

वा षक अ यापन प रयोजना

स 2024-25

क ा 11 वी, वषय हद

(1 अ ैल)

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।

(1 मई)

पाठ अपू के साथ ढाई साल।

पाठ वदाई संभाषण

क ा ग त व ध:

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लेखन कौशल

पाठ का सारांश अन्तु ाद वा य के  
कार,

(1 जुलाई)

पाठ भारतीय गा यका म ब्ने ोड़-लता मंगशे कर

पाठ राजान क रजत बूँ

पाठ आलो-अँा र

क ा ग त व

ध पठन-पाठन (वातालाप) क वता वाचन।

खं

गंश उ र पद क ा या वा य के उदाहरण

पाठ का सारांश अन्वु ाद वा य के  
कार।

(1 अग त)

पाठ गलता लोहा

पाठ रजनी

अ भ मा यम, प लेखन

क ा ग त व ध

पठन-पाठन खं (वातालाप) क वता वाचन।

गंश उ र पद क ा या वा य के उदाहरण

पाठ का सारांश अन्वु ाद वा य के  
कार।

(1 सत बर)

पाठ जामुन का पेड़

पाठ भारत मात

क ा ग त व ध:

पठन-पाठन पाठ का मू यांकन

अ धगम: वादन: वाचन।

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लेखन कौशल

पाठ का सारांश अन्वु ाद वा य के कार।

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पाठ हम तो एक एक क र जाना, संतो देखत जग बोराना

पाठ प थक

पठन पाठन पाठ का मू यांकन

अ यास काय ० उ० ब वक पीय का पर अधा रत शन अ यास काय क प रभाषा।  
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(1 नवंबर )

पाठ घर क याद

पाठ हे श्लू मत मचल

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 अनवु ाद वा य के कार।

**Class: XI**  
**Subject: PHYSICS**

TOPIC	SUB-TOPIC	LEARNING OBJECTIVES / SKILLS TO BE DEVELOPED	ASSESSMENT / ACTIVITIES	LEARNING OUTCOMES
<p><b>Unit 1 Physical World and Measurement (Introduction Only)</b></p> <p><b>Ch 2 Units and Measurement</b></p>	<p><i>Physics: Scope and excitement; nature of physical laws; Physics, technology and society.</i></p> <p><i>Need for measurement: Units of measurement; systems of units; SI units, fundamental and derived units. Length, mass and time measurements; accuracy and precision of measuring instruments; errors in measurement; significant figures.</i></p> <p>(3)Dimensions of physical quantities, dimensional analysis and its applications.</p>	<p>The Objective of this chapter is to make the learners aware of basic fundamentals and derived quantities of Physics.</p> <p>The Objective of this chapter is to make the learners to know about the different types of measurement system of units and significance &amp; application of dimensional analysis.</p>	<p>(1) To measure diameter of a small spherical/cylindrical body using Vernier callipers.</p> <p>(2) To measure internal diameter and depth of a given beaker/calorimeter using Vernier callipers and hence find its volume.</p> <p>(3) To measure diameter of a given wire using screw gauge.</p> <p>(4) To measure thickness of a given sheet using screw gauge.</p> <p>(5) To measure volume of an irregular lamina using screw gauge.</p> <p>(6)To determine radius of curvature of a given spherical surface by a spherometer.</p>	<p>Learners will be able to understand Scope and application of Physics for the betterment of society.</p> <p>Learners will be able to understand the Need of measurement along with basics of fundamental and derived units.</p> <p>Learners will be able to understand the significance and importance of dimensional analysis of any physical quantity.</p>

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<p><b>Unit 2 Kinematics</b></p> <p><b>Ch 3 Motion in a straight Line</b></p>	<p>(1) Frame of reference, Motion in a straight line: Position-time graph, speed and velocity.  (2) Uniform and non-uniform motion, average speed and instantaneous velocity. Uniformly accelerated motion, velocity-time and position- time graphs.  (3) Relations for uniformly accelerated motion (graphical treatment).</p>	<p>The Objective of this chapter is to clear the concept of motion of a body with relating it to real life examples and to have basic concept of calculus method to derive three basic equations of kinematics. Also the learners will know about the graphical treatment of different types of motion.</p>	<ul style="list-style-type: none"> <li>• Differentiated work sheets</li> <li>• CBSE Sample papers</li> </ul>	<p>Learners will be able to understand the term motion as a relative term and classification of motion.</p> <p>Learners will be able to understand the significance of three equations of motion in our daily life along with its mathematical calculus analysis.</p>
<p><b>Ch 4 Motion in a Plane</b></p>	<p>(1)Elementary concepts of differentiation and integration for describing motion. <i>Scalar and vector quantities:</i> Position and displacement vectors, general vectors and notation, equality of vectors, multiplication of vectors by a real number; addition and subtraction of vectors. Relative velocity. (2)Unit vectors. Resolution of a vector in a plane – rectangular components.</p>	<p>The Objective of this chapter is to clear the concept of Vector analysis of a physical quantities and to understand the concept of vector algebra (addition subtraction)</p> <p>The Objective of this chapter is to know about projectile motion of body and calculation of its different parameters with real life examples.</p>	<p>(7)To find the weight of a given body using parallelogram law of vectors.</p> <p>Field study to see different types of projectile motion.</p>	<p>Learners will be able to understand basics of Scalar and Vector quantities along with its Mathematical analysis (Addition, subtraction, Product, Resolution, Projection)</p> <p>Learners will be able to understand the concept of Projectile and its mathematical analysis (Parabolic path, Maximum height attained, Range, Time of flight, Resultant velocity)</p>

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<p><b>Unit 3</b>  <b>Laws of Motion</b></p> <p><b>Ch 5 Laws of Motion</b></p>	<p>(3)Scalar and Vector products of Vectors. Motion in a plane. Cases of uniform velocity and uniform acceleration – projectile motion. Uniform circular motion.</p> <p>(1)Intuitive concept of force. Inertia, Newton’s first law of motion; momentum and Newton’s second law of motion; impulse; Newton’s third law of motion. Law of conservation of linear momentum and its applications.</p> <p>(2)Equilibrium of concurrent forces. Static and kinetic friction, laws of friction, rolling friction, lubrication.</p> <p>(3)<i>Dynamics of uniform circular motion</i>: Centripetal force, examples of circular motion (vehicle on level circular road, vehicle on banked road).</p>	<p>The Objective of this chapter is to clear the concept of Forces Momentum and different laws of motion given by Sir Newton.</p> <p>The Objective of this chapter is to make the student aware of Dynamics of circular which solves many problems in our society.</p>	<p>(8)To study the relationship between force of limiting friction and normal reaction and to find the coefficient of friction between a block and a horizontal surface.</p> <p>(9)To find the downward force, along an inclined plane, acting on a roller due to gravitational pull of the earth and study its relationship with the angle of inclination (<math>\theta</math>) by plotting graph between force and <math>\sin \theta</math>.</p>	<p>Learners will be able to understand the Concept of force along all the three Newton’s laws of motion. Learners will be able to understand the Concept of concurrent forces and dynamics of circular motion</p>
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<p><b>Unit 4</b> <b>Work, Energy, Power</b></p> <p><b>Ch 6 Work, Energy, Power</b></p>	<p>(1)Work done by a constant force and a variable force; kinetic energy, work-energy theorem, power.</p> <p>(2)Motion of potential energy, potential energy of a spring, conservative forces; conservation of mechanical energy (kinetic and potential energies); non-conservative forces; motion in a vertical circle, elastic and inelastic collisions in one and two dimensions.</p>	<p>The Objective of this chapter is to clear the concept Work, Energy and Power and its application in our daily life which helps us to approach and to solve the Problem technically.</p>	<ul style="list-style-type: none"><li>• Differentiated work sheets</li><li>• CBSE Sample papers</li></ul>	<p>Learners will be able to understand the Basic concept of work done along with its mathematical analysis and Classification of work.</p> <p>Learners will be able to understand the Concept of mechanical energy, different forms energy and its conservation with necessary mathematical analysis.</p> <p>Learners will be able to understand the Mechanical power along with its Practical and SI units.</p>
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<p><b>Unit 5</b> <b>Rotational</b> <b>Dynamics</b></p> <p><b>Ch 7 System of</b> <b>Particles and</b> <b>Rigid Bodies</b></p>	<p>(1) Centre of mass of a two- particle system, momentum conservation and centre of mass motion. Centre of mass of a rigid body; centre of mass of uniform rod.</p> <p>(2) Moment of a force, torque, angular momentum, conservation of angular momentum with some examples.</p>	<p>The Objective of this chapter is to clear the concept of rotational dynamics by relating it with the motion of body in a straight line.</p> <p>The Objective of this chapter is to clear the concept different parameters of rotating body (Torque, Angular momentum, moment of inertia) and applying different theorems to find the moment of inertia of simple geometrical objects.</p>	<ul style="list-style-type: none"><li>• Differentiated work sheets</li><li>• CBSE Sample papers</li></ul>	<p>Learners will be able to understand the concept of centre of mass and centre of gravity of a body. Learners will be able to understand the Concept of Rotational Dynamics and equations of motion for rotating body. Learners will be able to understand the Analogy between Kinematics and Rotational Dynamics.</p>
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<p><b>Ch 7 System of Particles and Rigid Bodies</b></p> <p><b>(Cont.)</b></p>	<p>(3)Equilibrium of rigid bodies, rigid body rotation and equation of rotational motion, comparison of linear and rotational motions; moment of inertia, radius of gyration. Values of M.I. for simple geometrical objects (no derivation). Statement of parallel and perpendicular axes theorems and their applications.</p>			
<p><b>Unit 6 Gravitation</b></p> <p><b>Ch 8 Gravitation</b></p>	<p>(1) Kepler's laws of planetary motion. The universal law of gravitation. Acceleration due to gravity and its variation with altitude and depth.</p> <p>(2) Gravitational potential</p>	<p>To make the learners to understand the concept of gravitational force and gravity with laws of planetary motion and detailed mathematical analysis of acceleration due to gravity above and below the surface of</p>	<p>(10)To determine the mass of two different objects using a beam balance.</p>	<p>Learners will be able to understand Concept of gravitational force between two bodies and its conservative nature.</p> <p>Learners will be able to understand the Concept of variation of acceleration due</p>

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<p><b>Unit 7</b>  <b>Properties of Bulk Matter</b>  <b>Ch 9</b>  <b>Mechanical Properties of Solids</b></p>	<p>energy; gravitational potential. Escape velocity, orbital velocity of a satellite. Geostationary satellites.</p> <p>(1)Elastic behaviour, Stress-strain relationship, Hooke's law, Young's modulus, bulk modulus, shear, modulus of rigidity, poisson's ratio; elastic energy.</p>	<p>earth.  To make the learners to understand the concept of elasticity and rigidity of a body with stress-strain analysis and applying it to solve real life problems.</p>	<p>(11) To determine Young's modulus of elasticity of the material of a given wire.</p> <p>(12) To find the force constant of a helical spring by plotting a graph between load and extension.</p>	<p>to gravity with height and depth.</p> <p>Learners will be able to understand Practicality of different types of Elastic modulli and Relation between stress and strain.</p>
<p><b>Ch 10</b>  <b>Mechanical Properties of Fluids</b></p>	<p>(1)Pressure due to a fluid column; Pascal's law and its applications (hydraulic lift and hydraulic brakes).</p> <p>(2)Effect of gravity on fluid pressure. Viscosity, Stokes' law, terminal velocity, Reynold's number,</p>	<p>To make the learners to understand the concept of Fluid dynamics and its application for our daily life.(Viscosity, types of flows, capillarity and its applications)</p>	<p>(13) To determine the surface tension of water by capillary rise method.</p> <p>(14) To determine the coefficient of viscosity of a given viscous liquid by measuring the terminal velocity of a given spherical</p>	<p>Learners will be able to understand Practicality of Fluid dynamics in real life (Pascal's Law, Bernoulli's theorem, Magnus Effect)</p> <p>Learners will be able to understand Concept of surface Tension and Surface</p>

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<p><b>Ch 11 Thermal Properties of Matter</b></p>	<p>streamline and turbulent flow.            (3)Critical velocity, Bernoulli's theorem and its applications. Surface energy and surface tension, angle of contact, excess of pressure, application of surface tension ideas to drops, bubbles and capillary rise.</p> <p>(1)Heat transfer – conduction and thermal conductivity, convection and radiation. Qualitative ideas of Black Body Radiation, Wein's displacement law, and Green House effect.            (2)Heat, temperature, thermal expansion; thermal expansion of solids, liquids, and gases. Anomalous expansion. Specific heat capacity: <math>C_p</math>, <math>C_v</math> – calorimetry; change of state – latent heat. (3)Newton's law of cooling and Stefan's law.</p>	<p>To make the learners to understand the concept of heat transfer between the bodies and its different methods along with its mathematical analysis and relating it to our daily life.</p>	<p>body.</p> <p>(15) To study the relationship between the temperature of a hot body and time by plotting a cooling curve.</p> <p>(16) To determine specific heat capacity of a given (i) solid (ii) liquid, by method of mixtures.</p>	<p>energy and will be able to relate it with a daily life.</p> <p>Learners will be able to understand the Different methods of heat transfer, Concept of thermal expansion and Laws of cooling.</p>
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	application to specific heat capacities of gases; concept of mean free path, Avogadro's number.			
<b>Unit 10</b> <b>Oscillations and waves</b>				
<b>Ch 14</b> <b>Oscillations</b>	<p>Periodic motion – period, frequency, displacement as a function of time. Periodic functions. Simple harmonic motion (SHM) and its equation; phase; oscillations of a spring – restoring force and force constant; energy in SHM – kinetic and potential energies; simple pendulum – derivation of expression for its time period; free, forced and damped oscillations (qualitative ideas only), resonance.</p>	<p>To make the learners to understand the concept of Wave motion and SHM along with its different application and mathematical analysis and also to learn basics of oscillations and its types.</p>	<p>(18)Using a simple pendulum, plot L-T and L-T<sup>2</sup> graphs. Hence find the effective length of a second's pendulum using appropriate graph.</p>	<p>Learners will be able to understand the basic concept of generation of waves along with its Classification and Mathematical analysis and SHM.</p> <p>Learners will be able to understand the Concept of Different forms of energy possessed by a body executing SHM with its mathematical analysis.</p> <p>Learners will be able to understand the Concept of Resonance, free oscillations</p>

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				and forced oscillations
<b>Ch 15 Waves</b>	Wave motion. Longitudinal and transverse waves, speed of wave motion. Displacement relation for a progressive wave. Principle of superposition of waves, reflection of waves, standing waves in strings and organ pipes, fundamental mode and harmonics. Beats. Doppler effect.	To make the learners to understand the concept of Wave motion, beats and doppler's effect relating it to our daily life.	(19)(i) To study the relation between frequency and length of a given wire under constant tension using sonometer.  (ii) To study the relation between the length of a given wire and tension for constant frequency using sonometer.  (20)To find the speed of sound in air at room temperature using a resonance tube by two resonance positions.	Learners will be able to understand the Mathematical analysis of waves along its basic parameters (Amplitude , Frequency and Phase)  Learners will be able to understand the concept of reflection of waves along with concept of harmonics.  Learners will be able to understand the Practicality in variation in frequency of sound due to relative motion between source and observer (Doppler's Effect)
	<b>REVISION AND EXAMS</b>			

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

Class : XI

Month Topic	Sub Topic	Audio Visual Inputs	Concept Maps/Diagram/Interdisciplinary Linkage/Art Integration	Practical/Investigatory Project	Assignment/Discussion
<b>April</b> Topic:Some Basic Concept of Chemistry	Importance of chemistry,nature of matter,Properties of matter and their Measurement,Uncertainty in measurement,Laws of chemical combinations,Dalton's Atomic Theory,Atomic and molecular Masses,Mole Concept and Molar Masses,Percentage Composition,Stoichiometry and Stoichiometric Calculations	Videos to show Law of chemical combination, Dalton's Atomic Theory and Atomic and Molecular masses	<b>Interdisciplinary Linkage:</b> Maths <b>Diagrams:</b> Fig 1.3,1.4,1.10,1.11	<b>Practical:</b> Packing of Na <sup>+</sup> and Cl <sup>-</sup> ions in sodium chloride and law of chemical combination	1.Assignment on Law of chemical combination, 2.Discussion of scoring point/Making Scheme/Sample Questions
<b>Topic:</b> Structure of Atom	Discovery of sub-atomic Particles,Atomic Models,Developments Leading to the Bohr's Model of atom,Quantum Mechanical Model of Atom,Heisenberg's Uncertainty Principle,Stability of Completely filled and Half filled Subshells	Video to show discovery of electron,Thomson model of atom,Schematic molecular view of the gold foil	<b>Interdisciplinary Linkage:</b> Maths <b>Diagram:</b> Fig 2.2,2.4,2.5,2.13,2.14,2.15,2.17, 2.18 <b>Art Integration:</b> Drawing map on Aufbau principle and full filled and half filled orbitals	<b>Practical:</b> Heisenberg's Uncertainty Principle	1.Assignment on Structure of the Atom 2.Discussion of Scoring Points/Marking Scheme/Sample Questions
<b>Topic:</b> Classification of elements	Why do we need to classify Elements,Genesis of periodic classification,Modern Periodic Law	Video to show Modern	<b>Interdisciplinary Linkage:</b> Maths <b>Diagram:</b> Fig3.2,3.3,3.4,3.5,3.6	<b>Practical: x</b>	1.Assignment Classification of elements

and Periodicity in Properties	and the present form of the periodic table, Nomenclature of elements with Atomic no > 100, Electronic configurations of elements and the periodic Table, Electronic configurations and type of elements: s, p, d, f-blocks, Periodic Trends in properties of elements	Periodic Law and the present form of the periodic Table			and periodicity in properties
<b>May</b> <b>Topic:</b> Chemical bonding and molecular structure	Kossel-Lewis Approach to chemical bonding, ionic or electrovalent bond, bond parameters, The Valence Shell Electron pair Repulsion (VSEPR) Theory, Valence bond Theory, Hybridisation, Molecular orbital Theory, Bonding in some homonuclear diatomic molecules, Hydrogen bondings	Videos to show Ionic bond, Hybridisation, Molecular orbital, bond parameters, Hydrogen bonding	<b>Interdisciplinary Linkage:</b> Maths <b>Diagrams:</b> 4.3, 4.6, 4.9, 4.11, 4.12, 4.16, 4.17, 4.18, 4.19	<b>Practical:</b> No	1. Assignment on chemical bonding and molecular structure 2. Hydrogen bondings 3. valence bond theory and VSEPR Theory
<b>July</b> <b>Topic:</b> State of matter	Intermolecular forces, Thermal energy, Intermolecular forces vs Thermal Interactions, The gaseous state, The gas laws, Ideal gas equations, Kinetic energy and molecular speeds, Kinetic molecular theory of gases, Behaviour of real gases: Deviation from Ideal gas	Videos to show Dispersion forces or London forces between atoms, Surface Tension	<b>Interdisciplinary Linkage:</b> Maths <b>Diagram:</b> Fig 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9 <b>Art Integration:</b> Drawing graphs on Pressure of a gas, graph pressure vs volume of a gas at different temperatures	<b>Practical:</b> 1. Surface Tension	1. Assignment on State of matters

	behavior, Liquefaction of gases, Liquid state				
<b>Topic:</b> Thermodynamics	Thermodynamics Terms, Applications, Measurement of $\Delta U$ and $\Delta H$ : Calorimetry, Enthalpy change, $\Delta_r H$ of a reaction- Reaction Enthalpy, Enthalpies for different Types of reactions, Spontaneity, Gibbs energy change and Equilibrium	Videos to shows System, Surroundings, Type of Systems, Calorimeter for measuring heat changes at constant pressure	<b>Interdisciplinary Linkage:</b> Maths, Physics <b>Diagram:</b> Fig 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9, 6.10, 6.11	<b>Practical:</b> 1. Open System 2. Closed System 3. Isolated System 4. Hess's Law	1. Assignment on Thermodynamics
<b>Topic:</b> Equilibrium	Equilibrium in physical processes, Equilibrium in chemical processes- Dynamic Equilibrium, Law of chemical Equilibrium and Equilibrium constant, Homogeneous Equilibria, Heterogeneous Equilibria, Applications of Equilibrium constants, Relationship between Equilibrium constant $K$ , Reaction Quotient $Q$ and Gibbs Energy $G$ , Factors affecting Equilibria, Ionic Equilibrium in solution, Acids, Bases and salts, Ionisation of Acids and Bases, Buffer Solutions, Solubility Equilibria of Sparingly Soluble Salts	Videos to shows Physical and chemical Equilibria, Factors affecting Equilibria	<b>Interdisciplinary Linkage:</b> Maths, Physics <b>Diagram:</b> Fig 7.1, 7.2, 7.3, 7.4, 7.5, 7.8, 7.9, 7.10 <b>Art Integration:</b> Drawing graph on chemical Equilibrium	<b>Practical:</b> Dynamic nature of Equilibrium	Assignment on Equilibrium

<b>August</b> <b>Topic:</b> Redox Reactions	Classical Idea of Redox Reactions- Oxidation and Reduction and Reactions,Redox Reactions in Terms of Electron Transfer Reactions,Oxidation Number,Redox Reactions and Electrode Processes	Videos to show Redox Reactions and electrode processes	<b>Interdisciplinary Linkage:</b> Maths <b>Diagram:</b> Fig 8.1,8.2,8.3	<b>Practical:</b> Danie II cell	Assignment on Redox Reaction and balancing the Equations
<b>Topic:</b> Hydrogen	Position of Hydrogen in the periodic Table,Dihydrogen,Preparation of dihydrogen,Hydrides,Water,Hydrogen Peroxide,Heavy water,Dihydrogen as a fuel	Videos to show 1.Structure of water 2.Structure of Ice	<b>Interdisciplinary Linkage:</b> Maths <b>Diagram:</b> Fig 9.1,9.2,9.3	<b>Practical:</b> No	Assignment on Hydrogen
<b>Topic:</b> The S-Block Elements	Group 1 Elements: Alkali Metals,General Characteristics of the compounds of the alkali metals,Anomalous Properties of Lithium,Some Important compounds of Sodium,Biological Importance of Sodium and potassium,Group 2 Elements: Alkaline Earth Metals,General characteristics of compounds of the Alkaline Earth Metals,Anomalous behavior of Beryllium,Some Important compounds of calcium ,Biological Importance of Magnesium and Calcium	Videos to show Alkali Metals and Alkaline Earth Metals	<b>Interdisciplinary Linkage:</b> NO <b>Diagram:</b> NO	<b>Practical:</b> NO	Assignment on Alkali Metals and Alkaline Earth Metals

September			Half Yearly Examination		
<b>October</b> <b>Topic:</b> The P-Block Elements	Group 13 Elements:The Boron Family,Important Trends and Anomalous properties of Boron,Some Important compounds of Boron,Uses of Boroa and Aluminium and their Compounds,Group 14 Elements:The Carbon Family,Important Trends and anomalous behavior of Carbon,Allotropes of Carbon,Some Important Compounds of Carbon and Silicon	Videos to show 1.The Structure of diamond 2.The Structure of graphite 3.The Structure of C <sub>60</sub>	<b>Interdisciplinary</b> <b>Linkage:</b> NO <b>Diagram:</b> Fig 11.1,11.2,11.3,11.4,11.5	<b>Practical:</b> NO	Assignment on 1.Classification of organic compounds 2.Nomenclature of organic compounds 3.Isomerism
<b>Topic:</b> Organic Chemistry-Some Basic Principles and Techniques	General Introduction,Tetravalence of Carbon:Shapes of Organic Compounds,Structural Representations of organic compounds,Classification of organic compounds,Nomenclature of organic compounds,Isomerism,Fundamental Concepts in organic reactions Mechanism,Methods of Purification of organic compounds,Qualitative Analysis of organic compounds,Quantitative Analysis	Videos to show 1.Methods of purification of organic compounds	<b>Interdisciplinary</b> <b>Linkage:</b> NO <b>Diagram:</b> Fig 12.4,12.5,12.6,12.7,12.8,12.14,12.15,12.16,12.17	<b>Practical:</b> 1.Distillation 2.Fractional distillation 3.Distillation under reduced pressure	Assignment on 1.Isomerism 2.Resonance 3.Electronic effects
<b>November</b> <b>Topic:</b>	Classification,Alkanes,Alkenes,Alkynes,Aromatic	Videos to show	<b>Interdisciplinary</b> <b>Linkage:</b> NO	<b>Practical:</b> NO	Assignment on Hydrocarbons

Hydrocarbons	Hydrocarbons,Carcinogenicity and Toxicity	Orbital picture of ethyne showing sigma and pi overlaps	<b>Diagram:Fig</b> 13.1,13.2,13.3,13.4,13.5,13.6,13.7		
<b>Topic:</b> Environmental Chemistry	Environmental Pollution,Atmospheric Pollution,Water Pollution,Soil Pollution,Industrial Waste,Strategies to control Environmental Pollution,Green Chemistry	Videos to show 1.Water Pollution 2.Air Pollution 3.Soil Pollution	<b>Interdisciplinary Linkage:NO</b> <b>Diagram:Fig</b> 14.1,14.2,14.3	<b>Practical:NO</b>	Assignment on Environmental Chemistry
<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</b>	<b>Examination</b>		

**Curriculum Plan of Computer Science**  
(Session: 2023-2024)

class : XI

Month/Topic	Theory	Practical/Project	Miscellaneous
<b>July</b> <b>Topic:</b> Computer Systems and Organisation	<ul style="list-style-type: none"> <li>➤ Basic computer organisation: description of a computer system and mobile system, CPU, memory, hard disk, I/O, battery.</li> <li>➤ Types of software: application, System, utility.</li> <li>➤ Memory Units: bit, byte, MB, GB, TB, and PB</li> <li>➤ Boolean logic: OR, AND, NAND, NOR, XOR, NOT, truth tables, De Morgan's laws</li> <li>➤ Information representation: numbers in base 2, 8, 16,</li> <li>➤ Strings: ASCII, UTF8, UTF32, ISCII (Indian script code), Unicode</li> <li>➤ Basic Concepts of Flowchart</li> <li>➤ Concept of Compiler &amp; Interpreter</li> <li>➤ Running a program: Notion of an operating system, how an operating system runs a program, idea of loading, operating system as a resource manager.</li> <li>➤ Concept of cloud computing, cloud (public/private), introduction to parallel computing.</li> </ul>	<ul style="list-style-type: none"> <li>• Demonstration of computer showing different parts of CPU.</li> <li>• Drawing Flowcharts               <ul style="list-style-type: none"> <li>○ to find successor and predecessor of a given number</li> <li>○ to find sum of two numbers</li> <li>○ to find average of three numbers</li> <li>○ to find whether a given number is positive or negative</li> <li>○ to find whether a given number is even or odd</li> <li>○ to print first 10 natural/whole numbers</li> <li>○ to develop infinite loop</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Assignment               <ul style="list-style-type: none"> <li>○ Computer fundamentals</li> <li>○ Boolean Logic</li> <li>○ Information Representation</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Sample Questions</li> <li>• Art Integration               <ul style="list-style-type: none"> <li>○ Draw the block diagram of computer</li> </ul> </li> <li>• Video               <ul style="list-style-type: none"> <li>○ Software</li> <li>○ Cloud computing</li> </ul> </li> <li>• Core Skills               <ul style="list-style-type: none"> <li>○ Problem solving</li> <li>○ Critical thinking</li> <li>○ Decision making</li> <li>○ Empathy</li> </ul> </li> </ul>
<b>August</b> <b>Topic:</b> Computational Thinking and Programming.	<ul style="list-style-type: none"> <li>➤ Basics of Computational Thinking: Decomposition, Pattern Recognition/ Data representation, Generalization/ Data Abstraction and algorithm.</li> <li>➤ Familiarization with the basics of Python programming: a simple "hello world" program, process of writing a program (Interactive &amp; Script mode), running it, and print statements; simple data-types: integer, float, string</li> </ul>	Write a program to <ul style="list-style-type: none"> <li>• display "hello world" on screen</li> <li>• print the successor, predecessor, half, double of a given number</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment               <ul style="list-style-type: none"> <li>○ Computational Thinking</li> <li>○ Python Programming</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Sample Questions</li> <li>• Video               <ul style="list-style-type: none"> <li>○ Computational Thinking</li> </ul> </li> </ul>

Month/Topic	Theory	Practical/Project	Miscellaneous
	<ul style="list-style-type: none"> <li>➤ Features of Python, Python Character Set, Token &amp; Identifiers, Keywords, Literals, Delimiters, operators.</li> <li>➤ Comments: (Single line &amp; Multiline/ Continuation statements), Clarity &amp; Simplification of expression.</li> <li>➤ Introduce the notion of a variable, and methods to manipulate it (concept of Lvalue and R-value even if not taught explicitly).</li> <li>➤ Knowledge of data types and operators: accepting input from the console, assignment statement, expressions, operators and their precedence.</li> <li>➤ Operators &amp; types: Binary operators – Arithmetic, Relational operators, Logical Operators, Augmented Assignment operators.</li> </ul>	<p>Write programs in Python to</p> <ul style="list-style-type: none"> <li>• Find the sum of two numbers</li> <li>• Find the average of three numbers</li> <li>• Accept values in four variables from use. Divide the sum of first two numbers by the difference of last two numbers and display the result</li> <li>• Find whether a given number is positive/ negative</li> <li>• Find whether a given number is even/odd</li> <li>• Find the bigger/smaller of two numbers</li> <li>• Find the biggest/smallest of three numbers</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Python Programming</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Sample Questions</li> <li>• Core Skills <ul style="list-style-type: none"> <li>○ Problem solving</li> <li>○ Critical thinking</li> <li>○ Creative thinking</li> <li>○ Decision making</li> <li>○ Empathy</li> <li>○ Interpersonal relationship</li> <li>○ Self-awareness</li> </ul> </li> </ul>
<p>September <b>Topic:</b> Computational Thinking and Programming</p>	<ul style="list-style-type: none"> <li>➤ Conditional statements: if, if-else, if-elif-else; simple programs: e.g.: absolute value, sort 3 numbers, and divisibility.</li> <li>➤ Notion of iterative computation and <b>control</b> flow: for(range(), len()), while, flowcharts, suggested programs: interest calculation and factorials, etc.</li> <li>➤ Idea of debugging: errors and exceptions; debugging: pdb, break points.</li> </ul>	<ul style="list-style-type: none"> <li>• Find the factorial of a given number.</li> <li>• Accept values for Principle, Rate of Interest and Time. Calculate Simple Interest.</li> <li>• Find <math>x^n</math>.</li> <li>• Print first N natural/whole numbers in forward/reverse order</li> <li>• Print even/odd numbers between 1 and N.</li> <li>• Find whether a given number is prime or not</li> <li>• Find if a number is equal to the sum of the cubes of its digits.</li> <li>• Find the reverse of a given number</li> <li>• Find the sum of digits of a given number</li> <li>• Find LCM and HCF of two given numbers</li> </ul>	

Month/Topic	Theory	Practical/Project	Miscellaneous
<b>September</b> <b>Topic:</b> Computational Thinking and Programming	<ul style="list-style-type: none"> <li>➤ Lists, tuples and dictionary: finding the maximum, minimum, mean; linear search on list/tuple of numbers, and counting the frequency of elements in a list using a dictionary. Introduce the notion of accessing elements in a collection using numbers and names.</li> <li>➤ Sorting algorithm: bubble and insertion sort; count the number of operations while sorting.</li> <li>➤ Strings: Traversing, compare, concat, substring.</li> <li>➤ Introduction to Python modules: Importing math (sqrt, cell, floor, pow, fabs, sin, cos, tan, random (random, randint, randrange), statistics (mean, median, mode) modules.</li> </ul>	Write programs in Python to <ul style="list-style-type: none"> <li>• Search for a number/name in the given list</li> <li>• Arrange the numbers in ascending/descending order</li> <li>• Find the largest/smallest number in a given list</li> <li>• Find the second largest/ smallest number in a given list</li> <li>• Find the reverse of a given string</li> <li>• Find whether a given string is palindrome or not</li> <li>• Project Work</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment               <ul style="list-style-type: none"> <li>○ Python Programming</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Sample Questions</li> <li>• Core Skills               <ul style="list-style-type: none"> <li>○ Problem solving</li> <li>○ Critical thinking</li> <li>○ Creative thinking</li> <li>○ Decision making</li> <li>○ Empathy</li> </ul> </li> </ul>
<b>September</b>	<b>Half Yearly Examination</b>		
<b>October</b> <b>Topic:</b> Data Management	<ul style="list-style-type: none"> <li>➤ Relational databases: Concept of a database, relations, attributes and tuples, keys- candidate key, primary key, alternate key, foreign key, Degree and cardinality of a table.</li> <li>➤ Use SQL – DDL/ DML commands to CREATE TABLE, INSERT INTO, UPDATE TABLE, DELETE FROM, ALTER TABLE, MODIFY TABLE, DROP TABLE, keys, and foreign keys; to view content of a table: SELECT-FROM WHERE-ORDER BY along with BETWEEN, IN, LIKE (Queries only on single table)</li> </ul>	<ul style="list-style-type: none"> <li>• Create a student table with the student id, name, and marks as attributes where the student id is the primary key.</li> <li>• Add a new column in the above table.</li> <li>• Modify the details of a particular column</li> <li>• Delete a particular column</li> <li>• Insert the details of a new student in the above table.</li> <li>• Delete &amp; update the details of a particular student in the above table.</li> <li>• Use the select command to manipulate data.</li> <li>• Create a new table (name, date of birth) by joining two tables (student id, name) and (studentid, date of birth).</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment               <ul style="list-style-type: none"> <li>○ Python Programming</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Sample Questions</li> <li>• Core Skills               <ul style="list-style-type: none"> <li>○ Problem solving</li> <li>○ Critical thinking</li> <li>○ Creative thinking</li> <li>○ Decision making</li> </ul> </li> </ul>
<b>November</b> <b>Topic:</b> Data Management	<ul style="list-style-type: none"> <li>➤ Aggregate functions – MIN, MAX, AVG, COUNT, SUM</li> <li>➤ Basics of NoSQL databases.</li> </ul>		

Month/Topic	Theory	Practical/Project	Miscellaneous
		<ul style="list-style-type: none"> <li>• Create a new table (order ID, customer Name, and order Date) by joining two tables (order ID, customer ID, and order Date) and (customer ID, customer Name, contact Name, country).</li> <li>• Show details from two tables</li> <li>• Delete the structure of a table.</li> </ul>	
<p><b>December</b>  <b>Topic:</b> Society, Law and Ethics – Cyber safety</p>	<ul style="list-style-type: none"> <li>➤ Cyber safety: safely browsing the web, identity protection, confidentiality, social networks, cyber trolls and bullying</li> <li>➤ Appropriate usage of social networks: spread of rumours, and common social networking sites (Twitter, LinkedIn, and Facebook) and specific usage rules.</li> <li>➤ Safely accessing web sites: adware, malware, viruses, Trojans</li> <li>➤ Safely communicating data: secure connections, eavesdropping, phishing and identity verification.</li> </ul>		<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Cyber Safety</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Sample Questions</li> <li>• Video <ul style="list-style-type: none"> <li>○ Cyber Safety</li> <li>○ Usage of Social Networking</li> <li>○ Malware, Virus, Trojans etc.</li> <li>○ Phishing</li> </ul> </li> <li>• Core Skills <ul style="list-style-type: none"> <li>○ Self-awareness</li> <li>○ Interpersonal relationship</li> <li>○ Empathy</li> </ul> </li> </ul>
<b>January</b>	<b>Revision</b>		
<b>February</b>	<b>Revision</b>		
<b>February</b>	<b>Annual Examination</b>		

## ANNUAL PLANNER- ENGLISH CLASS XI

Session 2023-24

Month/Topic	Specific Objective	Methodology/ Discussion	Assignment Listening, Speaking, Learning and Writing	Learning Outcome
<b>JULY</b> The Portrait of a Lady	<p>– To enable the students to</p> <p>i) develop cooperation, care and concern, Tolerance, Respect, Acceptance, Responsibility</p> <p>ii) be independent in thought and action</p> <p>iii) understand the feelings of parents and grandparents iii) face adverse situation calmly</p>	<p>- To enable the students</p> <p>i) to know the expressions used in the lesson and their usage</p> <p>ii) to understand the use of past perfect tense</p> <p>(ii) to strengthen the family bonds by accepting the situation</p>	<p>Present a pen picture of your grandparents describing their qualities you admire and appreciate the most.</p>	<p>Students will be able to know</p> <p>i) to improve working relations and respect for identities in relation to other people</p> <p>ii) to accept and manage the situations with patience and tolerance</p> <p>iii) to respect the relations in the family.</p>
<b>JULY</b> The Photograph	<p>-To enable the students to</p> <p>i) to inculcate values like learn from experience, care and share, love, affection and togetherness.</p> <p>ii) understand that time and tide wait for none.</p> <p>iii) change is the harsh and bitter reality of life.</p>	<p>To enable the students to</p> <p>i) read with proper voice intonation and pauses.</p> <p>ii) comprehend the poem.</p> <p>iii) identify the figures of speech.</p>	<p>Read out a poem on a similar theme/ discuss an incident/ describe an old mounted photograph.</p>	<p>The students will be able to</p> <p>i) understand the importance of human relationship.</p> <p>ii) understand child psychology.</p> <p>iii) understand the attachment with family members.</p>
<b>JULY</b> Ailing Planet	<p>To enable the students to</p> <p>i) value the natural</p>	<p>To enable the students to</p> <p>i) understand the</p>	<p>A debate on ‘Law and Order in India’</p>	<p>The students will be able to understand the</p>

	<p>resources</p> <p>ii) make the best use of the resources and able to retain them for the future generation.</p> <p>iii) analyse the grave situation of the planet Earth.</p>	<p>ecological situation of the Earth.</p> <p>ii) understand the issues regarding the declining health of the Earth continue to have relevance even today.</p> <p>iii) understand and gain knowledge - *the Green Movement –Earth a Living Organism</p>		<p>i) issues of the decline state of Mother Earth and sustainable development.</p> <p>ii) best use of resources.</p> <p>iii) awareness to save and protect the environment.</p>
<p><b>JULY</b> Notice Writing</p>	<p>To enable the students to The students will be able to</p> <p>i) inculcate values like share ideas, freedom to express and acceptance of ideas.</p> <p>ii) make use of appropriate formats, expressions and vocabulary.</p> <p>iv) appreciate the skill of expressing and writing effectively.</p>	<p>i) Guide and motivate students to express and write effectively.</p> <p>ii) Develop knowledge and purpose of writing an article and speech.</p> <p>iii) Awareness of the form, content and process of writing.</p>	<p>Different topics to give for Notice Writing practice</p>	<p>i) Guide the students to write effectively.</p> <p>ii) Spread awareness</p> <p>iii) To write in formal tone, to be precise and to the point.</p>
<p><b>AUGUST</b> Summer Of A Beautiful White Horse</p>	<p>To enable the students to</p> <p>i) inculcate the values of respecting one’s belief, honesty, confession, truth, faith, and sharing responsibility</p> <p>ii) show honesty and undo wrong doings</p>	<p>To enable the students to</p> <p>i) read and understand in between the lines</p> <p>ii) to appreciate humour in the story</p> <p>iii) express views clearly</p>	<p>(a)Rearrange the sentences to complete the story based on a similar theme.</p> <p>(b)Describe qualities of a horse</p>	<p>The students will be able to</p> <p>i) enhance vocabulary</p> <p>ii) enjoy humour</p> <p>iii) inculcate values like honesty, trust, responsibility etc</p>

	iii) understand stealing is a crime			
<b>AUGUST</b> We're not Afraid to Die	To enable the students to i) imbibe perseverance and patience, trust, self reliance and self confidence, positivity, team work ii) realise that courage and determination can overcome all the challenges iii) understand that presence of mind along with the practical knowledge is important to take instant decisions	To enable the students i) to know the expressions and phrasal verbs used in the lesson and their usage ii) to enhance and enrich the vocabulary	Optimism helps to endure the direst stress. Discuss.	The students will be able to i) learn the parts of ship and different terms/words related to voyage ii) understand the expressions and phrasal verbs used in the lesson and their usage
<b>AUGUST</b> Formal Letters, Business Letters, Letter to the Authorities, Posters	The students will be able to i) inculcate values like share ideas, freedom to express and acceptance of ideas. ii) make use of appropriate formats, expressions and vocabulary. iii) write formal letters, articles, speech, debate, reports and other short writing skills.	i) Guide and motivate students to express and write effectively. ii) Develop knowledge and purpose of writing an article and speech. iii) Awareness of the form, content and process of writing.	Different topics to give for practice	i) Guide the students to write effectively. ii) Develop and strengthen business relations, enquiries, registering complaints, placing orders, sending replies, apply for a job. iii) Letter to school authorities regarding admission, school issues, requirements and suitability
<b>SEPTEMBER</b> Revision- Half Yearly Exams				

<p><b>OCTOBER</b> Article, Speech, Note making</p>	<p>The students will be able to i) inculcate values like share ideas, freedom to express and acceptance of ideas.- ii) make use of appropriate formats, expressions and vocabulary. iii) write formal letters, articles, speech, debate , reports and other short writing skills.</p>	<p>i) Guide and motivate students to express and write effectively. ii) Develop knowledge and purpose of writing an article and speech. iii) Awareness of the form, content and process of writing.</p>	<p>Different topics to give for practice</p>	<p>i) Guide the students to write effectively. ii) Develop and strengthen business relations, enquiries, registering complaints, placing orders, sending replies, apply for a job. iii) Letter to school authorities regarding admission, school issues, requirements and suitability.</p>
<p><b>OCTOBER</b> The Address</p>	<p>To enable the students to i) read effectively with proper voice modulation. ii) comprehend the chapter. iii) enhance their vocabulary.</p>		<p>To enable the students – i) to inculcate values like courage, empathy, sensitivity, critical thinking and maintaining relations. ii) to learn from past experiences. iii) to understand to forget the past and move ahead in life</p>	<p>Sharing experience about the significance of articles/memories/people.</p>
<p><b>OCTOBER</b> Discovering Tut</p>	<p>To enable the students to i)inculcate the values of concern, responsibility, curiosity and respect ii)Respect other's beliefs, customs, rituals iii)Feel pride in using technology to unfold the</p>	<p>To enable the students to i) understand, enjoy and appreciate a factual text ii)understand the meaning and usage of phrases like resurrection, circumvented, computed Tomography, scudded</p>	<p>Draw a flow chart to draw King Tut's Family line and their description</p>	<p>The Students will be able to i)Think, analyse and observe ii)Know the meanings of new phrases iii)Satisfy their curiosity about King Tut's</p>

	mysteries	across etc iii) understand advancement in technology		mummy
<b>OCTOBER</b> Voice Of The Rain	To enable the students to i) understand rain as the life giving force on the earth ii) nurture the plants by taking care of the environment iii) understand the importance of saving resources	i) to understand the cyclic movement of rain ii) to know the role of plants in getting rain iii) to identify the two voices in the poem	i) What is water cycle ? How is the cycle getting disturbed? ii) What is the similarity between rain and music?	The students will be able to i) inculcate values like care and concern to save environment ii) develop imaginative and analytical skills iii) realise the importance of saving natural resources
<b>NOVEMBER</b> Ranga's Marriage	To enable the students – i) to inculcate values like courage, togetherness, empathy, appreciation, sensitivity and critical thinking. ii) to create a balance between tradition and Western culture. iii) to understand that tradition is deep rooted in our culture	To enable the students to i) read effectively with proper voice modulation. ii) comprehend the chapter. iii) enhance their vocabulary.	Discussion on Importance of traditions followed in India.	The students will be able to i) analyse that the ideas of Ranga about marriage seem apparently quite different but with the passage of time one realizes that he is inherently just like another person in the village. ii) realise the influence of the English language and Western culture in villages. iii) understand that the story brings out the conflict between tradition and modernity and shows

				how tradition is deep-rooted in our culture.
<b>NOVEMBER</b> 1)Report Writing 2)Invitations and Replies	The students will be able to- i) inculcate values like share ideas, freedom to express and acceptance of ideas. ii) make use of appropriate formats, expressions and vocabulary. iii) write formal letters, articles, speech, debate , reports and other short writing skills.	i)Guide and motivate students to express and write effectively. ii) Develop knowledge and purpose of writing an article and speech. iii) Awareness of the form, content and process of writing.	Different topics to give for practice	i) Guide the students to write effectively. ii) Spread awareness iii) To write in formal tone, to be precise and to the point.
<b>NOVEMBER</b> Mother's Day	To enable the students to i) imbibe values like care and concern, empathy, compassion, respect for elders, belongingness and tolerance ii) understand the struggles and sacrifices of parents and to draw inspiration from them iii) strengthen the family bonding with sharing and solving problems	To enable the students i) to perceive the overall meaning and organisation of the text ii) to identify and understand the central/main point and supporting details along with the phrases used in the lesson iii) to promote advanced language skills with an aim to develop the skills of reasoning and drawing inferences	Is drama a good medium for conveying a social message? Discuss	Students will be able i) to know that mothers have equal rights to enjoy their lives and deserve acknowledgement and appreciation ii) to strengthen the family bonding with sharing and solving problems iii) to develop analytical skills, thinking skills, decision making, management skills, logical skills
<b>DECEMBER</b>	To enable the students to	To enable the students to	i) What do you usually	The Students will be able

Browning Version	<ul style="list-style-type: none"> <li>i) inculcate the values of respecting teachers, mankind, sense of duty, punctuality and appreciation</li> <li>ii) acquire proper mannerism and attitude</li> <li>iii) owe respect towards their teachers</li> </ul>	<ul style="list-style-type: none"> <li>i) take role play and learn to deliver their part with appropriate voice modulation, stress and intonation</li> <li>ii) understand, enjoy and appreciate plays</li> <li>iii) enhance vocabulary</li> </ul>	<ul style="list-style-type: none"> <li>talk about teachers among friends?</li> <li>ii) What manner do you adopt when you talk to your teacher?</li> <li>iii) Role Play: will be done</li> </ul>	<ul style="list-style-type: none"> <li>to</li> <li>i) enhance vocabulary</li> <li>ii) know how to take role play</li> <li>iii) learn how to display mannerism and attitude towards others</li> </ul>
<b>DECEMBER</b> Childhood	<ul style="list-style-type: none"> <li>To enable the students</li> <li>i) to inculcate the values of accepting differences, understanding people, becoming sensible, valuing childhood and freedom</li> <li>ii) develop individuality</li> <li>iii) search for and gain innocence like a child</li> </ul>	<ul style="list-style-type: none"> <li>To enable the students to</li> <li>i) understand, enjoy and appreciate different genre of English writings</li> <li>ii) Enhance vocabulary</li> <li>iii) Have better understanding of rhyme scheme and other poetic devices</li> </ul>	Discuss: Is attainment of maturity a sigh of loss of innocence?	<ul style="list-style-type: none"> <li>The students will be able to</li> <li>i) Think, analyse and observe</li> <li>ii) Know how to identify rhyme scheme</li> <li>iii) Gain individuality</li> </ul>
<b>DECEMBER</b> Albert Einstein	<ul style="list-style-type: none"> <li>To enable the students to</li> <li>i) have respect for teachers</li> <li>ii) be truthful</li> <li>iii) accept and respect differences</li> </ul>	<ul style="list-style-type: none"> <li>To enable the students</li> <li>i) to comprehend the text</li> <li>ii) to learn/enrich vocabulary and its usage</li> <li>iii) to hone speaking and writing skills</li> </ul>	<ul style="list-style-type: none"> <li>i) Express your views on prevailing system of education</li> <li>ii) Do you think that the teacher's role should be primarily to make students think?</li> <li>iii) Incidents from the life of the great scientist</li> </ul>	<ul style="list-style-type: none"> <li>The students will be able to</li> <li>1. gain insight into the attitude of various teachers towards Einstein</li> <li>2. know about Einstein's nature based on his conversation with various teachers</li> <li>3. understand the difference between information gathering and insight formation</li> </ul>
<b>DECEMBER</b>	To enable the students to	To enable the students to	Class room discussion	The students will be able

<p>Birth</p>	<p>i) inculcate values like respect, being responsible, work for excellence, time management, commitment and determination, care and concern, humility, optimism, helping and tolerance. ii) never to lose hope iii) use of practical knowledge</p>	<p>i) read effectively with proper voice modulation. ii) comprehend the chapter. iii) enhance their vocabulary</p>	<p>based on- - Advancements in Medical Science. -Sharing of experiences and knowledge based on situations, news, articles, movies etc. -Noble profession of doctors and service to mankind.</p>	<p>to i) understand the sense of duty. ii) appreciate and accept the selfless service to mankind. iii) realise and create a balance between the knowledge gained and practical approach.</p>
<p><b>DECEMBER</b> Advertisement</p>	<p>The students will be able to i) inculcate values like share ideas, freedom to express and acceptance of ideas. ii) make use of appropriate formats, expressions and vocabulary. iii) write short writing skills.</p>	<p>i) Guide and motivate students to express and write effectively. ii) Develop knowledge and purpose of writing advertisements. iii) Awareness of the form, content and process of writing.</p>	<p>Different topics to give for practice</p>	<p>i) Guide the students to write effectively. ii) Spread awareness iii) To write in formal tone, to be precise and to the point.</p>
<p><b>JANUARY</b> Father To Son</p>	<p>To enable the students to i) to inculcate the values of accepting differences, understanding people, respecting elders ,peace and happiness, resolving conflicts, sincerity and perseverance, valuing</p>	<p>To enable the students to i) cultivate interest and appreciate poetry and develop the ability of reading with proper stress and intonation ii) prepare the students for poetic forms and</p>	<p>Students will be asked to enter into a debate about generation gap.</p>	<p>The students will be able to i) Comprehend and appreciate poetry ii) Learn new words iii) Enhance understanding of literary devices</p>

	relations and self realization ii) develop social skills iii) manage relations	adept them with the figures of speech, rhyme and rhythm iii) develop the ability of appreciation of ideas		
<b>JANUARY</b> Tale of Melon City	To enable the students to i) inculcate values like social connect, trust, co-operation, confidence, faith, respect and integrity, ability to fight against all odds. ii) analyse situations and take appropriate decisions. iii) not to make foolish decisions.	To enable the students to i) read with proper voice intonation and pauses. ii) comprehend the poem. iii) identify the figures of speech and the rhyming scheme.	Classroom discussions based on Examples of a kings and rulers.	The students will be i) aware of different situations and dealing them well. ii) realise that peace and liberty are the two strong factors for a state to flourish. iii) able to understand that the rulers of the state should be judicious and sensitive to the needs of the people.
<b>FEBRUARY</b> Revision – Final Examination				

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

Month Topic	Sub Topic	Concept/ Mathematics Activities	Assignment / Discussion
<b>April</b> <b>Topic:</b> Sets <b>No. of Periods:</b> 10	Sets and their representations. Empty set. Finite and Infinite sets. Equal sets. Subsets. Subsets of a set of real numbers especially intervals (with notations). Power set. Universal set. Venn diagrams. Union and Intersection of sets. Difference of sets. Complement of a set. Properties of Complement.	<ul style="list-style-type: none"> <li>• To find the number of subsets of a given set and verify that if a set has n number of elements, then the total no. of subsets is <math>2^n</math>.</li> <li>• To verify that for two sets A and B, <math>n(A \times B) = pq</math> and the total no. of relations from A to B is <math>2^{pq}</math>, where <math>n(A) = p</math> and <math>n(B) = q</math>.</li> </ul>	<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Set-builder form, roster form, Venn diagrams, applications on union &amp; intersection of sets</li> <li>○ Domain, range and co-domain</li> <li>○ all trigonometric transformations, general solutions, domain-range, identities and various functions</li> </ul> </li> </ul>
<b>Topic:</b> Relations & Functions <b>No. of Periods:</b> 10	Ordered pairs. Cartesian product of sets. Number of elements in the Cartesian product of two finite sets. Cartesian product of the set of reals with itself (upto $R \times R \times R$ ). Definition of relation, pictorial diagrams, domain, co-domain and range of a relation. Function as a special type of relation. Pictorial representation of a function, domain, co-domain and range of a function. Real valued functions, domain and range of these functions, constant, identity, polynomial, rational, modulus, signum, exponential, logarithmic and greatest integer functions, with their graphs. Sum, difference, product and quotients of functions.	<ul style="list-style-type: none"> <li>• To distinguish between a Relation &amp; Function.</li> </ul>	<ul style="list-style-type: none"> <li>• Discussion of Scoring Points/ Marking Scheme/ Sample Questions</li> </ul>
<b>Topic:</b> Trigonometric Functions <b>No. of Periods:</b> 15	Positive and negative angles. Measuring angles in radians and in degrees and conversion from one measure to another. Definition of trigonometric functions with the help of unit circle. Truth of the identity $\sin^2 x + \cos^2 x = 1$ , for all x. Signs of trigonometric functions. Deducing identities like the following: $\tan(x \pm y) = \frac{\tan x \pm \tan y}{1 \mp \tan x \tan y}, \cot(x \pm y) = \frac{\cot x \cot y \mp 1}{\cot y \pm \cot x}$ $\sin \alpha \pm \sin \beta = 2 \sin \frac{1}{2}(\alpha \pm \beta) \cos \frac{1}{2}(\alpha \mp \beta)$ $\cos \alpha + \cos \beta = 2 \cos \frac{1}{2}(\alpha + \beta) \cos \frac{1}{2}(\alpha - \beta)$ $\cos \alpha - \cos \beta = -2 \sin \frac{1}{2}(\alpha + \beta) \sin \frac{1}{2}(\alpha - \beta)$		

Month Topic	Sub Topic	Concept/ Mathematics Activities	Assignment
<b>May</b> <b>Topic:</b> Trigonometric Functions <b>No. of Periods:</b> 05	Identities related to $\sin 2x$ , $\cos 2x$ , $\tan 2x$ , $\sin 3x$ , $\cos 3x$ and $\tan 3x$ . General solution of trigonometric equations of the type $\sin y = \sin a$ , $\cos y = \cos a$ and $\tan y = \tan a$ . Signs of trigonometric functions. Domain and range of trigonometric functions and their graphs. Expressing $\sin(x \pm y)$ and $\cos(x \pm y)$ in terms of $\sin x$ , $\sin y$ , $\cos x$ & $\cos y$ and their simple applications.		<ul style="list-style-type: none"> <li>• Assignment <ul style="list-style-type: none"> <li>○ Principle of Mathematical Induction</li> <li>○ Argument, modulus and polar form of complex numbers, &amp; quadratic equations of imaginary nos.</li> <li>○ graphical representation of linear inequalities</li> <li>○ Permutations and Combinations</li> <li>○ Binomial Theorem, its expansion and rth term</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ Sample Questions</li> </ul>
<b>Topic:</b> Principle of Mathematical Induction <b>No. of Periods:</b> 05	Process of the proof by induction, motivating the application of the method by looking at natural numbers as the least inductive subset of real numbers. The principle of mathematical induction and simple applications.		
<b>Topic:</b> Complex Numbers and Quadratic Equations <b>No. of Periods:</b> 15	Need for complex numbers, especially $\sqrt{-1}$ , to be motivated by inability to solve some of the quadratic equations. Algebraic properties of complex numbers. Argand plane and polar representation of complex numbers. Statement of Fundamental Theorem of Algebra, solution of quadratic equations (with real coefficients) in the complex number system. Square root of a complex number.	<ul style="list-style-type: none"> <li>• To interpret geometrically the meaning of <math>i = \sqrt{-1}</math> and its integral power.</li> </ul>	
<b>Topic:</b> Linear Inequalities <b>No. of Periods:</b> 10	Linear inequalities. Algebraic solutions of linear inequalities in one variable and their representation on the number line. Graphical solution of linear inequalities in two variables. Graphical method of finding a solution of system of linear inequalities in two variables.	<ul style="list-style-type: none"> <li>• To verify that the graph of a given inequality, say <math>5x + 4y - 40 &lt; 0</math>, of the form <math>ax + by + c &lt; 0</math>, <math>a, b &gt; 0</math>, <math>c &lt; 0</math> represents only one of the two half planes.</li> </ul>	
<b>July</b> <b>Topic:</b> Permutations and Combinations <b>No. of Periods:</b> 10	Fundamental principle of counting. Factorial $n$ . ( $n!$ ) Permutations and combinations, derivation of Formulae for $n_{pr}$ and $n_{cr}$ and their connections, simple applications.	<ul style="list-style-type: none"> <li>• To find the number of ways in which three cards can be selected from given five cards.</li> </ul>	
<b>Topic:</b> Binomial Theorem <b>No. of Periods:</b> 10	History, statement and proof of the binomial theorem for positive integral indices. Pascal's triangle, General and middle term in binomial expansion, simple applications.	<ul style="list-style-type: none"> <li>• To construct a Pascal's triangle and to write binomial expansion for a given positive integral exponent.</li> </ul>	

Month Topic	Sub Topic	Concept/ Mathematics Activities	Assignment
<b>Topic:</b> Sequence and Series <b>No. of Periods:</b> 20	Sequence and Series. Arithmetic Progression (A. P.). Arithmetic Mean (A.M.) Geometric Progression (G.P.), general term of a G.P., sum of n terms of a G.P., infinite G.P. and its sum, geometric mean (G.M.), relation between A.M. and G.M. Formulae for the following special sums. $\sum_{k=1}^n k, \sum_{k=1}^n k^2 \text{ and } \sum_{k=1}^n k^3$	<ul style="list-style-type: none"> <li>To demonstrate that the Arithmetic mean of two different positive numbers is always greater than the Geometric mean.</li> </ul>	<ul style="list-style-type: none"> <li>Assignment <ul style="list-style-type: none"> <li>Straight Lines</li> <li>Conic Sections</li> <li>A.P., A.M., G.P., G.M., relation between A.M. &amp; G.M. and applications of sequences</li> <li>Slope, tangent, normal, various forms of slope of a line</li> <li>Parabola, Circle, Ellipse, Hyperbola and their applications</li> </ul> </li> <li>Discussion of Scoring Points/ Marking Scheme/ Sample Questions</li> </ul>
<b>August</b> <b>Topic:</b> Straight Lines <b>No. of Periods:</b> 20	Brief recall of two dimensional geometry from earlier classes. Shifting of origin. Slope of a line and angle between two lines. Various forms of equations of a line: parallel to axis, point -slope form, slope-intercept form, two-point form, intercept form and normal form. General equation of a line. Equation of family of lines passing through the point of intersection of two lines. Distance of a point from a line.		
<b>Topic:</b> Conic Sections <b>No. of Periods:</b> 15	Sections of a cone: circles, ellipse, parabola, hyperbola, a point, a straight line and a pair of intersecting lines as a degenerated case of a conic section. Standard equations and simple properties of parabola, ellipse and hyperbola. Standard equation of a circle.	<ul style="list-style-type: none"> <li>An alternating method to construct a parabola.</li> <li>To construct an ellipse using a rectangle.</li> </ul>	
<b>September</b>	<b>Half Yearly Examination</b>		
<b>October</b> <b>Topic:</b> Introduction to Three-dimensional Geometry <b>No. of Periods:</b> 10	Coordinate axes and coordinate planes in three dimensions. Coordinates of a point. Distance between two points and section formula.	<ul style="list-style-type: none"> <li>To explain the concept of octants by three mutually perpendicular planes in space</li> </ul>	<ul style="list-style-type: none"> <li>Assignment <ul style="list-style-type: none"> <li>octants, distance formula and section formula in 3-D</li> </ul> </li> <li>Discussion of Scoring Points/ Marking Scheme/ Sample Questions</li> </ul>

<b>Month Topic</b>	<b>Sub Topic</b>	<b>Concept/ Mathematics Activities</b>	<b>Assignment / Discussion</b>
<b>Topic:</b> Limits and Derivatives <b>No. of Periods:</b> 15	Derivative introduced as rate of change both as that of distance function and geometrically. Intuitive idea of limit. Limits of polynomials and rational functions trigonometric, exponential and logarithmic functions. Definition of derivative relate it to slope of tangent of the curve, derivative of sum, difference, product and quotient of functions. Derivatives of polynomial and trigonometric functions.	<ul style="list-style-type: none"> <li>To find analytically <math>\lim_{x \rightarrow c} \frac{x^2 - c^2}{x - c}</math></li> <li>Verification of the geometrical significance of derivative</li> </ul>	<ul style="list-style-type: none"> <li>Assignment <ul style="list-style-type: none"> <li>Limits, indeterminate form, derivatives of trigonometric functions, first principle, properties of derivatives</li> <li>basic Mathematical Reasoning</li> <li>Mean Deviation, median deviation, mode and frequency distribution</li> <li>Probability</li> </ul> </li> <li>Discussion of Scoring Points/ Marking Scheme/ Sample Questions</li> </ul>
<b>Topic:</b> Mathematical Reasoning <b>No. of Periods:</b> 10	Mathematically acceptable statements. Connecting words/ phrases - consolidating the understanding of "if and only if (necessary and sufficient) condition", "implies", "and/or", "implied by", "and", "or", "there exists" and their use through variety of examples related to real life and Mathematics. Validating the statements involving the connecting words, difference among contradiction, converse and contrapositive.	<ul style="list-style-type: none"> <li>To obtain truth values of compound statements of the type <math>p \vee q</math> by using switch connections in parallel</li> </ul>	
<b>November Topic:</b> Statistics <b>No. of Periods:</b> 20	Measures of Dispersion: Range, Mean deviation, variance and standard deviation of ungrouped/grouped data. Analysis of frequency distributions with equal means but different variances.		
<b>Topic:</b> Probability <b>No. of Periods:</b> 15	Random experiments; outcomes, sample spaces (set representation). Events; occurrence of events, 'not', 'and' and 'or' events, exhaustive events, mutually exclusive events, Axiomatic (set theoretic) probability, connections with other theories of earlier classes. Probability of an event, probability of 'not', 'and' and 'or' events.	<ul style="list-style-type: none"> <li>To write the sample space, when a coin is tossed once, twice, three times, four times.</li> </ul>	
<b>December</b>	<b>Periodic Test - 2</b>		
<b>January</b>	<b>Revision</b>		
<b>February</b>	<b>Annual Examination</b>		

# EXAMINATION SYLLABUS

## PERIODIC TEST – 1

- Trigonometric Functions
- Sets
- Relations & Functions

## HALF YEARLY EXAMINATION

- Trigonometric Functions
- Sets
- Relations & Functions
- Complex Numbers & Quadratic Equations
- Linear Inequalities
- Sequences & Series

## PERIODIC TEST - 2

- Permutations & Combinations
  
- Probability

## ANNUAL EXAMINATION

Full Syllabus

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

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

<b>Month / Topic</b>	<b>Theory</b>	<b>Practical / Project</b>	<b>Miscellaneous</b>
<b>July</b> Topic Changing Trends & Career in physical Education	<ul style="list-style-type: none"> <li>• Meaning &amp; definition of physical education.</li> <li>• Aims &amp; objectives of physical education.</li> <li>• Career option in physical education</li> <li>• Competition in various sports at National and international level</li> <li>• Khelo India Program</li> </ul>	<ul style="list-style-type: none"> <li>• Students shall make a list of career options in sports.</li> <li>• Students shall make a list of objectives of khelo India program.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>EBSB:</b> Students shall participate in Khelo India program</li> <li>• <b>Joyful learning Method</b> : Students shall take participate in various sports tournaments conducted by district Sports department and CBSE cluster.</li> <li>• <b>Experiential Learning Procedure</b> : Find out the various physical education courses in India.</li> </ul>
<b>August</b> Topic Olympic Value Education.	<ul style="list-style-type: none"> <li>• Olympics, Paralympics, and special Olympics.</li> <li>• Olympic Symbol, ideals, Objectives &amp; values of Olympism.</li> <li>• International Olympic Committee.</li> <li>• Indian Olympic Association.</li> </ul>	<ul style="list-style-type: none"> <li>• Students shall make a list of Indian athletes who have won medal in Olympics as well as in other international games.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Art Integrated Activities</b> : Make flag of international Olympics committee .</li> <li>• <b>Joyful Learning Method</b> : some motivation videos will be shown to the students of Paralympics , special Olympic and Olympics .</li> </ul>

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<p><b>September.</b> Topic Physical Fitness, Wellness and Lifestyle.</p> <p><b>October.</b> Topic Physical Education and Sports for CWSN.</p>	<ul style="list-style-type: none"> <li>• Meaning &amp; Importance of physical fitness, wellness &amp; lifestyle.</li> <li>• Components of Physical Fitness and wellness</li> <li>• Components of health related Fitness.</li> <li>• Aims and objectives of adaptive physical education</li> <li>• Organization promoting adaptive sports ( special Olympics Bharat, Paralympics, Deaflympics)</li> <li>• Concept of Inclusion , its need and implementation.</li> <li>• Role of various professionals for children with special needs.</li> </ul>	<ul style="list-style-type: none"> <li>• Make a list of physical fitness, wellness and healthy lifestyle.</li> <li>• Make a list of all components of physical fitness.</li> <li>• Write down the role of physical education teacher speech therapist and special educator.</li> <li>• Write down the concept of inclusive education.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Joyful learning method</b> : visit students to the gym and tell them how they improve their Joyful strength, speed and flexibility.</li> <li>• <b>Experiential Learning procedure:</b> take students to the ground and ask them about some exercise by which they can improve their strength speed and flexibility.</li> <li>• <b>Experiential learning procedure</b> : what is inclusive education why do we need inclusive education ,write its importance.</li> <li>• <b>Joyful learning Method</b> : make some students phe teacher, physiotherapist speech therapist and special therapist of your class and ask them about their role in school.</li> </ul>
<p><b>November</b> Topic Yoga</p> <p><b>November</b></p>	<ul style="list-style-type: none"> <li>• Meaning and importance of Yoga</li> <li>• Elements of Yoga</li> <li>• Introduction -Asanas, Pranayam, Meditation &amp; yogic Kriyas.</li> <li>• Yoga for concentration &amp; related Asanas</li> <li>• Relaxation Techniques for Improving concentration.</li> <li>• Leadership Qualities &amp; Role</li> </ul>	<ul style="list-style-type: none"> <li>• Take all students to the ground along with the yoga mats and do some yoga Asanas with Surya Namskar.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Experiential Learning Procedure</b> : Ask students about some Yoga Asanas which help in relaxation &amp; obesity .</li> <li>• <b>Joyful learning Method</b> : Take students to the ground with yoga mats and do Sitali Pranayama and sitkari pranayama for meditation .</li> <li>• <b>EBSB</b> : All students shall take participate in world Yoga day .</li> <li>• <b>Joyful Learning Method</b> : Organize a tour of your class into the hilly areas and take students for some adventure sports like, River Rafting trekking and Mountaineering.</li> </ul>

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<p>Topic Physical activity and Leadership Training.</p>	<p>of a leader</p> <ul style="list-style-type: none"> <li>• Creating Leader through Physical education</li> <li>• Meaning ,objectives &amp; types of Adventure Sports</li> <li>• Mountaineering, Surfing and Paragliding</li> <li>• Safety measures to prevent sports injuries.</li> </ul>	<ul style="list-style-type: none"> <li>• Divide students into two groups and make two leader of those groups and ask the how they improve their groups.</li> </ul>	<ul style="list-style-type: none"> <li>• Students shall participate in school rally and share their experience about the leadership and its qualities.</li> <li>• <b>Story Telling Activities</b> : Tell some stories of good leader of our country and qualities of their leadership to the students of your class.</li> </ul>
<p>December</p>	<ul style="list-style-type: none"> <li>• Revision</li> </ul>	<ul style="list-style-type: none"> <li>• Revision</li> </ul>	<ul style="list-style-type: none"> <li>• Revision</li> </ul>
<p><b>January</b> Topic Test, Measurement and Evaluation.</p>	<ul style="list-style-type: none"> <li>• Define test Measurement &amp; Evaluation</li> <li>• Importance of test ,Measurement and Evaluation in sports.</li> <li>• Calculation of BMI &amp; Waist Hip Ratio.</li> <li>• Somato Types (Endomorphy,Mesomorphy &amp; Ectomorphy )</li> <li>• Measurement of health related fitness.</li> </ul>	<ul style="list-style-type: none"> <li>• Students shall take the data of their family member and calculate the BMI (Body Mass Index).</li> <li>• Ask students make a list of their family members and identify their body types.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Art Integrated Activities</b> : Ask Students to make a list of health related fitness measurement tools.</li> <li>• <b>Joyful Learning Method</b> : Students will measure height ,weight ,flexibility , blood pressure , fat , heartbeat , and strength of their classmates by using Anthropometric Tools.</li> </ul>
<p><b>January</b> Topic Fundamentals of Anatomy &amp; Physiology.</p>	<ul style="list-style-type: none"> <li>• Definition , Importance of Anatomy , Physiology &amp; Kinesiology.</li> <li>• Function of Skeleton system , Classification of Bones &amp; Types of Joints.</li> <li>• Properties and Functions of Muscles.</li> <li>• Function &amp; Structure of Respiratory system and circulatory system.</li> <li>• Equilibrium – Dynamic &amp;</li> </ul>	<ul style="list-style-type: none"> <li>• Take a sphygmomanometer and measure the blood pressure of your class mates.</li> <li>• Explain the Equilibrium by using seesaw and gymnastic bar.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Joyful learning method:</b> Measure the blood pressure of your class mates by using Sphygmomanometer.</li> <li>• <b>Experiential learning procedure</b> ; give example of various joints found in your body by using some tools.</li> <li>• Identify the point of Centre of gravity in different position of body while running, bending jumping and standing.</li> </ul>

	static and Centre of gravity and its application in sport.		
<b>February</b> Topic Psychology and Sports.	<ul style="list-style-type: none"> <li>Psychology and sports psychology.</li> <li>Growth and Development</li> <li>Developmental characteristics at different stages of growth</li> <li>Adolescence changes and their needs.</li> <li>Problems of adolescence</li> <li>Management of adolescence problems.</li> </ul>	<ul style="list-style-type: none"> <li>Explain the various stages of growth by using examples of your school children.</li> </ul>	<ul style="list-style-type: none"> <li><b>Joyful learning method</b> : explain the term growth and development by catching a small ball by running &amp; jumping.</li> <li><b>Art integrated Activities</b> : what are the special needs of Adolescence age write also about their problems and management.</li> </ul>
<b>February</b> Topic Training and Doping in Sports.	<ul style="list-style-type: none"> <li>Meaning &amp; concept of sports training</li> <li>Principle of sports training</li> <li>Warming up &amp; limbering down.</li> <li>Skill techniques &amp; styles.</li> <li>Concept and classification of doping</li> <li>Dealing with Alcohol and substances abuse.</li> </ul>	<ul style="list-style-type: none"> <li>Make a chart paper for Drug abuse.</li> <li>Make a poster for no smoking</li> <li>Write the ill effects of Tobacco.</li> </ul>	<ul style="list-style-type: none"> <li><b>Joyful learning method</b> : Do some various exercises for limbering down and warming up.</li> <li><b>Experiential learning procedure</b> : how will you train yourself for the upcoming competition.</li> <li><b>EBSB</b> : organize a oath rally for world No Tobacco Day.</li> </ul>

MOHD ANVAR

PGT. PHYSICAL EDUCATION.

DPGS MORADABAD.

**Annual Pedagogical Plan (Session 2024-2025)**

**Delhi Public Global School, Moradabad**

**Class : XI Subject – Biology**

**By – Danial Faraz**

Month	Topic	Learning objectives/Skills to be developed	Art Integration/Joyful Learning Activities	Practical/Investigatory Project/Case Studies	Experiential Learning /Assignment/ Discussion &Outcome
July	<p align="center"><b>UNIT 1</b></p> <p><b><i>DIVERSITY IN LIVING WORLD</i></b></p> <p><b>Chapter 1</b></p> <p><b>The Living world</b></p> <p>No. of Periods: 03</p> <p><b>Chapter 2</b></p> <p><b>Biological Classification</b></p> <p>No. of Periods: 05</p>	<p>Living and its features Different Taxonomic Catagories.... Species, Genus, family order, class, phylum kingdom etc.</p> <p>Kingdom Monera Kingdom Protista Kingdom Fungi Kingdom Plantae Kingdom Animalia Viruses ,viroids and Lichens</p>	<ul style="list-style-type: none"> <li>• <b><i>Art Integrated Projects</i></b> <ul style="list-style-type: none"> <li>○ Diagrammatical skills development.</li> <li>○ Flow chart.</li> <li>○ Through Chart explain 5 kingdom of classification.</li> <li>○ Life cycle of Algae, Bryophytes, Pteridophytes Gymnosperms and Angiosperms.</li> </ul> </li>   <li>• <b><i>Joyful Learning Activities:</i></b> <ul style="list-style-type: none"> <li>○ Visit to the Zoological Park ,Botanical Gardens and Museums.</li>   <li>○ Modal Making on Bacteria, Virus.</li> <li>○ Educational tour for better understanding the</li> </ul> </li> </ul>	<p><b><i>Practical:</i></b></p> <p>Specimens/slides/models and identification with reasons – Bacteria,<i>Oscillatoria,Spirogyra, Rhizopus</i>, mushroom, yeast, liverwort, moss, fern, pine, one monocotyledonous plant, one dicotyledonous plant and one lichen.</p> <p><b><i>Investigatory Project/Case Studies</i></b></p> <ul style="list-style-type: none"> <li>○ Selection of the topic</li> <li>○ Planning of the project</li> <li>○ Experimentation for the project</li> </ul>	<ul style="list-style-type: none"> <li>• <b><i>Assignment</i></b> <ul style="list-style-type: none"> <li>○ Binomial Nomenclature.</li> <li>○ Tools for studying Taxonomy.</li> </ul> </li>   <li>○ Structure of Bacteria.</li> <li>○ Virus</li> <li>○ Lichens</li> <li>○ Algae</li> <li>○ Salient Features of Bryophytes Pteridophytes Gymnosperm &amp; Angiosperm</li> </ul>

	<p><b>Chapter 3</b></p> <p><b>Plant Kingdom</b></p> <p>No. of periods: 09</p>	<p>Salient features and classification of plants into major groups - Algae, Bryophyta, Pteridophyta, Gymnospermae and Angiospermae classification up to class, characteristic features and examples.</p> <p>Plant life cycles and alternation of generations</p>	<p>salient features of Bryophytes , Pteridiophytes ,Gymnosperms &amp; Angiosperms.</p> <ul style="list-style-type: none"> <li>○ Use of Smart class for better understanding of topic.</li> <li>○ Quiz Games.</li> </ul>		<ul style="list-style-type: none"> <li>○ Assignment related to Animal kingdom.</li> <li>● Discussion of Scoring Points/ Marking Scheme/ samples Questions</li> <li>● Worksheets.</li> <li>● Outcome: Acquire the concept of Diversity in Living world.</li> </ul>
	<p><b>Chapter 4</b></p> <p><b>Animal Kingdom</b></p> <p>No. of periods: 10</p>	<p>Basis of Classification; Salient features and classification of animals, non-chordates up to phyla level and chordates up to class level.</p>	<ul style="list-style-type: none"> <li>● <b>Art Integrated Projects</b> <ul style="list-style-type: none"> <li>○ Morphology of Flower.</li> <li>○ Difference between Monocot and Dicot Stem and leaf.</li> <li>○ Secondary Growth.</li> <li>○ Flow chart</li> <li>○ Diagrammatic Skill Development.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● <b>Practical:</b> <ul style="list-style-type: none"> <li>○ Different modifications in roots, stems and leaves.</li> <li>○ Different types of inflorescence (cymose and racemose).</li> <li>○ Study and describe three locally available common flowering plants, one from each of the families Solanaceae, Fabaceae and Liliaceae (Poaceae, Asteraceae or Brassicaceae can be</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● <b>Assignment</b> <ul style="list-style-type: none"> <li>○ Various types of Modifications in Stem, Root and Leaves.</li> <li>○ Secondary Growth in Plants.</li> <li>○ Reproductive structure of Cockroach and Earthworm.</li> </ul> </li> <li>● Discussion of Scoring Points/ Marking</li> </ul>

<p><b>August</b></p>	<p><b>UNIT-2</b></p> <p><b>STRUCTURAL ORGANIZATION IN PLANTS AND ANIMALS</b></p> <p><b>Chapter 5</b></p> <p><b>Morphology of flowering Plants</b></p> <p>No. of Periods: 10</p> <p><b>Chapter 6</b></p> <p><b>Anatomy of Flowering Plants</b></p> <p>No. of Periods: 07</p>	<p>Morphology and modifications: Morphology of different parts of flowering plants: root, stem, leaf, inflorescence, flower, fruit and seed. Description of families: Fabaceae, Solanaceae and Liliaceae</p> <p>Anatomy and functions of different tissues and tissue systems in dicots and monocots. Secondary growth.</p>	<ul style="list-style-type: none"> <li>• <b>Joyful Learning Activities</b> <ul style="list-style-type: none"> <li>○ Field visit to show the various features of flowering plants.</li> <li>○ Organizing a survey on the different kinds Plant vegetation (Families mentioned in the syllabus) around your Locality.</li> <li>○ Ppt Presentations</li> <li>○ Chart Making</li> <li>○ Poster Making</li> <li>○ Study the structural organization through Smart Classes.</li> <li>○ Quiz Games.</li> </ul> </li> </ul>	<p>substituted in case of particular geographical location) including dissection and display of floral whorls, anther and ovary to show number of chambers (floral formulae and floral diagrams).</p> <ul style="list-style-type: none"> <li>○ Types of root (Tap and adventitious); types of stem (herbaceous and woody); leaf (arrangement, shape, venation, simple and compound).</li> <li>○ Preparation and study of T.S. of dicot and monocot roots and stems (primary).</li> <li>○ Tissues and diversity in shape and size of plant cells through temporary and permanent slides.</li> <li>○ Virtual specimens/slides/models and identifying features of - <i>Amoeba</i>, <i>Hydra</i>, liverfluke, <i>Ascaris</i>, leech, earthworm, prawn, silkworm, honeybee, snail, starfish, shark,</li> </ul>	<p>Scheme/ samples Questions</p> <ul style="list-style-type: none"> <li>• Worksheets.</li> <li>• Outcome: Acquire the concept of Structural organization in Plants &amp; Animals.</li> </ul>
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	<p><b>Chapter 7</b></p> <p><b>Structural Organisation in Animals</b></p> <p>No. of Periods: 10</p>	<p>Anatomy and functions of different systems of Frog. (a brief account only).</p>		<p>rohu, frog, lizard, pigeon and rabbit.</p> <p><b>Investigatory Project/Case Studies</b></p> <ul style="list-style-type: none"> <li>○ Selection of the topic</li> <li>○ Planning of the project</li> <li>○ Experimentation for the project</li> </ul>	
<p><b>October</b></p> <p><b>Chapter 8</b></p>	<p><b>UNIT 3</b></p> <p><b>CELL: STRUCTURE &amp; FUNCTION</b></p> <p><b>Cell-The Unit of Life</b></p> <p>No. of Period : 10</p>	<p>Cell theory and cell as the basic unit of life, structure of prokaryotic and eukaryotic cells; Plant cell and animal cell; cell envelope; cell membrane, cell wall; cell organelles - structure and function; endomembrane system- endoplasmic reticulum, ribosomes, golgi bodies, lysosomes, vacuoles; mitochondria, plastids,</p>	<ul style="list-style-type: none"> <li>• <b>Art Integrated Project</b> <ul style="list-style-type: none"> <li>○ Chart/Modal Presentation on Cell and Cell Organelles.</li> <li>○ Flow Chart on Biomolecules.</li> <li>○ Poster making on Cell cycle</li> <li>○ Cell Division.</li> <li>○ Diagrammatic Skills development.</li> </ul> </li> <li>• <b>Joyful Learning Activities:</b></li> </ul>	<p><b>Practical:</b></p> <p>1.Parts of a compound microscope.</p> <p>2. Mitosis in onion root tip cells and animals cells (grasshopper) from permanent slides.</p> <p><b>Investigatory Project/Case Studies</b></p> <ul style="list-style-type: none"> <li>○ Selection of the topic</li> <li>○ Planning of the project</li> <li>○ Experimentation for the project</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Assignment</b> <ul style="list-style-type: none"> <li>○ Plasma membrane and its Function.</li> <li>○ Mitochondria: The Power House Of the Cell.</li> <li>○ Cytoskeleton</li> <li>○ Nucleus</li> <li>○ Carbohydrates</li> <li>○ Nucleic Acids</li> <li>○ Enzymes and their Function.</li> <li>○ Difference Between Meiosis and Mitosis.</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ samples Questions</li> </ul>

<p><b>Chapter 9</b></p>	<p><b>Biomolecules</b></p> <p>No. of Periods: 06</p>	<p>microbodies; cytoskeleton, cilia, flagella, centrioles nucleus.</p> <p>Chemical constituents of living cells: biomolecules, structure and function of proteins, carbohydrates, lipids, nucleic acids; concept of metabolism; Enzymes - properties, enzyme action, factors, classification, Co- factors.</p>	<ul style="list-style-type: none"> <li>○ Interactive Smart Class sessions.</li> <li>○ Modal/chart presentation.</li> <li>○ PPT Presentation.</li> <li>○ Quiz Games.</li> <li>○ Mind Maps.</li> <li>○ Flow Charts.</li> </ul>		<ul style="list-style-type: none"> <li>● Worksheets.</li> <li>● Outcome: Acquire the concept of Cell's Structure &amp; Function.</li> </ul>
<p><b>Chapter 10</b></p>	<p><b>Cell Cycle and Cell Division</b></p>				

	No. of Periods: 10	Cell cycle, mitosis, meiosis and their significance.			
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<b>Month</b>	<b>Topic</b>	<b>Learning objectives/Skills to be developed</b>	<b>Art Integration/Joyful Learning Activities</b>	<b>Practical/Investigatory Project/Case Studies</b>	<b>Experiential Learning /Assignment/ Discussion &amp;Outcome</b>
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<p><b>November-December</b></p> <p><b>Chapter 11</b></p> <p><b>Chapter 12</b></p>	<p><b>UNIT-4</b></p> <p><b>PLANT PHYSIOLOGY</b></p> <p><b>Photosynthesis in Higher Plants</b></p> <p>No. of Periods: 08</p> <p><b>Cellular Respiration</b></p> <p>No. of Periods: 08</p>	<p>Photosynthesis as a means of autotrophic nutrition; early experiments, site of photosynthesis, pigments involved in photosynthesis (elementary idea); photochemical and biosynthetic phases of photosynthesis; cyclic and non-cyclic photophosphorylation; chemiosmotic hypothesis; photorespiration; C3 and C4 pathways; factors affecting photosynthesis.</p> <p>Exchange of gases; do plants breathe; cellular respiration - glycolysis, fermentation (anaerobic), TCA cycle and electron transport system (aerobic); energy relations - number of ATP molecules generated;</p>	<ul style="list-style-type: none"> <li>• <b>Art Integrated Projects</b> <ul style="list-style-type: none"> <li>○ Transpiration in plants</li> <li>○ Growth Regulators.</li> <li>○ Seed Germination.</li> <li>○ Diagrammatic skills development.</li> </ul> </li> <li>• <b>Joyful Learning Activities</b> <ul style="list-style-type: none"> <li>○ Interactive Smart Class sessions.</li> <li>○ Modal/chart presentation.</li> <li>○ PPT Presentation.</li> <li>○ Quiz Games.</li> <li>○ Mind Maps.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Practicals:</b> <ol style="list-style-type: none"> <li>1. Study of osmosis by potato osmometer.</li> <li>2. Study of plasmolysis in epidermal peels (e.g. Rhoeo/lily leaves or flashy scale leaves of onion bulb).</li> <li>3. Study of distribution of stomata in the upper and lower surfaces of leaves.</li> <li>4. Comparative study of the rates of transpiration in the upper and lower surface of leaves.</li> <li>5. Test for the presence of sugar, starch, proteins and fats in suitable plant and animal materials.</li> <li>6. Separation of plant pigments through paper chromatography.</li> <li>7. Study of the rate of respiration in flower buds/leaf tissue and germinating seeds.</li> </ol> </li> <li>Investigatory Project/Case studies <ul style="list-style-type: none"> <li>○ Selection of the topic</li> <li>○ Planning of the project</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• <b>Assignment</b> <ul style="list-style-type: none"> <li>○ Photosynthesis in higher plants</li> <li>○ Glycolysis</li> <li>○ Electron Transport system</li> <li>○ Plant Hormones</li> </ul> </li> <li>• Discussion of Scoring Points/ Marking Scheme/ samples Questions</li> <li>• Worksheets.</li> <li>• Outcome: Acquire the concept of Plant Physiology.</li> </ul>
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<p><b>Chapter 13</b></p>	<p><b>Plant - Growth and Development</b></p> <p>No. of Periods: 08</p> <p><b>UNIT -5</b></p> <p><b>HUMAN PHYSIOLOGY</b></p>	<p>amphibolic pathways; respiratory quotient.</p> <p>Seed germination; characteristics, measurements and phases of plant growth, growth rate; conditions for growth; differentiation, dedifferentiation and redifferentiation.</p>	<ul style="list-style-type: none"> <li>○ Flow Charts.</li> </ul>	<ul style="list-style-type: none"> <li>○ Experimentation for the project</li> </ul>	
<p><b>Chapter 14</b></p>	<p><b>Breathing and Exchange of Gases</b></p> <p>No. of Periods: 06</p>	<p>Introduction to respiratory organs in animals; Respiratory system in humans; mechanism of breathing and its regulation in humans - exchange of gases, transport of gases and regulation of respiration, respiratory volumes; disorders related to respiration - asthma,</p>	<ul style="list-style-type: none"> <li>• <b>Art Integrated Projects</b> <ul style="list-style-type: none"> <li>○ Digestive System</li> <li>○ Absorption and Assimilation of proteins.</li> <li>○ Mechanism Of breathing.</li> <li>○ Poster making on human heart.</li> <li>○ Composition of Blood.</li> <li>○ Mechanism of Double circulation</li> </ul> </li> </ul>		<ul style="list-style-type: none"> <li>• <b>Assignments</b> <ul style="list-style-type: none"> <li>○ Diabetes</li> <li>○ Respiratory Disorders</li> <li>○ Mechanism Of Breathing</li> <li>○ Composition of Blood</li> <li>○ Blood Clotting</li> <li>○ Disorders Related to Circulatory system</li> <li>○ Urine Formation</li> <li>○ Kidney Trasplantation</li> <li>○ Locomotion and Movement</li> </ul> </li> </ul>

<p><b>Chapter 15</b></p>	<p><b>Body Fluids and Circulation</b> No. of Periods: 05</p>	<p>emphysema, occupational respiratory disorders.</p> <p>Composition of blood, blood groups, coagulation of blood; composition of lymph and its function; circulatory pathways; human circulatory system - Structure of human heart and blood vessels; cardiac cycle, cardiac output, ECG; double circulation; regulation of cardiac activity; disorders of circulatory system - hypertension, coronary artery disease, angina pectoris, heart failure.</p>	<p>through flow chart.</p> <ul style="list-style-type: none"> <li>○ Flow chart on the mechanism of Excretion.</li> <li>○ Contraction of Muscles.</li> <li>○ Modal on Nerve cell, sense organs and Brain.</li> <li>○ Endocrine system.</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Practicals:</b> <ul style="list-style-type: none"> <li>○ Test for presence of urea in urine.</li> <li>○ Test for presence of sugar in urine.</li> <li>○ Test for presence of albumin in urine.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>○ Generation, Conduction and Transmission of Nerve Impulse</li> <li>○ Human Endocrine System</li> </ul> <ul style="list-style-type: none"> <li>● Discussion of Scoring Points/ Marking Scheme/ samples Questions</li> <li>● Worksheets.</li> <li>● Outcome: Acquire the concept of Human Physiology.</li> </ul>
<p><b>December-January</b></p>	<p><b>Chapter 16</b> <b>Excretory Products and their Elimination</b></p>	<p>Modes of excretion - ammonotelism, ureotelism, uricotelism; human</p>	<ul style="list-style-type: none"> <li>● <b>Joyful Learning Activities</b> <ul style="list-style-type: none"> <li>○ Interactive Smart Class sessions.</li> <li>○ Modal/chart presentation.</li> <li>○ PPT Presentation.</li> </ul> </li> </ul>		

	<p>No. of Periods: 05</p> <p><b>Chapter 17</b></p> <p><b>Locomotion and Movement</b></p> <p>No. of Periods: 05</p>	<p>excretory system – structure and function; urine formation, osmoregulation; regulation of kidney function -, ADH, diabetes insipidus; disorders - uremia, renal failure, renal calculi, nephritis; dialysis and artificial kidney, kidney transplant.</p> <p>Types of movement – amoeboid, ciliary, flagellar, muscular; types of muscles; skeletal muscle, contractile proteins and muscle contraction; skeletal system and its functions; joints; disorders of muscular and skeletal systems - myasthenia gravis, tetany, muscular dystrophy, arthritis, osteoporosis, gout.</p>	<ul style="list-style-type: none"> <li>○ Quiz Games.</li> <li>○ Mind Maps.</li> <li>○ Flow Charts.</li> </ul>	<p>Investigatory Project/Case studies</p> <ul style="list-style-type: none"> <li>○ Selection of the topic</li> <li>○ Planning of the project</li> <li>○ Experimentation for the project</li> </ul>	
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	<p><b>Chapter 18</b> <b>Neural Control and Coordination</b></p> <p>No. of Periods: 07</p>	<p>Neuron and nerves; Nervous system in humans - central nervous system and peripheral nervous system; generation, conduction and transmission of nerve impulse; reflex action; sensory perception; sense organs; elementary structure and functions of eye and ear.</p>			
	<p><b>Chapter 19</b> <b>Chemical Coordination and Integration</b></p> <p>No. of Periods: 07</p>	<p>Endocrine glands and hormones; human endocrine system - hypothalamus, pituitary, pineal, thyroid, parathyroid, thymus, adrenal, pancreas, gonads; hormones of heart, kidney and gastrointestinal tract; mechanism of hormone action (elementary idea); role</p>			

		of hormones as messengers and regulators, hypo - and hyperactivity and related disorders; dwarfism, acromegaly, cretinism, goiter, exophthalmic goiter, diabetes, Addison's disease.			
<b>Feburary</b>	<b>Final Examination</b>				