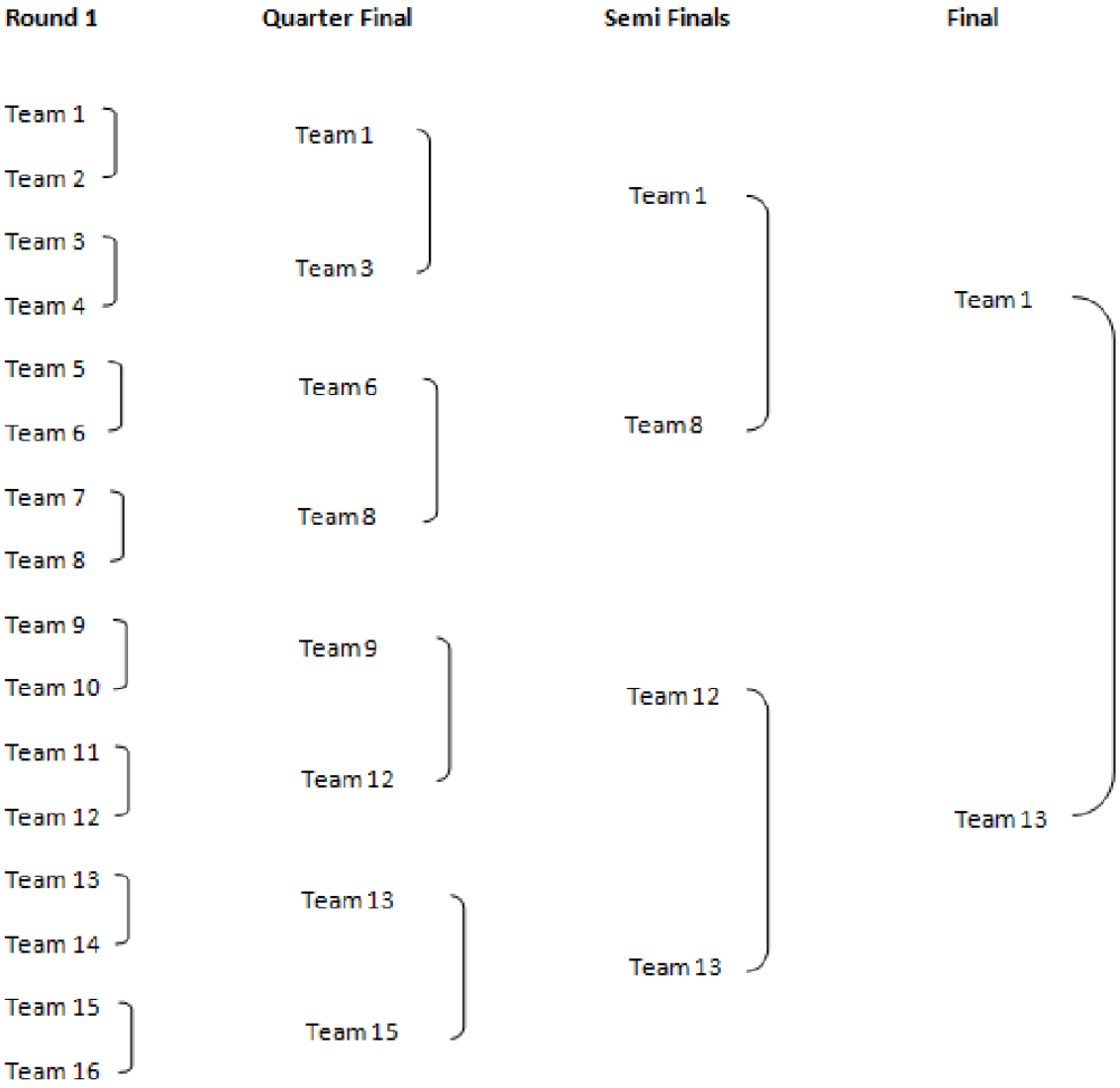
$$4(4-1)/ 2 = 6 \text{ matches}$$

Total no. of matches including all the groups will be 24 only (6 matches per group X 4 groups).

Post group league, it may continue as league format or knockout format.

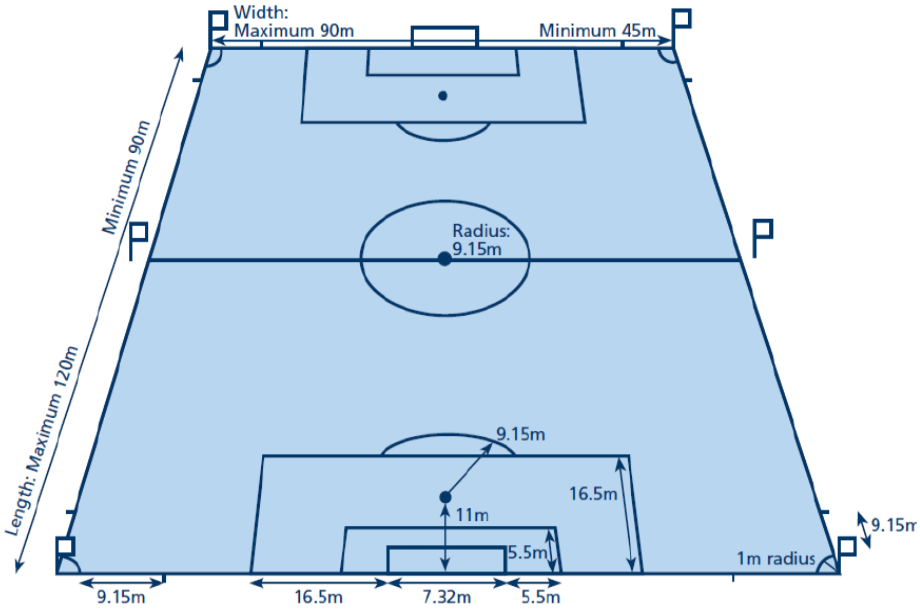
Knockout Format

Knockout is another way of conducting a tournament where in the teams get knocked out on losing. The winning teams keep moving to the next level and finally 2 teams compete for the championship.

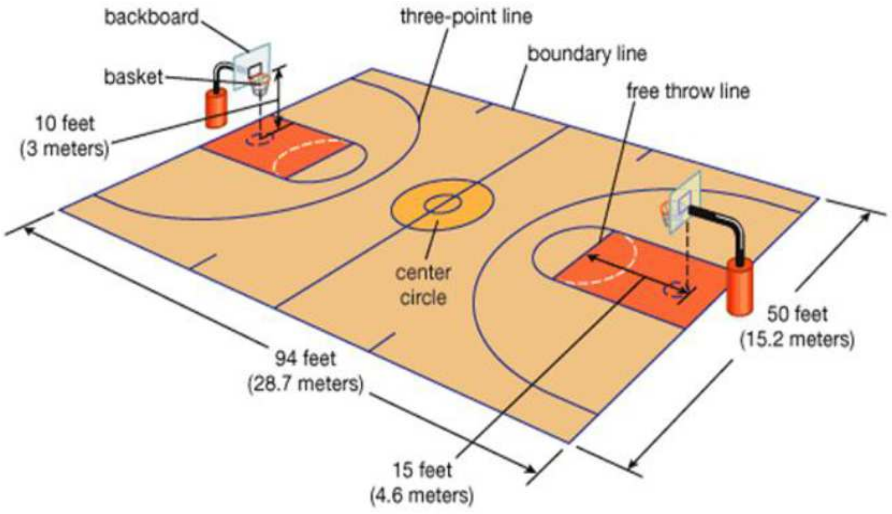


The above fixture is applicable only if the total no. of teams is exponential power of 2 that means 22 =2 x 2 = 4, 23 = 2 x 2 x 2 = 8 and so on (16, 32, 64 .....).

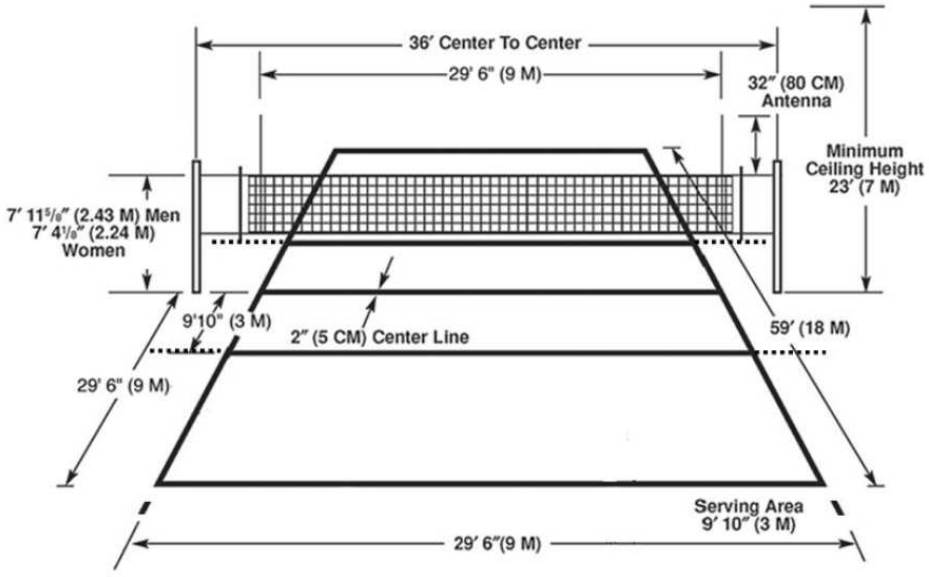
Football: Dimension of the Field



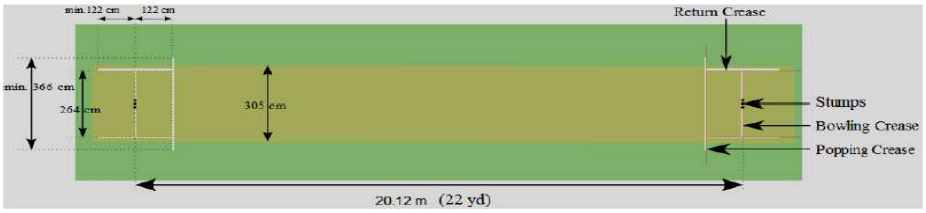
Basketball: Dimension of the Court



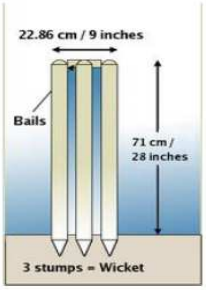
Volleyball: Dimension of the Court



Cricket: Dimension of the Pitch



Pitch Dimension



Wicket/ Stumps Measurement

Maintaining the Props and Equipment?

Check the pressure carefully. Pressures for various balls are:
Football - 0.6 – 1.1 atmosphere (600 – 1,100 g/cm2) at sea level
Basketball – 3.17 – 4.0 atmosphere (3170 – 4000 g/cm2) at sea level
Volleyball - 0.30 - 0.325 atmosphere (300 – 325 g/cm2) at sea level

Before using balls:

1. Inflate balls to correct pressures.
2. Before you inflate the balls, moisten the needle.
3. To inflate balls, squeeze balls while gradually adding a small amount of air at a time.
4. Inflating balls with too much air at once will damage the inner tube/ bladder.
5. Avoid inflating balls with machines as it may over inflate resulting in bursting.

After using balls:

1. Deflate little air after use. If the same air pressure remains in balls after use, balls may expand or deform.
2. Wipe the surface with a soft cloth.
3. If you are unable to remove dirt easily, wipe balls with a moistened cloth.
4. If you are unable to remove dirt with water, wipe balls with a cloth moistened with water-diluted mild detergent.
5. If you use mild detergent to clean balls, thoroughly wipe off any remaining detergent to ensure that it does not remain on the ball surface. (Detergent may cause stain).
6. If you use water to clean balls, wipe the ball afterwards with a dry cloth.
7. Dry balls out of direct sunlight in a well-ventilated place.
8. If the ball has been soaked by rain, wipe away moisture and dirt using a cloth. Dry the ball out of direct sunlight in a well-ventilated place.

To store balls:

1. Avoid leaving balls in a place that is exposed to direct sunlight.
2. Avoid storing balls in hot or damp places.
3. Store balls in a well-ventilated place.
4. Inflate balls regularly, in a well-ventilated place out of direct sunlight.

To maintain props and equipment:

1. After the activity, use a dry cloth to wipe the props/ equipment and store in a well-ventilated place out of direct sunlight.
2. Check the condition of the props/ equipment regularly to avoid any unobserved crack/ breakage.
3. Do not leave the props/ equipment in direct sunlight for the whole day. It would reduce the life of props/ equipment.
4. Do not store the props and equipment made of iron/ metal in a damp place. The moisture may lead to rusting.
5. The equipment which has not been in use for long duration (posts, flags, poles, hurdles etc.) needs special care.
6. Wrap it properly and store it in a well-ventilated place out of direct sunlight. Such equipment should be checked at least once in a year to ensure the good condition.
7. Do not apply water in any leather props and equipment. Always use dry cloth to clean.

Project/ Activity 8: Studying the nutrition and health status of people in a peer group/ village/city slum/ tribal area/ neighbourhood

The nutrition and health status of the people reflect and present status and future prospects of a country. Enhancement of the nutrition and health status of the people should, therefore, be the first priority of the national planning for development. Study of the factors responsible for the present status of nutrition and health will lead to acquisition of facts on the basis of which proper planning for the enhancement of their status can be made.

Specific Activities

- Adoption of a village/city slum/tribal area or even peer group/neighbourhood
- Preliminary identification of nutritional and health problems of the community.
- Preparation of questionnaire/interview schedule to elicit background and information from family such as:
  - General information: head of the family, type of family
  - Composition of the family
  - Meal pattern of the family
  - Monthly expenditure pattern on food, clothing, housing, education, medicine, fuel,
    transport, saving, remittance of debt, recreation, other items.
  - Details of monthly food expenditure.
  - Food produced at home.
  - Food given under special condition
  - Methods of cooking.
  - Food items stored in the home
  - Food items which are considered "good" and "not-good".
  - Commonly occurring health problems:
- deficiency / diseases of children
- other common ailments of children
- commonly occurring ailments in the family
  - Measures taken to get rid of the ailments
  - Environmental sanitation problem:
- procedure of disposal of wastes (soild or liquid)
- source of water supply and mode of water storage at home
  - Hygienic habits followed
  - Health services available
- Conduct of Survey (Students in groups may develop a questionnaire for the survey)
- Analysis of data and preparation of reports on main findings in respect of:
  - socio-economic conditions;
  - environmental sanitation problems;
  - commonly prevalent health problems;
  - malnutrition problems of children, mothers and the community;
  - undesirable nutrition, health and sanitation practices in the community;
  - practicable intervention measures to enhance the nutrition and health status;

- Helping in community health programmes and enhancing the nutrition, health and environmental status of the community through door-to-door contact programmes.
- Presentation through feedback videos/posters/pamphlets

Process

1. May be done individually, in pairs or in groups
2. Form may be developed for data collection
3. Online data analysis and graphical presentation of findings

Assessment

Rubric may be developed in consultation with teachers

Project/ Activity 9: Participating in the community health programme through door-to-door contact programmes.

Malnutrition and infection are the major causes of the precarious status of health in the developing world. Malnutrition is not only due to poverty or non-availability of food resulting from social and distributive injustice, but also due to ignorance of nutritional facts and undesirable practices. Malnutrition problems can be resolved to a great extent if judicious selection of food is made possible within economic means and the available foods are better utilized. Infectious diseases are caused mainly by the lingering existence of two fundamental problems of environmental sanitation, mainly unsafe water supply and unhygienic disposal of waste, specially human excreta. The application of modern scientific knowledge to environmental sanitation can lead to 80 percent of the diseases being effectively controlled.

Thus, by developing desirable nutrition, health and environmental sanitation practices in the communities, health problems can be considerably resolved. This can be achieved through environment-based education for all age groups of population. A door to door contact programme is the most effective way of environment-based education. Without any nutrition, health and sanitation intervention, the status of nutrition, health and sanitation in the community can be enhanced through functional education by door to door contact.

Process

- May be done in groups
- Developing a checklist to collect data
- Analyze data and prepare a graph
- Record the findings in the report

Specific Activities

- Correlating the nutrition, health and sanitation problems in the adopted community. With the community health programmes being implemented and preparing a check-list of specific practices desirable in the community such as:
    - Gives supplementary foods to the child from the age of four months.
    - Gives milk to the child in katori and not in a bottle.
    - Feeds the child several times a day.
    - Feeds the child even when sick.
    - Immunizes the child.
    - Washes vegetables before cutting.

- Makes use of surplus cooking water.
- Uses green leafy vegetables regularly.
- Uses raw vegetables/fruits/sprouted grains regularly.
- Keeps the home surroundings clean.
- Uses waste water for growing plants.
- Throws garbage in a pit
- Keeps teeth clean.
- Keeps nails trimmed and clean
- Keeps hair clean and combed.
- Keeps clothes clean.
- Uses clean toilet facilities

- Distributing families among members of the project team for door-to-door contact and preparing a time schedule for door-to-door contact programmes, explaining the importance of desirable practices for better nutrition, health and sanitation and recording the practices present in the family in the checklist of desirable practices.
- Discussing the problems encountered by the team members after every 3 contacts, analyzing why a particular desirable practice is not achieved, finding out possible solutions to reinforce the programme.

Process:

- May be done in groups
- Developing a checklist to collect data
- Analyze data and prepare graphs
- Record the findings in the report

Reporting and Consolidation

- Consolidating the records of desirable practices on the first and last contact programme for the entire community and seeing the impact of the programme on the basis of improvement in practice percentage.

Assessment:

- Assessing individual performance of the project team members on the basis of their integrity and honesty and improvement in practice percentage in the families assigned to them.

Project / Activity 10: First Aid: Awareness raising and demonstration

First aid is the immediate and temporary care given to the victim of an accident or sudden illness. The main purpose of first aid is to preserve life, assist recovery and prevent aggravation of the condition until the availability of a doctor, or during transport to a casualty home or hospital.

Specific Activities

- Preparation and use of First Aid Kit.
- Dressing of wounds and bandaging.
- Management of simple injuries and emergencies:
    - bleeding
    - shock

- drowning
- burns
- snakebites
- fractures
- poisoning

Activity 11: Plantation of Shade/ Fuel/ Ornamental/ Avenue trees

- Writing a play and enacting the procedures
- Showing a video film
- Making a video film
- Importance of trees for ecological balance of the environment.
- Local and exotic trees for various purposes.
- Factors affecting normal growth of the plants.
- Specific problems pertaining to certain tree species and their solution.
- Raising seedlings in the nursery, nursery management.
- Vegetative propagation of ornamental trees.
- Planning layout.
- Planting and after care.

Specific Activities

- Identification of shade/fuel/ornamental/avenue trees.
- Preparation of herbaria of various trees.
- Phenological observations on vegetative growth, emergence of new shoots/leaves, flowering, fruiting, etc.
- Identification of seeds, seed treatment before sowing in the nursery.
- Preparation of nursery beds for sowing the seeds.
- Raising seedlings in the nursery and nursery management.
- Vegetative propagation by cuttings, layerage.
- Layout for planting
- Digging pits for planting.
- Preparation of soil-manure mixture for filling the pits.
- Transfer of seedlings for plantation.
- Planting with the help of planting board or rope.
- Providing tree-guards/fencing for protection (made of iron bars/empty old drums/throny/ twigs/bricks/ barbed wire/live fence, etc.)
- After care of the plants: watering, weeding mulching, hoeing, protection against disease, pests, animals, adverse weather conditions, etc.

Project/ Activity 12: Acquaintance with common fertilizers and pesticides and their application with appropriate equipment.

- Elements of plant nutrition, Common fertilizers nitrogenous, phosphates.
- Concept of bio-fertilizers, micronutrients, Common insecticides, fungicides, weedicides.
- Calculation of doses.
- Plant protection equipments; various types of sprayers and dusters.
- Use and maintenance of plant protection equipments.
- Methods of fertilizers application soil and foliar application.

Specific Activities:

- Identification of various fertilizers, fungicides, insecticides, weedicides, bio-fertilizers.
- Identification of various parts of sprayers and dusters.
- Calibration of plant protection equipments.
- Calculation of doses of fertilizers, pesticides, etc. for specific purpose.
- Preparation of working solution of plant protection chemicals.
- Use of plant protection equipments.
- Fertilizer application through basal dressing, top dressing and foliar spraying.
- Use of bio-fertilizers for legume crops.
- Band placement of fertilizers in horticultural crops.
- General observation of crops/plants/after application of fertilizers/pesticides and their comparison with the untreated ones.

Assessment:

Data Collection, analysis and their reporting through graphs, presentations and written reports, rubric for assessment may be developed

Project/ Activity 13: Acquaintance with Common Pests and Diseases of Plants and Use of Simple Chemicals and Plant Protection Equipment

- Significance of pests and diseases in agriculture.
- General idea about biological and integrated control measures.
- Common insecticides, fungicides, weedicides.
- Common plant protection equipments, their construction details, simple repairs and maintenance.
- Precautions while using plant protection chemicals.
- Common pests of important field crops, vegetable and fruit crops.
- Common diseases of important field crops, vegetables and fruit crops.

Specific Activities

- Collection and preservation of insects, their larvae, pupae, eggs.
- Collection and preservation of diseases affected plant parts.
- Identification and description of pests and diseases of crops.
- Identification of plant protection chemicals.
- Estimation of crop's damage due to pests and diseases.
- Cleaning, maintenance and simple repairs of plant protection equipments.
- Operation of plant protection equipments.
- Preparation of working solutions of plant protection chemicals.
- Observation of plant after application of plant protection chemicals.
- Comparison between the treated and untreated plants.
- Seed treatment with fungicides.

Assessment:

Data Collection, analysis and their reporting through graphs, presentations and written reports, rubric for assessment may be developed

Project / Activity 14: Preparation of Family Budget and Maintenance of Daily Household Accounts.

Specific Activities

- Identifying importance of household accounts.
- Learning the procedure of recording transactions.
- Keeping records of expenses, vouchers, receipts, bill, etc.
- Preparing simple receipts & payment account in the register systematically & neatly.
- Comparing past receipts and payments with present receipts and payments.
- Discriminating between necessities, comforts and luxuries of different families.
- Preparing a list of consumable articles of the family.
- Collecting comparative prices for the required consumable articles.
- Allocating the family income on various heads.
- Preparing family budget.
- Making a comparative study of the budget of families from lower class, lower middle and middle class.

Assessment:

Data Collection, analysis and their reporting through graphs, presentations and written reports, rubric for assessment may be developed

Project / Activity 15: Helping school authorities in oragnizing
(a) picnics, tours, excursions, functions
(b) exhibitions.

Specific Activities

- Helping school authorities in organizing picnics, tours, excursions and school functions:
  - planning the programme;
  - forming groups for different functions such as conveyance, food, games and entertainment, collection of funds and maintenance of accounts;
  - making arrangements/preparation of each activity;
  - organizing/performing activities on the day of the picnic, tour/excursion, function;
  - evaluation of the success of the programme/effectiveness of the activity undertaken.
- Helping school authorities in organizing exhibitions:
  - planning the programme;
  - collecting/making exhibits and keeping them safely;
  - collecting suitable tables, boards, etc. for display;
  - cleaning and decorating the exhibition hall or ground;
  - displaying the exhibits on proper spots according to plan;
  - doing reception duty on the day of the exhibition;
  - explaining exhibits to the visitors;
  - collecting the exhibits after the exhibition and restoring them to their owners/the school authorities;
  - putting back the furniture, etc. in its proper place.

Assessment:

Writing a report and making an audio visual film on the entire process including the planning stage.

Project / Activity 16: Participation in Adult-Literacy Programmes

Specific Activities

- Survey of the neighbourhood and identification of adult illiterates.
- Making door-to-door visits and persuading them to join literacy classes.
- Grouping the illiterates according to their age, occupation and interests.
- Grouping students on the basis of their known capabilities and interests.
- Selecting literacy materials with the guidance and help of the teacher.
- Making spatial and physical arrangements for conducting the programme.
- Making adequate preparation for teaching, including the selection of teaching aids.
- Teaching adults in groups.
- Getting together in class and reviewing the progress of work and problems, if any
- Modifying the teaching methods and procedures in the light of experience.
- Evaluating the progress of adult literacy and maintaining records.
- Materials, Tools and Equipment Required : Charts, maps, register, almirah, etc.

Procedure:

- Develop a survey form and conduct the same
- Develop a pre test and post test and administrator
- Conducting an end of the project assessment for the adult learners
- Compare the results of pre and post test and analyze the data

Project/ Activity 17: Resources for Classroom Use and School Use

Specific Activities

- Identification of the concept/topic/lesson for which teaching aids are to be prepared.
- Identification of the teaching aids to be prepared-flashcards, chart, model, scrapbook, flannel board,
- improvised apparatus, etc.
- Making a plan/working drawing of the teaching aid as also a list of tools and materials required.
- Collecting materials needed for making it.
- Preparing the teaching aid under the guidance of the teacher.
- Using the teaching aid on a sample of students to find out its effectiveness and defects.
- Submitting it to the school authorities for use.

Procedure

- Brainstorm with the concerned subject teacher an develop a mind map
- Identify resources to be developed according to the subject
- Work in groups of 3-5 to develop resources, aids for a particular subject
- Pilot them in class in age-appropriate ways, modify if required

Assessment

- In groups, write a report based on the template developed
- As peer educator/ mentor / buddy, teach a lower class level using the resources developed
- Video film a lesson you are teaching using the resources developed and share it with other groups

CHAPTER 6
STRAND 4: HEALTH AND ACTIVITY RECORD

Note:

- The schools will maintain record of children in the formats given in next pages. This is only for the purpose of maintaining record and communication with parents, or if any information is required to be shared. It is for encouraging the child to attain health and wellness.
- No weightage of Health Record is to be given in result.
- This information of the students written in Health Record should not be shared with any third party/ agency in any case. Privacy must be ensured.

CBSE Logo

HEALTH AND ACTIVITY RECORD

GENERAL INFORMATION

School Logo

Aadhar Card no. of Student (optional)_____

NAME: _____.

ADMISSION NO.:_____DATE OF BIRTH:_____.

M F T _____ BLOOD GROUP:_____.

MOTHER'S NAME:_____.

YOB_____ WEIGHT _____ HEIGHT_____BLOOD GROUP_____

AADHAR CARD NO. (optional) _____

FATHER'S NAME:_____.

YOB_____ WEIGHT _____ HEIGHT_____BLOOD GROUP_____

AADHAR CARD NO. (optional) _____

FAMILY MONTHLY INCOME_____.

ADDRESS_____

_____.

PHONE NO._____ (M):_____ .

CWSN, SPECIFY _____.

SIGNATURE OF PARENTS/ GUARDIAN DATE:

Fitness Components	Fitness Parameters		Test Name	What does it measure	Age 15+ Yrs
Health Components	Body Composition		**BMI**	Body Mass Index for specific Age and Gender	Height, Weight
	Muscular Strength	Core	**Partial Curl Up**	Abdominal Muscular Endurance	60 seconds
		Upper Body	**Flexed/ Bent Arm Hang**	Muscular endurance/functional strength	Yes
	Flexibility		**Sit and Reach**	Measures the flexibility of the lower back and hamstring muscles	Yes
	Endurance		**600 Mt Run**	Cardiovascular Fitness/ Cardiovascular Endurance	Yes
	Balance	Static Balance	**Flamingo Balance Test**	Ability to balance successfully on a single leg	Yes
Skill Components	Agility		**Shuttle Run**	Test of speed and agility	6 x 10 Meters Shuttle Run
	Speed		**Sprint/ Dash**	Determines acceleration and speed	50 Meter Dash
	Power		**Standing Vertical Jump**	Measures the Leg Muscle Power	Yes
	Co-ordination		**Plate Tapping**	Tests speed and co-ordination of limb movement	-
			Alternative Hand Wall Toss Test	Measures hand-eye coordination	Yes

Test Details are:

Test Name	What does it measure	How to Peform	Equipment Required	Scoring
BMI	Body Mass Index for specific Age and Gender	BMI is calculated from body mass (M) and height(H). BMI = M / (H x H), where M = body mass in kilograms and H = height in meters. The higher the score usually indicating higher levels of body fat.	Scales and stadiometer as for weight and height.	Height and Weight as per the WHO for each Age and Gender
Partial Curl Up	The curl up test measures abdominal muscular strength and endurance of the abdominals and hip-flexors, important in back support and core stability.	The subject lies on a cushioned, flat, clean surface with knees flexed, usually at 90 degrees, with hands straight on the sides (palms facing downwards) closer to the ground, parallel to the body. The subject raises the trunk in a smooth motion, keeping the arms in position, curling up the desired amount (at least 6 inches above ground). The trunk is lowered back to the floor so that the shoulder blades or upper back touch the floor.	Flat, clean, cushioned surface, stopwatch, recording sheets, pen	Record the maximum number of sit ups in a certain time period, such as 30 seconds (Age 9-14 years) or 1 Minute (Age 15+)
Flexed/ Bent Arm Hang	Upper body functional strength and muscular endurance	The subject is assisted into position, the body lifted to a height so that the chin is level with the horizontal bar. The bar is grasped using an overhand grip (palms are facing away from body), with the hands shoulder width apart. The timing starts when the subject is released. They should attempt to hold this position for as long as possible. Timing stops when the person's chin falls below the level of the bar or the head is tilted backward to enable the chin to stay level with the bar.	Stopwatch**,** an elevated horizontal bar	The total time is seconds is recorded.
Sit and Reach	Common measure of flexibility, and specifically measures the flexibility of the lower back and hamstring muscles. This test is important as because tightness in this area is implicated in lumbar lordosis, forward pelvic tilt and lower back pain	This test involves sitting on the floor with legs stretched out straight ahead. Shoes should be removed. The soles of the feet are placed flat against the Sit and Reach box. Both knees should be locked and pressed flat to the floor - the tester may assist by holding them down. With the palms facing downwards, and the hands on top of each other or side by side, the subject reaches forward along the measuring line as far as possible. Ensure that the hands remain at the same level, not one reaching further forward than the other. After some practice reaches, the subject reaches out and holds that position for at one-two seconds while the distance is recorded. Make sure there are no jerky movements.	Sit and Reach box with the following dimensions: 12" x 12" (sides) 12" x 10" (front and back) 12" x 21" (top) Inscribe the top panel with centimeter/mm gradations. It is crucial that the vertical plane against which the subject's feet will be placed is exactly at the 23 cm mark.	The score is recorded to the nearest centimeter as the distance reached by the hand
600 Mt Run	Cardiovascular Fitness/ Cardiovascular Endurance	Participants are instructed to run 600 mts. in the fastest possible pace. The participants begin on signal, “ready, start” as they cross	Stopwatch, whistle, marker cone, lime powder,	Time taken for completion (Run or Walk)

		the finish line elapsed time should be announced to the participants. Walking is permitted but the objective is to cover the distance in theshortest possible time.	measuring tape	
Flamingo Balance Test	Ability to balance successfully on a single leg. This single leg balance test assesses the strength of the leg, pelvic, and trunk muscle as well as dynamic balance.	Stand on the beam/line with shoes removed. Keep balance by holding the instructor's hand. While balancing on the preferred leg, the free leg is flexed at the knee and the foot of this leg held close to the buttocks. Start the watch as the instructor lets go. Stop the stopwatch each time the person loses balance (either by falling off the beam or letting go of the foot being held).	Stopwatch, can be done on just standing on one leg on a thin line (Age Group: 5-8 years) or a beam locally procured (Age Groups: 9-14, 15+ years)	Total time till the subject loses balance.
Shuttle Run	Test of speed and agility	Marker cones and/or lines are placed 10 meters apart. Start with a foot at one marker. When instructed by the timer, the subject runs to the opposite marker, turns and returns to the starting line. This is repeated four times without stopping (covering 40 meters total) for Age 9-14 years OR repeated five times without stopping (covering 50 meters total) for Age 15+ years. At each marker both feet must fully cross the line.	stopwatch, measuring tape, marker cones, a flat non-slip surface	Record the total time taken to complete the 40 mt/50 m course.
Sprint/ Dash	Determines acceleration and speed	The test involves running a single maximum sprint over 20 meters (Age 5-8 years)/30 mts (Age 9-14 years)/50 Mts (Age 15+), with the time recorded. A thorough warm up should be given, including some practice starts and accelerations. Start from a stationary position, with one foot in front of the other. The front foot must be on or behind the starting line. This starting position should be static (dead start). The tester should provide hints for maximizing speed (such as keeping low, driving hard with the arms and legs) and encouraged to continue running hard through the finish line.	Measuring tape or marked track, stopwatch, cone markers, flat and clear surface of at least 60 meters.	Time taken for completion
Standing Vertical Jump (Sargent Jump)	Measures the Leg Muscle Power	The subject stands side on to a wall and reaches up with the hand closest to the wall. Keeping the feet flat on the ground, the point of the fingertips is marked or recorded. This is called the standing reach height. The athlete then stands away from the wall, and leaps vertically as high as possible using both arms and legs to assist in projecting the body upwards. Attempt to touch the wall at the highest	measuring tape or marked wall, chalk powder for marking wall	The jump height is usually recorded as a distance score.

		point of the jump. The difference in distance between the standing reach height and the jump height is the score.		
Plate Tapping Test	Tests speed and co-ordination of limb movement	If possible, the table height should be adjusted so that the subject is standing comfortably in front of the discs. The two yellow discs are placed with their centers 60 cm apart on the table. The rectangle is placed equidistant between both discs. The non-preferred hand is placed on the rectangle. The subject moves the preferred hand back and forth between the discs over the hand in the middle as quickly as possible. This action is repeated for 25 full cycles (50 taps).	Table (adjustable height), yellow discs (20cm diameter), rectangle (30 x 20 cm), stopwatch.	The time taken to complete 25 cycles is recorded
Alternative Hand Wall Toss Test	Measures hand-eye coordination	A mark is placed a certain distance from the wall (e.g. 2 meters, 3 feet). The person stands behind the line and facing the wall. The ball is thrown from one hand in an underarm action against the wall, and attempted to be caught with the opposite hand. The ball is then thrown back against the wall and caught with the initial hand. The test can continue for a nominated number of attempts or for a set time period (e.g. 30 seconds). By adding the constraint of a set time period, you also add the factor of working under pressure.	tennis ball or baseball, smooth and solid wall, marking tape, stopwatch	Score of the number of successful catches in a 30 second period

Chapter 7
Transactional Strategies for the Strands of HPE
(Except Health and Activity Record)

The cross-cutting themes of the transactional strategy are as follows:

- Transacting it through cross curricular linkages cutting across subjects, thus creating interest and motivation, enhancing physical fitness levels thus leading to overall health.
- Enhancing Life Skills such as creative and critical thinking, problem solving and decision making, inter personal and Intra personal skills, empathy and self awareness, effective communication and collaboration and team-work.
- Focus on inclusion

The ways of transaction across the curriculum would include:

- Recognition of HPE as a compulsory component across stages beginning with pre-primary, primary, upper primary, secondary and senior.
- The CBSE in its previous circulars and advisories has already mandated at least forty-five to sixty minutes of compulsory transaction on a daily basis.
- PE has been an integral theme of the **Comprehensive School Health Manuals** (brought out in four volumes by the Board in 2005, revised in 2010). (Available under Resources)
- Resources for transacting PE by providing linkages across subjects at the Pre-primary, and Primary level are already available in **Physical Education Cards** brought out for teachers and students. (Available under Resources)
- PE Cards are also available for differently-abled children as PEC ability cards and also for secondary level (SPEC). (Available under Resources)
- **Life Skills Manuals** for Primary, Middle and Secondary have activities and themes for transaction of PE across classes in age appropriate ways. (Available under Resources)

Specific transactional methodology for Class IX – XII

- Students should select the activities they want to pursue further whether as specialists or for personal enjoyment.
- If students are to prepare themselves for using their leisure time effectively, they will need to acquire the knowledge and skills of a broad range of activities, sports and games so that they are able to make truly informed choices about the activities they want to get involved in as part of their own healthy lifestyle management. Therefore, facilitate sports/games/health and fitness/SEWA activities by discussing with students about the knowledge, attributes, skills, strategies and / or compositional knowledge required to meet the outcomes of the activity and involve students as performers and officials, judges and/or referees.
- Inter-class/ school games, competitions and performances must be encouraged and used as opportunities for assessing students using the continuous and comprehensive assessment framework.

- All schools cannot include every physical activity within its time table.
- The list of physical activities available to young people these days is vast and ranges from the very traditional, indigenous games of our country to the increasingly popular games and pastimes of the west. Combinations of activities chosen must take the choices of the students into account.
- **Schools may add their own games, sports and activities to the relevant category**
- Schools may choose the activities they wish to include depending on the infrastructure and expertise available as well as interest of their students.
- In classes IX and X, whereas all students are expected to involve themselves in games, activities and sports, it is possible that some of them may choose to excel in areas of their interest. It is therefore, recommended that such students be permitted to pursue **one activity out of the strands over each year.** This will allow for specialization whilst still providing breadth to their learning.
- As far as PE is concerned, there is a need to create a skilled class of PE educators or trainers through the TOT, cascade model, a beginning of which was made by CBSE in the PEC program. (Physical Education Cards) PE cards are age appropriate tools for implementing the PE curriculum using a cross-curricular approach.

Chapter 8

Assessment for the Strands

- The strands conceptualized will be assessed internally through a blended approach of self-assessment and teacher assessment.
- **There will be no separate theory part as was the trend earlier.**
- Students will be assessed in each of the strands on the basis of evidence such as - direct observation, checklists, and/or use of video. In case of SEWA Projects Students plan and conduct projects and communicate their findings. Evidence in this case can include journals, diaries, essays, laboratory reports, oral presentations and/or the use of video, etc.

Maximum marks allotted for each strand are given in table 1.1. SEWA can be assessed on the basis of the rubric developed by the class teacher for the project chosen by the class for that year. Each game/ sports/ activity should broadly be assessed on the basis of following criteria and marks should be given accordingly:

- Participation in game/ sports/ SEWA/ activity
- Basic Knowledge & understanding of the game/ sports/ SEWA/ activity
- Skills learnt/ development or enhancement of skills of game/ sports/ SEWA/ activity
- Motivation to excel
- Improvement in performance (competing with self)
- Team spirit
- Development/ enhancement of
    - Organizational skills for game/ sports/ SEWA/ activity
    - Leadership skills/ qualities
- Sensitivity towards
    - CWSN (children with special needs) / inclusion in team
    - Sensitivity towards gender in team

Work Experience
or
SEWA (Social Empowerment through Work Education and Action)

1.1 Introduction

Several years ago, the noted educationist *Paulo Freire* pointed out that there is no such thing as neutral education. Any education, to be meaningful, has to fit into the context of the society in which it is given and which is relevant to the times. In the context of the multiplicity and the rapidity of the changes that are taking place, the students need to know and understand the contexts in which they are living today and the demands that will be made on them, in the immediate future, to fit into the changing patterns of society.

SEWA aims to develop a whole person in their intellectual, personal, social, emotional and social growth. Learners engaged in this program are expected to be life-long learners and through experiential learning develop as active citizens and caring and compassionate humans. The experiential and constructive modes of learning emphasize the immediate personal experience of the learner and view learning as a process.

SEWA takes learning beyond the walls of the classroom and sometimes even beyond the boundaries of the school, building bridges with the authentic and real world in meaningful and positive ways. The following maybe noted with regard to SEWA:

- SEWA is an integral component of HPE.
- This aspect aims to focus on the mental/emotional and social health of the child
- All students of classes IX to XII (for XII, only till end of the first semester/ term) will participate in SEWA program around the year.

1.2 Objective:

There is an urgent need to foster strong mental and social health amongst today's children so that they can connect with their peers, their elders, the community, the environment, etc. The main objective of the SEWA projects is to direct children's mind in constructive activities with positive outcomes through the facilitation of creative and critical thinking. This would help them to develop self-confidence and self-esteem.

Another objective of this programme is to underline the significance of the interdependence of all human beings and our dependence on the environment in this shrinking global village. Students must acknowledge that they have a responsibility towards the less privileged, the disadvantaged, the CWSN (Divyang), the society, and the environment. The principle of giving to society has to become second nature to them.

1.3 The SEWA Philosophy

SEWA is all about social or community service; it can include environmental, civic responsibilities or democracy or health and fitness related projects, international and other projects too, as long as the project is able to connect the child to his surroundings or to a cause, and is able to generate a sense of responsibility towards it (even if it is towards health and fitness of the class itself). The Social

Empowerment component to a large extent inspires SEWA philosophy, which in the Indian environment refers to the concept of service to the community.

1.4 Note to Class Teachers

SEWA has been designed to integrate social awareness into the regular curriculum of the students. The teacher must be careful in facilitating the child's activities so as to provide a suitable learning environment. This in turn would also give a boost to a positive school environment.

The teachers need to create opportunities for students to engage with learning activities to develop core competencies such as:

a) Social Awareness, Self Awareness and Empathy
b) Self Management and Leadership Skills
c) Creative and Critical Thinking
d) Interpersonal Skills and Effective Communication Skills
e) Responsible Decision-making through Problem Solving

The teachers need to be open-minded about errors committed by learners while implementing the SEWA programme. The learners may find themselves in ambiguous situations and sometimes suffer from moral conflicts. As adults, we need to facilitate the widening of the scope for the learner so that they find alternative ways of making informed decisions. Here, one cannot undermine the responsibility of the school as a community. Thus, one can develop and establish a caring community encouraging collaborative learning activities by weaving Self-empowerment into their daily school activities.

1.5 The learning outcomes expected to be developed and fostered through participation in SEWA are experiential:

The Learner:

- Develops Life Skills of **Self-Awareness and Empathy**. *
- Develops Creative and Critical Thinking Skills. *
- Becomes a **caring and compassionate** individual.*
- Responds as a socially empowered change maker. *
- Acquires the skills to be an active leader and initiator of change.
- Plans, implements and delivers projects connected to the real world.
- Visualizes and participates in a world going beyond the classroom and often/ sometimes beyond the boundaries of the school.
- Formulates strategies to deliver meaningful programs and projects
- Critiques premises as a **reflective enquirer**.
- Demonstrates fair play and **non-judgmental ethical behavior**. *
- Actively engages in SEWA activities as an individual and at a team level.
- Participates in various activities in **age appropriate ways across disciplines**.
- Selects and applies skills, facts and compositional ideas.
- **Competes with oneself** to improve **self-performance** and **evaluate strategies** for further enhancement. *
- Knows, understand and applies rules.

***** Integrated values across HPE

The integrated SEWA program helps to acquire the following learning skills:

- Plan, initiate and implement activities
- Learn to work in teams and collaborate through organizing activities/events in terms of skills, interest, motivation and professional growth
- Identify and nurture areas of strength and identify areas requiring further growth
- Engage with issues of social concern in the community, society, state and nation
- Develop new life skills and strategies and become lifelong learners.

1.6 Guidelines for Schools

- School can Design and announce school SEWA policy.
- School can also decide on yearly focus theme for SEWA and class-wise sub themes.
- Each class as a whole can decide to take up one SEWA activity for the entire year
- The choice of activity can be left to the students of the class, with guidance and facilitation by the class teacher and will depend upon the school policy too.
- Schools are encouraged to allow children to suggest SEWA themes for the year.
- Once a SEWA activity is decided for a particular school/class/year, the class students themselves will decide upon the role of each student of the class.
- Orient parents about SEWA and seek support from stakeholders.
- Appoint School SEWA Mentor and Class-wise SEWA Mentors, if required. Mentors could also be from amongst the parents or teachers.
- Arrange administrative support for the activities involving government and outside agencies.
- Dedicate day/s for SEWA exhibition or presentation day at the end of the year or as suitable.
- Ensure that each child in a class actively participates in his/her assigned role of SEWA.
- Arrange training and create support structure for all involved as required.
- Ensure 100% dedicated involvement.

1.7 Guidelines for Students

- Discuss how they can improve/impact the community/ environment/ health and fitness of the students and choose the focus area for the project.
- Brainstorm and create mind-maps on the chosen area
- Identify the causes they want to support and choose one/or more ways of carrying it forward.
- Outline the objectives of the projects they have chosen and present plans for the implementation as well as ways of measuring the success of the project.
- Assign roles to each member of the class community by consensus. Ensure each and every child is included.
- Learn to research on the chosen area of SEWA
- Seek guidance from the teacher when they need it.
- Learn how to plan, implement, review and take responsibility for their decisions.
- Examine the effect of their intervention and support for the causes they have chosen and present them to the rest of the class/school.
- Capture the hours spent as well as documents as evidence wherever required in the student Portfolio/dossier

- Share the impact of the SEWA work undertaken as Power Point with the school community and as part of a special exhibition at the end of the year, clearly highlighting the role of each student in the class.

1.8 What forms a Social Empowerment activity?

The activities conducted 'in school' as part of Eco-clubs, Sports Club, Literacy Clubs or 'out of school' as community outreach activities etc. can be considered as Social Empowerment activities. It may range from a small role as 'volunteer' and a 'contributor' to running an entire project over the year. Social Empowerment activities are bound to germinate some thought process in young minds.

The class may decide to take up any innovative social empowerment activity every year; students may decide the role of each child; at the end of each year the class as a whole may present its project report.

Even sports activities can be taken up as a SEWA project by the class. Some of the activities under sports that can be taken up are as follows (illustrative list):

- Organizing sports meet for CWSN (Children with Special Needs)
- Planning, organizing and delivering a League tournament (Basketball, Cricket, Football)
- Planning and holding a friendly cricket match between alumni and the current grade XI and XII
- Organizing sports competition for primary school
- Organized Inter-class/ Inter-school sporting activities (basketball, volleyball, swimming, hockey, netball, squash, cricket and boxing)
- Long distance runs (half and full marathons) for a cause
- Researching on Yoga, Running/Jogging, Dance, Trekking/ Hiking/Biking/Cycling, Camping, Military training as part of planned projects.

There are multiple other possibilities of projects that can be taken up under SEWA, such as (illustrative list):

- Organizing a fund raising Musical Extravaganza for school
- Holding an Art Exhibition for fund raising
- Inviting professionals from industry to develop career pathways (App on mobile)
- Running school café with focus on nutrition
- School gardening project
- Collaborating as part of Photography Club and create Exhibitions across the city with a social message.
- Projects on social awareness or cross curricular themes initiated, planned and implemented by students with teacher as initiator.
- As volunteer for **'in school activities'** such as organizing a school-based event based on Life Skills.
- Participating or volunteering in Youth Parliament or mock UN Sessions
- Activities from 'Revised School Health Manual **(see under Resources)**
- Life Skills Activities (Creative and Critical Thinking, Problem Solving and Decision Making, Effective Communication, Self Awareness and Empathy) **(see under Resources)**

- 'Buddies' or 'Peer Mentors' for **Adolescence Education**, **School Health Program**, **Life Skills Program** etc.
- Anti Bullying or Anti Ragging Committee and awareness raising
- As volunteer for charities **'outside of school'** such as orphanages, old-age homes
- Collecting and distributing used and unused books and clothes to the underprivileged
- **Volunteer work** with stray animals and organizations connected with the same cause
- Helping to raise funds for beneficiaries involving natural disasters (flood, earthquake victims)
- Adopting an old age home for interactive activities
- Adopting an orphanage for conducting joyful activities
- **Online volunteering** for counseling peers for raising awareness regarding career pathways.
- **Enrichment Activities** of different Ministries can be taken up in project mode, such as **Swachhta Abhiyan for neighbouring community**, **Ek Bharat Shrestha Bharat** (upto Oct 2018), **Paryatan Parv – creating awareness about historical sites and tourist spots in your city,** etc.
- Organising and volunteering for various 'in-school activities' and Language Club, Theatre and Dramatics Club, Social Science Club, Dance club, Science Club, Science Fairs, Heritage Club, Nature Clubs.

1.9 Activities complying with SEWA Criteria

SEWA activities require involvement and interaction. When students assume a passive role and no contributory service is performed, it cannot be defined as a SEWA activity/project.

Activities which do NOT fall under SEWA:

- An activity through which a student attains financial or some other type of benefit (unless this benefit is passed on in full to a worthy cause).
- Getting involved in effortless, monotonous, and repetitive work – like returning library books to the shelves.
- Work experience that only benefits an individual student.
- Activities that cause division among different groups in the community.
- Activities with a bias to any religion or cultural sector which may hurt the sentiment of any other person in any form.
- Regular recreational or community activities of a temporary nature - like a visit to a museum, the theatre, concert, or sports event unless it clearly inspires work in a related activity in which a student is already engaged.
- Any unsupervised or recorded activity where there is no guide or responsible adult onsite to evaluate and confirm student performance and evaluate accordingly.

1.10 Guidelines for Class Teacher/Mentor for conduct of SEWA

- Support students in identification and selection of the causes they want to support and take up as projects, brainstorm and create mind-maps.
- Provide supervision, consultation, guidance to students and create support structures required whenever they need it including for research.
- Intervene positively to ensure participation of each and every child in the class, including CWSN
- Guide students on how to plan, implement, review and take responsibility for their decisions.

- Guide students on upkeep of Portfolio/dossier, making a report, analyzing data, creating presentations, video films, channels on social media, websites.
- Plan and prepare SEWA exhibition or presentation day at the end of the year.

1.11 Procedures

1. Fill out a My SEWA promise form. The description of the activity needs to be in complete simple sentences and describe the SEWA activity intended to be taken up by the class.
2. Each student in consultation with the teacher and parents decide and create an hourly schedule of activities in accordance with role assigned. This form must be signed by a parent and submitted before the activity begins to the school's SEWA Mentor.
3. Fill out 'Reflective Musings' at the end of every 4 hours given to the project and keep attaching it to the SEWA dossier. (The time is given in hours and not in periods with the intention that if the child does any additional work outside school hours, it can be reflected here).
4. SEWA hours will be accounted for both in school as well as out of school activities, provided they are agreed upon by the mentor.
5. It is expected from a SEWA volunteer that they would be honest in recording their activities.
6. Complete your SEWA classes/periods before the last date.
7. All the forms must be completed and signed and attached with relevant evidences, together with a Self-Appraisal Form for classes IX-XII and a summary list of the SEWA projects/hours as items of SEWA dossier/scrapbook.
8. The visual evidence (photographs, videos, etc.), testimonials and certifications must be there to support the project.

1.12

My SEWA Promise Form (illustrative)

Dear Student,

SEWA is a firm step to prepare you for life. It is a voluntary project experience. You have to complete **My SEWA Promise Form** and obtain prior approval for the activity/project. Selection of a SEWA activity, development, implementation of the proposal and evaluation of the activity is the responsibility of each student. Signature of the parent indicates review and approval of this proposal.

Student's Name: _____ Class: _____

(Print or type)

Brief Description of the Activity:

Duration (Days and Time):_____ Estimated Hours:_____

Name of Mentor Teacher:_____

Student Signature: _____Date:_____

Parent Signature: _____ Date: _____

1.13 SEWA Hourly Schedule (illustrative)

Hour Count	Date and Day	Proposed Activity Plan
Hour 1		
Hour 2		
Hour 3		
Hour 4		
Hour 5		
Hour 6		

1.14

SEWA Hour Log (illustrative)

STUDENT NAME: _____

PROJECT: _____

Date	Activity	Hours	Mentor's Signature

Mentor's Observation (Suggestive)

Attendance: _____

Involvement: _____

Regularity: _____

Commitment: _____

Additional Comments: _____

_____

_____

The activity/project was (circle appropriate response):

Satisfactorily completed Not Satisfactorily completed

_____ _____

Activity/Project Mentor's signature

Name

Seal of school

1.15 SEWA Self-Appraisal Form (illustrative)

The following questions should be addressed at the end of each activity/project. These are guiding questions. Candidates can either answer on this form or write a reflective, continuous text incorporating responses to these questions.

My Name_____

My Activity / Project_____

My Commitment Towards the Project/ Activity

_____

_____

This Activity/ Project has been a great learning experience because

_____

_____

I initially felt that the project could not have achieved its outcomes because

_____

_____

The project has definitely changed me as a person in terms of behaviour, attitude and life skills because

_____

_____

The details of beneficiary(ies). Any significant comment received from them; please quote

_____

_____

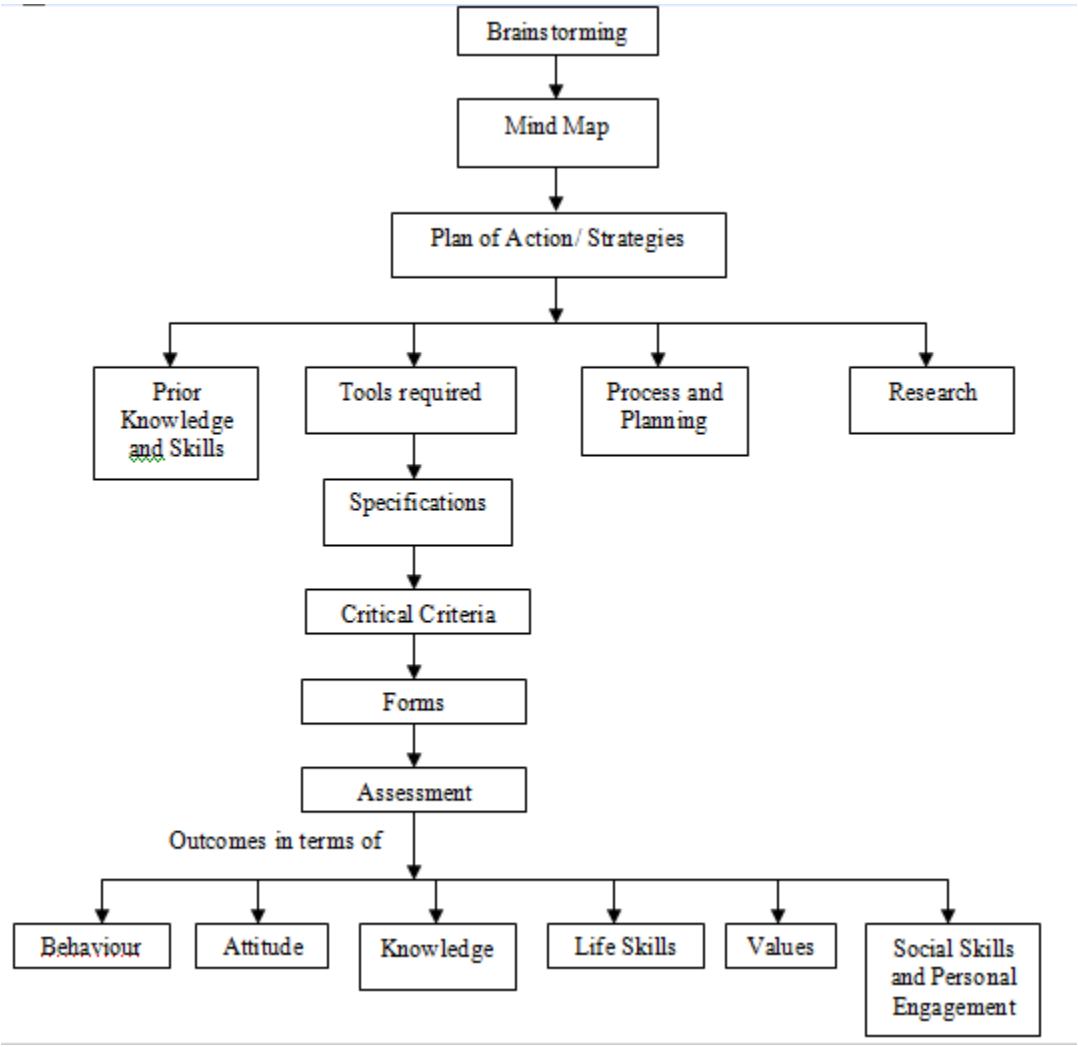
The challenges I faced and the things I might do differently next time so as to improve?

_____

_____

1.16 Illustrative Flow Chart for Conducting a Project/Report/ Event

(Can be Quarterly/ Bi-Annual / Annual)



1.17 Assessment and Evaluation

The following strategies may be taken up for assessing the individual/ group projects. In case of group, they all get marked the same way.

Tools, Techniques and Strategies:

1. For activities being done, a portfolio or dossier may be maintained individually by each student.
2. Report at the end of the project may be assessed through a rubric developed by teachers and students.
3. Rubric for assessing will depend on the project/ activity being taken up.

1.18 Exemplar Projects under Social Empowerment sub-strand of SEWA

(These may be taken up in age-appropriate ways across IX - XII)

The projects given here are only exemplar projects and are illustrative/ suggestive in nature. These are given so that the child/class may able to understand the topic/ activity. This will help the child/class to plan the activity / project accordingly. The child/class may take/ choose any other project/ activity which has a positive impact on the environment, community, society, the disadvantaged, etc.

Project-1: 'Swachcha Vidyalaya Swachcha Bharat'

Project Focus- Cleanliness and Sanitation

Duration- Term/Annual

Key Objectives:
Learner will:

- identify clean and dirty places.
- bring attitudinal change towards cleanliness and sanitation.
- be able to distinguish between benefits of cleanliness and the disadvantages of uncleanliness, including the health hazards.
- make the community aware of the result of not practising cleanliness.
- know the importance of cleanliness in neighbourhoods, parks, market places, roads and cities.
- know how to appeal for clean places.
- be aware of unclean and unhealthy surroundings as breeding ground of epidemics and diseases.
- be able to highlight cleanliness as an important value in day-to-day life.
- Develop a creative methodology to create awareness in community and test it

SE Component

- To be able to take care of personal hygiene and being organized with belongings.
- To learn to keep household items and personal belongings in proper place (before and after photos).
- To be able to live life of cleanliness through word and example.
- To learn the art of **proper waste disposal and be able to sensitize other people about it.**

  "We must get obsessed about the cleanliness of our city."

Role of Mentor/ Teacher:

- Initiate a project in consultation with students
- Act as an initiator and motivate learners to be ever vigilant in maintaining cleanliness at all public places such as markets, parks, gardens, bus stands, railway stations, movie halls, and malls, etc., as well as while using public transport, public utilities.
- Focus on the tidiness of Class Room, Library, Assembly Hall and Computer Room.
- Respect National property.
- Generate awareness of health and hygiene amongst the slum dwellers.

Project Process:

Prepare:

• Brainstorming and discussion sessions to be organised for students.
• Identify the area to focus on and prepare **a road map** to achieve targets.

The following ideas can be further explored (illustrative only):

a) Disposal of human waste properly and safely
b) Creating sensitization amongst community members about personal hygiene
c) Spreading awareness about sanitized and clean toilets and contribution required to maintain public utilities
d) Proper garbage disposal
e) School Sanitation
f) Personal Hygiene
g) Drinking Water Testing
h) Green and Blue Bins
i) Recycling
j) Water Conservation
k) Water Table
l) Interacting with City Sanitary Workers
m) Spending a day with sanitary workers
n) Visiting a city water works
o) Adopt a Park/ Lake/ Pond

Collect the above data and read prepared report of the class, then segregate the areas where 'Mission Cleanliness' can be accomplished. Reflect and form groups and get the project rolling.

Suggestions: (May be done in groups under the supervision of a Mentor/ Adult/ Peer Mentor)
Organize Cleanliness Month:

- For cleanliness drive arrange advertisement competition for students' in schools.
- Identify surroundings or a locality which need assistance by doing a field survey of the surrounding community area.
- Create awareness and take up projects to ensure cleanliness of water sources like lakes, rivers, ponds and other such bodies that are getting polluted due to insensitivity of human beings.
- Segregate groups who can provide solutions to most aspects of cleanliness through researching articles, TV programmes, and video on YouTube or by speaking to the authorities and residents.
- Students can prepare Street Plays and present them to community members, using creative medium like-posters, placards for slogan march to generate awareness.
- Project on 'Cleanliness Drive' of a nearby public place may be taken up in groups.
- Don't miss to click the photographs of the area before the cleanliness drive and after that.

Reflective Musings:

- Discussions will be held in class on the activities of the project. The students will think, talk and write about what they have learned and observed.
- Questions will be discussed in class about their experiences and response of the community; e.g.,
    - Describe what have you learned and felt about your project?

    - How far was the activity beneficial for you?
    - What have you learned about yourself and your surroundings from this project?
    - How do you think we can solve problem of cleanliness and sanitation? Where did you find maximum dirt and squalor?
    - How can we make the project more effective?
- The students will be given a Proforma to fill in (Self-Assessment) so that they can assess their own learning from the project.
- Share and Celebrate
- An assembly can be arranged to award all participants.
- The students will display the charts and models on school notice-board.
- Certificates can be awarded to students.
- The students can make future plans about continuing the activities/projects by taking them to the community.
- The class room can also be decorated with charts and models.
- The students can also keep imparting information regarding cleanliness through practical demonstration to other students.
- The report of the project may be published in the newspapers and the school's magazine.

Activity Report for Cleanliness/ Sanitation Drive (illustrative only):

S. No.	Identified Locality	Steps taken for cleaning up	Awareness generated	Solutions recommended

Student to write and update their activity report:

Date	Activity	Learning Experience	Outcome

Students to give details of their learning experience:

Learning Outcomes

Learner will:

- learn that they must keep their surrounding areas and themselves clean.
- raise awareness among other students and their community members about personal hygiene and keeping their surrounding environment clean.
- become aware citizens and will be able to spread awareness amongst the people around them.
- go through the process of initiating, planning and implementing a project based on cleanliness and sanitation.

Key Messages

- Share your knowledge, experience and skills with others.
- Take utmost care of both personal hygiene and environmental hygiene.
- Do not throw garbage or litter at public places.
- Keep your surrounding areas clean in order to make your environment pleasant.

Assessment

Rubric may be developed in consultation with teachers

Project - 2: "Dignity of Labour"

Project Focus – Empathy and Compassion

Target Point- As individuals we should encourage students to respect all jobs and understand the value and dignity of work. Sweepers, shoe makers, laborers and launderers contribute to comfortable living.

We should respect people for their perseverance, hard work and effort. If we have to accord dignity to labour, social services must be commended and community has to be sensitive to individuals and learn to understand and respect them.

Key Objectives:

Learner will:

- understand the value of toil.
- understand the importance of different occupations in our social system – such as, ice-cream lorry, balloon man, chai stall, kite seller, bangle seller, knife sharpener, food lorry, etc.
- learn to respect people from different vocations of life. *
- understand and value of Human Rights.
- be empathetic and compassionate. *
- respect people despite nature of work involved in their vocations. *
- instill love for labour. *

* values integrated across SEWA

Role of mentor teacher / Peer Mentor:

- Initiate and brainstorm a collaborative project.
- Deducing inferences from comparative study of life situations.
- Discussing consequences of disliking a type of work and attitudinal problems related to it.
- Suggest remedies.
- Instill respect for all types of work.
- Be able to support discussions with anecdotes and examples from the life of great people (M.K. Gandhi, Abraham Lincoln, Martin Luther King, Lal Bahabhur Shastri), who believed in dignity of labour and practised it as well.

Project Process:

- Divide students in groups of around ten.
- Organise brainstorming sessions with the students.
- Collect quotations and quips.
- Collect Newspaper cuttings indicating both - respect for Human Rights and violation of Human Rights.
- Share stories and anecdotes highlighting the theme.
- Prepare an action plan and roadmap to achieve it.
- Analyze the action plan.
- Collect views of elders/parents/other adults.
- Organise outing in specific area to identify and correlate the project.

Suggestive Activities:

- One group could contribute to community work by regularizing and facilitating the job of people from different walks of life in their respective areas/ apartment complexes by making them aware of hygiene, etc.
- Collect funds in cash / kind to recognize and reward the contribution of helpers on special occasions like New Year / Labour Day. Keep proper records of this collection.
- Organise a discussion in class where people were victimised due to their profession and how Human Rights were violated in such situations.
- Celebrate World Human Rights Day (10th December) and Labour Day (1st May).
- Address the issue through creative arts, perform street plays, interviews of the school helpers (getting to know them better).
- Understand the importance of knowing how to work with the hand.

Reflective Musings:

- Discussion sessions will be organized to have a better understanding of Human Rights.
- Students can discuss about the importance of different vocations in a social structure.
    - Why must a human being be seen and treated beyond his/her occupation.
    - Basic courtesies that should be extended to one and all.
    - How do they need to change their attitude and behaviour to be more humane compassionate and empathetic.

- What are the social or mental problems that arise from lack of respect for labour in different categories?
- How can we appreciate the contribution of helpers?
- Develop a code of personal behaviour consistent with the social and physical aspects.
- In a Journal explore the life skills you have developed in the process.

- Elucidate the ideas you have gathered from your preparation on the value of 'Dignity of Labour'.

"It is dignity for a man to labor in his vocation."

Interview Questionnaires

- Understand the problems of ten different community helpers.
- Share experiences in class discussion and dissect problems and threats.

S. No.	Name and address	Occupational problems and threats	Assistance required	Suggestions

Activity reports (to be updated by students):

Date	**Name and address**	**Activity**	**Outcome/s**	**Change in attitude**

Assessment

Rubric may be developed in consultation with teachers

Project - 3: "Empathy"

Project Focus- Facilitating inclusivity

Target Point- The concern about the fate of others, the ability to realize another person's insecurities and fears and ability to put oneself in their shoes and willingness to extend a supportive hand makes for empathy.

Individuals, communities, countries will not be able to get socially empowered without EMPATHY.

It is also ability to appreciate, understand and accept other person's emotions. It improves inter-personal relations especially with people of different abilities, backgrounds, regions and nationalities.

Key Outcomes:
Learner will:

- be sensitive to the needs of others
- support inclusivity and develop a positive attitude
- develop compassion and value human life
- support and help people in distress
- develop a humane outlook
- express love, care and compassion towards the disadvantaged and CWSN (Divyang)
- be able to communicate the value of empathy
- understand the importance of inclusivity and support it
- sensitize peers as well as community members about inclusivity and help prepare a conducive environment for the same
- develop skills of self awareness and critical thinking towards the under privileged

Role of Mentor/ Teacher:

The mentor/teacher should:

- help students understand implications of life situations -discrete difference between sympathy and empathy;
- guide students to communicate value of empathy through examples;
- organize rotation mentoring of CWSN (Divyang)
- support and create conducive environment for promoting inclusivity.
- Initiate, brainstorm, plan, organize and collaborate with students.

<u>Project Process</u>

Prepare: (Suggestive ideas)

- Organise brainstorming sessions with the students
- Discuss the scope of project and prepare a road map

- Draft an action plan
- Make 'who needs my help' worksheet
- Participate in prayer services. Express feelings in form of poem/ story.
- Write letters to sick or distressed or visit old age homes / orphanages (read to them or play with them)
- Role-play, creating situations which call for a manifestation of empathy.
- Identify or compose a poem on the subject and read it to the class.
- Ask them to work on 'who needs my help' worksheets prepared during the 'Prepare' phase. They can depict it through words or drawing thinking about the needs of others and provide assistance without being asked. (Show the writings and pictures)
- Discuss how we can help CWSN, fighting with terminal diseases like Cancer, belong to disadvantaged groups.
- Plan their interaction, on rotation, with CWSN.

Reflective Musings:

- Talk about empathy with students, ask them to discuss it within their peer group and family.
- Discussions will be held in class on the activities of the project. The students will think, talk and write about what they have learned and observed.
- Questions will be discussed in class about their experiences and response of the community; e.g.

  "I believe empathy is the most essential quality of civilization."

  - Describe what have you learned and felt about your project?
  - How far was the activity beneficial for you?
  - What have you learned about inclusivity from this project?

- The students will be given a Proforma to fill in so that they can assess their own learning from the project.
- The teacher will also fill the Proforma to assess and rate the performance of the students.

Share and Celebrate

- Students share awards and certificates for practicing the value after relating situations and elaborating on them.
- An assembly can be arranged to award the outstanding students.
- The report of the project may be published in the newspapers and the school's magazine.

Assessment

Rubric may be developed in consultation with teachers

Project - 4: Care for Homeless Children

Project Focus- Child Rights

Target Point- Groups as community volunteers participate in a programme to give happiness to children living in shelters. This would also increase awareness about the issue of homelessness. This SE project will also focus on every child's right for special protection and care. Children have the right to an adequate standard of living, health care, education and services, and to play and recreation.

Learning Outcomes:

Learner

- understands and appreciates every child's right to an optional standard of living, health care, education and services, and to play and recreation. These also include a balanced diet, a warm bed to sleep in, and access to schooling.
- is aware about issues of homelessness.
- develops empathy for other children who may be less privileged than them but not less creative or talented.
- expands their horizon of society and develop an understanding of child rights.
- assesses impact of one's work.
- supports underprivileged children.
- helps create a social environment that supports and respects every child's rights.
- develops deep insight into the living conditions of underprivileged children.

Role of mentor/ teacher:

The teacher/ Mentor/Initiator

- help students develop an action plan.
- provide them with an understanding of Child Rights.
- help them with all support in terms of logistics.
- facilitate the process and provide them all scaffolding required.

Project Process:

- help students in identifying a shelter for children.
- guide students to understand the complexities involved by a few pre-project activities.
- brainstorm and ask what they think their objective is.
- coordinate with the authorities concerned and complete any official formalities required in the school and in the shelter.

Suggestive activities

- Plan to clean a shelter. The improved aesthetics will add cheer to the House.

- Identify needs of various Shelters in the community (Read the concept and complete the Survey Form). Look up which Shelter has the direst need to be painted. Steps for painting the Shelter:
    a) A group of students may go and take measurement of the area to be painted-the rooms, the compound wall and the outside wall.
    b) Discuss the budget that will be involved in purchasing the paints and discuss how to arrange for any donation from the community.
    c) Organise a donation drive.
    d) Meet the local authorities.
    e) Get budget allocated for cleaning

Reflective Musings:

- Discussions will be held in the class on the activities of the project. The students will think, talk and write about what they have learned and observed.
- Questions will be discussed in class about their experiences and response of the community; e.g.:
    i. Describe what you have learned and felt about your project.
    ii. How far was the activity beneficial for you?
    iii. What have you learned about child rights from this project?
- What can be your future plans about continuing to support such children in terms of their other basic requirements?

Share and Celebrate

- An assembly can be arranged to award the outstanding students.
- The students may display activity pictures (before and after) on school notice-board.
- Certificates can be awarded to all students.
- The report of the project be published in the newspapers and the school's magazine.

Survey Form - Suggestive

1. Please read the following concept and complete the survey:

A group of students from _____(School's name) are interested in giving a makeover to a House like yours. These children have decided to bring happiness to a group of their friends by adding colour to their life and be friends with them. However, as the resource is limited, they are interested to find out which of the Shelters have the urgent need for it.

Survey form to identify Shelter for Makeover

i) Select how you feel about the qualities of your Shelter:

Quality/Scale Low_____ High 1, 2, 3, 4, 5

Maintenance of rooms
Maintenance of bathrooms
Number of games played
Colour of your room-wall
Classes conducted

ii) After reading the above service description, how interested would you be in using the described service?

- Not at all interested
- Not very interested
- Neither interested nor uninterested
- Somewhat interested
- Extremely interested

iii) Which features are the most valuable in the above description?

_____

_____

_____

_____

_____

_____

_____

_____

iv) Do you find anything unappealing in the concept? Please Write.

_____

_____

_____

_____

_____

v) How often do you get such opportunities from other community groups?

- Once in a year
- Once in two years
- Less often
- Never seen

vi) Do you want us to do anything more for you in addition to what we offering? List any three in order of you preference.

_____

_____

_____

_____

Alternate Suggestive Activities:

- Celebration of festivals with children in Orphanages.
- Adopting an Orphanage/Slum/Village and help to skill children (Communicative Skills, Etiquette, Exploring viable job opportunities)

Assessment
Rubric may be developed in consultation with teachers

Project - 5: Being Safe and Responsible

Project Focus - First Aid/ Health Club; Disaster Prevention and Mitigation

Target Point - To bring awareness in the society about safety concern, reactions to different types of dangers and how to give first aid during emergencies.

Learning Outcomes:
Learner will

- understand importance of being safe and responsible.
- understand the importance of first aid, dealing with cuts and bruises, heat exhaustion and heat stroke, breathing difficulties, cuts nosebleeds, choking, basic sports injuries
- practice first aid skills in order to empower them to help people in emergencies.
- learn to prepare a first aid kit.

Cross-Curricular Linkages

- The students will learn basics of first aid.
- The students will be trained practically about first aid skills.

Project Process

- The students will be provided tips for facing danger.
- Informative lecture-demonstration sessions will be arranged with doctors from different hospitals including a dentist.
- The students will be provided first aid boxes.
- The students will be divided into four groups for conducting the project. A project manager from within the group will check the progress of the students for their field work. The project manager will bring a camera to make video of first aid provision to others.
- After collecting data about the topic, the students will discuss various dangers in the classroom and will come up with life saving and precautionary reactions. They will be asked the following questions:
    - What is your very first response to danger?
    - Why is first aid not a common practice?
    - How can it be made common practice among people of the community?
    - Can you explain different situations in which first aid is required?
    - What can be your first reaction towards an injured person?
    - What will you do, if you see an unconscious person lying in a pool of blood?
    - What can be done to make first aid a common practice?

- The students will go to the hospitals in order to attend lectures of the doctors about first aid. Each group of students will visit 3 doctors. The students will also make videos of the sessions held with the doctors. ‘First aid’ videos will be shown to students.
- Practice of first aid will be done in the classroom.
- The students will learn how to check temperature and blood pressure of a person.
- Charts and models will be prepared by students.

- The students will perform first aid in real life. They will treat the injured students and their community members. They will keep a record of those who will be treated.
- The students will teach students of lower class about different first aid techniques.

Reflective Musings:

- Students will share their experience of working on the project with their teachers and class fellows.
- Students will be asked the following questions about their project and present it in the form of a report:
  - What did you learn after conducting this project?
  - Did you feel that this project made a difference to your life and the lives of others?
  - What problems did you face during the project?
  - Do you think that the project was successful?

- The students will develop a proforma to fill in, so that they can assess and judge their performance.
- The teacher will also develop a proforma to assess and rate the performance of the students.
- Each student will present a Report.

Share and Celebrate:

- Health Mela: A Health Mela can be organised to sensitize people about the importance of first aid. Demonstrations and lectures on administering first-aid can be presented.
- Exhibition: An exhibition will be held during the Mela. Charts and models made by the students can be displayed in the exhibition.
- Speeches: Speeches/ Lecture-demonstrations can be done by the students to spread awareness about first aid.
- Publicity: The report of the project may be published in the school's magazine and newspapers.

Assessment

Rubric may be developed in consultation with teachers

Project - 6: Environment Conscious Citizens as Part of Eco Clubs

Project Rationale -

Our world is changing, and changing fast. Our environment is pressured due to over-exploitation of our finite natural resources, climate change, and rapidly changing economic and social situations. This is leading to us leaving behind a complicated and difficult mess for our future generations to deal with. Unless the young generation does not build an appreciation for nature and see value in its preservation, we will continue to deplete our natural resources, causing irreparable damage to our planet.

Our education systems must ensure our children develop an understanding of the environmental systems and learn new skills and new ways of living sustainably with respect for themselves, each other, their communities and their surrounding environment.

Education has been globally recognized as a key solution to achieving sustainability in development and current lifestyle approaches. To achieve this, it is important to target all the stakeholders by empowering them to take conservation action. Classes IX to XII are the most crucial years of laying foundation for professional life, thus an intervention at this stage is most impactful in shaping the society.

Project Focus-

This is a leadership building exercise and will help the students to become a thinking and environmentally conscious individual. It is a journey of self-evaluation and personal and professional growth.

Target Point-

The following activities that the senior secondary school (Classes IX to XII) students of all the CBSE schools, can undertake through its Social Empowerment through Work Education and Action (SEWA) programme. You can choose 1 activity from each section.

6.1. SELF HELP

6.1.1 Learning Outcomes:

Students will –

1. Connect with nature
2. Adopt practices that will benefit the environment
3. Prepare a plan and suggest steps your family can take to become a sustainable household.
4. Manage domestic waste produced in their homes

6.1.2 Activities –

Did you know that nature has a therapeutic effect on us? It has been scientifically proven that, being in the proximity of nature encourages physical activity, reduces negative emotions, enhances recovery from illness and eventually has positive effects on physical and mental health. Nature can be an individual's first step to achieving holistic well being.

6.1.2.1 Connecting with Nature

a) Go on a walk in a park/garden/forest nearby. Choose a time when there is a likelihood of minimum disturbance.
b) Take a deep breath and feel the air (warm/cool).
c) Visit regularly and observe different kinds of trees that grow there.
d) Compare their size, kinds of leaves, flowers, seeds, bark, canopy etc.
e) Observe different kinds of birds, insects any other animal that you see on the walk.
f) Look closely at the birds and insects having an affinity to a particular kind of tree. Find out if there is a symbiotic relationship.
g) Choose a plant and observe it closely to find some additional information about the tree such as flowers, fruits, seeds, bark, trunk, any special adaptation, size, kind of soil it grows on etc.
h) Find the name of the tree, its importance in nature and for humans.
i) Collect or draw pictures of its leaves, fruit, flower and other prominent parts.
j) Create herbariums with fallen leaves, flowers and twigs of the tree.
k) Look for a special feature that helps the plant adapt in the climate of your region.
l) Make a list of books and publications that you referred for additional information on the tree.
m) Prepare a portfolio for the tree capturing detailed information about the tree.
n) Read National/International publications and websites on environmental themes regularly.

- **Refer to field guides on the Indian Landscape on** Birds, Mammals, Reptiles, Trees and Marine life

6.1.2.2 Set up a small kitchen/herb garden at your school. This can be your first step to healthier living while conserving resources. If possible, take help from a gardener or a visit a nursery nearby.

a) Identify a space in your school, where you can start your kitchen garden. You can grow vegetables/herbs in pots as well.
b) Ensure that it gets enough sunlight.
c) Analyze the space available and decide upon the herbs/vegetables you can grow.
d) Choose the herbs/vegetables that are easy to grow and are seasonal.
e) Procure the seeds, soil, pots (optional), manure and basic gardening tools.
f) Water your garden regularly.
g) Consult a gardener on the steps to be taken to care for the plants.
h) Harvest the vegetables/herbs and cook your favourite dishes with them.
i) Involve others in looking after the garden.

6.1.2.3 Prepare a plan to make the households of all students and teachers of a class more efficient and sustainably functioning unit.

a) Prepare a chart to evaluate the monthly household expenditure on various items used by your family and the waste generated. Talk to your parents and other family members to collect the information.

Items	Monthly Expenditure	List of waste generated
Groceries	INR	Packaging material- Plastic bags, tetra packs, cartons, plastic bottles etc.
Fruits & Vegetables	INR	Food waste
Clothing (monthly average)	INR	Old clothes, buttons, bed sheets, old shoes etc.
Electricity	INR	
Transport	INR	
Cooking Gas	INR	
Water	Litres	Waste water from kitchen, laundry etc.

b) A sustainable household should have minimal impact on the environment. For this, it should use minimal resources and generate as less waste as possible. To ensure this, suggest ways in which use of resources and generation of household waste can be minimized.

c) Reuse grey water or waste water from the kitchen and laundry for gardening or floor cleaning.

d) Repair, Reuse and Recycle household waste as much as possible.

e) Reduce the use of electricity and cooking gas

f) Use eco friendly means of transport such as public transport or CNG vehicles.

g) Practice the above ways and review the chart to measure the extent to which your household has become low cost and sustainable.

6.1.2.4 Segregation and proper disposal of waste in every household will help combat the issue of waste management in out towns and cities by reducing the burden on its landfills. It is important to segregate waste at source itself. Sensitize family members of households and start segregating waste at each selected home.

a) Keep separate containers for dry and wet waste in the kitchen.

b) Keep two bags for dry waste collection- paper and plastic, for the rest of the household waste

c) Keep plastic from the kitchen clean and dry and drop into the dry waste bin. Keep glass/plastic containers rinsed of food matter. Give away the recyclable waste items to the kabadiwala/junk dealers or rag pickers.

d) Send kitchen waste to the community compost pits. You may sensitize and encourage your community to start composting wet waste from the kitchen.

6.2 COMMUNITY OUTREACH ACTIVITIES

6.2.1 Learning Outcomes:

Students will –

1. Conduct awareness campaigns in School and neighbourhood community.
2. Conduct survey on utilization of resources, quality of soil, water, air and sanitary conditions
3. Prepare a report based on the survey and inform the local authorities about the issues.
4. Adopt a neighbourhood community for greening and cleanliness.
5. Suggest innovative solutions for sensitization of the community and dealing with local environmental issues.

6.2.2 Activities –

6.2.2.1 Start a Birding club in your school

a) Find a group of nature enthusiasts (conservation leaders) in your school who volunteer to be the core working committee for the Birding club. Give an interesting name to your club.

b) Organize the Birding club core committee meeting to plan the activities of the club. Arrange for some binoculars, if possible.

- Conduct regular nature walks especially during winters.
- To start with looking at some common birds.
- Be attentive to the different kinds of bird calls you hear during the walk.
- Observe their size, colour of feathers, colour of the eyes and beak and claws if possible.
- Try to find out the different kinds of nests birds make.
- Follow some basic rules during birding walks such as, maintaining a distance from nests and nesting colonies to ensure that there is no stress caused to the birds.
- Learn some interesting facts and stories about birds and share them among your birding community members.
- Refer to books
- Conduct regular meetings for the core committee to share knowledge and gain from each other's experience.
- Conduct presentations for others in the school to sensitize them about issues concerning the birds.

6.2.2.2 In the 21st century, it has become utmost essential for the schools to become green entities and undertake activities that will empower their students and teachers to take conservation action and become leaders for nature conservation. Prepare an annual calendar of activities that will offer them opportunities to explore, learn and practice sustainable living. Student committees can be formulated to undertake following activities during the year.

- Publish quarterly e-newsletter on Sustainability and Conservation of environment, "The Green Gene". Students will design e-newsletter. The following are the suggested sections; however, students may use their own creativity to design it. –
    i. Editor's Column
    ii. News Alert

iii. New species discovered
iv. People for the Planet (Conservationists, scientists, authors for nature etc.)
v. Sustainable practices – Try at Home
vi. Activity section (Crossword, Quiz, picture quiz, puzzles etc.)
vii. Reader's Column (Nature art, posters, stories, poems, photographs etc. contributed by the readers)
viii. Circulate the newsletter to all the stakeholders.

- Suggest methods to reuse of greywater in school. Share the ideas with the school authorities and support them in the implementation.
- Track journey of waste in your school from source to destination
- Segregate waste in your classroom and prepare a plan to dispose each kind of waste sustainable. Attempt to become a zero waste classroom and showcase your classroom as a model classroom for others to follow.

6.2.2.3 Survey your local community to find out the environmental issues. Prepare a set of questions that you will need to ask to collect relevant information on sanitary conditions, quality of air, soil and practices that have a negative impact on the environmental health.

Prepare a report on the above with respect to your school/community highlighting the issues and its impact on them. Draft a letter to the school/local authorities informing them about the issue and send the letter to them along with the report.

6.2.2.4 Make a School Compost pit- Organic waste constitutes 35-40% of the municipal solid waste generated in India. This waste can be recycled by the method of composting. Composting ensures that this waste is not carelessly thrown or left to rot but nutrients are recycled and returned to the soil.

a) A group of students may conduct a survey on the kind of waste produced in the school.
b) Identify a cool, shady corner in your school compound or garden where a pit can be dug. Cover the pit with a net or mesh to keep away flies and birds.
c) Start a waste segregation project in the school. Install two dustbins in the school for biodegradable and non-biodegradable waste.
d) Put a layer of biodegradable waste (Bits of paper, leaves, twigs, fruit peels, leftover food etc.) into the pit and cover it with a thin layer of soil or dried leaves to prevent bad odour.
e) Turn the waste over and over once every three days. In about 45 days, the pure, rich and organic waste will be ready to be used in the school's garden.

6.2.2.5 Plan an awareness campaign for water conservation/plastic free school/neighbourhood in your school and execute it.

a) Create a poster to dissuade the local community members from using plastic bag or waste water and display the posters in public places.
b) Write slogans against use of plastic bags/water wastage/pollution.
d) Have these community members take pledge to avoid using plastic bags/ prevent water wastage.

6.2.2.6 Form groups of volunteers in your neighbourhood for making it greener and cleaner. Undertake any of the following activities in the locality-

a) Conduct cleanliness drives in the locality
b) Carry out plantation drive in the locality
c) Install dustbins in the area
d) Write a letter to the local authorities to ban plastics
e) Run anti fire cracker campaigns in the locality.
f) Encourage community households to segregate waste and educate them about proper disposal of waste.

6.3 PRE VOCATIONAL AND SKILL DEVELOPMENT ACTIVITIES

6.3.1 Learning Outcomes:

Students will –

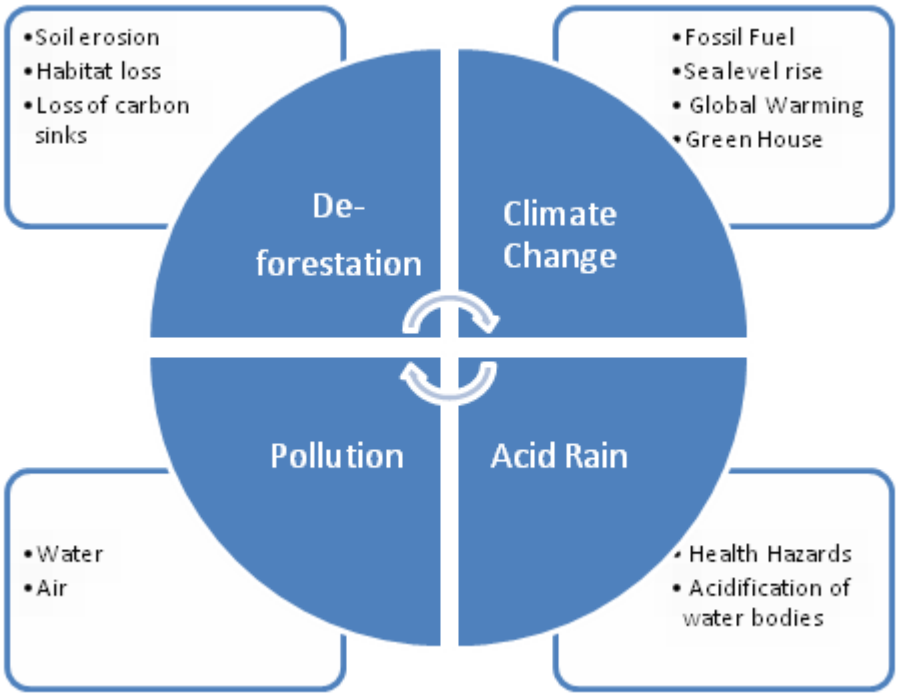
1. Prepare a plan to start a small scale eco-friendly business (Entrepreneurship)
2. Set up Vermicompost pits/compost bins, Upcycle (Paper, Glass bottles, plastic), installing vertical gardens for earning profits.

6.3.2 Activities –

6.3.2.1 As more consumers demand that companies behave in a socially responsible way, it's becoming more common for businesses to implement environment friendly practices. You can take this initiative one step further by starting an eco friendly business and scale it.

- Prepare a mind- map of desirable and sustainable future in local community or neighbourhood.

For example, following is the map for describing environmental issues-



- List the changes needed in the local community to ensure that the business does not harm or degrade the environment in any way. Each required change is a business opportunity.
- The business can be service/product based.
- Fix upon a business based on your knowledge and skills.
- Describe your business idea. (What to sell? How to sell? Where to sell? Who will buy? Why will he buy?)
- Find the investment on the basis of operational and human resource costs. Fix the pricing.
- Plan a fundraising activity (refer to next activity).
- Analyze the risks & threats. Prepare a strategy to overcome it.
- Analyze strengths and opportunities and plan to use them for running your business.
- Build your network. Promote your product/service (Make a poster advertisement for your product/service).
- Few eco friendly businesses are- Selling upcycled (paper bags, cloth bags etc.) or energy efficient products, garden products, nursery, environmental radio programme etc.

6.3.3. Fund- Raising for Eco Friendly businesses-

- Explain who you are, what you are all about and why someone should support you in 15 seconds.
- Remember fundraising is not just about raising money, it's also about building relationships with your community for the longer term.
- Tell the prospective supporters following things.

- Share a report of expenditure with your donors/supporters to ensure transparency and credibility in your efforts.

6.3.4. Environmental consciousness and sustainability should infuse in every aspect of our living. This will require every individual to develop certain skills that will enable them to manage their resources more efficiently.

a) Make a list of skills that are required to manage resources in a more sustainable way such as vermicomposting, paper recycling, gardening, rainwater harvesting etc.
b) Find an expert and invite him/her to conduct a workshop.
c) Organize the workshop in the school.
d) Have students form groups and undertake the project.
e) Organize an exhibition to display the projects.

Project - 7: Reduce, Recycle, Reuse (most important 3R's) and Now Respect

Project Focus – Conservation, Caring for the Planet, Segregation of garbage

Target Area - It enables children to learn about the original source of material and also which materials can be recycled.

Every living organism is important in this world, be it an elephant, a banyan tree, a rabbit, an insect, a mustard plant, or inanimate resources such as water, air or soil. They are members of one or the other food chain and are dependent on one another. Every food chain starts from a plant source and man is the last consumer in almost all the food chains. But with increasing population the resources are depleting. We need to establish a balance between human populations and available resources so that renewable sources find sufficient time to renew themselves and others can be recycled and reused.

Learning Outcomes:

Learners-

- learn about the original source of material goods such as glass, aluminium, iron, paper, plastic, petroleum, coal.
- learn the importance of segregating garbage.
- learn which materials can be recycled. .
- learn to coordinate between plan and action, within the volunteer group as well as with the target group.
- find new ways of cooperating with each other.
- learn social skills and ability to solve problems in a group.
- understand the importance of conserving resources.
- explore and internalize the importance of Reduce, Recycle, Reuse.
- learn to use resources judiciously.

Project Process: Prepare:

- Students will make a rough layout and plan the activities to practically implement the project.
- Conduct a class discussion. Discuss the meaning of recycling. (The teacher may tell a story with a message - "There is enough for everyone's need but not for their greed)".
- Students will make a list of things that can be recycled at home or at school.
- Discuss the reasons for recycling. Ask students if they know what the source of the original material is.
- Many students do not know the actual origin of materials and how material is recycled. Prepare and use the resource sheets to sequence the steps from original product to recycling for each material.
- Draw story boards about where materials come from. Display stories.
- Identify locality or target area for the execution of the project.

- Form groups of 10 to 12 students and elect a group leader for each group. The students in each group should preferably be from the same residential area to make it practically easy for them to target their project area.
- Divide larger areas into smaller target areas, and allot them to each group accordingly.
- Do a door to door survey to find out things that are needed to be recycled by the people living in the neighbourhood and collect data to fill in the provided survey sheet.
- Talk to the local area welfare society and arrange a presentation.
- Conduct a survey an environmental hygiene of your school (classroom, corridors, washroom, public spaces) and suggest solutions.
- Prepare a presentation to :-
    - spread awareness about Reuse and Recycling.
    - sensitize people about conservation of nature by recycling.
    - make residents aware about the benefits of segregating the trash.
    - tell them about the various benefits of understanding the origin of various goods so that recycling becomes easy for them..
- Ask students to prepare two lists by following the steps given below:
    - Make a list of all man-made things around them.
    - Try to find out where they come from.
    - The materials, about which they have a doubt (its origin), will be marked in the list.
    - The teacher will help them find the origins of these materials.
- Share the list prepared by you with the residents and prepare a consent list of those who would agree to segregate the trash in order to facilitate the garbage disposal.
- Prepare an evaluation sheet after monitoring and taking feedback from the residents to make a record of people to know how they have benefitted from the project.

Reflective Musings:

- After the collection of the data from survey, ask students to assemble all the collected data at one place.

  We have to start caring about our planet. That is why we should recycle. "Why should we recycle? To talk is good, to act is better."
- Guide students to research and prepare two lists- one with the materials that can be recycled and another one with the materials that cannot be recycled.
- Guide students to prepare a presentation highlighting the following:

    - Meaning of Recycling.
    - The need for reuse.
    - Does it help in easy disposal if the garbage is segregated?
    - Why do some materials need to be recycled while others cannot?
    - Why does man need to control greed and utilise Mother Earth's resources thoughtfully?
    - Why do we need to respect the resources provided by nature?
    - What should be reduced and why?

- Discussions will be held in class on the activities of the project. The students will think, talk and write about what they have learned and observed.
- Questions will be discussed in class about their experiences and response of the community; e.g.,
    - Describe what you have learned and felt about your project:
    - How far was the activity beneficial for you?
    - What have you learned about yourself and your surroundings from this project?
    - How do you think we can sensitize people about conserving and respecting resources?
    - How can we make the project more effective?

- The students will be given a Performa to fill in so that they can assess their own learning from the project.

Share and Celebrate:

- An assembly can be arranged to award the outstanding students.
- The students will display the charts and models on school notice-board.
- Certificates can be awarded to all students.
- The classroom can also be decorated with charts and models.
- The students can also keep imparting information regarding cleanliness through a practical demonstration to other students.
- The report of the project may be published in the newspapers and the school's magazine.

Survey Sheet

SN	Name	Residential Address	People who started segregating garbage	People who did not start segregating garbage	People who were benefitted (Those who Changed)

Student Evaluation Sheet to be filled by the Mentor after the completion of each activity:-

Scheduled Activity	Proposed Date	Suggested number of hours	Hours invested	Date of completion of the activity	Learning Outcomes achieved	Skills developed

Self Assessment

1. The experience was a great learning experience because
   _____
   _____
2. The next time, i will ensure
   _____
   _____
3. The community needs that were fulfilled
   _____
   _____
4. The community needs that were not addressed include
   _____
   _____
5. The things that i would do differently next time include
   _____
   _____
6. I think we can be better equipped for future involvement in the community by
   _____
   _____

Overall Assessment: Rubric may be developed in consultation with teachers

Activities under SEWA?

Activities leading to 'Physical Fitness' as an outcome and contributing to a healthy lifestyle will fall under SEWA.

The assessment criteria will be evidence based taking the readings from Health Card (**Fitnometer, Actometer and Nutrometer)**. These will be used as scientific evidence towards fulfilling the weighting assigned to this component. These activities need to be taken up in larger groups and organized as a motivational and aspirational tool of outreach to the community.

The illustrative list of activities suggested under this theme are as under:

- Being part of **adventure camps** either at school or as part of collaboration with uniformed services, this is in addition to the 'adventure' activities under the strand
- Part of '*Swachh Bharat*' activities such as cleaning and clearing fields and other initiatives of Ministries.
- Creating leagues of Sporting activities (basketball, volleyball, swimming, hockey, netball, squash, cricket and boxing) as interclass, school, city, district or even at national levels
- Long distance runs (half and full marathons). 'Fun runs' for a cause
- Yoga, Running/ Jogging with fitness trackers with a goal in mind at the end of the year.
- Dance and choreography in groups
- Trekking/ Hiking/ Biking/ Cycling as meaningful fitness activities with a goal in mind at the end of the year.
- Camping, Military training with a goal in mind at the end of the year.
- Gardening and creating herb gardens/medicinal gardens/vegetable garden
- Disciplined and responsible dietary habits as outcome-based fitness projects

Managing Sport Events: An Exemplar Activity:
All participation in any of the above activities or those under scheme of games and sports must be consistent and on a daily basis. The **by-product and outcome** of these will be **health and wellness and overall fitness**. **Physical fitness** also leads to choosing **good dietary practices**, thus ensuring **good nutrition habits**.

Organizing and managing sport events are complex. It includes integration of modern management skills like budgeting, sponsorship management, venue management logistic management, facility management are required.

Learning outcomes:
The learner:

- Creates court/ground marking as per specifications
- Learns to use equipment for marking such as nails, ropes, pegs, hammer, measuring tape, chalk powder
- Prepares fixtures as per the specifications:
- Maintains props and equipment as per the requirement e.g. pressure for various balls, plans budgets, organizes venue, logistics

- Implements to make it a positive learning experience
- Marks restricted area around the field servings, area, pitch, scorers table
- Uses chalk powder to make a 5 cm line as per the dimension of the field depending on the game.
- Understands cross curricular linkages through concept of dimensions (Length, breadth, depth on height), radius, diameter
- Understands the methods of conducting a league and implements them

League Format

League is a way of conducting a tournament where each team plays against all the teams or within a group. In league format, teams play all the pre-fixed matches and get the advantage to recover even if the team losses the first or second match.

For example, in a tournament, if 4 groups are made and each group has 4 teams in each group, one team may play against 3 other teams.

Likewise, the champion of all 4 groups move to the next level. In the next level, the group champion teams may play against each other (all the teams) and the winner is decided based on the maximum number of wins. This method is known as league-cum-league.

The other method is league-cum-knockout where in the champion team of a group plays with the other group champion and the winners play the final.

The method of league or league-cum-knockout solely depends on the organizers. Organizers decide on the basis of time availability, no. grounds available, funds and no. of teams.

In a league format, the total no. of matches is calculated as **n (n-1)/2**

'n' is the total number of teams.

Each group has 4 teams. So the total no. of matches in each group will be

$$n(n-1)/2$$

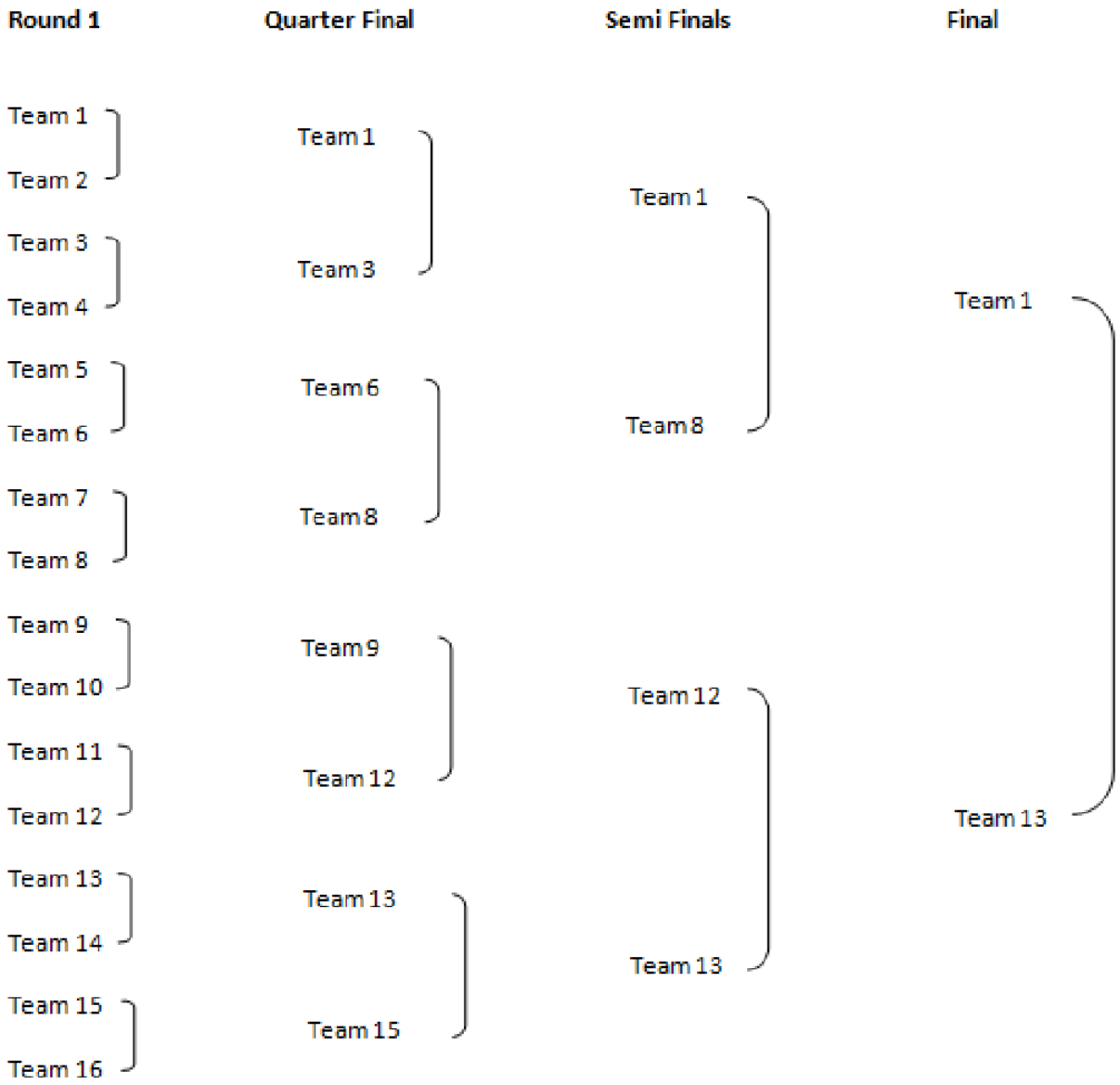
$$4(4-1)/ 2 = 6 \text{ matches}$$

Total no. of matches including all the groups will be 24 only (6 matches per group X 4 groups).

Post group league, it may continue as league format or knockout format.

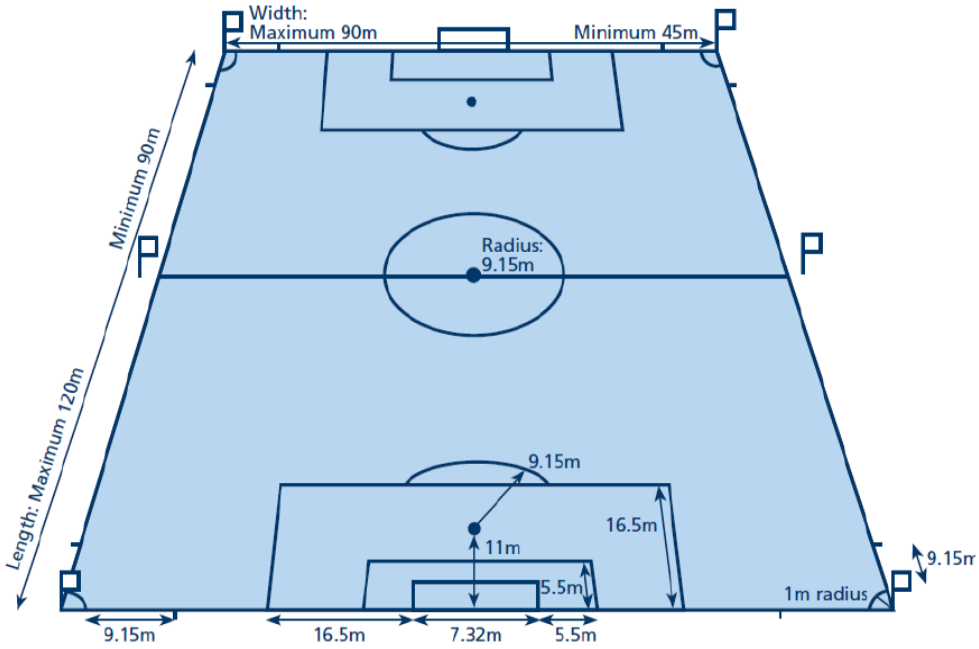
Knockout Format

Knockout is another way of conducting a tournament where in the teams get knocked out on losing. The winning teams keep moving to the next level and finally 2 teams compete for the championship.

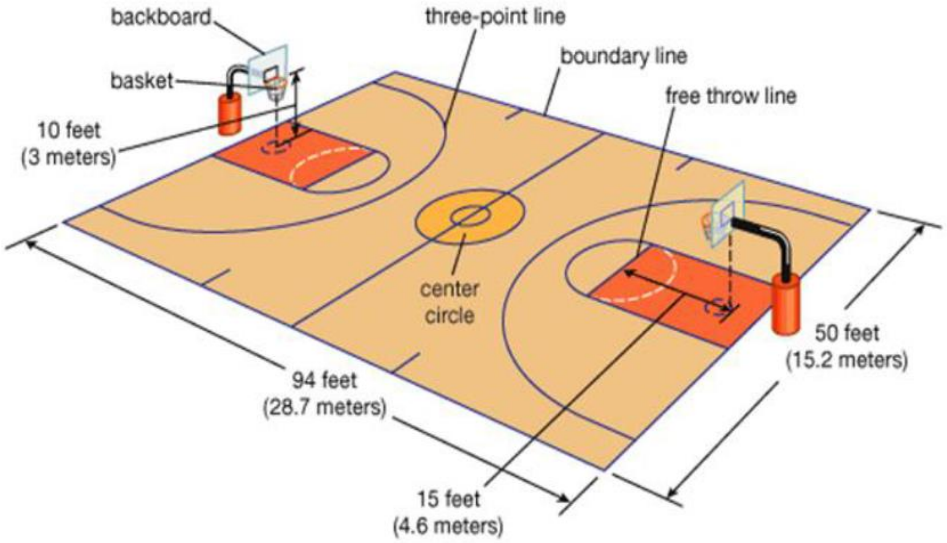


The above fixture is applicable only if the total no. of teams is exponential power of 2 that means 22 =2 x 2 = 4, 23 = 2 x 2 x 2 = 8 and so on (16, 32, 64 .....).

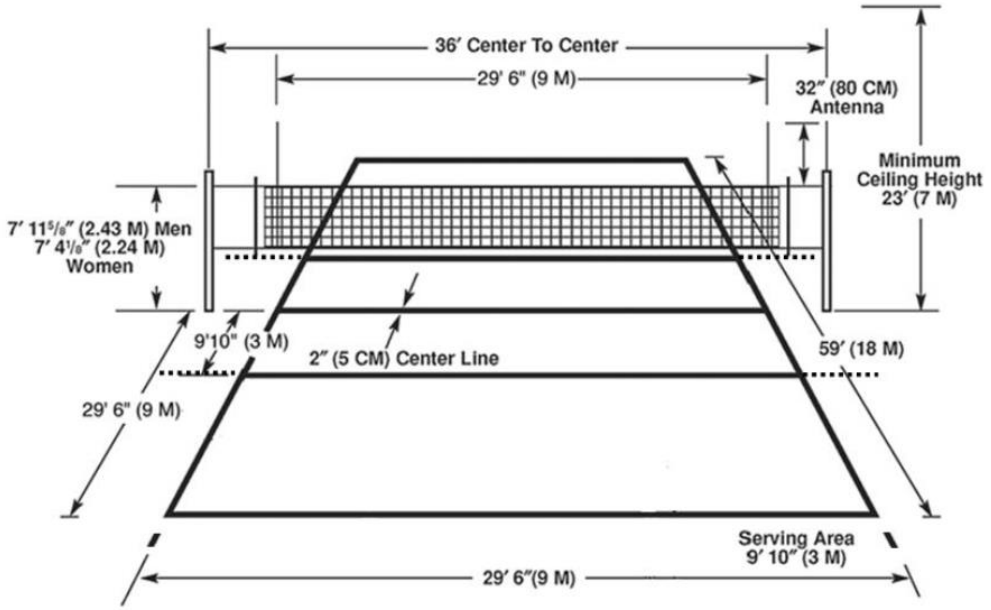
Football: Dimension of the Field



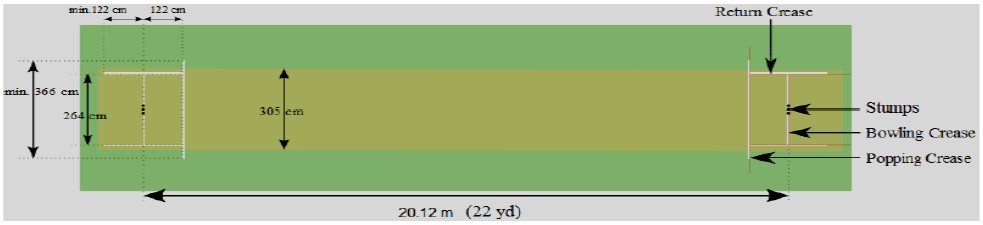
Basketball: Dimension of the Court



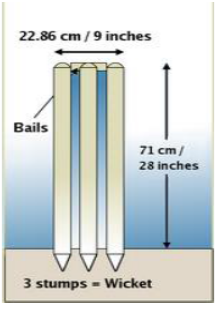
Volleyball: Dimension of the Court



Cricket: Dimension of the Pitch



Pitch Dimension



Wicket/ Stumps Measurement

Maintaining the Props and Equipment?

Check the pressure carefully. Pressures for various balls are:
Football - 0.6 – 1.1 atmosphere (600 – 1,100 g/cm2) at sea level
Basketball – 3.17 – 4.0 atmosphere (3170 – 4000 g/cm2) at sea level
Volleyball - 0.30 - 0.325 atmosphere (300 – 325 g/cm2) at sea level

Before using balls:

1. Inflate balls to correct pressures.
2. Before you inflate the balls, moisten the needle.
3. To inflate balls, squeeze balls while gradually adding a small amount of air at a time.
4. Inflating balls with too much air at once will damage the inner tube/ bladder.
5. Avoid inflating balls with machines as it may over inflate resulting in bursting.

After using balls:

1. Deflate little air after use. If the same air pressure remains in balls after use, balls may expand or deform.
2. Wipe the surface with a soft cloth.
3. If you are unable to remove dirt easily, wipe balls with a moistened cloth.
4. If you are unable to remove dirt with water, wipe balls with a cloth moistened with water-diluted mild detergent.
5. If you use mild detergent to clean balls, thoroughly wipe off any remaining detergent to ensure that it does not remain on the ball surface. (Detergent may cause stain).
6. If you use water to clean balls, wipe the ball afterwards with a dry cloth.
7. Dry balls out of direct sunlight in a well-ventilated place.
8. If the ball has been soaked by rain, wipe away moisture and dirt using a cloth. Dry the ball out of direct sunlight in a well-ventilated place.

To store balls:

1. Avoid leaving balls in a place that is exposed to direct sunlight.
2. Avoid storing balls in hot or damp places.
3. Store balls in a well-ventilated place.
4. Inflate balls regularly, in a well-ventilated place out of direct sunlight.

To maintain props and equipment:

1. After the activity, use a dry cloth to wipe the props/ equipment and store in a well-ventilated place out of direct sunlight.
2. Check the condition of the props/ equipment regularly to avoid any unobserved crack/ breakage.
3. Do not leave the props/ equipment in direct sunlight for the whole day. It would reduce the life of props/ equipment.
4. Do not store the props and equipment made of iron/ metal in a damp place. The moisture may lead to rusting.
5. The equipment which has not been in use for long duration (posts, flags, poles, hurdles etc.) needs special care.
6. Wrap it properly and store it in a well-ventilated place out of direct sunlight. Such equipment should be checked at least once in a year to ensure the good condition.
7. Do not apply water in any leather props and equipment. Always use dry cloth to clean.

Project/ Activity 8: Studying the nutrition and health status of people in a peer group/ village/city slum/ tribal area/ neighbourhood

The nutrition and health status of the people reflect and present status and future prospects of a country. Enhancement of the nutrition and health status of the people should, therefore, be the first priority of the national planning for development. Study of the factors responsible for the present status of nutrition and health will lead to acquisition of facts on the basis of which proper planning for the enhancement of their status can be made.

Specific Activities

- Adoption of a village/city slum/tribal area or even peer group/neighbourhood
- Preliminary identification of nutritional and health problems of the community.
- Preparation of questionnaire/interview schedule to elicit background and information from family such as:
    - General information: head of the family, type of family
    - Composition of the family
    - Meal pattern of the family
    - Monthly expenditure pattern on food, clothing, housing, education, medicine, fuel, transport, saving, remittance of debt, recreation, other items.
    - Details of monthly food expenditure.
    - Food produced at home.
    - Food given under special condition
    - Methods of cooking.
    - Food items stored in the home
    - Food items which are considered "good" and "not-good".
    - Commonly occurring health problems:
- deficiency / diseases of children
- other common ailments of children
- commonly occurring ailments in the family
    - Measures taken to get rid of the ailments
    - Environmental sanitation problem:
- procedure of disposal of wastes (soild or liquid)
- source of water supply and mode of water storage at home
    - Hygienic habits followed
    - Health services available
- Conduct of Survey (Students in groups may develop a questionnaire for the survey)
- Analysis of data and preparation of reports on main findings in respect of:
    - socio-economic conditions;
    - environmental sanitation problems;
    - commonly prevalent health problems;
    - malnutrition problems of children, mothers and the community;
    - undesirable nutrition, health and sanitation practices in the community;
    - practicable intervention measures to enhance the nutrition and health status;
- Helping in community health programmes and enhancing the nutrition, health and environmental status of the community through door-to-door contact programmes.
- Presentation through feedback videos/posters/pamphlets

Process

1. May be done individually, in pairs or in groups
2. Form may be developed for data collection
3. Online data analysis and graphical presentation of findings

Assessment

Rubric may be developed in consultation with teachers

Project/ Activity 9: Participating in the community health programme through door-to-door contact programmes.

Malnutrition and infection are the major causes of the precarious status of health in the developing world. Malnutrition is not only due to poverty or non-availability of food resulting from social and distributive injustice, but also due to ignorance of nutritional facts and undesirable practices. Malnutrition problems can be resolved to a great extent if judicious selection of food is made possible within economic means and the available foods are better utilized. Infectious diseases are caused mainly by the lingering existence of two fundamental problems of environmental sanitation, mainly unsafe water supply and unhygienic disposal of waste, specially human excreta. The application of modern scientific knowledge to environmental sanitation can lead to 80 percent of the diseases being effectively controlled.

Thus, by developing desirable nutrition, health and environmental sanitation practices in the communities, health problems can be considerably resolved. This can be achieved through environment-based education for all age groups of population. A door to door contact programme is the most effective way of environment-based education. Without any nutrition, health and sanitation intervention, the status of nutrition, health and sanitation in the community can be enhanced through functional education by door to door contact.

Process

- May be done in groups
- Developing a checklist to collect data
- Analyze data and prepare a graph
- Record the findings in the report

Specific Activities

- Correlating the nutrition, health and sanitation problems in the adopted community. With the community health programmes being implemented and preparing a check-list of specific practices desirable in the community such as:
    - Gives supplementary foods to the child from the age of four months.
    - Gives milk to the child in katori and not in a bottle.
    - Feeds the child several times a day.
    - Feeds the child even when sick.
    - Immunizes the child.
    - Washes vegetables before cutting.
    - Makes use of surplus cooking water.
    - Uses green leafy vegetables regularly.
    - Uses raw vegetables/fruits/sprouted grains regularly.

- Keeps the home surroundings clean.
- Uses waste water for growing plants.
- Throws garbage in a pit
- Keeps teeth clean.
- Keeps nails trimmed and clean
- Keeps hair clean and combed.
- Keeps clothes clean.
- Uses clean toilet facilities

- Distributing families among members of the project team for door-to-door contact and preparing a time schedule for door-to-door contact programmes, explaining the importance of desirable practices for better nutrition, health and sanitation and recording the practices present in the family in the checklist of desirable practices.
- Discussing the problems encountered by the team members after every 3 contacts, analyzing why a particular desirable practice is not achieved, finding out possible solutions to reinforce the programme.

Process:

- May be done in groups
- Developing a checklist to collect data
- Analyze data and prepare graphs
- Record the findings in the report

Reporting and Consolidation

- Consolidating the records of desirable practices on the first and last contact programme for the entire community and seeing the impact of the programme on the basis of improvement in practice percentage.

Assessment:

- Assessing individual performance of the project team members on the basis of their integrity and honesty and improvement in practice percentage in the families assigned to them.

Project / Activity 10: First Aid: Awareness raising and demonstration

First aid is the immediate and temporary care given to the victim of an accident or sudden illness. The main purpose of first aid is to preserve life, assist recovery and prevent aggravation of the condition until the availability of a doctor, or during transport to a casualty home or hospital.

Specific Activities

- Preparation and use of First Aid Kit.
- Dressing of wounds and bandaging.
- Management of simple injuries and emergencies:
  - bleeding
  - shock
  - drowning
  - burns
  - snakebites
  - fractures
  - poisoning

Activity 11: Plantation of Shade/ Fuel/ Ornamental/ Avenue trees

- Writing a play and enacting the procedures
- Showing a video film
- Making a video film
- Importance of trees for ecological balance of the environment.
- Local and exotic trees for various purposes.
- Factors affecting normal growth of the plants.
- Specific problems pertaining to certain tree species and their solution.
- Raising seedlings in the nursery, nursery management.
- Vegetative propagation of ornamental trees.
- Planning layout.
- Planting and after care.

Specific Activities

- Identification of shade/fuel/ornamental/avenue trees.
- Preparation of herbaria of various trees.
- Phenological observations on vegetative growth, emergence of new shoots/leaves, flowering, fruiting, etc.
- Identification of seeds, seed treatment before sowing in the nursery.
- Preparation of nursery beds for sowing the seeds.
- Raising seedlings in the nursery and nursery management.
- Vegetative propagation by cuttings, layerage.
- Layout for planting
- Digging pits for planting.
- Preparation of soil-manure mixture for filling the pits.
- Transfer of seedlings for plantation.
- Planting with the help of planting board or rope.
- Providing tree-guards/fencing for protection (made of iron bars/empty old drums/throny/ twigs/bricks/ barbed wire/live fence, etc.)
- After care of the plants: watering, weeding mulching, hoeing, protection against disease, pests, animals, adverse weather conditions, etc.

Project/ Activity 12: Acquaintance with common fertilizers and pesticides and their application with appropriate equipment.

- Elements of plant nutrition, Common fertilizers nitrogenous, phosphates.
- Concept of bio-fertilizers, micronutrients, Common insecticides, fungicides, weedicides.
- Calculation of doses.
- Plant protection equipments; various types of sprayers and dusters.
- Use and maintenance of plant protection equipments.
- Methods of fertilizers application soil and foliar application.

Specific Activities:

- Identification of various fertilizers, fungicides, insecticides, weedicides, bio-fertilizers.

- Identification of various parts of sprayers and dusters.
- Calibration of plant protection equipments.
- Calculation of doses of fertilizers, pesticides, etc. for specific purpose.
- Preparation of working solution of plant protection chemicals.
- Use of plant protection equipments.
- Fertilizer application through basal dressing, top dressing and foliar spraying.
- Use of bio-fertilizers for legume crops.
- Band placement of fertilizers in horticultural crops.
- General observation of crops/plants/after application of fertilizers/pesticides and their comparison with the untreated ones.

Assessment:
Data Collection, analysis and their reporting through graphs, presentations and written reports, rubric for assessment may be developed

Project/ Activity 13: Acquaintance with Common Pests and Diseases of Plants and Use of Simple Chemicals and Plant Protection Equipment

- Significance of pests and diseases in agriculture.
- General idea about biological and integrated control measures.
- Common insecticides, fungicides, weedicides.
- Common plant protection equipments, their construction details, simple repairs and maintenance.
- Precautions while using plant protection chemicals.
- Common pests of important field crops, vegetable and fruit crops.
- Common diseases of important field crops, vegetables and fruit crops.

Specific Activities

- Collection and preservation of insects, their larvae, pupae, eggs.
- Collection and preservation of diseases affected plant parts.
- Identification and description of pests and diseases of crops.
- Identification of plant protection chemicals.
- Estimation of crop's damage due to pests and diseases.
- Cleaning, maintenance and simple repairs of plant protection equipments.
- Operation of plant protection equipments.
- Preparation of working solutions of plant protection chemicals.
- Observation of plant after application of plant protection chemicals.
- Comparison between the treated and untreated plants.
- Seed treatment with fungicides.

Assessment:
Data Collection, analysis and their reporting through graphs, presentations and written reports, rubric for assessment may be developed

Project / Activity 14: Preparation of Family Budget and Maintenance of Daily Household Accounts.

Specific Activities

- Identifying importance of household accounts.
- Learning the procedure of recording transactions.
- Keeping records of expenses, vouchers, receipts, bill, etc.
- Preparing simple receipts & payment account in the register systematically & neatly.
- Comparing past receipts and payments with present receipts and payments.
- Discriminating between necessities, comforts and luxuries of different families.
- Preparing a list of consumable articles of the family.
- Collecting comparative prices for the required consumable articles.
- Allocating the family income on various heads.
- Preparing family budget.
- Making a comparative study of the budget of families from lower class, lower middle and middle class.

Assessment:

Data Collection, analysis and their reporting through graphs, presentations and written reports, rubric for assessment may be developed

Project / Activity 15: Helping school authorities in oragnizing (a) picnics, tours, excursions, functions (b) exhibitions.

Specific Activities

- Helping school authorities in organizing picnics, tours, excursions and school functions:
  - planning the programme;
  - forming groups for different functions such as conveyance, food, games and entertainment, collection of funds and maintenance of accounts;
  - making arrangements/preparation of each activity;
  - organizing/performing activities on the day of the picnic, tour/excursion, function;
  - evaluation of the success of the programme/effectiveness of the activity undertaken.
- Helping school authorities in organizing exhibitions:
  - planning the programme;
  - collecting/making exhibits and keeping them safely;
  - collecting suitable tables, boards, etc. for display;
  - cleaning and decorating the exhibition hall or ground;
  - displaying the exhibits on proper spots according to plan;
  - doing reception duty on the day of the exhibition;
  - explaining exhibits to the visitors;
  - collecting the exhibits after the exhibition and restoring them to their owners/the school authorities;
  - putting back the furniture, etc. in its proper place.

Assessment:

Writing a report and making an audio visual film on the entire process including the planning stage.

Project / Activity 16: Participation in Adult-Literacy Programmes

Specific Activities

- Survey of the neighbourhood and identification of adult illiterates.
- Making door-to-door visits and persuading them to join literacy classes.

- Grouping the illiterates according to their age, occupation and interests.
- Grouping students on the basis of their known capabilities and interests.
- Selecting literacy materials with the guidance and help of the teacher.
- Making spatial and physical arrangements for conducting the programme.
- Making adequate preparation for teaching, including the selection of teaching aids.
- Teaching adults in groups.
- Getting together in class and reviewing the progress of work and problems, if any
- Modifying the teaching methods and procedures in the light of experience.
- Evaluating the progress of adult literacy and maintaining records.
- Materials, Tools and Equipment Required : Charts, maps, register, almirah, etc.

Procedure:

- Develop a survey form and conduct the same
- Develop a pre test and post test and administrator
- Conducting an end of the project assessment for the adult learners
- Compare the results of pre and post test and analyze the data

Project/ Activity 17: Resources for Classroom Use and School Use

Specific Activities

- Identification of the concept/topic/lesson for which teaching aids are to be prepared.
- Identification of the teaching aids to be prepared-flashcards, chart, model, scrapbook, flannel board,
- improvised apparatus, etc.
- Making a plan/working drawing of the teaching aid as also a list of tools and materials required.
- Collecting materials needed for making it.
- Preparing the teaching aid under the guidance of the teacher.
- Using the teaching aid on a sample of students to find out its effectiveness and defects.
- Submitting it to the school authorities for use.

Procedure

- Brainstorm with the concerned subject teacher an develop a mind map
- Identify resources to be developed according to the subject
- Work in groups of 3-5 to develop resources, aids for a particular subject
- Pilot them in class in age-appropriate ways, modify if required

Assessment

- In groups, write a report based on the template developed
- As peer educator/ mentor / buddy, teach a lower class level using the resources developed
- Video film a lesson you are teaching using the resources developed and share it with other groups

Assessment for SEWA

- The SEWA will be assessed internally through a blended approach of self-assessment and teacher assessment.
- **There will be no separate theory part as was the trend earlier.**
- Students will be assessed in each of the strands on the basis of evidence such as - direct observation, checklists, and/or use of video. In case of SEWA Projects Students plan and conduct projects and communicate their findings. Evidence in this case can include journals, diaries, essays, laboratory reports, oral presentations and/or the use of video, etc.

Maximum marks allotted for each strand are given in table 1.1. SEWA can be assessed on the basis of the rubric developed by the class teacher for the project chosen by the class for that year. Each activity should broadly be assessed on the basis of following criteria and marks should be given accordingly:

- Participation in SEWA/ activity
- Basic Knowledge & understanding of the SEWA/ activity
- Skills learnt/ development or enhancement of skills of SEWA/ activity
- Motivation to excel
- Improvement in performance (competing with self)
- Team spirit
- Development/ enhancement of
    - Organizational skills for SEWA/ activity
    - Leadership skills/ qualities
- Sensitivity towards
    - CWSN (children with special needs) / inclusion in team
    - Sensitivity towards gender in team

Strand	Periods (Approx.)	Grades
SEWA	50 periods	Grades of SEWA are considered against Work Experience Class IX-X: Grade (A-E) on 5-point scale (A, B, C, D, E)

GENERAL STUDIES

(Syllabus and Guidelines)

Classes XI and XII

CENTRAL BOARD OF SECONDARY EDUCATION

2 Community Centre, Preet Vihar, Delhi-110092


केन्द्रीय माध्यमिक शिक्षा बोर्ड
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असतो मा सद्गमय

GENERAL STUDIES

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FOREWORD

The Central Board of Secondary Education had introduced General Studies at the Senior School stage as a part of the implementation of the National Policy on Education, 1986. The earlier guidelines and syllabus, published in 1990, were a concrete step towards providing a value oriented curriculum. It was visualized as a subject that would transcend all disciplines and would bring a positive change in students.

In the light of changing dynamics of today's society, the earlier guidelines for General Studies have been reviewed and revised. The revised guidelines include objectives specific to each unit along with suggested transactional strategies. An attempt has been made to make the content more relevant and interesting for students. These guidelines provide a structure for effective transaction of this subject and at the same time offer ample flexibility to teachers. The teachers may choose readings and transactional approach for each unit as per the interest of students and availability of time.

The Board is publishing the revised guidelines in order to facilitate the transaction of this subject in a motivating way. It is hoped that the revised guidelines and syllabus will contribute in development of responsible citizenship among students.

My sincere thanks are to the members who have contributed towards the revision of these guidelines. I would also like to make a special mention of Ms. Sugandh Sharma, Addl. Director (I & R) and Dr. Sweta Singh, Joint Director in the Board, who have worked very hard in giving shape to the publication.

I request the schools to make use of these guidelines while transacting this subject with sincerity and diligence. The teachers must ensure that the content is transacted in a meaningful and constructive manner. We would welcome their feedback and suggestions for further improvement of the publication.

Y.S.K. Seshu Kumar
Chairman

July, 2016
New Delhi

Introduction

All students in the academic stream at the Senior School stage are required to study the following eight subjects:

A. Language(s) -Two

Elective I

Elective II

Elective III
(Elective IV is allowed in lieu of a language)

B. Work Experience

Physical and Health Education

General Studies

While subjects under 'A' are evaluated externally, those under 'B' are evaluated internally by the schools. As per the Scheme of Studies, a candidate will be eligible to get the pass certificate of the Board, if he/she gets a grade higher than 'E' in all subjects of internal assessment unless he/she is exempted (Private/Patrachar Vidyalaya and candidates sponsored by Adult School shall be exempted from Work Experience, General Studies and Physical and Health Education). General Studies, one of the three subjects assessed internally by the school, is a very significant component of the overall curriculum as it equips students with the ability to grow into an integrated personality.

The subject of General Studies had been included in the scheme of studies w.e.f. 1989 (1988 for KVS) in pursuance of the National Policy on Education 1986. It is an extension of the following 10 value-oriented curricular components as enumerated in the document 'Programme of Action' which are integrated with the Secondary curriculum:

1. India's Freedom Movement
2. Constitutional Obligations
3. National Identity
4. Cultural Heritage
5. Egalitarianism, Democracy and Secularism
6. Equality of Sexes
7. Protection of Environment
8. Removal of Social Barriers
9. Observance of Small Family Norms
10. Inculcation of Scientific Temper

Aims and Objectives

The purpose of orienting students to General Studies is to develop in them an appreciation for the holistic nature of knowledge. In contemporary times, familiarity with General Studies is indispensable because at the senior school stage there is an element of specialization due to which the students do not get exposed to some vital disciplines/areas of study that are not covered in their specialized field. The whole course of General Studies is, therefore, focused on proper development of the 'affective domain' by exposing the students to varied domains of study.

Specific Objectives

Students will be able to:

1. imbibe scientific temper by developing a rational attitude involving disbelief in superstitions and respect for integrity, objectivity and scientific method;
2. gain awareness about the changing concept of time and space in which mutual inter-dependence among countries has assumed added significance for the survival of humanity and to accentuate the importance of peace and economic cooperation;
3. highlight the importance of and need for conserving and promoting ecological balance and take practical steps for not only checking the unhindered depletion of natural resources, but also find other alternatives to preserve and enhance them;
4. develop pride in the rich cultural heritage as well as in the multipronged achievements of the country in various fields such as politics, agriculture, Science and technology, education and industry;
5. inculcate constitutional values and imbibe the spirit of secularism and national unity;
6. be conversant with contemporary socio-economic problems of the country like illiteracy, poverty, social disharmony, sex or caste discrimination etc.

The course for General Studies for Classes XI and XII has been revised keeping in mind the changing dynamics of today's society. The purpose behind revising the curriculum is to make it more relevant. It is hoped that this course will develop responsible citizens.

In the following sections, a brief introduction to each unit has been provided, along with its specific objectives. Further, contemporary issues have been included in each unit to make it pertinent to the lives of students. Suggestive transactional strategies have also been incorporated in each unit to facilitate teachers in effectively planning the learning activities. It may be ensured that all learners get the opportunity to express their views during the conduct of the activities.

Guidelines to Teachers

It is suggested that the assessment of General Studies be continuous and not a one-time exercise. Further, a variety of assessment tools may be adopted as per the transactional strategies used by the teachers. Rubrics may be developed for evaluating students' work to ensure a fair evaluation. The teacher may also encourage students to engage in self-assessment. The aim of assessing this component is not to evaluate how many facts students may recall, but to ensure that they are sensitized towards the feelings, opinions and viewpoints of others so that they become more tolerant, objective and empathetic. The objective of assessment is to ensure that the students have imbibed the values inherent in the ten *value-oriented curriculum components* as enumerated in the document 'Programme of Action'. Thus, assessment needs to be continuous and must take into account individual differences in learning. It is advised that schools maintain cumulative records of students' periodic achievements and progress during the year as these are subject to the scrutiny of the Board as and when deemed fit.

The teacher may adopt any one or more transactional strategies from those listed in this document. This list is not exhaustive. Further, only examples of some topics of the unit are given. Similar exercises for other topics may be developed.

An example of a rubric for role play organized by students to present the life history of freedom fighters, is given below:

Objectives: After the role play, students will be able to:

1. outline the challenges that freedom fighters faced
2. appreciate the contribution of freedom fighters
3. delineate the significant life events of Indian freedom fighters
4. respect our nation's freedom
5. appreciate the democratic ethos of our country.

The teacher may give the following instructions to the students:

- You may work in groups of five/six.
- Each group will select an Indian freedom fighter and gather information on his/her life history.
- Each group will present the life history of the selected freedom fighter in the form of a role play.
- After the presentation, other groups will share their views on the role play presented.

The rubric for assessment of this activity is given below.

Areas	1	2	3
Factual Information on the Topic	Inaccurate information. Lacks relevant information	Factual information is mostly accurate. Adequate information	Factual information is accurate. In-depth information
Attitude	The student is not open to ideas of others during planning and discussion.	The student accepts most ideas without negative comments.	The student is open to ideas of others during planning and discussion.
Participation in Group Work	Uninterested	Limited participation	Active participation
Presentation	Incoherent, not interesting for audience	Engages audience intermittently	Innovative, engaging and entertaining.

In this example, a maximum of 12 marks may be awarded as each of the four dimensions may be scored on a scale of 1-3. Similarly, rubrics for assessment of other activities may be developed taking help from the assessment criteria given in the Formative Assessment Manuals, Classes IX & X, developed by the CBSE.

The evaluation of General Studies is done by the schools. They are expected to assess the performance of all the students on a 9-Point scale as given below and report it to the Board:

A-1 : Top1/8th of the passed candidates
A-2 : Next 1/8th of the passed candidates
B-1 : Next 1/8th of the passed candidates
B-2 : Next 1/8th of the passed candidates
C-1 : Next 1/8th of the passed candidates
C-2 : Next 1/8th of the passed candidates
D-1 : Next 1/8th of the passed candidates
D-2 : Next 1/8th of the passed candidates
E : Failed candidates

Since the above definitions are based on large statistics of the Board, they will not be applicable to a school situation. What is expected from the schools is to make an assessment keeping general performance of students who take the Board's Examinations in mind and to award grades in such a way that the student should get the grade according to the group he is likely to belong if he is considered to be a part of the total population.

Passing in General Studies is a basic condition of eligibility for earning the Senior School Certificate from the Board. The result of a student who fails to get a grade higher than 'E' in General Studies will be withheld but not for more than a year. This arrangement imposes an additional responsibility on the teaching staff of a school.

As has been emphasized, the major objectives of teaching General Studies lie in the 'affective domain'. Accordingly, evaluation should be based on observational methods assessing students' interests, attitudes and personality traits.

General Studies: Class XI

UNIT I: SCIENCE AND TECHNOLOGY

Humankind has constantly sought to innovate to make life more comfortable. Almost every aspect of our life today is touched by Science in one way or the other. It is pertinent that we are able to identify and appreciate the varied applications of Science in our daily lives. Whether it was learning to domesticate animals rather than hunt, or inventing the wheel, we have sought to better our lives through scientific inventions and discoveries. These changes have impacted modern technology the most. Rapid changes in the field of Science have led to tremendous advances in the field of technology and that has had both positive and negative impacts on the society at large. For example, culture of organs could be life saving in case of emergency but also has given rise to heated debates on ethics and abuse vs. application. This unit throws light upon the integral relation between Science and Technology.

The objectives of this unit are to:

- highlight Science as a necessary part of our everyday life.
- explore emerging technologies.
- analyze the impact of Science and emerging technologies on our lives.

Content

I Application of Science in everyday life

- Identifying role of Science in daily activities e.g. cooking, communication, transportation etc.
- Improving life through knowledge of Science

II Emerging technologies

- Green technology
- Mechatronics
- Nanotechnology
- Biotechnology

III Science and Technology in the social context

- Science: discussion on use & abuse
- Uses and misuses of technology (in healthcare, agriculture, warfare, changing lifestyle etc.)
- Assistive technology for the differently abled

Suggested Transactional Strategies:

Students may:

1. prepare a projects (in groups of 5-7 students) where some models based on emerging technologies may be presented and explained such as solar panels, rain water harvesting, e-waste management, etc.
2. organize a cyber safety day in the school. This may be suitably done during the morning assembly or activity period.
3. debate on the pros and cons of using social media, or on any other related topic.
4. enumerate ways in which Science and technology have changed lives particularly in the context of differently abled children.

UNIT II: UNDERSTANDING SOCIAL STRUCTURE

Social structure is the distinctive, stable arrangement of institutions, whereby, human beings in a society interact and live together. These arrangements may take the form of kinship, marriage, language, caste, politics, economy and so on. Various social institutions function in tandem with each other to fabricate a social structure which affects individuals and in turn individuals impact social structures. This unit helps in understanding the social structure of society, its dynamics and the various forces that shape it.

The objectives of this unit are to:

- acquaint the students with the basic and distinctive features of the society they live in.
- enable the students to understand different types of social institutions of their society.
- understand the functions and significance of different social institutions of Indian society.

Content

I. Meaning and importance of society and social structure/s.

II. Distinctive features of Indian society

III. Social institutions of Indian society
   - Family and marriage
   - Religion
   - Economy
   - Politics

IV. Unity in diversity

V. Continuity and change in Indian society

Suggested Transactional Strategies:

Students may:

1. conduct a survey in the school, exploring the relationship between economic status and occupation.
2. document examples of social relations witnessed by them in their neighbourhood. They may then work in groups and prepare a small skit showcasing the same.
3. prepare a questionnaire containing 5-7 questions, collect data and analyze the findings by seeking opinion from different people of various age groups on different social institutions.
4. work in groups of 5-6 and present a glimpse of Indian culture by preparing scrapbooks, collecting photographs or making powerpoint presentations.

UNIT III: PROTECTION OF ENVIRONMENT

The Earth Charter says, "humanity is a part of the vast evolving universe. Earth, our home, is alive with a unique community of life. The forces of nature make existence a demanding and uncertain adventure but Earth has provided the conditions essential to life's evolution. The protection of Earth's vitality, diversity and beauty is a sacred trust."

The many *shlokas* and hymns of the Vedas have shaped Indian philosophy in terms of being frugal with the Earth's resources so that there is enough for all. These ideas and thoughts have been replicated in many sustainable development goals and Earth environment summits in the past few years. Thus, this unit proposes to describe the connection between availability and usage of resources.

The objectives of this unit are to:

- identify the available natural resources.
- create awareness about factors causing the depletion of natural resources.
- discuss the implications of the rising world population.
- outline the importance of and need for conserving and promoting ecological balance.
- inspire students to adopt an environment friendly lifestyle.

Content

I. Natural resources
   - Renewable
   - Non renewable

II. Factors causing environmental pollution and degradation

III. Understanding sustainable development

IV. Strategies for environmental conservation

V. Lifestyle changes for environmental protection
   - generating less waste
   - environment friendly transportation
   - Recycle - Reduce - Reuse - Refuse - Renew - Recover

Suggested Transactional Strategies:

Students may:

1. make presentations on initiatives and conservation movements made by individuals and organizations.
2. study their surroundings, enlist local species and learn more about them.
3. design a plan to keep the school premises clean and save paper/paper/electricity.
4. attempt an audit of water/electricity use at home/ in the school and explore the possibility for reducing their consumption.

UNIT IV: NATIONAL UNITY

A nation is a unified socio-economic and political structure. It denotes a body of people who have a feeling of oneness, built on the basis of common history, society, culture and values. This feeling of oneness binds the people together in to a nation. National integration is the awareness of a common identity amongst the citizens of a country. It means that though the individuals belong to different communities, castes, religions, cultures and regions and speak different languages, all of them recognize the fact that they are one. This kind of integration is very important in the building of a strong and prosperous nation. This unit provides a comprehensive insight into India's national integration.

The objectives of this unit are to:

- discuss the meaning and importance of national integration.
- appreciate how the national movement against British rule helped in national integration.
- identify the challenges to national integration in our country.
- appreciate the concept of secularism in the Indian context.

Content

I. Understanding the meaning and importance of national integration

- Unified socio-economic, political structure and feeling of oneness on the basis of common history, society, values and culture
- Integration - fusion of norms and cultures- sharing of values

II. Role of national movement in national integration

- Freedom struggle
  - ❏ Non-cooperation movement
  - ❏ Civil disobedience movement
  - ❏ Quit India movement
- Role of Mahatma Gandhi in mass mobilization- awakening of national feeling among masses

IV. Challenges to national integration

- Forces causing a divide among the people of the nation
  - ❏ Casteism
  - ❏ Communalism

V. Promoting national integration

- National symbols and their significance
- Heroic deeds and sacrifices of freedom fighters
- History of the country and its cultural diversity
- Importance of unity in the country in the midst of diversity
- Importance of Republic Day and Independence Day

VI. Secularism

- Constitutional provisions
- Freedom of conscience, thought and expression

Suggested Transactional Strategies:

Students may:

1. form a Youth Parliament in the class. It may function through a democratic process of working by choosing a cabinet, discussion and voting on a bill relating to prescribed dress code for students in educational institutions.
2. collect passages/quotes with universal messages from world literature and these may be posted on display boards.
3. write creative slogans on the themes that unite people of different communities, for example, music, cricket, etc, and present them on display boards.
4. read selected biographies of great leaders and organize book discussions.
5. actively participate in NCC, NSS, Scouting and Guiding activities.

UNIT V: INTERNATIONAL UNDERSTANDING

The significance of international understanding and cooperation are of paramount importance. Rapid advances in technology have remarkably connected the world and the boundaries between global and local seem to be fading away. In such a scenario, maintaining peace and harmony among nations is of paramount significance. International organizations, like the United Nations, provide a platform to different nations to negotiate and reach common ground on various unsettled issues. Today, awareness about various concerns related to international understanding is necessary to become a responsible global citizen. Therefore, this unit focuses on various dimensions of international understanding.

The objectives of this unit are to:

- acquaint the students with the need, scope and importance of international understanding.
- elaborate the structure, types and functions of different international organizations working for international harmony.
- outline the importance of human rights with special reference to women and children.
- create awareness about the importance of their rights and duties towards clean environment, peace and mutual cooperation.
- throw light upon how interdependence among countries has assumed added significance for the survival of humanity.
- outline the importance of peace and economic cooperation.

Content

I. Meaning of internationalism and international understanding. Perspective on global citizenship

II. Need, scope, dimensions and basic principles of international understanding

III. International organizations and forums working for mutual cooperation and international understanding

IV. Place and role of human rights in international understanding

V. Peace conventions, international cooperation on environment and climate change

Suggested Transactional Strategies:

The students may:

1. read selected material, for example, “Education for International Understanding” by Reuben R. Palm, United Nations brochure on peace keeping .

2. work in pairs and visit the websites of different international organizations, for example, UNICEF or UNESCO. They may then act as representatives of these organizations and a mock press conference may be arranged, where some students may ask questions about the ongoing projects, policies and mandates of the chosen organizations.
3. discuss how advances in technology have changed the dynamics of international understanding. The students' inputs may be recorded by a representative chosen by the class. The class may be asked to submit an article for the school magazine based on the discussion.
4. conduct a model UN peace convention wherein they will represent different countries to discuss how they can work together to promote universal harmony, for example, through the conduct of sports/cultural/literature festivals, etc.
5. prepare a presentation for the class on issues concerning women, children, elderly and persons with special needs in contemporary times.
6. enlist their rights and the corresponding responsibility for each. This may be followed by a discussion on what measures may be taken if one's rights are violated.

General Studies: Class XII

UNIT I: SCIENCE AND SOCIETY

Society has a codependence on Science and technology and hence Science and technology have been in the forefront of transforming societies. Scientific knowledge has gradually permeated all spheres of human lives and is increasingly guiding us in all our endeavours. Scientific knowledge involves knowing basic scientific facts and concepts and enables the individual to become more informed. It develops not only an open-minded attitude but also helps in analyzing information and its sources rationally and empirically. This unit examines the ways in which the larger society influences and gets influenced by Science.

The objectives of this unit are to:

- develop a rational attitude and imbibe scientific temper.
- promote scientific literacy and dispel myths and superstitions.

Content

I. The Nature of Science
   - Different aspects of Science, viz. the content, process and attitude
   - The language of Science- facts, hypothesis, theories and laws

II. Science as a social enterprise
   - The manner in which modern Science and technology shape modern culture, values, and institutions on one hand and how modern values shape Science and technology on the other
   - The progress of Science- major landmarks in the history of Science in India

III. The Scientific spirit
   - Scientific attitude
   - Dispelling superstitions and myths

Suggested Transactional Strategies:

The students may:

1. do a small project, where they identify a problem, frame hypothesis, gather data and analyze it to test the hypothesis.
2. organize a debate for the whole class on ‘Science - a boon or bane’.
3. identify given set of statements as facts, laws and hypothesis.

UNIT II: CONTEMPORARY PROBLEMS OF INDIAN SOCIETY

Every society has to face certain challenges and devise means to overcome them. Our society is no exception and thus needs to address various social, cultural and economic issues. In order to become responsible members of the society, it is imperative that we understand these major issues that need our immediate attention for preservation of our social and cultural values but also our survival itself. This unit delves into some of the contemporary problems of Indian society.

The objectives of this unit are to:

- sensitize students about the problems of Indian society.
- equip students to deliberate on existing social practices and their manifestations.
- make students gain awareness about contemporary socio-economic problems of the country like illiteracy, poverty, social disharmony, gender and caste discrimination, etc.

Content

I. Poverty

- Meaning, genesis and broad measures to alleviate it
- Nature of poverty in rural and urban India

II. Illiteracy

- Causes and consequences
- Measures to eradicate illiteracy

III. Unemployment

- Nature and extent of unemployment
- Ameliorative measures to reduce unemployment - Vocational education, skill based education

IV. Social Inequalities

- Kinds
- Implications
- The way forward

V. Population and health

- declining sex ratio
- infant mortality
- malnutrition
- obesity and other lifestyle diseases

Suggested Transactional Strategies:

The students may:

1. make group presentations (collage, charts, posters) on the contemporary problems of Indian society by using only newspaper clippings as a resource.
2. conduct a small survey on status of literacy/employment/income in their locality.
3. contribute towards solving social problems such as illiteracy. Students may volunteer to teach one illiterate person in their locality.

UNIT III: CULTURAL HERITAGE OF INDIA

The Indian culture, often labeled as an amalgamation of several cultures, spans across the Indian subcontinent and has been influenced by a history that is several millennia old. The present culture of India reflects a collective heritage of the past. Undoubtedly, Indian culture is varied, rich and diversified with its own uniqueness. Many elements of India's diverse cultures, such as Indian religions, yoga, dance forms, music and Indian cuisine have had a profound impact across the world. This unit elaborates upon the shared and rich cultural heritage of our society.

The objectives of this unit are to:

- familiarize the students with the historical framework that has shaped the common cultural heritage of India.
- develop in students appreciation for the basic principles, perspectives and approaches to life and living that were deeply thought by Indian seers and sages, adopted by Indian people in life from time to time and that has given a unique syncretic heritage and culture to our country.
- develop in students appreciation for the richness and syncretic nature of - Arts (music, dance, painting), crafts and architecture (monuments) of Indian sub-continent.
- elaborate on the basic characteristics of Indian culture.
- develop pride in the rich cultural heritage as well as the multipronged achievements of the country in various fields.

Content

I. The historical framework of India's heritage and culture

II. Evolution of Indian culture

- Historical background- from the Indus Valley civilization to the British period and Indian renaissance
- Shaping of Indian ethos and syncretism

III. The cultural heritage of India

- Performing arts- dance, music, theatre etc.
- Language and literature
- Crafts

- Paintings
- Architecture
- Cuisines
- Textiles

Suggested Transactional Strategies:

The students may:

1. read and discuss excerpts from various world literature with universal messages, writings of poets (such as Kabir), philosophers, prophets, historians of the renaissance period such as Raja Ram Mohan Roy, Vivekananda, etc.
2. effectively use paintings, short films and other material developed by the Centre for Cultural Resources and Training (CCRT) to appreciate the arts, crafts and architecture of India.
3. develop resource files on
   - Sufi saints of Kashmir/Delhi/Rajasthan etc.
   - Poets/saints of the Bhakti period.
   - Mughal influence on Indian architecture.
   - Relevance of the teachings of Kabir/ Thiruvalluvar in today's Indian society.
4. practice meditation, 'pranayam' and 'yogasana' for health benefits and better understanding of Indian culture.

UNIT IV: INDIA'S FREEDOM STRUGGLE

The freedom that we enjoy today would not have been accorded to us if the great leaders of our country would not have paid for it with their sweat and blood. It was after a great political and social struggle that our nation was able to gain independence. In order to appreciate the efforts of freedom fighters and to map the trajectory of the making of our nation, it is essential to acquaint oneself with the events and people that shaped its destiny. Thus, this unit gives an overview of India's freedom struggle.

The objectives of this unit are to:

- introduce the social, political and economic context of Indian freedom struggle.
- appreciate the contribution of freedom fighters.
- develop students' interest in the history of India.

Content

I. The first war of independence-1957

II. Indian freedom struggle
   a) the moderates
   b) the radicals
   c) the revolutionaries

III. The contribution of leaders

IV. Nurturing freedom and democracy

Suggested Transactional Strategies:

The students may:

1. participate in a field trip to a place of historical importance.
2. watch a movie based on India's freedom struggle and submit a review.
3. read about the history of India's freedom struggle and submit an article about events or personalities that impress them.
4. work in groups of 5-7 and conduct a quiz for the class about India's freedom struggle.
5. present the life history of Indian freedom fighters through a short role play/skit.

UNIT V: CONSTITUTIONAL VALUES

The Constitution of India is of utmost importance to our identity as a democracy. It is the vital document which outlines the character of our country. It lays down the framework for smooth functioning of the Indian democracy by providing the essential principles, structure and role of government institutions. At the same time it elucidates fundamental rights and duties of citizens. In order to become a responsible citizen of India, it is essential to understand the nature of this supreme document. Thus, this unit focuses on the key features of the Constitution of India along with the emerging rights and responsibilities.

The objectives of this unit are to:

- appreciate the spirit of the Constitution of India.
- cultivate in students the values enshrined in the Constitution of India.
- develop in students sensitivity to constitutional obligations.
- imbibe the spirit of secularism and national unity in students.
- gain awareness about the various legal provisions concerning children.

Content

I Preamble to the Indian Constitution (understanding the spirit of the Constitution):

- Justice: Social, economic and political
- Liberty of thought, expression, belief, faith and worship
- Equality of status and of opportunity
- Fraternity, the dignity of individual and the unity and integrity of the Nation
- Secularism

II Key features of the Constitution of India

- Fundamental Rights, Directive Principles of State Policy and Fundamental Duties
- Citizenship
- Organs of Government
- Federalism

III Some legal provisions (relevant to children)

Suggested Transactional Strategies:

While transacting this curriculum in the classroom, it must be kept in mind that the students are familiar with most of the content given in this unit as it has been a part of the Social Science curriculum up to Class X. Thus, the aim at this level is to revise the basic concepts and inculcate in students the ability to use this knowledge in their day to day lives and become

responsible citizens. A variety of strategies may be used to transact this unit effectively. Some strategies are suggested below.

The students may:

1. work in groups of 5-7 and develop a code of conduct which may relate to one of the Fundamental Duties.
2. work in groups of 5-7 and come to consensus on an area of interest after discussion among themselves. They may then display their ideas/views on display boards in the form of comic strips, pictures, cartoons, slogans, etc. This action well help cover the themes of the unit and showcase the students' concerns.
3. prepare biographies of the makers of the Constitution.
4. read excerpts from the Constitution of India. For this purpose, the teacher may arrange a copy for the students.
5. read the Preamble to the Constitution of India and highlight the values reflected in it. They may then present a play to showcase these values.



UNIT VI: HUMAN RIGHTS

Human rights are rights inherent to all human beings, irrespective of nationality, place of residence, sex, national or ethnic origin, colour, religion, language, or any other status. We are all equally entitled to our human rights without discrimination. These rights are interrelated, interdependent and indivisible. This unit helps in creating a deeper understanding about the concept of human rights.

The objectives of this unit are to:

- discuss the meaning of human rights.
- familiarize the students with their human rights.
- outline the importance of human rights so that students may take responsibility of protecting themselves and their peers.
- encourage students to play an active role towards creating a future of freedom and hope.
- empower and inspire them to become valuable advocates of tolerance and peace.
- build cognitive skills of students by reflecting on issues related to matters of law, governance and society.

Content

Human rights:

- Historical perspective
- The philosophical foundations of human rights
- The United Nation's declaration of human rights
- Civil and political rights
- Economic, social and cultural rights
- Human rights of vulnerable groups
- Human rights: Violation and remedies
- Gender equality

Suggested Transactional Strategies:

The students may:

1. read articles related to human rights, for example, United Nation's Universal Declaration of Human Rights and discuss them in class.

2. observe their surroundings for any human rights violation. They may share the case with the class and also suggest ways to deal with such violation.

3. form an anti-bullying/anti-ragging group in school to ensure that no violation of students' rights take place.

4. read the literature of different cultures and identify the common message of humanity as envisaged through the provisions of human rights.

5. prepare short investigatory projects based on current events as reported in the press and identify:

   - Who is the victim?
   - Who has violated his/her human rights?
   - Which right has been violated?
   - What is the abuse committed?
   - How was the victim protected?

   The project may be shared with the class.


केन्द्रीय माध्यमिक शिक्षा बोर्ड
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