

The Orchid School
Baner
Syllabus Overview 2015- 2016
Std X
Subject : Science

Month	Lesson / Content / Name of the Book	Expected Learning Objective	Activities/FAs Planned
	<p>Chemical Reactions and Equations: Chemical Equations</p> <p>Life Processes: Autotrophic Nutrition</p> <p>Electricity: Electric Current and circuit</p>	<p>The students will explain the concept of chemical equation and the method of balancing it.</p> <p>The students will be able to explain the process of photosynthesis.</p> <p>All students will be define the term-current,ampere and meaning of electric circuit.</p>	<p>Lab Activity:To show that light is necessary for photosynthesis.</p>
	<p>Chemical Reactions and Equations: Types of chemical reactions(Combination and Decomposition)</p> <p>Life Processes: Autotrophic Nutrition</p> <p>Electricity: potential difference and circuit diagram</p>	<p>They will be able to define and explain combination and decomposition reactions with the help of examples.</p> <p>The students will be able to explain the role of stomata in plants.</p> <p>All students will be able to define P.D and draw a simple circuit diagram using symbols of electrical components</p>	<p>Lab Activity:To prepare temporary mount of stomata.</p>

MARCH/APRI

<p>Chemical Reactions and Equations: Displacement and Double Displacement Reactions Life Processes:Heterotrophic Nutrition Electricity: Ohm's Law and resistance</p>	<p>They will be able to define and explain displacement and double displacement reactions with the help of examples. The students will be able to explain the modes of nutrition by heterotrophs. All learners will be able to define ohm's law , write its mathematical expression and draw V-I graph. All learners will be able to define resistance and factors on which it depends.</p>	<p>Lab Activity: To perform and observe different types of reactions</p>
<p>Chemical Reactions and Equations: Oxidation and reduction Life Processes:Nutrition in human beings Electricity:resistance in series</p>	<p>They will be able to define and explain oxidation and reduction reactions with the help of examples. They will explain the process of digestion in human beings All students will be able to draw circuits for resistors in series and derive the expression for the equivalent resistance.</p>	

<p>Chemical Reactions and Equations: Corrosion and Rancidity Life Processes: Nutrition in Human Beings Electricity: Resistors in parallel</p>	<p>They will be able to explain the phenomena of corrosion and rancidity with the help of real life examples. They will explain the process of digestion in human beings. All students will be able to draw circuits for resistors in parallel and</p>	<p>FA Planned: To make a ppt on various life processes.</p>
<p>Acids, Bases and Salts: Chemical properties of acids and bases Life Processes: Respiration Electricity: Resistances in series and parallel</p>	<p>The students will be able to explain the reactions of acids and bases with metals. They will be able to explain and distinguish between aerobic and anaerobic respiration. All students will be able to draw circuits for resistors in series and parallel and derive the expression for the equivalent resistance.</p>	<p>Lab Activity: To show that carbon dioxide is released during respiration.</p>

JUNE

<p>Acids, Bases and Salts: Chemical properties of acids and bases Life Processes:Transportation Electricity: Numericals on series and parallel and heating effect of electric current</p>	<p>The students will be able to explain various types of reactions of acids and bases. They will be able to explain the process of transportation in human beings. All learners will be able to solve numericals based upon series and parallel. All learners will be able to explain heating effect of electric current with its applications in real life</p>	<p>Lab Activity: To study the dependence of potential difference across a resistor on the current passing through it.</p>
<p>Acids, Bases and Salts: Chemical properties of acids and bases Life Processes:Transportation Electricity: Numericals</p>	<p>All learners will be able to solve numericals based upon current, P.D, resistance in series and parallel, heating effect of current</p>	<p>Lab Activity : To study the properties of acids and bases.</p>
<p>Acids, Bases and Salts: Chemical properties of acids and bases Life Processes: Transportation in plants Electricity: Revision Revision</p>	<p>The students will be able to explain various types of reactions of acids and bases. They will be able to explain transport of food and water in plants. Revision of the chapter is done</p>	

FA 1			
JULY	<p>Acids, Bases and Salts: pH Life Processes: Excretion in human beings Magnetic effects of current : Magnetic field and field lines</p>	<p>The students will be able to explain the importance of pH in everyday life with the help of real life examples. They will be able to explain the process of excretion.</p>	<p>Lab Activity: To find pH of dilute HCL, dilute NaOH, dilute ethanoic acid, dilute sodium bicarbonate, lemon juice and water.</p>
	<p>Acids, Bases and Salts:pH scale Life Processes:Excretion in plants Magnetic effects of current : Magnetic field due to a straight conductor</p>	<p>They will be able to explain the concept of pH scale. They will be able to explain the process of excretion in plants. All learners will be able to describe field due to a current carrying straight conductor.</p>	
	<p>Acids, Bases and Salts: Salts Control and Coordination:Nervous System, Reflex actions Magnetic effects of current : Magnetic field due to a circular loop</p>	<p>The students will be able to explain chemical properties of different salts. They will be able to explain nervous system, functioning of neuron in animals. All learners will be able to describe field due to a current carrying circular loop.</p>	

<p>Acids, Bases and Salts: Salts Control and Coordination: Human Brain, Hormones in animals Magnetic effects of current : Magnetic field due to a solenoid</p>	<p>The students will be able to explain chemical properties of different salts. They will be able to explain the structure and functions of human brain and enlist functions of various hormones in animals. All learners will be able to describe field due to a current carrying Solenoid</p>	
<p>Acids, Bases and Salts: Salts Control and Coordination: Coordination in plants Magnetic effects of current : Fleming's left hand rule</p>	<p>The students will be able to enlist uses of different salts. They will be able to explain response to stimulus, geotropism in plants. All learners will be able to describe force on a current conductor in a magnetic field using Flemming's left hand rule.</p>	
<p>Metals and Non-metals: Physical and Chemical properties of metals and non-metals Magnetic effects of current : Electric Motor and E.M Induction</p>	<p>The students will be able to explain and distinguish between the properties of metals and non-metals. All learners will be able to explain the the working of Electric motor. All learners will be able to define electromagnetic induction.</p>	

AUG	Metals and Non-metals: Reactivity Series Magnetic effects of current : Electric Generator	The students will be able to explain the relative reactivities of metals. All learners will be able describe the working of electric generator.	Lab Activity:To observe action of Zn, Fe, Cu, and Al metals on different salt solutions.
	Metals and Non-metals: Formation and Properties of ionic compounds Magnetic effects of current : Domestic Electric supply	The students will be able to explain the formation and properties of ionic compounds. All learners will be able to explain the	To determine the equivalent resistance of two resistors connected in series and parallel.
	Metals and Non-metals: Metallurgy and corrosion Magnetic effects of current : Recap of Motor and generator	The students will be able to explain the process of metallurgy and corrosion. All students will be able to describe the working of motors and Generators with the help of activity	Activity- Making a Motor
FA 2			

<p>Carbon and its Compounds: Covalent Bonds How do Organisms Reproduce?: Modes of asexual reproduction Sources of Energy:Conventional sources of energy</p>	<p>The students will be able to define and explain covalent bonding in carbon. They will be able to explain different modes of asexual reproduction like fission,fragmentation and regeneration. They will be able to explain the uses of major sources of energy(coal, hydro, petrol, wind)</p>	
<p>Carbon and its Compounds: Nature of carbon How do Organisms Reproduce?: Modes of asexual reproduction Sources of Energy:Non-Conventional sources of energy</p>	<p>The students will be able to explain the properties of carbon with the help of examples. They will be able to explain different modes of asexual reproduction like budding, vegetative propagation and spore formation. They will be able to explain the uses and advantages of non-conventional sources of energy(solar,tidal,etc.)</p>	<p>Lab activity:To study homology and analogy of the available specimens of plants and animals. To study binary fission in amoeba and budding in yeast with the help of prepared slide.</p>

SEPT	<p>Carbon and its Compounds: Saturated and Unsaturated Carbon compounds</p> <p>How do Organisms Reproduce?: Sexual Reproduction in flowering plants and human beings Sources of Energy:Environmental consequences</p>	<p>The students will be able to explain and distinguish between Saturated and Unsaturated carbon compounds (alkane,alkene and alkyne)</p> <p>They will be able to explain the process of sexual reproduction in flowering plants and in human beings.</p> <p>They will be able to explain the impact of using fossil fuels on environment.</p>	
	<p>Carbon and its Compounds: Saturated and Unsaturated Carbon compounds</p> <p>How do Organisms Reproduce?: Sexual Reproduction in human beings and Reproductive health Revision</p>	<p>The students will be able to explain and distinguish between Saturated and Unsaturated carbon compounds (alkane,alkene and alkyne)</p> <p>They will be able to explain the process of sexual reproduction in human beings and how to maintain good reproductive health.</p>	<p>Lab Activity : To study the properties of acetic acid.</p>
	<p>Revision</p>		

SA 1			
<p>Carbon and its Compounds: Chemical properties of carbon compounds(Combustion and Oxidation)</p> <p>Heredity and Evolution:Heredity</p> <p>Light :Reflection of light</p>	<p>The students will be able to explain combustion and oxidation reactions with the help of examples.</p> <p>They will be able to explain the meaning of inherited traits and the rules for the inheritance of traits.</p> <p>All students will be describe - laws of reflection and terms related to spherical mirrors.</p>		
<p>Carbon and its Compounds: Addition and Substitution reaction</p> <p>Heredity and Evolution:Sex Determination</p> <p>Light: Reflection</p>	<p>The students will be able to explain addition and substitution reactions with the help of examples.</p> <p>They will be able to explain the process of determining sex in human beings.</p> <p>All learners will be able to draw ray diagrams based upon reflection of light through spherical mirrors.They will be able to define magnification.</p>	<p>Lab Activity :To determine the focal length of concave mirror and covex lens.</p>	

OCT	<p>Carbon and its Compounds: Ethanol and Ethanoic acid</p> <p>Heredity and Evolution:Evolution</p> <p>Light: Refraction</p>	<p>The students will be able to explain the structure and properties of Ethanol and Ethanoic acid</p> <p>They will be able to explain the process and importance of evolution(acquired and inherited traits)</p> <p>All learners will be able to explain laws of refraction and refraction through glass slab.</p>	<p>Lab Activity:To identify different parts of the embryo of dicots.</p> <p>Lab Activity: To trace the path of light passing through rectangular glass slab.</p>
	<p>Carbon and its Compounds: Soaps and Detergents</p> <p>Heredity and Evolution:Speciation</p> <p>Light:Refraction and Numericals</p>	<p>The students will be able to explain the action of soap and detergent and structure of micelles.</p> <p>They will be able to define and explain speciation.All learners will be able to draw the ray diagrams for refraction through lens and find magnification.</p> <p>Students will be able to apply the mirror and lens formula to solve the related problems.</p>	<p>Lab Activity: To study saponification reaction.</p> <p>Lab Activity : To observe images of the object formed by a convex lens.</p>

NOV	<p>Carbon and its Compounds: Soaps and Detergents</p> <p>Heredity and Evolution:Evolution and Classification</p> <p>Human Eye and the colourful world:Structure of Human eye</p>	<p>The students will be able to explain the action of soap and detergent and structure of micelles.</p> <p>They will be able to explain the importance and study of evolution.</p> <p>All learners will be able to draw and explain human eye.</p>	<p>Lab activity:To study the comparative cleaning capacity of soap in soft and hard water.</p> <p>Demonstration- Model of Human eye</p>
	<p>Periodic Classification of elements:History of classification of elements</p> <p>Management of natural Resources:Sustainable Management</p> <p>Human Eye and the colourful world: Defects of vision</p>	<p>The students will be able to explain achievements and limitations of Mendeleev's classification.</p> <p>They will be able to explain how to manage our natural resources</p> <p>All learners will be able to explain with the help of diagrams various defects of vision- Myopia, Hypermetropia and Presbyopia</p>	
	<p>Periodic Classification of elements:Modern Periodic Table</p> <p>Management of natural Resources:Water and Fossil fuels</p> <p>Human Eye and the colourful world:Refraction and dispersion of light through prism</p>	<p>The students will be able to explain the position of elements in the Modern Periodic Table.</p> <p>They will be able to explain various processes to conserve water, coal and petroleum.</p> <p>All learners will be able to explain diagrammatically the refraction and dispersion of light through prism.</p>	<p>Videos on dispersion of light in nature will be shown</p>

FA 3			
DEC	Periodic Classification of elements: Valency,Atomic Size Our Environment: Ecosystem Human Eye and the colourful world: Atmospheric Refraction	The students will be able to define and explain valency and atomic size. They will be able to define and explain ecosystem, food chains and food web.All learners will be able to explain atmospheric refraction-	
	Our Environment: Environmental problems, waste management	The students will be able to explain various environmental problems like depletion of ozone layer, global warming due to human activities and the importance of waste management.	
	Human Eye and the colourful world:Scattering of Light	All learners will be able to explain- Tyndall Effect, color of sky during the day and sunset time.	

JAN	Revision Test		
	Revision Test		
	Revision Test		
	Revision Test		
FA 4			
FEB	Study circle		
	Study Leave		

SA 2	Study Leave		