

**INFANT JESUS CONVENT SCHOOL**  
**ANNUAL PLAN**  
**SCIENCE**  
**CLASS: X (2024-25)**

MONTH/NO OF DAYS	TOPIC: SUB TOPIC	OBJECTIVES	AIDS/ACTIVITIES	MULTIPLE INTELLIGENCE SKILLS	LEARNING OUTCOME
<p style="text-align: center;">APRIL No of Days: 18</p>	<p><b>CHEMICAL SUBSTANCES-NATURE AND BEHAVIOUR</b></p> <p><b>TOPIC:</b> Chapter 1: Chemical reactions and equations</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• Chemical equations</li> <li>• Types of chemical reactions</li> <li>• Combination reactions</li> <li>• Decomposition reaction</li> <li>• Displacement reaction</li> <li>• Double displacement reaction</li> </ul> <p><b>EFFECTS OF CURRENT</b></p> <p><b>TOPIC:</b></p>	<p><b>Learners will be able to:</b></p> <ul style="list-style-type: none"> <li>• Compare the characteristics of initial &amp; final substances to check whether the change is physical or chemical.</li> <li>• Use chemical symbols &amp; chemical formulae correctly to acquire the skill of writing chemical equations.</li> <li>• Categorize the given reactions as(combination) based on the reactants &amp; products of a chemical reaction.</li> <li>• Categorize the given reactions as(decomposition) based on the reactants &amp;</li> </ul>	<p><b>KNOWLEDGE:</b></p> <ul style="list-style-type: none"> <li>• List the chemical changes in a daily life situation.</li> <li>• Cartoon making on concept of ohms law</li> <li>• Create an interactive accordion foldable responding to the purposes (functions) and parts of each system.</li> <li>• Recall various modes of nutrition in plants and animals.</li> </ul> <p><b>SKILL:</b></p> <ul style="list-style-type: none"> <li>• Diagram making</li> <li>• Analyzing</li> <li>• Scientific skill</li> <li>• Problem solving</li> </ul>	<p>Naturalist Intelligence  Logical-Mathematical Intelligence  Interpersonal Intelligence  Visual-Spatial Intelligence.  Existential Intelligence  Linguistic Intelligence</p>	<p><b>Learners will be able to: -</b></p> <ul style="list-style-type: none"> <li>• Distinguish between physical and chemical change.</li> <li>• Write chemical equation.</li> <li>• Recall the symbols of elements</li> <li>• Write formulae and balance chemical equations.</li> <li>• Classify different types of chemical reactions</li> <li>• Understand and explain the concept of charge and electric current.</li> <li>• Understand and Calculate potential difference</li> </ul>

	<p>Chapter 11: Electricity</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• Electric Current and Circuit</li> <li>• Electric potential and Potential difference</li> <li>• Circuit diagram</li> <li>• Ohm’s law</li> <li>• Factors on which the resistance of a conductor depends.</li> <li>• Resistance of a system of resistors.</li> <li>• Resistors in Series</li> <li>• Resistors in Parallel</li> </ul> <p><b>TOPIC</b> Chapter 5: Life processes</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• What are life processes?</li> <li>• Nutrition</li> </ul> <p>Autotrophic nutrition</p> <ul style="list-style-type: none"> <li>• Heterotrophic nutrition</li> <li>• Nutrition in amoeba</li> </ul>	<p>products of a chemical reaction.</p> <ul style="list-style-type: none"> <li>• Classify the given reaction as displacement or double displacement based on the type of reactants used &amp; products formed.</li> <li>• Evaluate the charge flowing through a conductor in a given time, to calculate current flowing through it.</li> <li>• Determine work done in moving a charge across two points, to calculate potential difference between two points.</li> <li>• Identify the electrical components and their functions.</li> <li>• Understand Ohm’s Law and calculate resistance.</li> <li>• Define resistivity and classify substances as conductors, alloys and Insulators.</li> <li>• Determine the resultant resistance in a series and a</li> </ul>	<ul style="list-style-type: none"> <li>• Creative thinking</li> <li>• Critical thinking</li> </ul> <p><b>APPLICATION:</b></p> <p><b>LAB ACTIVITY:</b></p> <ul style="list-style-type: none"> <li>• Classifying and identifying the types of reactions.</li> <li>• Draw electric circuit using electrical symbols.</li> <li>• Studying the dependence of potential difference (V) across a resistor on the current (I) passing through it and determine its resistance. Also plotting a graph between V and I.</li> <li>• Determination of the equivalent resistance of two resistors when connected in series and parallel.</li> <li>• Prepare a temporary mount of leaf.</li> </ul>		<p>between two points.</p> <ul style="list-style-type: none"> <li>• Identify and list different types of electrical components</li> <li>• Understand and explain the concept of ohms law, resistance and resistivity,</li> <li>• Understand and evaluate the numerical value of, resistance.</li> <li>• Plot a graph between voltage and current</li> <li>• Understand and evaluate the equivalent resistance in different combinations.</li> <li>• Understands the importance of life processes.</li> <li>• Describes the modes of nutrition.</li> <li>• Explain the definition of digestion.</li> <li>• Illustrate the meaning &amp; function of various</li> </ul>
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<ul style="list-style-type: none"> <li>Nutrition in human beings</li> </ul>	<p>parallel combination.</p> <ul style="list-style-type: none"> <li>Define life processes.</li> <li>Explain modes of nutrition</li> <li>Explain the process of conversion of CO<sub>2</sub> &amp; H<sub>2</sub>O into carbohydrates</li> <li>Understand step wise nutrition in heterotrophs.</li> </ul>	<ul style="list-style-type: none"> <li>Diagrams of Human Digestive system.</li> </ul> <p><b>UNDERSTANDING:</b></p> <ul style="list-style-type: none"> <li>Observe the changes to determine a chemical</li> <li>Compare and classify different types of reactions</li> <li>Calculate the charge flowing through a conductor in a given time, in order to calculate current flowing through it and potential difference.</li> <li>Solve numerical on ohms law and combination of resistors.</li> <li>Explains processes and phenomena of nutrition</li> <li>Prepare a temporary mount of leaf.</li> <li>Explain the various ways of nutrition in plants and animals</li> </ul>		<p>enzymes involve in digestion</p> <ul style="list-style-type: none"> <li>Arrange sequentially all the steps of digestion of food in humans.</li> </ul>
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MAY  
No of Days: 18

<p><b>TOPIC</b> Chapter 1: Chemical reactions and equations</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• Oxidation and Reduction reaction</li> <li>• Balancing of equation</li> <li>• Corrosion</li> <li>• Rancidity</li> </ul> <p><b>TOPIC:</b> Chapter 11: Electricity</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• Heating effect of electric current</li> <li>• Electric power</li> </ul> <p><b>TOPIC</b> Chapter 5: Life processes</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• Respiration</li> <li>• Aerobic and anaerobic respiration</li> <li>• Human respiratory system</li> </ul>	<p><b>Learners will be able to:</b></p> <ul style="list-style-type: none"> <li>• Predict the reaction as Oxidation or Reduction based on the addition / removal of oxygen / hydrogen.</li> <li>• Apply Law of conservation of mass in order to balance chemical equations.</li> <li>• Observe colour, taste and smell change in articles over time in order to outline the effects of corrosion and rancidity in our surroundings.</li> <li>• Explain and calculate the heating effect of electric current, in order to learn working of appliances.</li> <li>• Calculate power, in order to represent electric consumption in domestic circuits.</li> <li>• Outline and explain the ways of breakdown of</li> </ul>	<p><b>KNOWLEDGE:</b></p> <ul style="list-style-type: none"> <li>• Identify the reaction as oxidation or reduction and balance equations.</li> <li>▪ Observe that heat is produced due to flow of current.</li> <li>• Unify the concept of glucose catabolism</li> </ul> <p><b>SKILL:</b></p> <ul style="list-style-type: none"> <li>• Diagram making</li> <li>• Analyzing</li> <li>• Scientific skill</li> <li>• Problem solving</li> <li>• Creative thinking</li> </ul> <p><b>APPLICATION:</b></p> <ul style="list-style-type: none"> <li>• Activity of Balancing of equations</li> <li>• Discover applications of heating effect of electric current like fuse, heaters.</li> <li>• Experimentally show that carbon dioxide is given out during respiration.</li> <li>• Diagrams of human Respiratory System.</li> </ul> <p><b>UNDERSTANDING:</b></p> <ul style="list-style-type: none"> <li>• Use chemical symbols &amp; chemical formulae correctly.</li> </ul>	<p>Naturalist Intelligence</p> <p>Logical-Mathematical Intelligence</p> <p>Interpersonal Intelligence</p> <p>Visual-Spatial Intelligence.</p> <p>Existential Intelligence</p> <p>Linguistic Intelligence</p>	<p><b>Learners will be able to: -</b></p> <ul style="list-style-type: none"> <li>• Balance the chemical reactions</li> <li>• Classify the reactions as oxidation or reduction.</li> <li>• Apply knowledge of oxidation in daily life.</li> <li>• Explain and calculate the heating effect of electric current.</li> <li>• Evaluate the consumption of electric energy.</li> <li>• Interpret the significance of different pathways of break down of glucose in various organisms.</li> <li>• Explain the concept of glucose catabolism in humans</li> </ul>
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		glucose by various pathways.	<ul style="list-style-type: none"> <li>Infer that appliances of higher power consume more energy.</li> <li>Explain and locate the various parts of human respiratory system.</li> </ul>		<ul style="list-style-type: none"> <li>Draw a well labelled diagram of human respiratory system.</li> </ul>
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**REVISION: PT-1**

**CONDUCTION OF PT – 1**

**REMEDIAL CLASSES**

<p align="center">JULY No of Days: 27</p>	<p><b>CHEMICAL SUBSTANCES-NATURE AND BEHAVIOUR</b></p> <p><b>TOPIC:</b> Chapter 2: Acid and bases</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>Understanding the chemical properties of acids and bases.</li> <li>What do all acids and all bases have in common?</li> <li>How strong are acid or base solutions?</li> <li>Importance of pH in Everyday Life</li> <li>More about salts</li> </ul>	<p><b>Learners will be able to: -</b></p> <ul style="list-style-type: none"> <li>Observe the action of given substances with various indicators, to categorize them as acids or bases.</li> <li>Detect the formation of hydrogen gas when a metal reacts with an acid or a base.</li> <li>Detect the formation of carbon dioxide when a metal carbonate/ bicarbonate reacts with acid.</li> <li>Analyse the reaction taking place</li> </ul>	<p><b>KNOWLEDGE:</b></p> <ul style="list-style-type: none"> <li>To understand the properties of acids bases and salts.</li> <li>Cross word puzzle</li> <li>Components of transport system in human beings.</li> </ul> <p><b>SKILL:</b></p> <ul style="list-style-type: none"> <li>Diagram making</li> <li>Analyzing</li> <li>Scientific skill</li> <li>Problem solving</li> <li>Creative thinking</li> </ul> <p><b>APPLICATION: LAB ACTIVITY</b></p> <ul style="list-style-type: none"> <li>A. Finding the pH of the following samples by using pH</li> </ul>	<p>Naturalist Intelligence</p> <p>Logical-Mathematical Intelligence</p> <p>Interpersonal Intelligence</p> <p>Visual-Spatial Intelligence.</p> <p>Existential Intelligence</p> <p>Linguistic Intelligence</p>	<p><b>Learners will be able to: -</b></p> <ul style="list-style-type: none"> <li>Differentiates materials / objects / organisms / phenomena / processes, based on, properties / characteristics</li> <li>Plans and conducts investigations / experiments to arrive at and verify the facts.</li> <li>Relates processes and phenomena with causes /</li> </ul>
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**EFFECTS OF CURRENT**

**TOPIC:**

Chapter 12: Magnetic effects of current

**SUB-TOPICS**

- Magnetic field and field lines
- Magnetic Field due to a straight current carrying conductor.
- Right hand thumb rule.
- Magnetic Field lines due to current through a circular loop
- Magnetic Field lines due to current in a circular loop.
- Force on a current carrying conductor in a magnetic field.
- Fleming's left hand rule.

**TRANSPORTATION AND EXCRETION**

**TOPIC**

Ch-5 Life processes

between an acid and a base.

- Write down the ions present in aqueous solution of an acid or a base.
- Detect the strength of given substances based on their position in the pH scale.
- Explain the effect of pH change in animals, plants and environment.
- Identify the positive and negative radicals present in a salt, in order to predict a salt's family and pH range.
- Outline the process of formation of sodium hydroxide.
- List the properties & explain the preparation of some important compounds of Sodium. (bleaching powder, baking soda and washing soda)
- Demonstrate the activity to detect the

paper / universal indicator:

- (i) Dilute Hydrochloric Acid
- (ii) Dilute NaOH solution
- (iii) Dilute Ethanoic Acid
- (iv) Lemon juice
- (v) Water
- (vi) Dilute Hydrogen Carbonate solution
- B. Studying the properties of acids and bases (HCl & NaOH) on the basis of their reaction with:
  - (a) Litmus solution
  - b) Zinc metal
  - c) Solid sodium carbonate
- To sketch the magnetic field lines around the current carrying conductors.
- Display the magnetic field lines(Magnetic field pattern) (Use Paper quilling or threads) around.
- Diagrams of Human Circulatory and Excretory Systems

effects, their functions

- Explains processes and phenomena
- Analyses data in order to interpret the difference between them.
- Recall magnets and list their important properties
- Conceptualize magnetic field lines and list their properties.
- Interpret construction of Solenoid & electro-magnet and their uses.
- Comprehend and apply right hand thumb rule to find the direction of magnetic field
- Comprehend and apply Fleming's Left-hand rule for finding direction of force on a current carrying conductor.

**SUB-TOPICS**

- Transportation in human beings
- Human heart
- Transportation in plants
- Transport of water, food and other substances.
- Excretion in human beings
- Excretion in plants

presence of water of crystallization.

- Draw magnetic field lines for a bar magnet, in order to identify the magnetic field strength at different points around a magnet.
- Represent magnetic field lines for a straight current carrying conductor.
- Draw magnetic field lines for at current carrying circular loop.
- Outline magnetic field lines for at current carrying solenoid, in order to identify the magnetic field strength at different points around it.
- State Fleming's Left-Hand rule.
- Outline the double circulation of blood in fishes.
- Explain the function of xylem and phloem in Plants.
- Explain the function of

**UNDERSTANDING:**

- To identify the nature of the substances used in household activities using olfactory indicators.
- Identify the rules and directions, to find the magnetic field, Force on the current carrying conductor.
- Summarize working of human heart.
- Illustrate the structure and functioning of nephron.

- Compare and contrast the structure and function of vein and artery. Emphasize on the Importance of lymphatic system.
- Discover the mechanism of transport of water in plants.
- Identify various waste products
- Understanding the importance of filtration and removal of liquid
- Waste (urine) through kidney
- Find out the waste products of plants & Mechanism of their removal.
- Discover the impact of less intake of water on excretory

		<p>transpiration in order to explain how water travels up in plants.</p> <ul style="list-style-type: none"> <li>• Explain the function of phloem &amp; ATP, in order to explain how food is transported in Plants.</li> <li>• Describe the function of blood vessels, arteries, platelets &amp; lymph in human body.</li> <li>• Understands the process of excretion in various levels of organisms.</li> </ul>			system.
<p>AUGUST No of Days: 23</p>	<p><b>CHEMICAL SUBSTANCES-NATURE AND BEHAVIOUR</b></p> <p><b>TOPIC:</b> Chapter -3 Metals and Non- metals</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• Physical and chemical properties of metals and non-metals</li> <li>• Reactivity series</li> <li>• Formation and properties of ionic</li> </ul>	<p><b>Learners will be able to: -</b></p> <ul style="list-style-type: none"> <li>• Classify metals and non-metals based on their properties.</li> <li>• Predict the products when metals &amp; non-metals react with oxygen, water, dilute acids in order to write a balanced chemical equation.</li> <li>• Identify the product formed when a metal reacts with a metal salt, to list the metals in order</li> </ul>	<p><b>KNOWLEDGE:</b></p> <ul style="list-style-type: none"> <li>• Prepare a Power point presentation on metals explaining their extraction according to their position in reactivity series</li> <li>• Examine the advantages and disadvantages of AC and DC.</li> <li>• Cover page</li> <li>• Get the knowledge oh human endocrine glands and their hormonal secretion.</li> </ul>	<p>Naturalist Intelligence</p> <p>Logical-Mathematical Intelligence</p> <p>Interpersonal Intelligence</p> <p>Visual-Spatial Intelligence.</p>	<p><b>Learners will be able to: -</b></p> <ul style="list-style-type: none"> <li>• Demonstrate properties of metals and non-metals.</li> <li>• Tabulate the reactivity series of metals.</li> <li>• Draw schematic diagrams for ionic compounds and list the properties</li> <li>• Identify various steps in the</li> </ul>



	<p>compounds</p> <ul style="list-style-type: none"> <li>• Basic metallurgical processes</li> <li>• Corrosion and its prevention.</li> </ul> <p><b>EFFECTS OF CURRENT</b></p> <p><b>TOPIC:</b> <b>Chapter 12: Magnetic effects of current</b></p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• Direct current.</li> <li>• Alternating current:</li> <li>• Advantage of AC over DC.</li> <li>• Domestic electric circuits.</li> </ul> <p><b>TOPIC</b> Chapter 6 Control and Coordination</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• Animals nervous system</li> <li>• Reflex action</li> <li>• Human brain</li> <li>• Coordination in plants</li> <li>• Hormones in animals.</li> </ul>	<p>of their reactivity.</p> <ul style="list-style-type: none"> <li>• Discuss formation &amp; properties of ionic compounds.</li> <li>• Analyze the process of getting metals from their oxides, sulphides, carbonates in order to extract them from their ores.</li> <li>• Explain the process of electrolytic refining.</li> <li>• Observe corrosion in metal articles &amp; its process in order to develop ways to prevent corrosion.</li> <li>• Understand DC and AC current.</li> <li>• Discuss the advantages of AC over DC</li> <li>• Analyze the significance of neutral, earth and live wire</li> <li>• Explain short circuiting and overloading.</li> <li>• Explain the functioning of a neuron, in order to explain how electrical signals</li> </ul>	<p><b>SKILL:</b></p> <ul style="list-style-type: none"> <li>• Diagram making</li> <li>• Analyzing</li> <li>• Scientific skill</li> <li>• Problem solving</li> <li>• Creative thinking</li> </ul> <p><b>APPLICATION:</b></p> <ul style="list-style-type: none"> <li>• <b>LAB ACTIVITY:</b></li> <li>• Observing the action of Zn, Fe, Cu and Al metals on the following salt solutions: <ul style="list-style-type: none"> <li>i) <math>ZnSO_4(aq)</math></li> <li>ii) <math>FeSO_4(aq)</math></li> <li>iii) <math>CuSO_4(aq)</math></li> <li>iv) <math>Al_2(SO_4)_3(aq)</math></li> </ul> </li> <li>• Arranging Zn, Fe, Cu and Al (metals) in the decreasing order of reactivity based on the above result.</li> <li>• Draw ionic structures of compound</li> <li>• Sketch domestic electric circuit of your house and interpret the advantages of parallel circuit over series circuit.</li> <li>• To study the phenomenon of phototropism and</li> </ul>	<p>Existential Intelligence</p> <p>Linguistic Intelligence</p> <p>High order thinking skills: Analysis and synthesis</p>	<p>extraction of metals.</p> <ul style="list-style-type: none"> <li>• Choose different separating techniques for obtaining metals from the ores</li> <li>• Develop ways to prevent corrosion.</li> <li>• Study advantages of AC over DC.</li> <li>• Understand domestic electric circuit.</li> <li>• Know the reason for short circuiting and overloading.</li> <li>• Differentiate between nervous and endocrine system in animals.</li> <li>• Explain the importance of reflex actions and its reflex arc.</li> </ul>
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		<p>travel in human body</p> <ul style="list-style-type: none"> <li>• Outline the working of a reflex arc, in order to explain how reflex actions take place in humans</li> <li>• Illustrate the location and functions of different parts of human brain, in order to understand the working of nervous system.</li> <li>• Examine tropic movements in plants, in order to understand how plants respond to environmental triggers like light, gravity, water.</li> <li>• Discuss limitations of electrical impulses, in order to outline the importance and use of hormones</li> <li>• Illustrate the function of endocrine glands in the human body, in order to understand the functioning of hormones.</li> </ul>	<p>geotropism in plants</p> <ul style="list-style-type: none"> <li>• poem on plant hormones</li> </ul> <p><b>UNDERSTANDING:</b></p> <ul style="list-style-type: none"> <li>• Compare the physical and chemical properties of metals and non-metals.</li> <li>• Infers and analyses the significance of neutral, earth and live wire, in order to understand the formation of a domestic electrical circuit.</li> <li>• Understand the structure and function of human of brain and spinal cord and their role in controlling different activities of human brain.</li> <li>• Infer and analyse the chemical coordination in plants.</li> </ul>		
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SEPTEMBER No of Days: 05	<b>REVISION OF TERM1/PT-2</b>				
<b>CONDUCTION OF TERM 1/PT-2 ASSESSMENT</b>					
OCTOBER No of Days: 22	<p><b>CHEMICAL SUBSTANCES-NATURE AND BEHAVIOUR</b></p> <p><b>TOPIC:</b> Chapter-4 Carbon and its compounds</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• Covalent bonding in carbon compounds.</li> <li>• Versatile nature of carbon.</li> <li>• Saturated and Unsaturated carbon compounds</li> <li>• Homologous series.</li> <li>• Functional groups</li> <li>• Nomenclature of carbon compounds</li> </ul>	<p><b>Learners will be able to: -</b></p> <ul style="list-style-type: none"> <li>• Illustrate carbon with 4 valence electrons forming only covalent bonds.</li> <li>• Correlate the bonds formed as single, double, triple to the number of pairs of electrons shared between them.</li> <li>• Draw structures of carbon compounds in order to classify them as saturated or unsaturated.</li> <li>• Classify carbon compounds in homologous series in order to predict their properties.</li> <li>• Identify the functional group, type of bonding, number of C atoms present in a carbon compound, in order</li> </ul>	<p><b>KNOWLEDGE:</b></p> <ul style="list-style-type: none"> <li>• List types of covalent bonds</li> <li>• Draw introductory page on properties of light.</li> <li>• cover page</li> <li>• Summarise different modes of reproduction in organisms.</li> </ul> <p><b>SKILL:</b></p> <ul style="list-style-type: none"> <li>• Diagram making</li> <li>• Analyzing</li> <li>• Scientific skill</li> <li>• Problem solving</li> <li>• Creative thinking</li> </ul> <p><b>APPLICATION:</b></p> <ul style="list-style-type: none"> <li>• Select the compound and tell the functional group.</li> <li>• <b>LAB ACTIVITY: -</b> 1.Determination of the focal length of:</li> </ul>	<p>Naturalist Intelligence</p> <p>Logical-Mathematical Intelligence</p> <p>Interpersonal Intelligence</p> <p>Visual-Spatial Intelligence.</p> <p>Existential Intelligence</p> <p>Linguistic Intelligence</p>	<p><b>Learners will be able to: -</b></p> <ul style="list-style-type: none"> <li>• Differentiate and classify the carbon compounds with their properties</li> <li>• Illustrate the structures of carbon compounds.</li> <li>• Understand homologous series.</li> <li>• Identify functional group.</li> <li>• Name the carbon compounds.</li> <li>• Understand the terms related to spherical mirrors and lenses.</li> <li>• Draw the ray diagrams</li> </ul>

<p><b>NATURAL PHENOMENON</b></p> <p><b>TOPIC</b> Chapter 9: Light – Reflection and Refraction</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• Reflection of light</li> <li>• spherical mirrors</li> <li>• Image Formation by Spherical Mirrors</li> <li>• Representation of Images Formed by Spherical Mirrors Using Ray Diagrams</li> <li>• Uses of mirrors</li> <li>• Sign Convention for Reflection by Spherical Mirrors</li> <li>• Mirror Formula and</li> <li>• Magnification</li> <li>• Refraction of light</li> <li>• Refraction through a Rectangular Glass Slab</li> <li>• The Refractive Index</li> <li>• Refraction by Spherical Lenses</li> </ul>	<p>to correctly name them.</p> <ul style="list-style-type: none"> <li>• State the laws of reflection of light</li> <li>• Outline the rule of image formation by spherical mirrors in order to complete the ray diagrams by drawing reflected rays.</li> <li>• Express <math>u</math>, <math>v</math>, <math>f</math> in the mirror formula in order to apply sign convention in solving word problems to find the unknown variable.</li> <li>• Deduce the nature and size of image by magnification <math>n</math> in order to relate height of object with height of image.</li> <li>• List the uses of spherical mirrors.</li> <li>• Explain refraction</li> <li>• Demonstrate the path of light when it travels through a rectangular glass slab.</li> <li>• Compare speed of light in one medium with another in order to calculate refractive index.</li> </ul>	<ul style="list-style-type: none"> <li>i) Concave mirror</li> <li>ii) Convex lens by obtaining the image of a distant object.</li> </ul> <ul style="list-style-type: none"> <li>• Tracing the path of a ray of light passing through a rectangular glass slab for different angles of incidence. Measure the angle of incidence, angle of refraction, angle of emergence and interpret the result.</li> <li>• Draw the different modes of reproduction.</li> <li>• Studying (a) binary fission in Amoeba, and (b) budding in yeast and Hydra with the help of prepared slides.</li> <li>• Identification of the different parts of an embryo of a dicot seed (Pea, gram or red kidney bean)</li> </ul> <p><b>UNDERSTANDING:</b></p> <ul style="list-style-type: none"> <li>• Draw dot structures for covalent bonds</li> <li>• Draw Ray diagrams for different</li> </ul>		<ul style="list-style-type: none"> <li>• Use mirror formula to solve the numerical.</li> <li>• Understand sign convention</li> <li>• Explore the uses of spherical Mirrors.</li> <li>• Explain the laws of refraction of light.</li> <li>• Calculate refractive index of different mediums.</li> <li>• Traces the path of light passing through a glass slab.</li> <li>• identify the types of lenses and define the terms related to them</li> <li>• Discover rules for obtaining image formed lenses and draw ray diagrams.</li> <li>• Investigate the uses of lenses in our day-to-day life, with the help of activity</li> </ul>
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<ul style="list-style-type: none"> <li>• Image Formation by Lenses</li> </ul> <p><b>REPRODUCTION TOPIC</b></p> <p>Chapter-7 How do Organisms Reproduce?</p> <p><b>SUB-TOPICS</b></p> <ul style="list-style-type: none"> <li>• Do organisms create exact copies of themselves</li> <li>• The importance of variation</li> <li>• Modes of reproduction used by single organisms</li> <li>• Sexual reproduction in flowering plants</li> <li>• Reproduction in human beings</li> <li>• Reproductive health.</li> </ul>	<ul style="list-style-type: none"> <li>• Represent the path of incident &amp; reflected light rays from a concave and convex lens, in order to locate the position and nature of image formed.</li> <li>• Discuss the importance of reproduction for continuity of generation.</li> </ul>	<p>positions of the objects for mirror and lenses.</p> <ul style="list-style-type: none"> <li>• Comprehend sexual reproduction in flowering plants.</li> <li>• Understand the importance of using birth control.</li> </ul>		<ul style="list-style-type: none"> <li>• Differentiate between reproductive system of male and female.</li> <li>• Prioritize reproductive health</li> <li>• Explain the embryo nourishment inside the mother's body.</li> </ul>
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NOVEMBER  
No of Days: 17

**CHEMICAL SUBSTANCES-NATURE AND BEHAVIOUR**

**TOPIC:**

Chapter 4:  
Carbon and its compounds

**SUB-TOPICS**

- Chemical properties of carbon compounds
- Some important carbon compounds – ethanol and ethanoic acid
- Soaps and detergents.

**NATURAL PHENOMENON TOPIC**

Chapter 9: Light – Reflection and Refraction  
Chapter 10: : Human Eye and The Colorful World

**SUB-TOPICS**

- Sign Convention for Spherical Lenses

**Learners will be able to: -**

- Identify how carbon compounds react with hydrogen in the presence of nickel catalyst.
- Identify how carbon compounds react with chlorine in the presence of sunlight.
- Observe how carbon compounds burn in oxygen, in order to classify them as saturated or unsaturated
- Perform physical and chemical tests in order to distinguish between Ethanol & Ethanoic acid
- Describe the process of micelle formation in order to understand how soaps work
- Express  $u$ ,  $v$ ,  $f$  in the lens formula in order to apply sign convention in solving word problems to find the unknown variable.

**KNOWLEDGE:**

- Realize the effect of alcohols on living beings.
- Investigates the uses of lenses in our day-to-day life
- List the parts of eye and state their function
- To impart the knowledge of heredity
- Know about the dominance and recessive nature of characters
- Role of Ozone layer

**SKILL:**

- Diagram making
- Analyzing
- Scientific skill
- Problem solving
- Creative thinking

**APPLICATION:**

- **LAB ACTIVITY: -**  
1. Study of the following properties of acetic acid (ethanoic acid): i) odour ii) solubility in water iii) effect on litmus iv) reaction

Naturalist Intelligence

Logical-Mathematical Intelligence

Interpersonal Intelligence

Visual-Spatial Intelligence.

Existential Intelligence

Linguistic Intelligence

**Learners will be able to: -**

- Perform chemical tests in order to distinguish between Ethanol & Ethanoic acid
- Understand the chemical properties of carbon compounds.
- Demonstrates activities for the preparation of soap and for identifying the salts which cause hardness in water.
- Understand sign convention.
- Calculate power of lens.
- Explain the Functions of different parts of the eye, defective eye sight and the correction using different lenses.
- Draw the shape of the prism and

- Lens Formula and Magnification
- Power of lens
- The human eye
- Defects of vision and their correction
- Refraction of light through a prism
- Dispersion of white light through a prism
- Atmospheric refraction
- Scattering of light applications in daily life(Excluding color of the sun at sunrise and sunset)

**HEREDITY  
TOPIC**

CHAPTER-8 Heredity

**SUB-TOPICS**

- Accumulation of variation during reproduction
- Heredity
- Rules of inheritance of traits-Mendel's contributions
- How do these traits get expressed
- Sex determination

- Deduce the nature and size of image by magnification  $n$  in order to relate height of object with height of image.
- List the uses of spherical lenses.
- Calculate the power of a lens, in order to determine its power to converge or diverge.
- Illustrate the parts and function of human eye, in order to understand how humans see the objects around them
- Identify the defects of vision in human eye (myopia, hypermetropia, presbyopia) and their causes, in order to devise a correction method for them
- Examine the path of light rays through a prism, in order to determine how light gets deviated when travelling through a prism
- Trace the path of white light rays

with Sodium Hydrogen Carbonate  
2. Study of the comparative cleaning capacity of a sample of soap in soft and hard water.

- Tracing the path of the rays of light through a glass prism
- Determine the populations phenotypic outcome based on their results from using a punnet square.
- Form a monohybrid cross using coloured beads and calculate the phenotypic and genotypic ratios.
- Tabulate the dihybrid cross and observe the Genotypic and phenotypic ratios to formulate into Graphic Organization.
- Make a DNA model
- Form the Ecological Pyramids and co-relate it with different monuments/ things found in daily life.

- define angle of prism.
- Trace the path of a ray of light through a glass prism.
- Deduce the cause of dispersion.
- Deduce the reason for apparent position of star due to refraction and the reason for advanced sunrise and sunset.
- Develop concept of scattering of light and Tyndall Effect.
- Calculate the phenotypic and Genotypic ratios.
- Define the laws of Inheritance
- Learn the concept, need and importance of waste management.
- Form the Ecological pyramids

**ENVIRONMENT**

**TOPIC**

Chapter 13: Our Environment

**SUB-TOPICS:**

- Ecosystem- What are its components?
- Food chain and webs
- Ozone layer depletion
- Garbage management

through a prism, in order to determine that white light is made of seven colours.

- Elaborate the process of atmospheric refraction, in order to understand natural phenomena, like twinkling of stars and advanced sunrise and delayed sunset
- Explain the process of scattering of light, in order to understand natural phenomena
- Understand the concept of heredity
- Evaluate the phenotypic and genotypic ratios.
- Define the laws of Inheritance
- Learn the concept, need and importance of waste management.
- Form the Ecological pyramids
- Role of Ozone layer Garbage management.

**UNDERSTANDING:**

- Describe and compare the properties of alcohols and carboxylic acids.
- Draw the ray diagrams for different positions of the objects.
- Draw the Ray diagrams for Defects of eye and their correction.
- Relate changes in focal length of eye lens to vision of distant and nearby objects.
- Set up a punnet square demonstrating the monohybrid heredity of an offspring, considering the individual parents.
- Infer flow of energy in an ecosystem
- Correlate the food chain in a food web.
- Contrast causes of ozone layer depletion.

- Role of Ozone layer Garbage management.



	<b>REVISION: PT-3</b>
<b>CONDUCTION OF PT-3 ASSESSMENT</b>	
DECEMBER No of Days: 17	<b>REVISION / PREBOARD 1</b>
JANUARY No of Days: 21	<b>REVISION/PREBOARD 2</b>
FEBRUARY No of Days: 06	<b>REMEDIAL CLASSES</b>
MARCH	<b>CLASS X BOARD EXAMS</b>