

## Annual Pedagogical Plan (Session 2024-2025)

**Delhi Public Global School, Moradabad**

Class: XII, Subject – Biology

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Month	Topic	Learning objectives/Skills to be developed	Art Integration/ Joyful learning Activities	Practical/Investigatory Project/Case Studies	Experiential Learning/ Assignment/ Discussion and outcome
April	<p><b>Chapter 1</b></p> <p><b>Sexual Reproduction in Flowering Plants</b></p> <p>No. of Periods: 10</p>	<ol style="list-style-type: none"> <li>1. Concept of flower development.</li> <li>2. development of male and female gametophytes.</li> <li>3. Pollination-types agencies and example, outbreeding devices.</li> <li>4. Pollen Pistil interaction.</li> <li>5. Double fertilization</li> <li>6. Post fertilization events- development of endosperm and embryo.</li> <li>7. Development of seed and formation of fruit.</li> <li>8. special modes of reproduction – apomixes, parthenocarpy, polyembryony</li> <li>9. Significance of seed dispersal and fruit formation.</li> </ol>	<ul style="list-style-type: none"> <li>• <b>Art Integrated Projects</b> <ul style="list-style-type: none"> <li>○ Asexual and Sexual reproduction in plants.</li> <li>○ Sexual Reproduction in Flowering Plants.</li> <li>○ Double Fertilization In plants.</li> <li>○ Poster making on Various topics of the chapter.</li> </ul> </li> </ul> <p>Diagrammatic Skills Development. Making flow chart</p>	<ul style="list-style-type: none"> <li>• Practical                             <ul style="list-style-type: none"> <li>○ Study pollen germination on a slide.</li> <li>○ Flowers adapted to pollination by different agencies (wind, insects, and birds).</li> <li>○ Pollen germination on stigma through a permanent slide.</li> <li>○ Controlled pollination – emasculation, tagging and bagging.</li> </ul> </li> <li>• Investigatory Project/Case Studies</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment                             <ul style="list-style-type: none"> <li>○ Reproduction in organisms</li> <li>○ Flower-A fascinating organ- pollination</li> <li>○ Pollen Pistil interaction apomixes</li> <li>○ To demonstrate the properties of various flowers pollinated by different agencies such as wind, water, insect etc</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ samples Questions</li> <li>• Worksheets.</li> <li>• Outcome: Acquire the concept of Reproduction in plants.</li> </ul>

			<ul style="list-style-type: none"> <li>• <b>Joyful Learning Activities</b> <ol style="list-style-type: none"> <li>1. Field visit</li> <li>2. Garden visit to show the Flower parts and to understand the concept of Pollination.</li> </ol> </li> </ul>		
<p><b>May</b></p>	<p><b>Chapter 2</b></p> <p><b>Human Reproduction</b></p> <p>No. of periods: 10</p>	<ol style="list-style-type: none"> <li>1. Study of Male and female reproductive systems and then role of each part.</li> <li>2. Microscopic anatomy of testis and ovary.</li> <li>3. Concept of gametogenesis spermatogenesis and oogenesis.</li> <li>4. Menstrual cycle and various events of it.</li> <li>5. Fertilisation-blastocyst formation,implantation, pregnancy and placenta formation.</li> <li>6. Concept of parturition , lactation and</li> </ol>	<ul style="list-style-type: none"> <li>• <b>Art Integrated projects</b> <ul style="list-style-type: none"> <li>○ Male Reproductive system</li> <li>○ Female Reproductive system</li> <li>○ Fertilization and Implantation.</li> </ul> </li> </ul> <p>Diagrammatic Skills Development. Making flow chart</p> <ul style="list-style-type: none"> <li>• <b>Joyful Learning Activities</b></li> </ul>	<ul style="list-style-type: none"> <li>• Practical <ul style="list-style-type: none"> <li>○ Identification of stages of gamete development, i.e., T.S. of testis and T.S. of ovary through permanent slides from grasshopper/mice)</li> </ul> </li> <li>• Practical <ul style="list-style-type: none"> <li>○ T.S. of blastula through permanent slides (Mammalian)</li> <li>○ Meiosis in onion bud cell or grasshopper testis through permanent slides</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Male reproductive system</li> <li>○ Oogenesis</li> <li>○ Spermatogenesis</li> <li>○ Menstrual cycle</li> <li>○ Fertilization and Implantation</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Samples Questions</li> <li>• Woksheets</li> <li>• Outcome: Acquire the concept of</li> </ul>

		hormonal changes in the body.	<ul style="list-style-type: none"> <li>○ Learning through chart and Modals.</li> <li>○ Animation Videos</li> <li>○ Poster making.</li> </ul>		Reproduction in Human.
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Month	Topic	Learning objectives/Skills to be developed	Art Integration in Science	Practical/Investigatory Project/Case Studies/Joyful learning of Science	Experiential Learning/ Assignment/ Discussion and outcome
	<b>Chapter 3</b> <b>Reproductive Health</b> No. of Periods: 05	1. Need for reproductive health and prevention of STDs. 2. Concept of birth control – needs and methods. 3. Concept of contraception and MTPs, Amniocentesis. 4. Methods to cure infertility and assisted reproductive technologies- IVF, ZIFT,GIFT,IUDs.	<ul style="list-style-type: none"> <li>● <b>Art Integrated project</b> <ul style="list-style-type: none"> <li>○ IVF</li> <li>○ Amniocentesis</li> </ul> </li> </ul> Diagrammatic Skills Development. Making flow chart  <ul style="list-style-type: none"> <li>● <b>Joyful Learning</b>            Create awareness in Students regarding Reproductive health by organizing debate , speech , slogans, charts, poster etc.</li> </ul>	<ul style="list-style-type: none"> <li>● Investigatory Project               <ul style="list-style-type: none"> <li>○ Discussion how to write a project/ investigatory experiment</li> </ul> </li> <li>● Case Studies on Female Foeticide.</li> </ul>	<ul style="list-style-type: none"> <li>● Assignment               <ul style="list-style-type: none"> <li>○ Reproductive health</li> <li>○ Methods of STDs Prevention.</li> </ul> </li> <li>● Worksheets</li> <li>● Discussion of Scoring Points/ Samples Questions</li> <li>● Outcome:            Students will be aware of various methods which are developed to combat infertility. Use of contaceptions &amp; their effect on body.</li> </ul>

<p><b>July</b></p>	<p><b>Chapter 4</b></p> <p><b>Principles of Inheritance and variation</b></p> <p>No. of Periods: 15</p>	<p>1. Concept building of mendelian Inheritance.</p> <p>2. Deviations from Mendelism- Incomplete dominance, Co-Dominance, multiple alleles.</p> <p>3. Concept building about various blood groups and their inheritance.</p> <p>4. Concept of pleiotropy and polygenic inheritance.</p> <p>5. Chromosomal theory of inheritance.</p> <p>6. Sex determination in- Humans, Birds and honey bees.</p> <p>7. Concept of linkage and crossing over.</p> <p>8. Sex linked inheritance- Haemophilia, colour Blindness.</p> <p>9. Chromosomal and Mendelian disorders in Humans.</p>	<ul style="list-style-type: none"> <li>• <b>Art Integrated project</b> on Principles of Inheritance and variation.</li> </ul> <p>Diagrammatic Skills Development. Making flow chart</p> <ul style="list-style-type: none"> <li>• <b>Joyful Learning</b> <ul style="list-style-type: none"> <li>○ Garden visit to show pea plant importance in Mendelian Genetics.</li> <li>○ Poster Making on various genetic disorders.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Practical <ul style="list-style-type: none"> <li>○ Mendelian inheritance using seeds of different colour/sizes of any plant.</li> <li>○ 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.</li> </ul> </li> <li>• Investigatory Project <ul style="list-style-type: none"> <li>○ Discussion how to write a project/ investigatory experiment</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Mendelian inheritance polygenic inheritance</li> <li>○ Chromosomal theory of inheritance chromosomal disorder</li> <li>○ To find out diseases with pedigree analysis charts</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Samples Questions</li> <li>• Outcome : Concept building on mendelian genetics. Blood groups and their role in various organisms.</li> </ul>
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Month	Topic	Learning objectives/Skills to be developed	Art Integration / Joyful learning Activities	Practical/Investigatory Project/Case Studies	Experiential Learning/ Assignment/ Discussion and outcome
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	<p><b>Chapter 5</b></p> <p><b>Molecular basis of inheritance</b></p> <p>No. of Periods: 15</p>	<ol style="list-style-type: none"> <li>1. Search for genetic material and DNA and RNA .</li> <li>2. Structure of DNA and RNA</li> <li>3. DNA replication and packaging.</li> <li>4. Central Dogma.</li> <li>5. Transcription</li> <li>6. Genetic code</li> <li>7. Translation</li> <li>8. Gene expression and regulation-lac operon.</li> <li>9. Human genome projects</li> <li>10. DNA fingerprinting.</li> </ol>	<ul style="list-style-type: none"> <li>• Art Integration Project <ul style="list-style-type: none"> <li>○ Structure of Nucleic acids</li> <li>○ DNA Replication</li> <li>○ Transcription</li> <li>○ Translation</li> </ul> </li> </ul> <p>Diagrammatic Skills Development. Making flow chart</p> <ul style="list-style-type: none"> <li>• <b>Joyful Learning Activities</b> <ol style="list-style-type: none"> <li>1. Poster Making</li> <li>2. Flow chart describing the process of various topics of the chapter.</li> <li>3. Understanding the concepts of Biotechnology through Animation videos.</li> <li>4. Making PPTs</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>• Investigatory Project</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ The DNA properties of genetic material</li> <li>○ RNA world</li> <li>○ adapter molecule</li> <li>○ Translation</li> <li>○ DNA fingerprinting</li> <li>○ Human genome project</li> </ul> </li> <li>• Discussion of Scoring Points/ Samples Questions</li> <li>• Outcome : Concept of DNA and its structure is developed. DNA packaging and its applications. Genetic code and its relation with protein synthesis.</li> </ul>
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<p><b>August</b></p>	<p><b>Chapter 6</b> <b>Evolution</b></p> <p>No. of Period : 10</p>	<ol style="list-style-type: none"> <li>1. Concept of origin of life</li> <li>2. Biological evolution and its evidences .</li> <li>3. Darwin's contribution with respect to modern synthetic theory of evolution.</li> <li>4. Concept of natural selection and its types.</li> <li>5. Gene flow and genetic drift.</li> <li>6. Hardy weinberg's principle its application.</li> <li>7. Adaptive radiation and human Evolution.</li> </ol>	<ul style="list-style-type: none"> <li>• Art Integrated Project on Evolution</li> <li>• Flow Charts.</li> <li>• <b>Joyful Learning Activities</b> <ul style="list-style-type: none"> <li>○ Understanding the concepts of Evolution through Videos with the help of YouTube.</li> <li>○ Visit a natural Museum, find out the traces of evolution.</li> <li>○ Making poster.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Practical <ul style="list-style-type: none"> <li>○ Study of homologous and analogous organs with the help of charts</li> </ul> </li> <li>• Investigatory Project <ul style="list-style-type: none"> <li>○ Discussion how to write a project/ investigatory experiment</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Origin of life-adaptive radiation</li> <li>○ Biological evolution human evolution</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Samples Questions</li> <li>• Outcome : <ol style="list-style-type: none"> <li>1. Concept building on various theories of evolution</li> <li>2. Knowledge about evolution ,its patterns and evidences of evolution</li> <li>3. Strategies of hardy Weinberg principle.</li> <li>4. Deviations from Hardy Weinberg principle.</li> </ol> </li> </ul>
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	<p><b>Chapter 7</b></p> <p><b>Human Health and Disease</b></p> <p>No. of Periods: 15</p>	<p>1. Concept of diseases and their causative agents.</p> <p>2. Common communicable diseases their causes, symptoms and cure.</p> <p>3. Basic concepts of immunology – vaccines.</p> <p>4. Concept of HIV</p>	<ul style="list-style-type: none"> <li>• Art integrated Project on various Human Diseases</li> <li>• Cancer</li> <li>• Immunology</li> <li>• Malaria</li> <li>• AIDS</li> </ul> <p>Diagrammatic Skills Development. Making flow chart</p> <ul style="list-style-type: none"> <li>• <b><i>Joyful Learning Activities</i></b> <ul style="list-style-type: none"> <li>○ Visit The Doctor and get the details of common diseases that affect the people.</li> <li>○ Survey on the diseases prevailing around your surroundings.</li> <li>○ Poster Presentation on AIDS.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Practical <ul style="list-style-type: none"> <li>○ Common disease causing or Organisms like Ascaris, Entamoeba, Plasmodium, any fungus causing</li> <li>○ ringworm through permanent slides or specimens. Comment on symptoms of diseases that they cause.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ AIDS- Alcohol Abuse</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Samples Questions</li> <li>• Worksheet</li> <li>• Outcome: Knowledge of how diseases are spread will be developed. Concept of personal hygiene and its importance will be developed.. Drugs and misuse will be administered.</li> </ul>
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Month	Topic	Learning objectives/Skills to be developed	Art Integration / Joyful learning Activities	Practical/Investigatory Project/Case Studies	Experiential Learning/ Assignment/ Discussion and Outcome
August	<p><b>Chapter 8</b></p> <p><b>Microbes in Human welfare</b></p> <p>No. of Periods: 05</p>	<p>1. Importance of microbes in everyday life.</p> <p>2. Importance in agricultural production.</p> <p>3. Sewage treatment and energy generation..</p> <p>4. Role of microbes as biocontrol agents and biofertilisers.</p> <p>5. Production of antibiotics and its judicious use.</p>	<p>• <b>Art Integrated Project on</b> Importance Of Microbes.</p> <p>Diagrammatic Skills Development.</p> <p>• <b>Joyful Learning</b></p> <ol style="list-style-type: none"> <li>1. Chart presentation.</li> <li>2. Flow chart describing the process of various topics of the chapter.</li> <li>3. Animation videos.</li> <li>4. Making PPTs</li> </ol>		<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Microbes in Human welfare</li> </ul> </li> <li>• Discussion of Scoring Points/Marking Scheme/ Samples Questions</li> <li>• Worksheet</li> <li>• Outcome: Students will be able to-Know the importance of microbes in day to day life.</li> </ul>
September	<p><b>Chapter 09</b></p> <p><b>Principles and Processes of Biotechnology</b></p> <p>No. of Periods: 15</p>	<p>1. Introduction to the concept of biotechnology and its applications.</p> <p>2. Principles and processes.</p> <p>3. Method of genetic engineering</p> <p>4. Formation of rDNA.</p>	<ul style="list-style-type: none"> <li>• Art Integrated Project on Biotechnology and its applications.</li> <li>• Diagrammatic skills</li> <li>• Flow charts</li> </ul> <p>• <b>Joyful Activities</b></p> <p>Understanding the concept of</p>	<ul style="list-style-type: none"> <li>• Practical <ul style="list-style-type: none"> <li>○ Study the effect of different temperature and three different pH on the activity of salivary amylase on starch.</li> </ul> </li> </ul> <p>Prepare a temporary amount of onion root tip to study mitosis.</p>	<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Principles and processes of Biotechnology</li> </ul> </li> <li>• Classroom Discussion</li> <li>• Samples Questions</li> </ul>

			<ul style="list-style-type: none"> <li>○ biotechnology by using animation, PPTs and charts.</li> <li>○ Modal Making.</li> <li>○ Poster Making.</li> </ul>		<ul style="list-style-type: none"> <li>• Worksheet</li> </ul> <p>Outcome: Know the concept of biotechnology and its applications.</p>

	<p><b>Chapter 10 Biotechnology and its Applications</b></p> <p>No. of Periods: 15</p>	<p>1. Concept of human insulin and vaccine production. 2. Stem cell technology 3. Gene Therapy 4. Genetically modified organisms-Bt</p>	<ul style="list-style-type: none"> <li>• Art Integrated Project on Biotechnology and its applications.</li> <li>• Diagrammatic skills</li> <li>• Flow charts</li> </ul>	<ul style="list-style-type: none"> <li>• Practical <ul style="list-style-type: none"> <li>○ Isolate DNA from available plant material such as spinach, green pea seeds, papaya, etc.</li> </ul> </li> <li>• Investigatory Project <ul style="list-style-type: none"> <li>○ Final Draft</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Biotechnology and its applications</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Samples Questions</li> </ul>
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		<p>crops, Transgenic animals.</p> <p>5. Biosafety issues</p> <p>6. Biopiracy and patents.</p>			
<b>October</b>	<p><b>Chapter 11 Organisms and Population</b></p> <p>No. of Period: 07</p>	<p>1. Concept of habitat and niche.</p> <p>2. Populations and ecological adaptations (types)</p> <p>3. Population interactions- Mutualism, competitions, predation, parasitism.</p> <p>4. Population attributes- growth, birth rate, death rate, age distribution.</p>	<ul style="list-style-type: none"> <li>• Art Integrated Project on Organism and Population.</li> <li>• <b>Joyful Learning</b> <ul style="list-style-type: none"> <li>○ Understanding the concepts of Population interactions by using Audio Visual aids.</li> <li>○ Poster Presentaion.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Practical <ul style="list-style-type: none"> <li>○ Study the plant population density by quadrat method</li> <li>○ Collect and study soil from at least two different sites and study them for texture, moisture content, pH and water holding capacity.</li> <li>○ Correlate with the kinds of plants found in them.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Organisms and its environment – life history variation</li> <li>○ Population interactions</li> </ul> </li> <li>• Discussion of Scoring Points.</li> <li>• Sample Question Papers.</li> </ul>
	<p><b>Chapter 12 Ecosystems</b></p> <p>No. of Period: 07</p>	<p>1. Concept of ecosystem- Patterns and components.</p> <p>2. Productivity and decomposition</p> <p>3. Concept of energy flow.</p> <p>4. Ecological pyramids- no., energy and biomass.</p> <p>5. Types of nutrient cycling –carbon and phosphorus.</p> <p>6. Ecological succession- Hydrarch and xerarch.</p> <p>7. Ecological services- carbon fixation,</p>	<ul style="list-style-type: none"> <li>• Art Integrated Project on Ecosystem</li> <li>• <b>Joyful Activities</b> <ul style="list-style-type: none"> <li>Poster making</li> <li>Class debates on various environmental issues.</li> <li>Making PPTs</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Practical <ul style="list-style-type: none"> <li>○ Two plants and two animals (models/virtual images) found in xeric conditions. Comment upon their morphological adaptations.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Ecosystem structure and function- Energy flow</li> <li>○ Ecological pyramids- Ecosystem service</li> </ul> </li> <li>• Worksheet</li> <li>• Discussion of Scoring Points/Marking Scheme/ Samples Questions</li> </ul>

		pollination, seed dispersal.			
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Month	Topic	Learning objectives/Skills to be developed	Art Integration //Joyful learning Activities	Practical/Investigatory Project/Case Studies	Experiential Learning/ Assignment/ Discussion
November	<b>Chapter 13</b> <b>Biodiversity and its Conservation</b> No. of Periods: 08	1. Concept, patterns, importance, loss, conservation of 2. biodiversity hotspots, endangered organisms, extinction, 3. Red Data Book, 4. biosphere reserves, national parks and sanctuaries	<ul style="list-style-type: none"> <li>• <b>Art Integrated Project</b> <ul style="list-style-type: none"> <li>○ Biodiversity.</li> <li>○ National Parks of India</li> <li>○ Biodiversity Hotspots etc.</li> </ul> </li> <li>• <b>Joyful Activities</b> <ul style="list-style-type: none"> <li>○ Visit a National park for understanding the concepts of Biodiversity and its conservation.</li> <li>○ PPT Presentation on Endangered animals in India.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Practical               <ul style="list-style-type: none"> <li>○ Two plants and two animals (models/virtual images) found in xeric conditions. Comment upon their morphological adaptations.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Assignment               <ul style="list-style-type: none"> <li>○ loss of Biodiversity</li> <li>○ Biodiversity conservation.</li> <li>○ Make a project on various ex situ and in situ conservation strategies.</li> </ul> </li> <li>• Discussion of Scoring Points/Marking Scheme/Samples Questions</li> <li>• Outcome: Students will acquire the knowledge of importance of Biodiversity &amp; its importance.</li> </ul>
December	<b>Pre Board Examination</b>				
January	<b>Revision</b>				

<b>February</b>	<b>Revision</b>
<b>March</b>	<b>Annual Examination</b>

**Curriculum Plan of Chemistry**  
(Session: 2024-2025)

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
<b>April</b> <b>Topic:</b> Solutions	Types of solutions, expression of concentration of solutions of solids in liquids, solubility of gases in liquids, solid solutions, colligative properties - relative lowering of vapour pressure, Raoult's law, elevation of boiling point, depression of freezing point, osmotic pressure, determination of molecular masses using colligative properties, abnormal molecular mass, Van't Hoff factor.	Videos to show colligative properties and abnormal molecular mass, Raoult's law.	<b>Interdisciplinary Linkage:</b> Maths <b>Diagrams:</b> Fig 2.1, 2.3, 2.6, 2.7, 2.8, 2.9, 2.10, 2.11 (NCERT part 1) <b>Art Integration:</b> Drawing graphs on Raoult's law, deviation from Raoult's law, graphs of different on Colligative properties.	<b>Practical:</b> Determination of concentration/ molarity of $\text{KMnO}_4$ solution by titrating it against a standard solution of: <ul style="list-style-type: none"> <li>● Oxalic acid,</li> <li>● Ferrous Ammonium Sulphate</li> </ul> (Students will be required to prepare standard solutions by weighing themselves).	1. Assignment on Solutions 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
<b>Topic:</b> Electro-chemistry	Redox reactions, 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, 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, fuel cells, corrosion.	Videos to show fuel cells, types of batteries, corrosion.	<b>Interdisciplinary Linkage:</b> Maths, Physics <b>Diagrams:</b> Fig 3.1, 3.2, 3.3, 3.6, 3.8, 3.9, 3.10, 3.11, 3.12, 3.13 (NCERT part 1) <b>Art Integration:</b> Drawing graphs on variation of conductivity and molar conductivity with concentration for weak electrolyte and strong electrolyte.	<b>Practical:</b> (1) Thermochemistry Any one of the following experiments <ul style="list-style-type: none"> <li>● Copper Sulphate or Potassium Nitrate.</li> <li>● Enthalpy of neutralization of strong acid (HCl) and strong base (NaOH).</li> <li>● Determination of enthalpy change during interaction (Hydrogen bond formation) between Acetone and Chloroform.</li> </ul> (2) Electrochemistry Variation of cell potential in $\text{Zn}/\text{Zn}^{2+}  \text{Cu}^{2+}/\text{Cu}$ with change in concentration of electrolytes ( $\text{CuSO}_4$ or $\text{ZnSO}_4$ ) at room temperature	1. Assignment on Electro-chemistry. 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
<b>April Topic:</b> Chemical Kinetics	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.	Videos to show activation energy, collision theory and rate of reaction.	<b>Interdisciplinary Linkage:</b> Maths <b>Diagrams:</b> Fig 4.1,4.3, 4.4, 4.5, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12 (NCERT part 1) <b>Art Integration:</b> Drawing graphs on instantaneous and average rate of a reaction	<b>Practical:</b> <b>(1) Chemical Kinetics</b> (a) Effect of concentration and temperature on the rate of reaction between Sodium Thio sulphate and Hydrochloric acid. (b) Study of reaction rates of any one of the following: <ul style="list-style-type: none"> <li>● Reaction of Iodide ion with Hydrogen Peroxide at room temperature using different concentration of Iodide ions.</li> <li>● Reaction between Potassium Iodate (KIO<sub>3</sub>) and Sodium Sulphite (Na<sub>2</sub>SO<sub>3</sub>) using starch solution as indicator (clock reaction).</li> </ul>	1. Assignment on Chemical kinetics. 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
<b>May Topic:</b>	<b>PERIODIC TEST - 1</b>				

Surface Chemistry	Adsorption - physisorption and chemisorption, factors affecting adsorption of gases on solids, catalysis, homogenous and heterogenous activity and selectivity; enzyme catalysis colloidal state distinction between true solutions, colloids and suspension; lyophilic, lyophobic multi-molecular and macro-molecular colloids; properties of colloids; Tyndall effect, Brownian movement, electrophoresis, coagulation, emulsion - types of emulsions.	Videos to show Tyndall effect, Brownian movement, Homogeneous and heterogeneous catalysis, enzyme catalysis.	<b>Interdisciplinary Linkage:</b> Physical science. <b>Diagrams:</b> Fig 5.1, 5.2, 5.3, 5.4, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11, 5.12, 5.13, 5.14, 5.15. (NCERT part 1) <b>Art Integration:</b> Drawing graph on Adsorption isotherm and Freundlich Adsorption isotherm.	<b>Practical:</b> (1) Surface Chemistry <ul style="list-style-type: none"> <li>● Preparation of one lyophilic and one lyophobic sol Lyophilic sol - starch, egg albumin and gum Lyophobic sol - aluminium hydroxide, ferric hydroxide, arsenous sulphide.</li> <li>● Dialysis of sol-prepared in (a) above.</li> <li>● Study of the role of emulsifying agents in stabilizing the emulsion of different oils.</li> </ul> <b>Investigatory project: Topic Selection</b>	1. Assignment on Surface Chemistry. 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
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Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
<b>July Topic:</b> General Principles and Processes of Isolation of Elements	Principles and methods of extraction - concentration, oxidation, reduction - electrolytic method and refining; occurrence and principles of extraction of aluminium, copper, zinc and iron	Videos to show different methods of extraction	<b>Interdisciplinary Linkage:</b> Inorganic science. <b>Diagrams:</b> Fig 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, (NCERT part 1) <b>Art Integration:</b> Drawing graph on Adsorption isotherm and Freundlich Adsorption isotherm.	<b>PRACTICAL:</b> (1) Chromatography <ul style="list-style-type: none"> <li>● Separation of pigments from extracts of leaves and flowers by paper chromatography and determination of <math>R_f</math> values.</li> <li>● Separation of constituents present in an inorganic mixture containing two cations only (constituents having large difference in <math>R_f</math> values to be provided).</li> </ul>	1. Assignment on General Principles and Processes of Isolation of Elements  2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions

<p><b>Topic:</b> 'p' block elements</p>	<p>Group 16 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties, dioxygen: Preparation, Properties and uses, classification of Oxides, Ozone, Sulphur - allotropic forms; compounds of Sulphur: Preparation Properties and uses of Sulphur-dioxide, Sulphuric Acid: industrial process of manufacture, properties and uses; Oxoacids of Sulphur (Structures only). Group 17 Elements: General introduction, electronic configuration, oxidation states, occurrence, trends in physical and chemical properties; compounds of halogens</p>	<p>Videos to show structures of oxoacids.</p>	<p><b>Diagrams:</b> Fig 7.5, 7.6, 7.7, 7.8, 7.9 (NCERT part 1) <b>Art Integration:</b> Drawing structures of oxoacids and compounds of noble gases.</p>	<p><b>Revision of practical</b></p>	<p>1. Assignment on p - Block Elements 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions</p>
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Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
	Group 17 Elements: Preparation, properties and uses of Chlorine and Hydrochloric acid, interhalogen compounds, Oxoacids of halogens (structures only). Group 18 Elements: General introduction, electronic configuration, occurrence, trends in physical and chemical properties, uses.				
<b>Topic:</b> 'd' and 'f' Block Elements	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.	Video to show lanthanoid contraction and properties of $K_2Cr_2O_7$ and $KMnO_4$ .	<b>Diagrams/ Graphs:</b> Fig 8.1, 8.2, 8.3, 8.4, 8.6, 8.7 (NCERT part 1) <b>Art Integration:</b> Drawing graph on different properties like atomic radii etc.	<b>Revision of practical</b>	1. Assignment on 'd' and 'f' Block Elements 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
<b>August Topic:</b> Coordination Compounds	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, importance of coordination compounds (in qualitative inclusion, extraction of metals and biological system).	Video to show stereoisomerism	<b>Diagrams: Fig 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9, 9.10, 9.13, 9.14 (NCERT part 1)</b> <b>Art Integration:</b> Drawing structures of metal carbonyls, d orbital splitting in octahedral and tetrahedral crystal field.	<b>Practical: (1) Preparation of inorganic compounds</b> <ul style="list-style-type: none"> <li>Preparation of double salt of Ferrous Ammonium Sulphate or Potash Alum.</li> <li>Preparation of Potassium Ferric</li> </ul>	1. Assignment on coordination compounds. 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions

				Oxalate.	
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Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
<b>Topic:</b> Haloalkanes and Haloarenes	Haloalkanes: Nomenclature, nature of C-X bond, physical and chemical properties, mechanism of substitution reactions, optical rotation. Haloarenes: Nature of C-X bond, substitution reactions (Directive influence of halogen in monosubstituted compounds only). Uses and environmental effects of - dichloromethane, trichloro methane, tetrachloromethane, iodoform, freons, DDT	Videos to show retention, inversion and racemic mixtures.	<b>Diagrams:</b> Fig 10.2, 10.3, 10.4, 10.5 (NCERT part 2)  <b>Art Integration:</b> Drawing structures to show retention, inversion and racemic mixtures.	<b>PRACTICAL:</b> (1) Preparation of Organic Compounds Preparation of any one of the following compounds <ul style="list-style-type: none"> <li>● Acetanilide</li> <li>● Di -benzal Acetone</li> <li>● p-Nitro acetanilide</li> <li>● Aniline yellow or 2 - Naphthol Aniline dye.</li> </ul>	1. Assignment on Haloalkanes and Haloarenes 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
<b>Topic:</b> Alcohols, Phenols and Ethers	<b>Alcohols:</b> 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. <b>Phenols:</b> Nomenclature, methods of preparation, physical and chemical properties, acidic nature of phenol, electrophilic substitution reactions, uses of phenols. <b>Ethers:</b> Nomenclature, methods of preparation, physical and chemical properties, uses.	Video to show mechanism of dehydration in alcohols.	<b>Art Integration:</b> Drawing different resonating structures to explain the structure of phenol.	<b>PRACTICAL:</b> (1) Qualitative analysis Determination of one cation and one anion in a given salt. Cation - $\text{Pb}^{2+}$ , $\text{Cu}^{2+}$ , $\text{Al}^{3+}$ , $\text{Fe}^{3+}$ , $\text{Mn}^{2+}$ , $\text{Zn}^{2+}$ , $\text{Cu}^{2+}$ , $\text{Co}^{2+}$ , $\text{Ni}^{2+}$ , $\text{Ca}^{2+}$ , $\text{Sr}^{2+}$ , $\text{Ba}^{2+}$ , $\text{Mg}^{2+}$ , $[\text{NH}_4]^+$ Anions - $[\text{CO}_3]^{2-}$ , $\text{S}^{2-}$ , $[\text{SO}_3]^{2-}$ , $[\text{SO}_4]^{2-}$ , $[\text{NO}_2]^-$ , $\text{Cl}^-$ , $\text{Br}^-$ , $\text{I}^-$ , $[\text{PO}_4]^{3-}$ , $[\text{C}_2\text{O}_4]^{2-}$ , $\text{CH}_3\text{COO}^-$ (Note: Insoluble salts excluded) <b>PROJECT SUBMISSION</b>	1. Assignment on Alcohols, Phenols and Ethers 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
<b>September</b>	<b>Half Yearly Examination</b>				

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration	Practical/ Investigatory Project	Assignment / Discussion
<b>October Topic:</b> Aldehydes, Ketones and Carboxylic Acids	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.	Videos to show mechanism of addition and nucleophilic reactions	<b>Art Integration:</b> Writing mechanism of different reactions by showing arrows for transfer of electrons.	<b>PRACTICAL:</b> (1) Tests for the functional groups present in organic compounds: Unsaturation, alcoholic, phenolic, aldehydic, ketonic, carboxylic and amino (Primary) groups.	1. Assignment on Aldehydes, Ketones and Carboxylic Acids 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
<b>November Topic:</b> Organic compounds containing Nitrogen	Amines: Nomenclature, classification, structure, methods of preparation, physical and chemical properties, uses, identification of primary, secondary and tertiary amines. Cyanides and Isocyanides - will be mentioned at relevant places in text. Diazonium salts: Preparation, chemical reactions and importance in synthetic organic chemistry.	Videos to show chemical properties of amines.	<b>Art Integration:</b> Drawing resonating structures to explain the acidity of amines.	<b>Revision of practical</b>	1. Assignment on Organic compounds containing Nitrogen 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions

<p><b>Topic:</b> Biomolecules</p>	<p>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.</p>	<p>Videos to show structure of carbohydrate, proteins and nucleic acids.</p>	<p><b>Art Integration:</b> Drawing structures of carbohydrate, proteins and nucleic acids.</p>	<p><b>Practical:</b> <b>(1)</b> Characteristic tests of carbohydrates, fats and proteins in pure samples and their detection in given food stuffs.</p>	<p>1. Assignment on Biomolecules 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions</p>
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<b>Month Topic</b>	<b>Sub Topic</b>	<b>Audio Visual Inputs</b>	<b>Concept Maps / Diagrams/ Interdisciplinary Linkages/ Art Integration</b>	<b>Practical/ Investigatory Project</b>	<b>Assignment / Discussion</b>
<b>Topic:</b> Polymers	Copolymerization, some important polymers: natural and synthetic like polythene, nylon polyesters, Bakelite, rubber. Biodegradable and nonbiodegradable polymers.	Videos to show different types of polymerization reactions.	<b>Art Integration:</b> Drawing structures of different monomers which form polymers.	<b>Revision of practical</b>	1. Assignment on Polymers 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
<b>Topic:</b> Chemistry in Everyday life	Chemicals in medicines - analgesics, tranquilizers antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines. Chemicals in food - preservatives, artificial sweetening agents, elementary idea of antioxidants. Cleansing agents- soaps and detergents, cleansing action.	Videos to show cleansing action of soaps.	<b>Art Integration:</b> Drawing lock and key mechanism of enzyme and substrate, cleansing action of soap.	<b>Revision of practical</b>	1. Assignment on Chemistry in Everyday life 2. Discussion of Scoring Points/ Marking Scheme/ Sample Questions
<b>December</b>	<b>Pre Board Examination</b>				
<b>January</b>	<b>Revision</b>				
<b>February</b>	<b>Revision</b>				
<b>March</b>	<b>Annual Examination</b>				

**Curriculum of Computer Science(New) 083**  
**session 2023-2024**  
**Class :XII**

May Topic: Programming and conceptual thinking (II)	<b>Using Python Libraries</b> Library, Modules, Importing modules in a python program(eg. math, random) Using import function, Creating a python library	Program based on random function Output based question	
July: Topic: Programming and conceptual thinking (II)	<b>File Handling</b> Introduction of file, Data File, Opening and closing the files, reading the file, writing the file, Flush function, Significance of file Pointer in file handling, standard input, output and error stream <b>Recursion</b> Recursive function, Binary search, Binary search using recursive function, Recursive verses Iteration(for loop) <b>Idea of Algorithmic Efficiency</b> Computational complexity, Guide line for computing complexity, Big O notation, <b>Best , Average , and worst complexity</b>	<ul style="list-style-type: none"> <li>• Creating the python file write and read the record from the python file.</li> <li>• count the number of alphabet, number of words, Number of white spaces, Number of lines from the file.</li> </ul>	Project based on python language

Month / topic	Theory	Practical / project	Miscellaneous
August Topic: Programming and conceptual thinking (II)	Data Visualization using Pyplot Creating charts with matplotlib library pyplot Interface ( Line Chart, Bar Chat, Pie Chart) Customizing the plot : Anatomy of a chart, Adding a title, Setting X and Y labels, Limits and Tickets, Adding Legends Comparing Chart Types, <b>Data Structure I: Linear list</b> Elementary data structure, Different data Structure (Linear List Array, Stack, Queue,	<ul style="list-style-type: none"> <li>• Creating the list</li> <li>• Searching the element from the list</li> <li>• inserting the element in a list</li> <li>• deleting the element from the list</li> </ul>	

	Linked List, Trees, Operations on data Structures, Linear Lists, Linear list data structure (insertion, deletion, Traversing, searching , sorting), Two Dimensional lists		
September: Topic: Programming and conceptual thinking (II)  Topic: Computer Network	<b>Data Structure –II Stack And Queue</b> Stacks (Implementation Stack via python, Stack applications.) Queue ( Implementation and application) Variation in Queues	Stack operation (push and pop) Queue(insertion and deletion)	

Month / topic	Theory	Practical / project	Miscellaneous
September: Topic: Programming and conceptual thinking (II)  Topic: Computer Network-I	<b>Data Structure –II Stack And Queue</b> Stacks (Implementation Stack via python, Stack applications.) Queue ( Implementation and application) Variation in Queues  Computer Networks and its components , Types of networks, Network Devices The Cloud Internet of things(IoT)		Implementation of network devices, Concept of cloud in the network, Types of protocols discussion in class used by the internet,
October: Topic: Computer Network-II	Modulation Techniques, Collision in Wireless Network(CSMA/CA), Error Detection, Main Idea of Routing, TCP/IP, Domain Name System, Wireless Connectivity protocols, Basic Network Tools( PING, TRACEROUT, NSLOOKUP, IPCONFIG, WHOIS, SPEED TEST), VARIOUS protocols Used in networks, How HTTPS works, secure sockets layer (SSL) Network Applications		

Topics / Month	Theory	Project / Assignment	Miscellaneous
November Topics: MySQL Revision Tour  More on SQL  Interface Python with SQL	Relational Database Model, Accessing database, Creating table, insertion, deletion, update, alter, Select command, selecting particular row or column, range base, pattern based, Drop, View etc., SQL Join  Order By clause, Aggregate Function, Types of SQL function, Group by clause, Having clause  Connecting to Mysql from Python Parameterised Queries , Performing Insertion and updata queries,	Testing the SQL commands on MYSQL	
Creating a Django based Basic Web Application	Web Frame work, web, Websites, Web application, Activating Virtual Enviroment Creating basic Django Web Application, Models, views, templets Writing Dictionary data to CSV and text files. Processing Get and Post request		
December	Pre Board Exam 2020		





**Delhi Public Global School, Moradabad**  
**Annual Planner of English**  
**Class 12<sup>th</sup>**  
**Session 2024-25**

Topic	Specific Objective	Methodology/ Discussion	Assignment Listening, Speaking, Reading and Writing Skills	Learning Outcome
<b>APRIL</b>				
<b>Topic: The Last Lesson</b>  <b>No. of Periods</b> <b>08</b>	<ul style="list-style-type: none"> <li>• to make the students identify the genre to which the story belongs</li> <li>• to understand the techniques used by the author - to enhance vocabulary .</li> <li>• to enable them to realize the importance of a teacher in the life of a student.</li> </ul>	<p>The learners would interpret the title of the lesson. The background knowledge of the author and his works would be given. The facilitator would discuss difficult words and terms would be discussed. The prose will be explained. All possible questions and answers would be discussed and assigned.</p> <p style="text-align: center;">Discussion of Scoring Points/ Marking Scheme/Sample Questions.</p>	<ul style="list-style-type: none"> <li>• Group Discussion on Political enslavement is a curse on any Nation as it deprives it of its identity</li> <li>• Narrate a story on the Last lesson of most inspired teacher</li> </ul>	<ul style="list-style-type: none"> <li>• They would develop their optimistic attitude towards life struggles.</li> <li>• They would be able to familiarize themselves with specific background information of Alphonse Daudet/ history of France.</li> <li>• They would be able to make connections between similar situations in different storylines/life experiences.</li> </ul>
<b>Topic: My Mother at Sixty Six</b>  <b>No. of Periods</b> <b>06</b>	<ul style="list-style-type: none"> <li>• to encourage the students to appreciate poetry and read aloud with proper intonation</li> <li>• to prepare the students for poetic forms and figures of speech, rhyme and rhythm</li> <li>• to build up empathy, sympathy.</li> </ul>	<ul style="list-style-type: none"> <li>• The background of the poet would be discussed.</li> <li>• The poem would be read aloud with proper intonation rhyme and rhythm.</li> <li>• Difficult terms and words would be The background of the poet would be discussed.</li> <li>• The poem would be read aloud with proper intonation rhyme and rhythm.</li> <li>• Difficult terms and</li> </ul>	<ul style="list-style-type: none"> <li>• Speech on Importance of Mother</li> <li>• Narrate an incident to show the importance of mother in life..</li> </ul>	<ul style="list-style-type: none"> <li>• The students would be able to grasp the theme and meaning of the poem.</li> <li>• They would be able to read the poem with proper tone and rhyme and develop an interest in poetry.</li> <li>• Eternal law of ageing &amp; complex subtleties of human relationship.</li> <li>• Their vocabulary would be strengthened.</li> <li>• Their analyzing skills would be enhanced.</li> </ul>

		<p>words would be explained so that the students can predict the atmosphere of the world inside the poem.</p> <ul style="list-style-type: none"> <li>• The poem would be explained covering the phrases, sentences and discourse as well as their structuring.</li> <li>• Silent reading of the poem by the students within five minutes and listing the difficult terms.</li> <li>• The figures of speech and rhyme scheme would be discussed.</li> </ul>		
<p><b>Notice Writing</b></p> <p><b>No. of Periods</b> <b>04</b></p>	<ul style="list-style-type: none"> <li>• to enable the students to apply the correct format while writing a notice.</li> <li>• to make the students comprehend why a notice is written and the style and procedure.</li> </ul>	<ul style="list-style-type: none"> <li>• The Learners would be asked to speak about a notice they received and they remember still</li> <li>• The teacher would explain what a notice is and its purpose. The standard format of notice writing would be shown in the class.</li> <li>• The teacher would discuss in detail what a notice should contain.</li> </ul>	<p>Notice Writing exercises : Different topics on different fields of notice for all range of learners</p>	<ul style="list-style-type: none"> <li>• Students will be able to analyse any NOTICE shown to them on the basis of the knowledge imparted.</li> <li>• They will be able to frame notice about any event.</li> <li>• They will be able to identify important information in any given notice.</li> <li>• Students will be able to use appropriate style and format to write a NOTICE effectively.</li> </ul>
<p><b>INVITATION WRITING/ REPLIES</b></p> <p><b>No. of Periods</b> <b>06</b></p>	<ul style="list-style-type: none"> <li>• To enable the learners to express their ideas cohesively without any difficulty.</li> <li>• to enable them to comprehend different written texts for personal/public information, their formats and purpose.</li> </ul>	<ul style="list-style-type: none"> <li>• Developing the format in sequence or discourse/ spoken with reference to the educational, personal domains.</li> <li>• The teacher would discuss with examples all kinds of invitations and the method of framing replies.</li> </ul>	<p>Framing and preparing invitation cards for different purposes</p>	<ul style="list-style-type: none"> <li>• The learners would be able to express their ideas cohesively, completely, fluently and spontaneously with expressions, grammar usage and relevant vocabulary for a hospitable announcement of an event.</li> </ul>
<p><b>REPORT WRITING</b></p> <p><b>No of Periods :</b> <b>4</b></p>	<ul style="list-style-type: none"> <li>• to develop students' abilities to organize information and construct it into a text.</li> <li>• to develop students'</li> </ul>	<ul style="list-style-type: none"> <li>• The teacher in the beginning of the session would give students the opportunity to collect information</li> </ul>	<ul style="list-style-type: none"> <li>• Write a Report on the sites visited by you during the school trips.</li> <li>• Write a Report on</li> </ul>	<ul style="list-style-type: none"> <li>• The learners will be able to discuss the purpose of various reports.</li> <li>• They will be able to</li> </ul>

	<p>abilities to revise, redraft and improve their writing</p> <ul style="list-style-type: none"> <li>• To develop students' abilities to construct questions</li> </ul>	<p>on a declared issue before writing the report.</p> <ul style="list-style-type: none"> <li>• During the session students will go through the process of developing ideas and collecting and organizing information.</li> <li>• They will then use the information to create the first draft of an imaginary report.</li> <li>• They will then focus on some key areas of good writing and try to redraft their reports with these in mind.(Inductive Learning)</li> </ul>	<p>a recent disaster.</p>	<p>describe the kinds of information to include in specific reports and identify tips for writing a clear, concise, and useful report.</p> <ul style="list-style-type: none"> <li>• They will recognize and address patterns and trends and be able to explain how the tone of a report can affect worker morale and motivation.</li> </ul>
<p><b>LOST SPRING (Flamingo)</b></p> <p><b>No of Periods : 8</b></p>	<ul style="list-style-type: none"> <li>• to sensitize the students to the problem of child labour.</li> <li>• to facilitate making connections between similar situations in different storylines/life experiences.</li> </ul>	<ul style="list-style-type: none"> <li>• The session would begin with an audio – video presentation on the plight of poor children.</li> <li>• The learners would be asked to interpret the title of the lesson relating it to the presentation.</li> <li>• The background of the author would be given.</li> <li>• The theme and story line would be explained.</li> </ul>	<ul style="list-style-type: none"> <li>• E-Project on Child Labour : Shape Our Future Bright</li> <li>• On the basis of PPT Write a report on the Problem of Child Labour in India for your school magazine.</li> <li>• Being the head boy/girl of your school, write a notice informing students about the 'Anti-Child-Labour' day going to be observed in your school</li> </ul>	<ul style="list-style-type: none"> <li>• Learners will be able to sensitize the learners to the problem of child labour.</li> <li>• They would be able to identify the problem, consider the options, weigh the pros and cons of each option, and reach a decision/opinion/solution.</li> <li>• They would enhance their analytical skills.</li> </ul>
<b>MAY</b>				
<p><b>THIRD LEVEL (Vistas)</b></p> <p><b>No. of Periods: 06</b></p>	<ul style="list-style-type: none"> <li>• -The story revolves around Charley, the protagonist, who claimed to find himself on the third level at the grand Central Station which the rail authorities swore doesn't exist. The Third level refers to the world of fantasy where</li> </ul>	<ul style="list-style-type: none"> <li>• understand how fantasy and reality can be interwoven</li> <li>• understand 'waking dream wish fulfilment' concept -understand split personality and how one wanders from one world to another if he is insecure, fearful, tensed and worried</li> </ul>	<ul style="list-style-type: none"> <li>• an interaction on fantasy and reality by giving examples of the movie Ra One and the reference of futuristic video games.</li> <li>• the title of the lesson would be open for class</li> </ul>	<ul style="list-style-type: none"> <li>• identify and make connections between similar situations in own life experiences</li> <li>• understand the contrast between the fantasy world and real world</li> <li>• acquire realistic approach towards real life challenges</li> </ul>

	<p>Charley used to visit as a temporary relief or a medium of escape from the world of harsh realities. Man achieves this by constantly moving between the past, the present and the future</p>	<ul style="list-style-type: none"> <li>• understand that one should not be an escapist rather accept the challenges of real life</li> </ul>	<p>interpretation.</p> <ul style="list-style-type: none"> <li>• Brief up about the author</li> </ul>	
<p><b>TIGER KING (Vistas)</b></p> <p><b>No of Periods : 08</b></p>	<ul style="list-style-type: none"> <li>• to enhance the integrated skills of the learners.</li> <li>• to enhance familiarizing with specific background information of author.</li> <li>• to raise an awareness to conserve Wild Life.</li> <li>• to enable them to understand the importance to sustaining ecological balance.</li> </ul>	<ul style="list-style-type: none"> <li>• The session would start with a short video on save tiger.</li> <li>• The learners would interpret the title of the story and relate it to the video shown.</li> <li>• The background of the author would be given. The story would be read aloud</li> <li>• The theme and underlying meaning would be discussed.</li> <li>• A comparative study between Mrs Packletide's Tiger and the lesson.</li> <li>• Difficult words would be listed and explained.</li> <li>• The moral of the story would be discussed.</li> </ul>	<ul style="list-style-type: none"> <li>• Presentation on Treatment to Wild Life through Power Point Presentation.</li> </ul>	<ul style="list-style-type: none"> <li>• They would be able to familiarize with specific Royal Indian background information of the author/history of cruel insensitive kings who found pleasure in hunting and killing innocent animals.</li> <li>• They would understand the importance of becoming sincere and trustworthy in thought and action.</li> <li>• They would be understanding, responsible, tolerant and have respect for class identities – democratic citizenship.</li> </ul>
<p><b>DEEP WATER</b></p> <p><b>No of Periods 08</b></p>	<ul style="list-style-type: none"> <li>• -to enable the students to enhance their understanding skills and create an interest on the topic to be studied.</li> <li>• to make the students enrich their vocabulary and strengthen their understanding skills.</li> <li>• to prepare the learners for digital learning.</li> <li>• to enhance the learners' listening skill.</li> <li>• to enable them to strengthen their logical and critical thinking skills.</li> <li>• to develop their</li> </ul>	<ul style="list-style-type: none"> <li>• The session would begin with an interactive session wherein the teacher would ask the students to discuss about their phobias as related to the theme of the lesson.</li> <li>• The prose would be read aloud.</li> <li>• Difficult words would be discussed.</li> <li>• The story outline, theme and values would be discussed by the teacher through a PowerPoint Presentation.</li> </ul>	<ul style="list-style-type: none"> <li>• Worksheets on Listening task, Crisis Management, Creative writing to unfold logical thinking skills.</li> </ul>	<ul style="list-style-type: none"> <li>• The learners would unfold their logical thinking skills.</li> <li>• Their vocabulary will be enriched.</li> <li>• They would be able to organize their thoughts, research work, compile and present in an economic writing style.</li> <li>• The creative writing skills would be enhanced.</li> <li>• They would develop their listening, speaking, questioning and presentation skills.</li> <li>• They would strengthen their decision making</li> </ul>

	<p>creative writing skill.</p> <ul style="list-style-type: none"> <li>• to prepare them for Crisis Management.</li> <li>• to inculcate the values of hard work and determination.</li> </ul>			skills.
<b>JULY</b>				
<p><b>KEEPING QUIET</b></p> <p><b>No of Periods: 08</b></p>	<ul style="list-style-type: none"> <li>• to read and recognize the purpose of economy of words and the hidden feelings and nuances of the lines, correlating them with author's background and personal experiences.</li> <li>• to build up didactics, empathy and sympathy with the speaker</li> <li>• to enable them to realize the need of the hour and establish peace.</li> <li>• to inculcate the values of introspection, retrospection, peace, sensitivity to the environment, universal brotherhood, empathy and self awareness.</li> </ul>	<ul style="list-style-type: none"> <li>• The session would begin with the study of silence.</li> <li>• The teacher would ask the learners to maintain silence and the study the sounds of silence for one minute.</li> <li>• The learners would discuss on the sounds and thoughts of silence and relate to the title of the poem.</li> <li>• The background of the author would be given.</li> <li>• The poem would be read aloud and discussed.</li> <li>• Difficult words would be listed out and discussed.</li> <li>• The synopsis would be shown with the help of a PPT.</li> </ul>	<ul style="list-style-type: none"> <li>• Role Play on establishing Peace and Unity.</li> <li>• Write a script on Peace and Unity and act on it.</li> </ul>	<ul style="list-style-type: none"> <li>• The learners would be able to understand the need of the hour to maintain peace and cut out the clamour and bloodshed, correlating it with contemporary background and personal experiences.</li> </ul>
<p><b>THE ENEMY (Vistas)</b></p> <p><b>No of Periods : 14</b></p>	<ul style="list-style-type: none"> <li>• to make the students realize the essential worth of human life and universal brotherhood.</li> <li>• to help them think beyond countries and continents and races and wars.</li> </ul>	<ul style="list-style-type: none"> <li>• The session would start with an interactive session on the services of a doctor.</li> <li>• The title of the lesson would be open for class interpretation.</li> <li>• The background of the author would be given.</li> <li>• The lesson would be read aloud and explained. The historical background of the story and war related issues would be discussed.</li> <li>• Difficult words would be listed out and discussed.</li> </ul>	<ul style="list-style-type: none"> <li>• A Study on War Stories and present it through a Power Point Presentation.</li> </ul>	<ul style="list-style-type: none"> <li>• The learners will be able to familiarize themselves with specific background of political enmity.</li> <li>• They will be able to identify and make connections between similar situations in own life experiences where our prejudices often hinder our human compassion and empathy for a political enemy.</li> <li>• They will be able to understand the significance of professional ethics and</li> </ul>

				social obligation in sensitive times.
<b>Letter Writing – Editors</b> <b>No of Periods : 06</b>	<ul style="list-style-type: none"> <li>to express ideas harmoniously and chronologically without difficulty in expressions, grammar usage, format usage, relevant vocabulary.</li> </ul>	<ul style="list-style-type: none"> <li>The format, rules, technique would be discussed with examples.</li> <li>The usage of language would be taught and students would be assigned written tasks</li> </ul>	<ul style="list-style-type: none"> <li>Writing a report/ letter to the editor on a recent disaster/metro with congruent newspaper clip.</li> </ul>	<ul style="list-style-type: none"> <li>The learners would be able to organise their thoughts and express freely.</li> <li>They would develop an interest towards writing thus enhancing their writing skills.</li> <li>Their thinking skills would be enhanced.</li> </ul>
<b>AUGUST</b>				
<b>Article Writing</b> <b>No of Periods : 06</b>	<ul style="list-style-type: none"> <li>to enhance familiarizing with specific background information of author</li> <li>to express ideas fluently and Spontaneously without difficulty in expressions, grammar usage, format usage, relevant vocabulary.</li> </ul>	<ul style="list-style-type: none"> <li>The session would start with a pre-writing activity to create an interest towards writing.</li> <li>The teacher would define what an article is and discuss the purpose of article writing.</li> <li>The different styles, subjects, purpose of article writing would be discussed.</li> <li>The teacher would explain the technique of accumulating ideas, focusing on ideas and facts, planning, organizing, evaluating, structuring and editing.</li> <li>They would be taught the importance and way of producing a finished piece of work with examples</li> <li>The requirements of the content, beginning, body and end would be focused.</li> </ul>	<ul style="list-style-type: none"> <li>Assignment on various subjects</li> </ul>	<ul style="list-style-type: none"> <li>The students would develop an interest towards writing.</li> <li>Their planning and organizing techniques would be enhanced.</li> <li>They would be able to research on any subject and derive information from facts and present him in the form of a written piece. Their creative writing would be analysed.</li> <li>The interpreting and evaluative skills would be strengthened</li> </ul>
<b>Journey To The End Of The Earth</b> <b>No. Of Periods: 06</b>	<ul style="list-style-type: none"> <li>enhance their vocabulary and expressions.</li> <li>communicate their ideas regarding Antarctica.</li> <li>understand that India and Antarctica at one</li> </ul>	<ul style="list-style-type: none"> <li>check and analyse the effect of increase of human population and climate change.</li> <li>foster a new understanding and respect for our planet Earth.</li> </ul>	<ul style="list-style-type: none"> <li>Brief up about the author</li> <li>Why do people go for expedition?</li> <li>The students will be shown a video on ‘Antarctica’.</li> </ul>	<ul style="list-style-type: none"> <li>understand that millions of years ago humans hadn’t arrived and the climate was much warmer with a variety of flora and fauna.</li> <li>know that the landmass</li> </ul>

	<p>point of time had been part of the same landmass.</p> <ul style="list-style-type: none"> <li>• understand that the breakup of Gondwana started the episode of a continental drift.</li> <li>• understand the significance of Cordilleran folds and pre Cambrian granite shields.</li> <li>• gain knowledge of the ‘Students on Ice‘ programme for high school students.</li> </ul>	<ul style="list-style-type: none"> <li>• understand that they are the future generation of policy makers.</li> <li>• show care and concern for the increase in the average global temperature and other species on the planet.</li> </ul>		<p>disintegrated into countries shaping the globe.</p> <ul style="list-style-type: none"> <li>• understand that to study the Earth’s past, present and future, Antarctica is the place – the World’s geological history is in Antarctica.</li> <li>• analyse and evaluate the effect of human population and climate change.</li> </ul>
<p><b>On The Face Of It</b></p> <p><b>No of Periods : 12</b></p>	<ul style="list-style-type: none"> <li>• to enable the learners to view others by removing the glasses of prejudice, hatred, and dislike.</li> <li>• to adapt reality of life bravely</li> <li>• to build inner strength and look at the brighter sides of life.</li> </ul>	<ul style="list-style-type: none"> <li>• The session would start with an interaction on appearances are deceptive.</li> <li>• The title of the story would be open for interpretation.</li> <li>• The background of the author would be given.</li> <li>• The prose would be read aloud and discussed.</li> <li>• It would follow by Developing the format of text in sequence or discourse /spoken with reference to the global, cultural, public domains of social life.</li> </ul>	<ul style="list-style-type: none"> <li>• Group discussion on “It’s got nothing to do with my face and what I look like” Documentary on the success stories of physically challenged people</li> </ul>	<ul style="list-style-type: none"> <li>• The learners would be able to fight out their loneliness, depression and disappointment.</li> <li>• They would accept the physically challenged people positively in their life and expand their social interaction.</li> <li>• They would be able to build up optimism and self confidence.</li> </ul>
<p><b>THE RATTRAP</b></p> <p><b>No of Periods: 12</b></p>	<ul style="list-style-type: none"> <li>• to guide the students to relate the characteristics of literature to larger cultural and human values.</li> <li>• to facilitate making connections between similar situations in different storylines/life experiences.</li> </ul>	<ul style="list-style-type: none"> <li>• The session would begin with an interactive stage wherein the students would discuss on the temptations in life on basis of the theme of the story.</li> <li>• The title of the lesson would be opened to the class for interpretation.</li> <li>• The background knowledge of the author would be given.</li> <li>• The prose would be</li> </ul>	<ul style="list-style-type: none"> <li>• Debate on The whole World is nothing but a great Rattrap.</li> </ul>	<ul style="list-style-type: none"> <li>• The students would be able to effectively provide a synopsis of the story.</li> <li>• They will be able to analyze the values and thought process of the story.</li> <li>• They would be able to identify the insecurity while tackling personal fears and horrors that lurk in the recesses of our mind.</li> <li>• They would be able to</li> </ul>

		<p>explained.</p> <ul style="list-style-type: none"> <li>• Difficult words would be listed and explained. The moral of the story would be discussed.</li> </ul>		<p>appreciate the significance of developing personal fears yet rising above them to savour real liberty.</p> <ul style="list-style-type: none"> <li>• Their vocabulary would be enriched.</li> </ul>
<b>SEPTEMBER</b>				
<p><b>MEMORIES OF CHILDHOOD</b></p> <p><b>No of Periods: 06</b></p>	<ul style="list-style-type: none"> <li>• to enable the learners to develop comprehension.</li> <li>• to guide them to have a broader outlook.</li> <li>• to understand the problems related to casteism and racial discrimination.</li> </ul>	<ul style="list-style-type: none"> <li>• The session would begin with a presentation on the great personalities who fought against social injustice.</li> <li>• The title of the lesson would be open for class interpretation.</li> <li>• The background of the author would be given. The lesson would be read aloud and discussed. Difficult words would be listed out and discussed.</li> </ul>	<ul style="list-style-type: none"> <li>• Creating Posters for Cultural equality.</li> </ul>	<ul style="list-style-type: none"> <li>• The learners would be able to sensitize themselves to the issues of estranged cultural ties.</li> <li>• They will be able to make connections between similar situations in different storylines/life experiences.</li> <li>• They will be able to initiate the role of an ambassador in the world ridden with racial and class differences.</li> <li>• They would be able to recognize the universal/global theme of inequality.</li> </ul>
<p><b>Revision Work</b></p> <p><b>No of Periods: 06</b></p>	<ul style="list-style-type: none"> <li>• To check understanding of the learners</li> </ul>	<ul style="list-style-type: none"> <li>• Teacher will ask questions related to the chapters.</li> </ul>	<ul style="list-style-type: none"> <li>• Written Revision will be taken for Writing Section</li> </ul>	<ul style="list-style-type: none"> <li>• The learners would be able to Understand the topic more clearly and can clear their doubts to obtain good marks.</li> </ul>
<b>OCTOBER</b>				
<p><b>Indigo</b></p> <p><b>No. of Periods: 06</b></p>	<ul style="list-style-type: none"> <li>• Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters.</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding the historical significance of the lesson. Appreciating the biographical style of writing Appreciation of Gandhi's leadership style</li> </ul>	<ul style="list-style-type: none"> <li>• Encouraging students to role-play as various characters to interact with one another.</li> </ul>	<ul style="list-style-type: none"> <li>• The students would be able to effectively provide a synopsis of the story.</li> <li>• They will be able to analyze the values and thought process of the story</li> </ul>
<p><b>Poets &amp; Pancakes</b></p> <p><b>No. of Periods: 06</b></p>	<ul style="list-style-type: none"> <li>• Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters</li> </ul>	<ul style="list-style-type: none"> <li>• The session would begin with an interactive session wherein the teacher would ask the students to discuss about their</li> </ul>	<ul style="list-style-type: none"> <li>• Debate on "Should makeup be banned"?</li> </ul>	<ul style="list-style-type: none"> <li>• The students would be able to effectively provide a synopsis of the story.</li> <li>• They will be able to analyze the values and</li> </ul>

		<p>opinion as related to the theme of the lesson.</p> <ul style="list-style-type: none"> <li>• The prose would be read aloud. Difficult words would be discussed.</li> </ul>		<p>thought process of the story</p>
<p><b>AUNT JENNIFER'S TIGERS</b></p> <p><b>No. of Periods: 04</b></p>	<ul style="list-style-type: none"> <li>• to enable the learners to appreciate poetry</li> <li>• to infer the deeper meaning/message</li> <li>• to prepare the students for poetic forms and adept them with the figures of speech, rhyme and rhythm</li> <li>• to develop the ability of appreciation of ideas and criticizing the thinking.</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-reading activity would be the first step wherein the students would delve deep into the title of the poem.</li> <li>• The learners would make an interpretation of the title as it indicates the subject and theme.</li> <li>• The background of the poet would be discussed.</li> <li>• The poem would be read aloud with proper intonation rhyme and rhythm.</li> </ul>	<ul style="list-style-type: none"> <li>• PPT(audio-visual demonstration of the poem)</li> </ul>	<ul style="list-style-type: none"> <li>• The learners will be able to facilitate making connections between similar situations in different storylines/life experiences.</li> <li>• They will be able to empathize with Aunt Jennifer's problems and seek resolution.</li> <li>• They will be able to think and produce spontaneous, fluid and expression in poetic texts to convey a social change.</li> <li>• They would discern prevailing inequalities in various guises.</li> </ul>
<p><b>A Roadside Stand</b></p> <p><b>No. of Periods: 08</b></p>	<ul style="list-style-type: none"> <li>• to enable the learners to appreciate poetry</li> <li>• to infer the deeper meaning/message</li> <li>• to prepare the students for poetic forms and adept them with the figures of speech, rhyme and rhythm</li> <li>• to develop the ability of appreciation of ideas and criticizing the thinking.</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-reading activity would be the first step wherein the students would delve deep into the title of the poem.</li> <li>• Difficult terms and words would be explained so that the students can predict the atmosphere of the world inside the poem.</li> <li>• The poem would be explained covering the phrases, sentences and discourse as well as their structuring.</li> <li>• Silent reading of the poem by the students within five minutes and listing the difficult terms.</li> <li>• The figure of speech and rhyme scheme would be discussed.</li> </ul>	<ul style="list-style-type: none"> <li>• PPT(audio-visual demonstration of the poem)</li> </ul>	<ul style="list-style-type: none"> <li>• The learners would unfold their logical thinking skills.</li> <li>• Their vocabulary will be enriched.</li> <li>• The creative writing skills would be enhanced.</li> <li>• They would develop their listening, speaking, questioning and presentation skills.</li> <li>• They would strengthen their decision making skills.</li> </ul>

<p><b>A Thing of Beauty</b></p> <p><b>No. of Periods: 04</b></p>	<ul style="list-style-type: none"> <li>to encourage the students to appreciate poetry and read aloud with proper intonation</li> <li>to prepare the students for poetic forms and figures of speech, rhyme and rhythm</li> </ul>	<ul style="list-style-type: none"> <li>Pre-reading activity would be the first step wherein the students would delve deep into the title of the poem</li> <li>The background of the poet would be discussed.</li> <li>The poem would be read aloud with proper intonation rhyme and rhythm.</li> </ul>	<ul style="list-style-type: none"> <li>PPT(audio-visual demonstration of the poem).</li> </ul>	<ul style="list-style-type: none"> <li>The learners would unfold their logical thinking skills.</li> <li>Their vocabulary will be enriched..</li> <li>The creative writing skills would be enhanced.</li> <li>They would develop their listening, speaking, questioning and presentation skills.</li> <li>They would strengthen their decision making skills.</li> </ul>
<b>NOVEMBER</b>				
<p><b>The Interview</b></p> <p><b>No. of Periods: 08</b></p>	<ul style="list-style-type: none"> <li>Understanding the Genre Literary appreciation Central Idea</li> <li>Plot, Protagonists, Characters Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters</li> </ul>	<ul style="list-style-type: none"> <li>The session would begin with an interactive session wherein the teacher would ask the students to discuss about their opinion as related to the theme of the lesson.</li> <li>The prose would be read aloud. Difficult words would be discussed.</li> </ul>	<ul style="list-style-type: none"> <li>PPT(audio-visual Demonstration.</li> </ul>	<ul style="list-style-type: none"> <li>The students would be able to effectively provide a synopsis of the story.</li> <li>They will be able to analyze the values and thought process of the story</li> </ul>
<p><b>Going Places</b></p> <p><b>No. of Periods: 08</b></p>	<ul style="list-style-type: none"> <li>Understanding the Genre Literary appreciation Central Idea Plot, Protagonists, Characters.</li> </ul>	<ul style="list-style-type: none"> <li>The session would begin with an interactive session wherein the teacher would ask the students to discuss about their opinion as related to the theme of the lesson.</li> <li>The prose would be read aloud.</li> <li>Difficult words would be discussed.</li> </ul>	<ul style="list-style-type: none"> <li>PPT(audio-visual Demonstration.</li> </ul>	<ul style="list-style-type: none"> <li>The students would be able to effectively provide a synopsis of the story.</li> <li>They will be able to analyze the values and thought process of the story.</li> </ul>
<p><b>WRITING SKILLS</b></p> <p><b>Letter of Job Application</b></p> <p><b>No of Periods 08</b></p>	<ul style="list-style-type: none"> <li>to enable the learners to express their ideas fluently, chronologically and concisely. -to express request fluently and orderly with proper tone and expressions.</li> </ul>	<ul style="list-style-type: none"> <li>The teacher would stress the students on the importance of application – they may lead to an interview and discuss the content of a letter of application and note the responses on the blackboard/or discuss through a PPT.</li> </ul>	<ul style="list-style-type: none"> <li>Select a job advert from the Times Classified (would be provided) and write an appropriate letter of application. Exchange letters with a partner and use the checklist to</li> </ul>	<ul style="list-style-type: none"> <li>The learners will be able to understand the nature and purpose of a letter of application. They will be able to examine a variety of letters to determine best layout, content and style. They will be able to develop and</li> </ul>

			see how well your partner has completed the letter.	produce their own letter of application and prepare cover letter and attached bio data.
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**Curriculum Plan of Mathematics**  
(Session: 2024-2025)

Month Topic	Sub Topic	Concept/ Mathematics Activities	Discussion	Assignment
<b>April</b> <b>Topic:</b> Inverse Trigonometric Functions <b>No. of Periods:</b> 15	Definition, range, domain, principal value branch. Graphs of inverse trigonometric Functions Elementary properties of inverse trigonometric functions.	<ul style="list-style-type: none"> <li>To draw the graph of <math>\sin^{-1}x</math>, using the graph of <math>\sin x</math> and demonstrate the concept of mirror reflection (about the line <math>y = x</math>)</li> <li>To explore the principal value of the function <math>\sin^{-1}x</math> using a unit circle.</li> </ul>	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Inverse Trigonometric Functions
<b>Topic:</b> Matrices <b>No. of Periods:</b> 25	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). Concept of elementary row and column operations. Invertible matrices and proof of the uniqueness of inverse, if it exists; (Here all matrices will have real entries).		Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Algebra of Matrices
<b>Topic:</b> Determinants <b>No. of Periods:</b> 25	Determinant of a square matrix (up to 3 x 3 matrices), properties of determinants, 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.		Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Determinants (especially operation based and system of equations)

Month Topic	Sub Topic	Concept/ Mathematics Activities	Discussion	Assignment
<b>May</b> <b>Topic:</b> Continuity and Differentiability <b>No. of Periods:</b> 20	Continuity and differentiability, derivative of composite functions, chain rule, derivative of inverse trigonometric functions, 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. Rolle's and Lagrange's Mean Value Theorems (without proof) and their geometric interpretation.	<ul style="list-style-type: none"> <li>To find analytically the limit of a function <math>f(x)</math> at <math>x = c</math> and also to check the continuity of the function at that point.</li> </ul>	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Continuity, differentiability and Derivatives of various functions
<b>Topic:</b> Applications of Derivatives <b>No. of Periods:</b> 10	Applications of derivatives: rate of change of bodies, increasing/decreasing functions, tangents and normal use of derivatives in approximation, 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).	<ul style="list-style-type: none"> <li>To verify Rolle's Theorem &amp; Lagrange's Theorem</li> <li>To understand the concepts of decreasing and increasing functions</li> </ul>	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Applications of derivatives (especially increasing-decreasing functions & maxima-minima concept)
<b>July</b> <b>Topic:</b> Integrals <b>No. of Periods:</b> 20	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. $\int \frac{dx}{x^2 \pm a^2}, \int \frac{dx}{\sqrt{x^2 \pm a^2}}, \int \frac{dx}{\sqrt{a^2 - x^2}}, \int \frac{dx}{ax^2 + bx + c}, \int \frac{dx}{\sqrt{ax^2 + bx + c}}$ $\int \frac{px + q}{ax^2 + bx + c} dx, \int \frac{px + q}{\sqrt{ax^2 + bx + c}} dx, \int \sqrt{a^2 \pm x^2} dx, \int \sqrt{x^2 - a^2} dx$ $\int \sqrt{ax^2 + bx + c} dx, \int (px + q)\sqrt{ax^2 + bx + c} dx$ Definite integrals as a limit of a sum, Fundamental Theorem of Calculus (without proof). Basic properties of definite integrals and evaluation of definite integrals.	<ul style="list-style-type: none"> <li>To evaluate the definite integral <math>\int_a^b \sqrt{(1-x^2)} dx</math> as the sum and verify it by actual integration.</li> </ul>	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Definite & Indefinite integrals

Month Topic	Sub Topic	Concept/ Mathematics Activities	Discussion	Assignment
<b>Topic:</b> Applications of the Integrals <b>No. of Periods:</b> 15	Applications in finding the area under simple curves, especially lines, circles/ parabolas/ellipses (in standard form only), Area between any of the two above said curves (the region should be clearly identifiable).		Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Areas bounded by the curves (including all type of equations)
<b>August</b> <b>Topic:</b> Differential Equations <b>No. of Periods:</b> 15	Definition, order and degree, general and particular solutions of a differential equation. Formation of differential equation whose general solution is given. 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: $\frac{dy}{dx} + py = q, \text{ where } p \text{ and } q \text{ are functions of } x \text{ or constants.}$ $\frac{dx}{dy} + px = q, \text{ where } p \text{ and } q \text{ are functions of } y \text{ or constants.}$		Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Differential equations (especially homogeneous equations & linear differential equations)
<b>Topic:</b> Vectors <b>No. of Periods:</b> 15	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, scalar triple product of vectors.	<ul style="list-style-type: none"> <li>To verify geometrically that <math>\vec{c} \times (\vec{a} + \vec{b}) = \vec{c} \times \vec{a} + \vec{c} \times \vec{b}</math></li> </ul>	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Dot product, cross product and triple product of vectors
<b>September</b>	<b>Half Yearly Examination</b>			

Month Topic	Sub Topic	Concept/ Mathematics Activities	Discussion	Assignment
<b>October</b> <b>Topic:</b> Three - dimensional Geometry <b>No. of Periods:</b> 15	Direction cosines and direction ratios of a line joining two points. Cartesian equation and vector equation of a line, coplanar and skew lines, shortest distance between two lines. Cartesian and vector equation of a plane. Angle between (i) two lines, (ii) two planes, (iii) a line and a plane. Distance of a point from a plane.	<ul style="list-style-type: none"> <li>To demonstrate the equation of a plane in normal form.</li> <li>To measure the shortest distance between two skew lines and verify it analytically.</li> </ul>	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on D.C.'s & D.R.'s of line, co planarity, Cartesian & vector equations, shortest distance between lines and study of plane.
<b>Topic:</b> Linear Programming <b>No. of Periods:</b> 20	Introduction, related terminology such as constraints, objective function, optimization, different types of linear programming (L.P.) problems, mathematical formulation of L.P. problems, 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).		Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on Formulation of L.P.P., feasible & infeasible solutions
<b>November</b> <b>Topic:</b> Probability <b>No. of Periods:</b> 30	Conditional probability, multiplication theorem on probability, independent events, total probability, Bayes' theorem, Random variable and its probability distribution, mean and variance of random variable.	<ul style="list-style-type: none"> <li>To explain the computation of conditional probability of a given event A, when event B has already occurred through an example of throwing a pair of dice.</li> </ul>	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on conditional probability, Bayes' Theorem, random variable, probability distribution, mean and variance of random variable.
<b>Topic:</b> Relations and Functions <b>No. of Periods:</b> 15	Types of relations: reflexive, symmetric, transitive and equivalence relations. One to one and on to functions, composite functions, inverse of a function.	<ul style="list-style-type: none"> <li>To verify that the relation R in the set L of all lines in a plane, defined by <math>R = \{(l, m) : llm\}</math> is an equivalence relation.</li> <li>To demonstrate a function which is one-one but not onto.</li> </ul>	Discussion of Scoring Points/ Marking Scheme/ Sample Questions	Assignment on type of Relations, inverse of function, binary operation, one-one, many one, onto functions.
<b>December</b>	<b>Pre Board Examination</b>			

# EXAMINATION SYLLABUS

## **Periodic Test - 1**

- Inverse Trigonometric Functions
- Matrices

## **Half Yearly Examination**

- Inverse Trigonometric Functions
- Matrices
- Determinants
- Continuity and Differentiability
- Applications of Derivatives
- Vectors
- 3 Dimensional Geometry
- Linear Programming
- Probability

## **Pre Board Examination**

Full Syllabus

**NOTE:** There will be a class test after every chapter.

**Annual Pedagogical Plan**  
**Subject -Physical Education (048)**  
**Class XII**  
**Session 2024 -25**

<b>Month /Topic</b>	<b>Theory</b>	<b>Practical / Project</b>	<b>Miscellaneous</b>
<b>April</b> Topic Planning In Sports .	<ul style="list-style-type: none"> <li>• Meaning and objectives of planning.</li> <li>• various committees and their responsibilities.</li> <li>• Tournament.</li> <li>• Fixture.</li> <li>• Intramural &amp; Extramural.</li> <li>• Specific sports programmes.</li> </ul>	<ul style="list-style-type: none"> <li>• Make a knock out fixture of 23 football teams for a tournament.</li> <li>• What planning has to be done for making school foundation day.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Experiential learning procedure</b> : Make a successful arrangement fo a sports day function in your school .</li> <li>• <b>EBSB</b>: Organize a rally for health and hygiene .</li> <li>• <b>Joyful learning method</b> :do participate in various specific sports programmes eg. Run for unity , run for fun &amp; health run .</li> </ul>
<b>May</b>	<ul style="list-style-type: none"> <li>• Revision</li> </ul>	<ul style="list-style-type: none"> <li>• Specific sports programme</li> <li>• Intramural</li> <li>• Extramural</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Experiential learning procedure</b>: organize a knock out tournament for basketball .</li> </ul>
<b>July</b> Topic Children and Women in Sports	<ul style="list-style-type: none"> <li>• Balanced Diet and Nutrition</li> <li>• Nutritive and Non Nutritive components of Diet.</li> <li>• Eating for weight control.</li> </ul>	<ul style="list-style-type: none"> <li>• Make a chart for chemicals found in foods that are critical to human growth and function</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Experiential learning procedure</b> :take data from your family members and calculate their BMI any five .</li> <li>• <b>Joyful learning method</b> : calculate the basic energy requirements of individual for 24 hour by using this formulae (1.3 cal x body</li> </ul>

			weight x 24 hour ) <ul style="list-style-type: none"> <li>• <b>Art Integrated Activities :</b> Make a chart for nutritive and non nutritive components of diet.</li> </ul>
<b>August</b> Topic Yoga as preventive measure for lifestyle disease.	<ul style="list-style-type: none"> <li>• Asanas as preventive measures</li> <li>• Obesity</li> <li>• Diabetes</li> <li>• Asthma</li> <li>• Hypertension</li> <li>• Back Pain</li> </ul>	<ul style="list-style-type: none"> <li>• Students shall take the yoga mats and do the Asanas for curing Back pain &amp; obesity</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Experiential Learning Procedures :</b> Students shall take the yoga mats to the ground and do the Bhujang Asanas, Vajr Asanas &amp; Paschimottan Asanas.</li> <li>• <b>Joyful Learning Method</b> students shall do some Pranayam and yogic Kriyas.</li> <li>• <b>EBSB :</b> Students shall take participate in world yoga day event .</li> </ul>
Topic Physical Education And Sports For CWSN.	<ul style="list-style-type: none"> <li>• Concept of Disability &amp; Disorder</li> <li>• Types of Disability</li> <li>• Types of Disorder</li> <li>• Disability Etiquettes</li> <li>• Advantage of physical activities for children with special needs.</li> <li>• Strategies to make physical activities assessable for CWSN.</li> </ul>	<ul style="list-style-type: none"> <li>• Make a list of Indian Paralympics winner</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Experiential Learning Procedures :</b> Plan a activities for physically challenged students that how could they performed the task .</li> <li>• <b>Joyful learning Method:</b> make some rules for the game according to the disabled children.</li> <li>• <b>Story telling Activity:</b> tell students some motivational stories of Indian Paralympics winners eg Deepa Malik , Varun Singh Bhati etc.</li> </ul>
<b>August</b> Topic Sports and Nutrition	<ul style="list-style-type: none"> <li>• Motor Development &amp; Factor affecting it .</li> <li>• Exercise Guidelines at Different stages of growth &amp; development .</li> </ul>	<ul style="list-style-type: none"> <li>• Students shall go to the ground and do the exercise for curing knock knees , round shoulders , Bow legs &amp; Lordosis.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Experiential Learning Procedure :</b> Students shall do some exercise &amp; activities for the later growth and Development.</li> <li>• <b>Joyful Learning Methods :</b></li> </ul>

<p><b>September</b> Topic Test and Measurements in Sports</p>	<ul style="list-style-type: none"> <li>• Common Postural Deformities</li> <li>• Sports Participation of Women in India</li> <li>• Female Athletes Triad.</li>   <li>• Motor Fitness Test</li> <li>• Measurements of Cardio Vascular Fitness test.</li> <li>• Rikli &amp; Jones Senior Citizen Fitness Test</li> </ul>	<ul style="list-style-type: none"> <li>• Students shall take senior citizen fitness test of their family members at least any five .</li> <li>• Students shall make a chart of all test item of Barrow fitness test.</li> </ul>	<p>Students should walk on the sand without shoes for curing flat foot deformities &amp; do Hal Asanas for curing Lordosis Deformities.</p> <ul style="list-style-type: none"> <li>• <b>Story telling Activity</b> : Tell students Story of Mary Com , Hema Das &amp; PT Usha their journey to the success .</li> <li>• <b>Experiential Learning Procedure</b> : Students shall do all the test item of motor fitness test.</li> <li>• <b>Joyful Learning Method</b> :Students take senior citizen fitness test of their family member .</li> <li>• <b>Art Integrated Activities</b> : make a chart of all items of khelo India fitness test &amp; general motor fitness test.</li> </ul>
<p><b>October</b> Topic Physiology &amp; Injuries in Sports</p>	<ul style="list-style-type: none"> <li>• Physiological Factor determining components of physical fitness.</li> <li>• Effects of exercise on cardio Respiratory System.</li> <li>• Effects of exercise on Muscular system.</li> <li>• Sports injuries &amp; bone &amp; joint Injuries.</li> <li>• First Aid.</li> <li>• Physiological Changes due to ageing.</li> </ul>	<ul style="list-style-type: none"> <li>• Make a chart of some aerobic exercise and some anaerobic exercises.</li> <li>• Make a first Aid kit write aim and objectives of First Aid kit.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Experiential Learning Procedure</b> : students do some aerobic &amp; anaerobic exercises in the playground for a week .and then write its effects on muscular &amp; cardio respiratory system.</li> <li>• <b>Joyful learning Method</b> : Students shall go to the school infirmary and explore the components of First Aid Kit and learn how to use it.</li> <li>• <b>Art Integrated activities</b> :</li> </ul>

<p><b>October</b> Topic Biomechanics &amp; Sports</p>	<ul style="list-style-type: none"> <li>• Meaning and Importance of Biomechanics in sports.</li> <li>• Types of movements.</li> <li>• Newton's Law of motion &amp; its Application in sports.</li> <li>• Friction in sports.</li> </ul>	<ul style="list-style-type: none"> <li>• Make a chart of human body movements .</li> <li>• Mentions the uses of Newton's laws of motions in sports .</li> <li>• Write the uses of friction in sports .</li> </ul>	<p>make a chart of common sports injuries and classified them into soft tissue injuries and hard tissue injuries .</p> <ul style="list-style-type: none"> <li>• <b>Experiential Learning Procedure :</b> give some example of sports in which law of motion and its application in sports and role of friction in sports.</li> <li>• <b>Art integrated activities :</b> make a chart of human body movements in supine and prone position.</li> <li>• <b>Joyful learning method :</b> which law of motion used when a soccer kick a football. Why different games need different types of shoes why don't we wear same shoes in all games.</li> </ul>
<p><b>November</b> Topic Psychology &amp; Sports</p>	<ul style="list-style-type: none"> <li>• Personality its definition &amp; types</li> <li>• Motivation &amp; its types &amp; techniques</li> <li>• Exercise Adherence</li> <li>• Strategies for Enhancing adherence to exercise</li> <li>• Meaning concept &amp; types of aggressions in sports.</li> </ul>	<ul style="list-style-type: none"> <li>• Classified the human body according to the Sheldon's classification.</li> <li>• Write the types of motivations techniques.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Experiential Learning procedure :</b> classified the students into the endomorphic Mesomorphic and Ectomorphic.</li> <li>• <b>Joyful Learning Method :</b> intrinsic motivation motivate students with positive attitude and auto suggestion External motivation motivate students with reward ,audio visual aids and active participation.</li> </ul>
<p><b>November</b> Topic</p>	<ul style="list-style-type: none"> <li>• Strength</li> <li>• Endurance</li> </ul>	<ul style="list-style-type: none"> <li>• Make a weekly program for training .</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Experiential learning Procedure :</b> visit a gym with</li> </ul>

Training in Sports.	<ul style="list-style-type: none"><li>• Speed</li><li>• Flexibility</li><li>• Coordinative Abilities</li><li>• Circuit Training.</li></ul>		students and tell them about training for strength ,endurance , speed and flexibility. <ul style="list-style-type: none"><li>• <b>Art Integrated Activities :</b> make a list of some exercise that help in building strength and endurance.</li></ul>
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MOHD ANVAR

PGT. PHYSICAL EDUCATION

DPGS. MORADABAD.

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**Subject: PHYSICS**

TOPICS	SUB TOPICS	LEARNING OBJECTIVES / SKILLS TO BE DEVELOPED	ASSESSMENT EXERCISES/ ACTIVITIES/ PRACTICALS	OUTCOME
<p><b><u>Unit1</u></b>  <b><u>(Electrostatics)</u></b></p> <p><b><u>Ch 1</u></b>  <b><u>Electric charges and fields</u></b></p>	<p>1)Electric Charges; Conservation of charge, Coulomb's law-force between two point charges, forces between multiple charges; superposition principle and continuous charge distribution.</p> <p>2)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.</p> <p>3)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).</p>	<p>To make the learners to understand the theoretical and mathematical concepts of Electric Charges and its Properties and Electrostatics forces and fields of different charge distributions.</p>	<ul style="list-style-type: none"> <li>• Presentation From the Students</li> <li>• Worksheets</li> <li>• CBSE Sample Paper</li> </ul>	<p>Students acquires the basic knowledge of Electric charges, concept of electrostatic force in vector form different distribution of charges, Electric field produced by different distribution of charges and its mathematical analysis.</p> <p>Student will be able to relate the phenomena of charging of a body with daily life.</p>

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<p><b><u>Ch 2</u></b> <b><u>Electrostatic Potential and Capacitance</u></b></p>	<p>1) 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.</p> <p>2) Conductors and insulators, free charges and bound charges inside a conductor.</p> <p>3) Dielectrics and electric polarisation, 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.</p>	<p>To make the learners to understand the concept of Electric potential due to different charge distributions and its relation between electric field. Also the students will learn about the capacitance, dielectrics and its polarization.</p>	<ul style="list-style-type: none"><li>• Presentation From the Students</li><li>• Lab Demosntration</li><li>• Worksheets</li><li>• CBSE Sample Paper</li></ul>	<p>Student will be able to relate the Electrical potential with electric field.</p> <p>Student will be able to understand the working of charge storing device i.e, capacitor.</p>
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TOPICS	SUB TOPICS	LEARNING OBJECTIVES / SKILLS TO BE DEVELOPED	ASSESSMENT EXERCISES/ ACTIVITIES/PRACTICALS	OUTCOME
<p><b>Unit 2</b> <b>Current Electricity..</b></p> <p><b>Ch 3</b> <b>Current Electricity</b></p>	<p>1) Electric current, flow of electric charges in a metallic conductor, drift velocity, mobility and their relation with electric current; Ohm's law, electrical resistance, V-I characteristics (linear and non-linear)</p> <p>2) electrical energy and power, electrical resistivity and conductivity, Carbon resistors, colour code for carbon resistors; series and parallel combinations of resistors; temperature dependence of resistance. Internal resistance of a cell, potential difference and emf of a cell, combination of cells in series and in parallel</p> <p>3) Kirchhoff's laws and simple applications, Wheatstone bridge, metre bridge.</p> <p>4) Potentiometer - principle and</p>	<p>To make the learners to understand the concept Electricity, resistance and resistivity and the parameters affecting it with its link to our daily life.</p> <p>To make the learners to understand the concept of different electrical devices like wheat stone bridge and its application in meter bridge and potentiometer with real life application.</p>	<ol style="list-style-type: none"> <li>1. To determine resistance per cm of a given wire by plotting a graph for potential difference versus current.</li> <li>2. To find resistance of a given wire using metre bridge and hence determine the resistivity (specific resistance) of its material.</li> <li>3. To verify the laws of combination (series) of resistances using a metre bridge.</li> <li>4. To verify the laws of combination (parallel) of resistances using a metre bridge.</li> <li>5. To compare the EMF of two given primary cells using potentiometer.</li> <li>6. To determine the internal resistance of given primary cell using potentiometer.</li> <li>7. To determine resistance of a</li> </ol>	<p>Students are able to understand the concept of Potential difference and current and also the process of finding the unknown current in a loop using KVL and KCL.</p> <p>Students will be able to understand the practical application of resistors and cells and its different combination in real life.</p> <p>Students will be able to operate different electrical instruments like POT, Meter bridge, Galvanometer, Voltmeter, ammeter etc. also they learned to find the least count of given measuring instrument.</p>

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		its applications to measure potential difference and for comparing EMF of two cells; measurement of internal resistance of a cell.		galvanometer by half-deflection method and to find its figure of merit. 8. To convert the given galvanometer (of known resistance and figure of merit) into a voltmeter of desired range and to verify the same. 9. To convert the given galvanometer (of known resistance and figure of merit) into an ammeter of desired range and to verify the same.	
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TOPICS	SUB TOPICS	LEARNING OBJECTIVES / SKILLS TO BE DEVELOPED	ASSESSMENT EXERCISES/ ACTIVITIES/PRACTICALS	OUTCOME
<p><b><u>Unit 3</u></b>  <b><u>Magnetic effects of current and Magnetism</u></b></p> <p><b>Ch 4 Moving charges and Magnetism</b></p>	<p>1)Concept of magnetic field, Oersted's experiment.</p> <p>2)Biot - Savart law and its application to current carrying circular loop. Ampere's law and its applications to infinitely long straight wire. Straight and toroidal solenoids (only qualitative treatment), force on a moving charge in uniform magnetic and electric fields, Cyclotron.</p> <p>3)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;</p> <p>4)moving coil galvanometer-its current sensitivity and conversion toammeter and voltmeter.</p>	<p>To make the learners to understand the concept of relation between electricity and magnetism and analysis of magnetic field for different kind of symmetrical structure.</p> <p>To make the learners to understand the concept different measuring devices like galvanometer, voltmeter and ammeter and interrelation between them.</p> <p>To make the learners to</p>	<p>Experimental demonstration of Oersted's experiment.</p> <p>Experimental demo of Plotting of Magnetic Field lines for Bar Magnet</p>	<ul style="list-style-type: none"> <li>• Student will learn about the relation between electricity and Magnetism and different methods to find the Magnetic field due to different types of conductor.</li> <li>• Student will learn about the force between two parallel conductors and its mathematical analysis depending upon the directions of current.</li> <li>• Student will learn about the conversion of galvanometer into ammeter and voltmeter of desired range.</li> </ul>

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<p><b>Ch 5 Magnetism and Matter</b></p>	<p>1)Current loop as a magnetic dipole and its magnetic dipole moment, magnetic dipole moment of a revolving electron, magnetic field intensity due to a magnetic dipole (bar magnet) along its axis and perpendicular to its axis, torque on a magnetic dipole (bar magnet) in a uniform magnetic field; bar magnet as an equivalent solenoid, magnetic field lines; earth's magnetic field and magnetic elements.</p> <p>2)Para-, dia- and ferro - magnetic substances, with examples. Electromagnets and factors affecting their strengths, permanent magnets.</p>	<p>understand the different kinds of magnetic material and earth's magnetic field.</p>	<p>Concept of Earth's Magnetic field by Tangent Galvanometer</p>	
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TOPICS	SUB TOPICS	LEARNING OBJECTIVES / SKILLS TO BE DEVELOPED	ASSESSMENT EXERCISES/ ACTIVITIES/PRACTICALS	OUTCOME
<p><b><u>Unit 4</u></b>  <b><u>EMI and AC</u></b></p> <p><b><u>Ch 6 EMI</u></b></p> <p><b><u>Ch 7 AC</u></b></p>	<p>1)Electromagnetic induction; Faraday's laws, induced EMF and current; Lenz's Law, Eddy currents.</p> <p>2)Self and mutual induction.</p> <p>1)Alternating currents, peak and RMS value of alternating current/voltage; reactance and impedance; LC oscillations (qualitative treatment only), LCR series circuit, resonance; power in AC circuits, wattless current.</p> <p>2)AC generator and transformer.</p>	<p>To make the learners to understand the concept Electromagnetic Induction of single and double coil.</p> <p>To make the learners to understand the application based concept of Electromagnetic Induction (Generator, Transformer, choke coil)</p>	<p>10. To find the frequency of AC mains with a sonometer.</p>	<p>Students will learn about the different method to induce an emf in a given conductor which is useful to understand the concept of Mutual and self induction.</p> <p>Students acquires the basic knowledge about the Principle construction working and real life application of Transformer and Dynamo</p>

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<p><b><u>Unit 5</u></b> <b><u>Electromagnetic Wave</u></b></p> <p><b><u>Ch 8 EMW</u></b></p>	<p>1)Basic idea of displacement current, Electromagnetic waves, their characteristics, their Transverse nature (qualitative ideas only).</p> <p>2)Electromagnetic spectrum (radio waves, microwaves, infrared, visible, ultraviolet, X-rays, gamma rays) including elementary facts about their uses.</p>	<p>To make the learners to understand the generation and real life application of electromagnetic wave depending upon the value of wavelength and frequency.</p>	<p>Group Discussion to discuss the Practical Applications of EMW in field of Communication, Medical, etc.</p>	<p>Student acquires knowledge about the Practical application of EMW in our Daily life.</p>
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TOPICS	SUB TOPICS	LEARNING OBJECTIVES / SKILLS TO BE DEVELOPED	ASSESSMENT EXERCISES/ ACTIVITIES/PRACTICALS	OUTCOME
<p><u>Unit 6 Optics</u></p> <p><u>Ch 9 Ray Optics and Optical Instruments</u></p> <p><u>Ch 10 Wave Optics</u></p>	<p>1)<b>Ray Optics:</b> Reflection of light, spherical mirrors, mirror formula, refraction of light, total internal reflection and its applications, optical fibres, refraction at spherical surfaces, lenses, thin lens formula, lensmaker's formula, magnification, power of a lens, combination of thin lenses in contact, combination of a lens and a mirror, refraction and dispersion of light through a prism.</p> <p>2)Scattering of light - blue colour of sky and reddish appearance of the sun at sunrise and sunset.</p> <p>3)Optical instruments: Microscopes and astronomical telescopes (reflecting and refracting) and their magnifying powers.</p> <p>1)<b>Wave optics:</b> Wave front and Huygen's principle, reflection and refraction of plane wave at a plane surface using wave fronts.</p> <p>2)Proof of laws of reflection and</p>	<p>To make the learners to understand the applications of different lenses, mirrors and optical instrument in our daily life.</p> <p>To make the learners to understand the difference between ray optics and wave optics and different optical phenomena such as interference,</p>	<ol style="list-style-type: none"> <li>1. To find the value of <math>v</math> for different values of <math>u</math> in case of a concave mirror and to find the focal length.</li> <li>2. To find the focal length of a convex mirror, using a convex lens.</li> <li>3. To find the focal length of a convex lens by plotting graphs between <math>u</math> and <math>v</math> or between <math>1/u</math> and <math>1/v</math>.</li> <li>4. To find the focal length of a concave lens, using a convex lens.</li> <li>5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation.</li> <li>6. To determine refractive index of a glass slab using a travelling microscope.</li> </ol>	<p>Student will learn about the different types of mirror and lenses and respective ray diagrams for image formation along the mathematical tactics and Analysis.</p> <p>Student will learn the different optical phenomena of in our daily life like Colour of a sky and cloud, Advanced sunrise and delayed sunset etc.</p>

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	<p>refraction using Huygen's principle. 3) Interference, Young's double slit experiment and expression for fringe width, coherent sources and sustained interference of light, diffraction due to a single slit, width of central maximum 4) resolving power of microscope and astronomical telescope, polarisation, plane polarised light, Brewster's law, uses of plane polarised light and Polaroids.</p>	<p>diffraction and polarization of a light wave.</p>	<p>7. To find refractive index of a liquid by using convex lens and plane mirror.</p>	<p>Student are able to differentiate between the ray and wave nature of a light</p>
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TOPICS	SUB TOPICS	LEARNING OBJECTIVES / SKILLS TO BE DEVELOPED	ASSESSMENT EXERCISES/ ACTIVITIES/PRACTICALS	OUTCOME
<p><b><u>Unit 7 Dual Nature of Radiation and Matter</u></b></p> <p><b><u>Ch 11 Dual Nature of Radiation and Matter</u></b></p> <p><b><u>Unit 8 Atoms and Nuclei</u></b></p> <p><b>Ch 12 Atoms</b></p> <p><b>Ch 13 Nuclei</b></p>	<p>1)Dual nature of radiation, Photoelectric effect, Hertz and Lenard's observations; Einstein's photoelectric equation-particle nature of light.</p> <p>2)Matter waves-wave nature of particles, de-Broglie relation, Davisson-Germer experiment (experimental details should be omitted; only conclusion should be explained).</p> <p>1)Alpha-particle scattering experiment; Rutherford's model of atom; Bohr model, energy levels, hydrogen spectrum.</p> <p>1)Composition and size of nucleus, Radioactivity, alpha, beta and gamma particles/rays and their properties; radioactive decay law.</p> <p>2)Mass-energy relation, mass defect; binding energy per nucleon and its variation with mass number; nuclear fission, nuclear fusion.</p>	<p>To make the learners to understand the dual nature of radiation of light as practical and wave.</p> <p>To make the learners to understand the basic structure of atoms and nucleus proposed by different scientists and its importance in our life.</p>	<ul style="list-style-type: none"> <li>• Presentation From the Students</li> <li>• Worksheets</li> <li>• CBSE Sample Paper</li> </ul> <ul style="list-style-type: none"> <li>• Presentation From the Students</li> <li>• Worksheets</li> <li>• CBSE Sample Paper</li> </ul>	<p>Learners will be able to understand the dual nature of light (Wave and Particle) along with experimental and mathematical verification.</p> <p>Learners will be able to understand the Concept of atoms and nuclei with help of different models developed by different scientists (Rutherford's model, bohr's model etc.)</p>

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TOPICS	SUB TOPICS	LEARNING OBJECTIVES / SKILLS TO BE DEVELOPED	ASSESSMENT EXERCISES/ ACTIVITIES/PRACTICALS	OUTCOME
<p><u>Unit 9</u>  <u>Electronic Devices</u></p> <p><u>Ch 14</u>  <u>Semiconductor Electronics: Materials, Devices and Simple Circuits</u></p>	<p>1)Energy bands in conductors, semiconductors and insulators (qualitative ideas only)</p> <p>2)Semiconductor diode - I-V characteristics in forward and reverse bias, diode as a rectifier; Special purpose p-n junction diodes: LED, photodiode, solar cell</p>	<p>To make the learners to understand the importance and significance of semiconducting devices in our daily and how they are different from conductor and insulator by explaining different semiconducting devices.</p>	<p>8. To draw the I-V characteristic curve for a p-n junction in forward bias and reverse bias.</p>	<p>Learners will be able to understand the Concept of Conductors, Insulator and semiconductor with the help of Band Energy Theory.</p> <p>Learners will be able to understand the Classification of semiconductors along with Practical applications in PN diode, Rectifiers, Optoelectronic devices,.</p>

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**Subject: PHYSICS**

वा षक अ यापन प रयोजना

स 2024-25

क ा 11 वी, वषय हद

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पाठ: 1 नमक का दारोगा

पाठ 2 मयां नसी न

अ भ मा यम जनसंचार प लेखन:

भारतीय मी डया के वशेष संदभ मा।

क ा ग त व ध:

पठन-पाठन पाठ का मू यांकन

अ धगम: वादन: वाचन।

ग ांश उ र पदो क ा या एवं उससे संबं धत उदाहरण।

लेखन कौशल

पाठ का सारांश अन्तु ाद वा य के  
कार।

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पाठ अपू के साथ ढाई साल।

पाठ वदाई संभाषण

क ा ग त व ध:

पठन-पाठन पाठ का मू यांकन

अ धगम: वादन: वाचन।

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