



**Curriculum**  
**Subject: Science (086)**  
**Class: IX**  
**Session: 2024-25**

<b>EVALUATION SCHEME</b>		
<b>Theory</b>		
<b>Unit No.</b>	<b>UNITS</b>	<b>Marks</b>
I	Matter-Its Nature and Behaviour	25
II	Organization in the Living World	22
III	Motion, Force and laws of motion	27
IV	Food; Food Production	06
Total		80
Internal Assessment		20
Grand Total		100

NCERT Science (Physics/Chemistry/Biology)	NCERT
Lab Manual of Biology	Evergreen
Lab Manual of Physics	Evergreen
Lab Manual of Chemistry	Evergreen

Chapter No/ Month	Name of the chapter	Practical and Competency Skill Based Activities/ Experiential Learning	Skills	Assessments
<b>Biology:</b> <b>Chapter: 5</b> <b>(April-May)</b>	<b>The Fundamental Unit of Life</b> <b>Cell - Basic Unit of Life:</b> <b>Learning outcomes:</b> Student will be able to: <ul style="list-style-type: none"> <li>● Understand:- Cell as a basic unit of life</li> <li>● Differentiate:- Prokaryotic and eukaryotic cells, multicellular organisms.</li> <li>● Describe:- Cell membrane and cell wall, cell organelles and cell inclusions; chloroplast, mitochondria, vacuoles, endoplasmic reticulum, Golgi apparatus, nucleus, chromosomes - basic structure, number.</li> </ul>	<ul style="list-style-type: none"> <li>● Preparation of stained temporary mounts of (a) onion peel, (b) human cheek cells &amp; to record observations and draw their labeled diagrams.</li> </ul>	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity
<b>Chapter- 1</b> <b>( April)</b>  <b>Chemistry:</b> <b>Chapter - 2</b> <b>(May-June)</b>	<b>Matter in Our Surroundings:</b> <b>Learning outcomes:</b> Students will be able to <ul style="list-style-type: none"> <li>● Define matter</li> <li>● Categorize matter into solid, liquid and gas</li> <li>● Understand the characteristics - shape, volume, density</li> <li>● Identify the change of state-melting (absorption of heat), freezing, evaporation (cooling by evaporation), condensation, sublimation.</li> </ul> <b>Is Matter Around Us Pure</b> <b>Learning outcomes:</b> Student will be able to: <ul style="list-style-type: none"> <li>● Explain elements, compounds and mixtures homogenous and heterogenous mixtures.</li> <li>● Elaborate colloids and suspension, physical and chemical changes (excluding separating the components of mixtures).</li> </ul>	<ul style="list-style-type: none"> <li>● Preparation of: a) a true solution of common salt, sugar and alum b) a suspension of soil, chalk powder and fine sand in water c) a colloidal solution of starch in water and egg albumin/milk in water and distinguish between these on the basis of               <ul style="list-style-type: none"> <li>● transparency</li> <li>● filtration criterion</li> <li>● stability</li> </ul> </li> <li>● Determination of the melting point of ice and boiling point of water.</li> </ul> Preparation of <ol style="list-style-type: none"> <li>a) A mixture</li> <li>b) A compound using iron filings and Sulphur powder and distinguishing between these on the basis of:               <ol style="list-style-type: none"> <li>i. appearance, i.e., homogeneity and heterogeneity</li> <li>ii. behavior towards a magnet</li> <li>iii. behavior towards carbon disulphide as a solvent</li> <li>iv. effect of heat</li> </ol> </li> </ol> <ul style="list-style-type: none"> <li>● Perform the following reactions and classify them as physical or chemical changes               <ol style="list-style-type: none"> <li>a) Iron with Copper Sulphate solution in water</li> <li>b) Burning of Magnesium ribbon in air</li> <li>c) Zinc with dilute Sulphuric acid</li> <li>d) Heating of Copper Sulphate crystals</li> <li>e) Sodium Sulphate with Barium Chloride in the form of their solutions in water.</li> </ol> </li> </ul>	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes on Google forms/ lab activity

<b>Physics:</b> <b>Chapter -8</b> <b>(April)</b>	<b>Motion</b> <b>Learning outcomes</b> Student will be able to: <ul style="list-style-type: none"> <li>● Define: Distance and displacement, velocity; uniform and non-uniform motion along a straight line; acceleration.</li> <li>● Draw: distance-time and velocity-time graphs for uniform motion and uniformly accelerated motion.</li> <li>● Derive: equations of motion by graphical method;</li> <li>● Explain: elementary idea of uniform circular motion.</li> </ul>	<ul style="list-style-type: none"> <li>● Inter- class quiz and numerical based on different terms (Distance, Displacement, speed, velocity, acceleration)</li> </ul>	Knowledge, Understanding , Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity.
<b>Biology:</b> <b>Chapter-6</b> <b>( May - June - July)</b>	<b>Tissues, Organs, Organ System, Organism:</b> <b>Learning outcomes:</b> Student will be able to: <ul style="list-style-type: none"> <li>● <b>Describe:-</b> Structure and functions of animal and plant tissues (only four types of tissues in animals).</li> <li>● Differentiate between:- Meristematic and Permanent tissues in plants.</li> </ul>	<ul style="list-style-type: none"> <li>● Identification of Parenchyma, Collenchyma and Sclerenchyma tissues in plants, striped, smooth and cardiac muscle fibers and nerve cells in animals, from prepared slides. Draw their labeled diagrams.</li> </ul>	Knowledge, Understanding , Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity.
<b>Physics:</b> <b>( May - June )</b>	<b>Force and Laws of Motion</b> <b>Learning outcomes</b> Student will be able to: <ul style="list-style-type: none"> <li>● Define: Force and Newton’s laws: Force and Motion, Newton’s Laws of Motion, Action and Reaction forces, Inertia of a body.</li> <li>● Explain: Inertia and mass, Momentum, Force and Acceleration.</li> </ul>	<ul style="list-style-type: none"> <li>● Inter- class quiz and numerical based on motion, momentum, and conservation of momentum.</li> </ul>	Knowledge, Understanding , Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity
<b>Chemistry:</b> <b>Chapter- 3</b> <b>(July - Aug)</b>	<b>Atoms and Molecules</b> <b>Learning outcomes:</b> Students will be able to: <ul style="list-style-type: none"> <li>● Explain the atoms and molecules, law of chemical combination and chemical formula of common compound.</li> <li>● Elaborate atomic and molecular masses.</li> </ul>	<ul style="list-style-type: none"> <li>● Solving numerical based upon the mole concept.</li> </ul>	Knowledge, Understanding , Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes on Google forms/ lab activity
<b>Physics:</b> <b>Chapter-10</b> <b>(July-Aug)</b>	<b>Gravitation</b> <b>Learning outcomes</b> Student will be able to: <ul style="list-style-type: none"> <li>● Explain: Gravitation; Universal Law of Gravitation.</li> <li>● Define: Force of Gravitation of the earth (gravity).</li> <li>● Explain: Acceleration due to Gravity.</li> <li>● Differentiate: Mass and Weight; Free fall, Floatation; thrust and pressure, Archimedes principle, buoyancy,</li> </ul>	<ul style="list-style-type: none"> <li>● Determination of the density of solid (denser than water) by using a spring balance and a measuring cylinder.</li> <li>● Establishing the relation between the loss in weight of a solid when fully immersed in a) Tap water]</li> <li>● Strongly salty water with the weight of water displaced by it by taking at least two different solids.</li> </ul>	Knowledge, Understanding , Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity
<b>Biology:</b> <b>Chapter- 13</b> <b>(Aug.-Sept -Oct)</b>	<b>Food Production</b> <b>Students will be able to:</b> <ul style="list-style-type: none"> <li>● Understand: Plant and animal breeding and selection for quality improvement and management.</li> </ul> Describe: Use of fertilizers and manures; Explain: Protection from pests and diseases; Organic farming.	<ul style="list-style-type: none"> <li>● Inter - class quiz on different food resources ( Plants and Animals)</li> </ul> <b>Field trip to fish farm (Patlikul)</b>	Knowledge, Understanding , Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity

<b>Chemistry:</b> <b>Chapter - 4</b> <b>(September - October)</b>	<b>Structure of Atom</b> <b>Learning outcomes:</b> Students will be able to: <ul style="list-style-type: none"> <li>● Explain the electron, proton and neutron and valency.</li> <li>● Understand atomic number and mass number.</li> <li>● Elaborate isotopes and isobars.</li> </ul>	<ul style="list-style-type: none"> <li>● Verification of the law of conservation of mass in a chemical reaction</li> </ul>	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity
<b>Physics:</b> <b>chapter-11</b> <b>(August-Sep)</b>	<b>Work, Energy and Power:</b> <b>Learning outcomes</b> Student will be able to: <ul style="list-style-type: none"> <li>● Define: Work done by a Force.</li> <li>● Explain: Energy, power.</li> <li>● Define: Kinetic and Potential energy; Law of conservation of energy.</li> </ul>	<ul style="list-style-type: none"> <li>● Numerical based on work power and energy</li> </ul> <b>Field trip to wind mill</b>	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity
<b>Physics</b> <b>Chapter-12</b> <b>(October - November)</b>	<b>Sound</b> Students will be able to: <ul style="list-style-type: none"> <li>● Understand: Nature of sound and its propagation in various media and speed of sound, range of hearing in humans, ultrasound and reflection of sound.</li> <li>● Describe: Echo.</li> </ul>	<ul style="list-style-type: none"> <li>● Verification of the Laws of reflection of sound.</li> <li>● Determination of the speed of a pulse propagated through a stretched string/ slinky (helical Spring).</li> <li>● <b>Competency based activity</b>            To analyze national anthem on the basis of pitch and amplitude.</li> </ul>	Knowledge, Understanding, Application, Analysis and Evaluation	Oral Test/ Class test/ Quizzes / lab activity
<b>Biology:</b> <b>Chapter- 14</b> <b>(October)</b>	<b>Natural Resources</b> Students will be able to understand resources present in nature and their importance.	<b>Portfolio/File presentation Based on natural resources.</b>  <b>Field trip to Great Himalayan National Park Banjar</b>	Knowledge, Understanding, Application	Quiz