CHECHOITHRAM SCHOOL, MANIK BAGH, INDORE

ANNUAL CURRICULUM PLAN SESSION 2020-21

CLASS: X

SUBJECT: SCIENCE

CHEMISTRY

Month & Working Days	Theme/ Sub-theme	Learning Objectives		Activities &Resources	Expected Learning Outcomes	Assessment
		Subject Specific (Content Based)	**Behavioural (Application based)**			
APRIL AND MAY	**Chemical reactions and equations**	Students will be able to • Know about the changes occur in our surroundings • Understand the characteristics of physical and chemical changes. • Differentiate between these changes into physical and chemical. • Learn the method to balance a chemical equation and need of balancing it. • Understand various types of reactions and their symbolic representation. • Understand phenomenon of rancidity and	Students will be able to • Observe the changes occur in our surroundings and in terms of physical and chemical changes. • Students will appreciate the use of photolytic decomposition reaction in photography and aluminium foil for packing food items • Students will recognize respiration and combustion as an oxidation reaction. • Students will analyse the harmful effects of corrosion of metals and rancidity on packaged food items. • Students will be sensitized towards the	Students will perform a set of reaction including - burning of magnesium wire, electrolysis of water, reaction of zinc and sulphuric acid, reaction of barium chloride and magnesium sulphate solution, reaction of quick lime and water, reaction of iron nail and copper sulphate solution, heating of lead nitrate and - identify their type and characteristics of reactions accompanied with chemical change.	Students have learnt • Characteristics of physical and chemical change • Balancing of chemical equations and need of balancing. • To distinguish combination and decomposition reaction, displacement and double displacement reaction, exothermic and endothermic reaction • To identify the substance reduced, oxidized, oxidizing agent and reducing agent in a redox reaction. • The effects of oxidation of oils and fats resulting in to	Assignment Unit test Activity - To study the characteristics of chemical reactions and identify their type. Activity - To collect the various samples of food like groundnut, almond, chips, walnut, coconut, cashew nut, chirongi and keep them in an open bowl for 15 days and observe the change in colour taste and smell and perform chemical test to check rancidity.

		corrosion and its effects	environmental impacts of combustion of fossil fuel and minimize their use. • Students will apply the methods to prevent iron from rusting and food items to become rancid		bad smell and bad taste and methods to prevent rancidity. • About corrosion of metals, rusting of iron, favourable conditions for corrosion and common methods to prevent rusting. .	
June –July 17+26 **(12pd)**	**bases and salts**	nts will be able to: • Know indicators and their types. • Identify acids and bases with the help of indicators. • Understand chemical properties of acids and bases. • Compare, contrast and classify properties of acids and bases. • Illustrate chemical reactions of acids with metal, metallic oxide and bases. • Express the chemical reaction of bases with metal, non metallic oxides and acids.	nts will be able to • Recognize acid and base on the basis of taste. • Test acid and base with the help of indicators • Use china rose, red cabbage, turmeric, bougainvillea, beet root as natural indicator. • Prepare olfactory indicators like onion and clove oil. • Appreciate and use lemon and tamarind to clean corrosive layer on utensils like brass and copper. • Handle and store acids safely. • Treat acidity in stomach and tooth decay.	Reaction of NaCl and $H_2SO_4$to show the release of HCl gas which is exposed to dry and moist blue litmus paper). reaction of HCl & NaOH with • Metal • Meta l oxide • Metal carbonate	Students have learnt About indicators and their types. To identify acids and bases with the help of indicators. Chemical properties of acids and bases. To compare, contrast and classify properties of acids and bases. Chemical reactions of acids with metal, metallic oxide and bases. Chemical reaction of bases with metal, non metallic oxides and acids. The use of PH scale in comparing the strength of acids and bases. The importance of PH in day to day life. Students developed environmental sensitivity .	Action of indicators like litmus, methyl orange, phenolphthalein etc on acids and bases. Activity 2. Action of following chemicals on PH Paper . HCl, acetic acid ,baking soda, citric acid, sodium hydroxide and water Activity 3. Determination of PH of different samples used in day to day life he help of universal indicator and predict their nature and how will you bring change in pH and colour of

		• Explain the use of PH scale in comparing the strength of acids and bases. • Describe use of PH in day to day life.				the solution.
August & September 20+24 **(15pd)**	Metals and Non metals	Students will be able to • Know physical properties of elements as metals and non-metals. • Understand the chemical properties of metals. • Learn the reactivity series of metals. • Compare and contrast the properties of metals and non-metals on the basis of their physical and chemical properties. • Understand ionic bond formation between atoms and properties of ionic compound. • Define ore and mineral. • Understand the differences between ores and minerals. • Describe the different steps of metallurgy of	Students will be able to • Avoid the storage of acidic food in metal containers. • Prevent corrosion of iron articles at home by oiling/painting/greasing. • Encourage the use of solder as a fuse wire due to its low melting point and high resistance. • Make use of sour substances like lemon or tamarind to regain the shine of copper vessels. • To collaborate to yield better output or results like in alloying a better property is obtained by mixing two or more metal or non-metal. • To discourage and stop practicing giving gold jewellery to goldsmith for polishing to restore	• Reaction of metals with acids. • Reaction of metals with salt solution in lab to compare the reactivity of metals Al, Zn, Fe and Cu	The students have learnt • The physical and chemical properties of metals and non-metals.and differences between them. • The reactivity series of metals & its applications. • The properties and formation of ionic compounds. • The ores of several metals and the different steps of metallurgy • The differences between roasting and calcinations. • The methods to prevent corrosion of metals. • The purpose of making alloys and their uses. • To avoid the storage of acidic food like lemon pickle /curd in metal containers. • To prevent	**Assignment** **Unit test** **Activity** – Reactivity toward oxygen and nature of metal and non-metal oxide. The teacher will demonstrate the burning of magnesium ribbon and sulphur powder and show the nature of their oxides with the help of litmus paper. **Reactivity series**

		metals. • Differentiate between roasting and calcinations. • Illustrate various methods to prevent corrosion of metals. • Understand the purpose of making alloys and their uses.	their glitter.		corrosion of iron articles at home by oiling /painting/greasing.	
October & November 22+20 **(15-Pd)**	Carbon and its compounds	Students will be able to • Define combustion, oxidation, hydrogenation, addition and substitution reactions. • Distinguish between combustion of saturated and unsaturated carbons • Know about the terms covalent bond, tetravalency, catenation, homologous series and functional group. • Learn electron dot structure and IUPAC nomenclature.	• Students will learn the use of **alcohol** as a fuel, as an antiseptic in hospitals, as a preservative for biological specimen. • Students will be sensitized about the harmful effects of consumption of ethanol on human health and will be aware how consumption of alcohol leads to addiction and lack of control and coordination in the body which may result in accidents. • Students will analyse ill effects of drinking alcohol on society. • Students will be familiarized about denaturation of ethanol to make it unfit for drinking. • Students will appreciate the use of soap for washing clothes in soft water and detergent in	•Making Ball and stick model of saturated and unsaturated carbon compounds. •Combustion of saturated and unsaturated compounds •reaction of ethanol with sodium metal and observe the evolution of hydrogen gas. •Test acidic nature of ethanoic acid by using litmus and methyl orange. •Conduction of electricity by acidic and basic solution	Students have learnt • About Versatile nature of carbon • To distinguish between saturated and unsaturated hydrocarbon • chemical properties of saturated and unsaturated hydrocarbon • IUPAC nomenclature of compounds containing functional group • Chemical properties of ethanol and ethanoic acid. • Saponification reaction and method of preparation of soap. • Mechanism of Cleansing action of soap	**Class test** **Written Assignment** 1.Prepare soap from vegetable oil. 2.Identification of hard water and soft water by foaming capacity of soap. 3.To study different properties of ethanoic acid

		• Understand properties of covalent compound, • Understand various properties of carbon compounds, cleaning action of soap, action of soap on hard and soft water.	hard water.			
December (20) **(8 -pd)**	Periodic classification of elements	Students will be able to - • Understand the need of classifying elements. • Know how the concept of grouping elements in accordance to their properties led to the development of Periodic Table. • Compare the positive points and drawbacks of previous models of classification of elements e.g. laws of triads and octaves, Mendeleev's law • Appreciate the utility of Mendeleev's periodic classification in designing of the modern periodic classification • understand the Periodic Law;	Students will be able to • Understand and appreciate the importance of classification and will learn how to proceed to study, analyze and solve a problem through a systematic and sequential approach. • They will develop the skills of analysis, classification (sorting) and critical thinking. • They will also develop analytical and critical thinking through thoughtful study of the pattern of the classification and the properties of elements followed by discussion on normal & exceptional trends in the properties. • Through study and discussion on work done by the scientists, they will	•To predict group and period of the elements having same valence electrons. •To predict the formula oxide and hydride of the elements through periodic table chart.	• Students have developed an understanding about the need & importance of classification of elements and knowledge of historical back ground of the classification of elements. • With the help of the above information and subsequent discussion held thereon they have developed an insight into significance of having skills of classifying & arranging things systematically so that further studies become easier and effective. • They have developed the skills of analysis, sorting, arranging through the study of this	**Unit test** **Written assignment** **Activity** To find the position of elements through its electronic configuration. To name the elements having Z > 100

		understand the significance of atomic number and electronic configuration as the basis for periodic classificat recognize the periodic trends in physical and chemical properties of elements; • compare the reactivity of elements and correlate it with their occurrence in nature; • explain the relationship between ionization enthalpy and metallic character; • ion; • properties of atoms e.g., atomic/ ionic radii, ionization enthalpy, electron gain enthalpy, electronegativity, valence of elements	be motivated to follow a path of optimum values and life skills so that they can get success in life.		chapter and now critically think before explaining reasons about particular pattern of classification. • Students can predict periodic position of elements and can predict probable trends in properties of the elements in terms of their metallic/ non-metallic nature, ionization enthalpy, size, electro affinity, electronegativity, nature of compounds etc. • They can explain the periodic trends in the properties of the elements.	

SUBJECT: BIOLOGY

Month & Working Days	**Theme/ Sub-theme**	**Learning Objectives**		**Activities &Resources**	**Expected Learning Outcomes**	**Assessment**
		Subject Specific (Content Based)	**Behavioural (Application based)**			

APRIL AND MAY	Life Process	To make the students learn and understand about different modes of nutrition and differentiate between autotropic and heterotropic nutrition. 2. To enhance the ability to understand that autotrophic nutrition involves the intake of simple inorganic materials from the environment and by using an external energy source like sun to synthesize complex high energy organic material. 3. To comprehend that the heterotrophic nutrition involves the intake of complex material prepared by other organisms. 4. To understand and summarize the various steps of digestion in human beings in the alimentary	Students will be able to – 1. Identify that different food items consumed by them take different duration of time for digestion. 2. Analyze that heavy food items should be consumed during morning hours and lighter in evening. 3. Interpret that problem of acidity is due to the presence Different gastric enzymes.	To prove that chlorophyll,CO_2, light is essential for photosynthesis. Students will observe the activity carefully and note down all the components required for photosynthesis Following activity will be conducted in lab were students will prepare temporary mount of a leaf peel to show stomata. They will observe the slide and identify the stomata and will draw a well labeled diagram as stomata helps in the exchange of gases. A Self made video will be shown in the class on the process of human digestion. After observing this video they will draw the well labeled diagram of Human digestive system and also locate the parts where digestion of carbohydrate, protein and fats starts along with the name of enzyme associated with it.	1. Students understood different modes of nutrition involved in life process. 2. They were able to analyze that duration for digestion of fats is more than protein and carbohydrates. 3. They were able to evaluate the importance of enzymes and gastric juices in the process of digestion. 4. They were able to recognize that problem of acidity or ulcer or any other disorder is due to improper function of different organs of digestive system. 5. They were able to synthesized the importance of light, water and co2 for the light and dark reaction of photosynthesis along with the role of stomata.	• The video will be shown while explanation and the same video without the audio will be shown and the children will be asked to label the different organs and specify its function. **Assignment** **Unit test** **Practical**

		canal and the mode of absorption in the small intestine.				
JUNE-JULY **17-26 Days** **(5 +8)**	Respiration- Aerobic and Anaerobic Transportation- 1.blood, heart, arteries, vein capillaries, double circulation 2. Xylem and phloem and ascent of sap, transpiration. Excretion- kidney, nephron, dialysis	Students will be able to learn and understand the concept of respiration and can compare between aerobic and anaerobic respiration. * They will be able to comprehend and relate how in cellular respiration, complex organic compounds such as glucose are broken down to provide energy in the form of ATP which is used to provide energy for other reactions in the cell. *They will be able to infer the mechanism of circulatory system where materials such as oxygen, carbon-dioxide, food and excretory	Students will be able to – 1. Identify the process of fermentation is due to anaerobic respiration which is used in production of alcohol, vinegar and bakery industries as well as in making of dosa etc. and also heavy exercise leads to anaerobic respiration which is responsible for cramps in muscle in human 2. Apply their knowledge that improper functioning of these organs like lungs, heart and kidneys	Following activity will be conducted in the class were the process of inspiration and expiration with the help of a working model of lungs will be demonstrated. An activity will be conducted in a lab. were student will be given opportunity to do and observe themselves that CO_2 is given out during the process of breathing. TRANSPORTATION- A video chart of human heart will be shown in the class were different parts will be explained. Students will be asked to draw the well labeled diagram of human heart and will locate the path of double circulation of blood. EXCRETION- A Self made video will be shown in the class on the process of human excretion. Students will be aware of different parts of excretory system	1. Students understood the importance of different life process and were able to understood mechanism of circulatory system where materials such as oxygen, carbon-dioxide, food and excretory products are transported 2. They were able to analyze that cramps in muscle as well as bakery products, south Indian dishes and production of alcohol is due to anaerobic respiration. 3. They were able to analyze the importance of valve in veins and heart and will also able to evaluate the	• The video will be shown while explanation and the same video without the audio will be shown and the children will be asked to label the different organs and specify its function. **Assignment** **Unit test** **Practical**

		products are transported. *They will explore their critical thinking by studying the importance of transport of water, minerals, food and other materials in highly differentiated plants * To enhance the ability to understand the mechanism of excretion in human beings in the form of soluble nitrogenous compounds. * To understand and summarize about different technologies and its implementation for survival like renal dialysis, pacemaker etc.		and will understand that process of removal of nitrogenous waste from the blood and importance of nephron. After observing this video they will draw the well labeled diagram of Human excretory system and nephron also locate the parts where ultra-filtration and selective re-absorption takes place.	reason behind cardiovascular diseases and BP. 4. They were able to analyze the importance of blood group and Rh factors play major role in blood transfusion and childbirth. 5. They were able to recognize that problem in improper functioning of kidney or nephron leads to accumulation of toxic substances in the blood which are fatal. 5. They were able to synthesize the importance of dialysis, heart surgery, pace-maker for vital function.	
August -20 & September-24 (6+7)	CONTROL & COORDINATION	**Students will be able to** Describe the structure and types of neurons. Explain Reflex action, Involuntary and Voluntary	Students will be able to learn to appreciate the leadership quality of brain to control hunger, anxiety, anger ,memory ,thirst, riding, writing, balancing of the body, body postures etc are controlled by the Central	A self made video on Brain, highlighting the different parts of brain and its function. There after the teacher will cite different daily life examples to explain the various parts of brain that are responsible to carry various function.	Students have learnt to : Illustrate and describe the structure of brain Analysed the concept of reflex action, voluntary	• The students will be asked to make the diagram of brain and label its various parts & relate with different the physiological activity controlled

		actions. Describe the Central Nervous system- Structure of Brain and its function To understand the role of Plant hormones, plant movement, Understand the role of Human hormones and their secretions. Comprehend that control and coordination in human beings is the sum of nervous system and endocrine system	Nervous System and it coordinates with different systems in the body to maintain oneness in running all the physiological activities together. Sensitize the body response during adverse situation like touching hot water or any utensils, when suddenly any foreign object comes in contact with our eyes, etc through reflex action. Infer the effect of hormones for the changes in human after puberty . Appreciate the role of hormone to cope stress. Realize the role of plant hormones in regulating the process of phototropism, geotropism, hydrotropism, chemotropism etc. Illustrate examples from daily life to relate the effect of hormones on living system.	Reflex action will be introduced by demonstrating some activities in which the student responds to the stimuli without thinking. The students will be asked to make the diagram of brain and label its various parts & relate with different the physiological activity controlled by it.	and involuntary actions and could apply in real life situation Analyse and interpret the role of different hormones and its secretion in the life span of the organism. Interpret and describe various plant movements with phytohormones.	by it. • Assignments • Unit test, Term end exam .

			Learn to imbibe positive qualities of others and ignore the negative ones.			
Oct- 22 Nov-20 (6+5)	**Chapter:- How do organism reproduce?**	*Students will be able to learn and understand the concept DNA its structure, DNA copying and its importance. *They would be able to analyze and relate the concept of DNA copying with variation. *They would be able to acquire knowledge about different modes of reproduction and apply the concept in different living organisms. *They would be able to comprehend the mechanism of sexual reproduction in flowering plants and human beings. *They will be able to analyze and think critically about the changes in the	• To emphasized on development of skills like observational, experimental and inculcating values like Awareness, Responsibility, Accuracy, • Students will be able to identify the significance of bright colour of flower for pollination. • They will be able to interpret that night blooming flowers are white whereas the day blooming flowers are brightly coloured. • They will be able to evaluate that congenital	*To study the binary fission and budding in Amoeba and yeast through permanent slides. *To study the different parts of dicot seeds. dding and binary fission with f slides. **e vegetative** Propagation in , Bryophyllum leaf.	1) Learner learnt and understood about the concept DNA its structure, DNA copying and its importance. 2) Students were able to identify the significance of bright colour of flower for pollination. 3) Students were able to share their opinion on DNA copying with variation. 4) They were able to evaluate different types of High- Yielding varieties of wheat and rice. 5) They were able to explore their critical thinking by studying the importance of	*To study the different parts of dicot seeds. ***Unit test** ***Class Test** *Assignment

		human body at puberty. *They will explore their critical thinking by studying the importance of reproductive health their problems and strategies	anomalies are due to genetic and environmental factors. • The noticeable changes that occur during puberty such as- increase in height, body shape, change in voice of males, appearance of pimples • Mental and emotional maturity bodily changes during adolescence • Myths and taboos regarding bodily changes during adolescence • To get aware regarding prevention of sexually transmitted disease • To relate the importance of government raising awareness		reproductive health their problems and strategies 6) They were able to apply their knowledge to relate congenital anomalies are due to genetic and environmental factors. 7) They were to analyzing importance and male and female sex ratio and sex determination of child is male heterogamy.	

			campaign regarding birth control measures. . .			
Dec-20-Jan 23 6 +1days	**Chapter:-** Heredity and Evolution	*Students will be able to learn and understand the concept DNA its structure, DNA copying and its importance in variation. *They will be able to understand variations arising during the process of reproduction can be inherited. ***S**tudents will comprehend about different Mendel laws of inheritance. *They will able to understand about sex determination in human *They will able to differentiate between inherited and acquired traits and will able to understand to trace evolutionary relationships.	*To emphasized on development of skills like observational, experimental, knowledge ,understanding, analysis, interpretation and inculcating values like Awareness, Responsibility, responsibility, coordination and empathy Students will be able to identify the existence of wisdom teeth, auricular muscles and excessive growth of body hairs are vestigial organs in human population. They will be able to interpret inheritance of blood groups in human being. They will be able to evaluate that increased incidence of female foeticide in northern India and on basis of sex chromosome who is	**To observe the ears of all students in class to study the rule of inheritance.** **To make a punnet square for dihybrid cross.** To flip the coin and to sketch a face with different traits using genetic trait chart. To observe the specimens of evidence of evolution:. *Homologous and Analogous organ in plants and animals, Vestigial organs by specimens and charts. To analyze their genetical character through pedigree analysis	1) Learner learnt and understood about the concept DNA its structure, DNA copying and its importance in variation. 2) Students were able to identify the existence of wisdom teeth, auricular muscles and excessive growth of body hairs are vestigial organs in human population. 3) Students were able to share their opinion on sex determination in human 4) They were able to evaluate between inherited and acquired traits and will able to understand to trace evolutionary	**To make a puneet square for dihybrid cross.** To analyze their genetical character through pedigree analysis **Assignment** **Unit Test**

			responsible for sex determination of sex of baby. They will be able to interpret that illegal abortion of female foetus is a crime that affect sex ratio in future. They will be able to appreciate fossils help to unfold the mystery of evolution reflects phylogeny They will be able to evaluate the transmission of resemblances, with ancestors or parent is due to genes.		relationships. 5) They were able to explore their critical thinking that illegal abortion of female foetus is a crime that affects sex ratio in future. 6) They were able to apply their knowledge to relate congenital anomalies are due to genetic and environmental factors. 7) They were to analyzing importance of transmission of resemblances, with ancestors or parent is due to genes.	
-Jan-3	**Chapter:-** **Our Environment**	*****To make the students learn and understandabout the various abiotic and biotic factorsthat interacts in the environment. ***S**tudents will learn about various food chain and web in ecosystems. *****They will be able to analyze the impact of human in the deteriorating the environment.	*To emphasized on development of skills like observational, experimental, knowledge, understanding, analysis, interpretation and inculcating values like Awareness, Responsibility, responsibility, coordination and empathy towards environment. Students will be able to	The students will be asked to calculate the total amount of waste generated at home per day. They will be segregating into biodegradable and non biodegradable. Create an aquarium- Design an aquarium on a paper. What are the things we keep	1) Learner learnt and understood about the various abiotic and biotic factorsthat interacted in the environment. 2) Students were able to identify that tertiary consumers required more energy according to 10% law and therefore depends on multiple food options.	**Pannel discussion on Global Warming** **Assignment** **Unit Test**

		*They will able to interpret the cause of global warming and depletion of ozone layer. *They will learn about how to use and manage biodegradable substances. *They will be able to analyzeThree concepts of 'R'. *The students would be familiarized with various methods to manage the garbage	identify that tertiary consumers required more energy according to 10% law and therefore depends on multiple food options. They will be able to interpret layer of atmosphere in which ozone is present (stratosphere) and its importance. They will be able to evaluate that increased increase in size of ozone hole is due to human activities. They will be able to interpret the importance of bacteria and decomposers and consequences if decomposers are removed from environment. They will be able to evaluate the hazards of burning plastic and biological magnification.	in mind when we create?….(O2 pump to provide oxygen, Aquatic plants and animals for self sustaining…etc) What would happen if you do not take care while putting the aquatic animals which would eat others?	3) Students were able to share their opinion on cause of global warming and depletion of ozone layer. 4) They were able to evaluate that increased increase in size of ozone hole is due to human activities. 5) They were able to explore their critical thinking with various methods to manage the garbage 6) They were able to apply their knowledge to relate Three concepts of 'R'. 7) They were to analyzing importance of bacteria and decomposers and consequences if decomposers are removed from environment.	
Jan-2	Management of Natural Resources	*Students will able to understand about use of different natural resources. *They will be able to comprehend and	*To emphasized on development of skills like observational, experimental, knowledge, understanding, analysis,	*The students will be asked to find out about the international norms to regulate emission of carbon dioxide.	1) Learner learnt and understood about the use of different natural resources. 2) Students were	Panel discussion on how we can contribute towards meeting the international norms to regulate emission of carbon dioxide.

		infer their knowledge in deciding the ways by which these resources will be managed for sustainable development.	interpretation and inculcating values like Awareness, Responsibility, responsibility, coordination and empathy towards environment. Students will be able to identify that how we and our family member can play important role in regulation the daily use of some natural resources. They will be aware of importance of sustainable management. They will be able to interpret importance of making water potable and consequences of drinking unclean water. They will be able to evaluate that energy can be produce from waste. They will be able to interpret the use of new technology in India like WTE programme i.e. waste to energy project. They will be able to evaluate the hazards of burning fossil fuels.	*Panel discussion on how we can contribute towards meeting those norms.	able to identify that how we and our family member can play important role in regulation the daily use of some natural resources. 3) Students were able to share their opinion onin deciding the ways by which these resources will be managed for sustainable development. 4) They were able to evaluate that energy can be produce from waste. 5) They were able to explore their critical thinking with importance of making water potable and consequences of drinking unclean water. 6) They were able to apply their knowledge to interpret the use of new technology in India like WTE programme i.e. waste to energy project.	

SUBJECT: PHYSICS

APRIL **AND** **MAY**	**LIGHT- Reflection and Refraction**	**SPECIFIC LEARNING OBJECTTIVES:** **Students will be able to-** • Define reflection • State laws of reflection • Differentiate between types of reflection • Differentiate between real and virtual image. • Define terms related to spherical mirror. • Define refraction • State laws of refraction • State causes for refraction • Define and calculate refractive index • State factors affection refractive index • Explain refraction through spherical lenses • Draw image formation for	**BEHAVIOURAL LEARNING OBJECTIVES:** **Students will be able to –** • Understand the difference between reflection and refraction. • Apply the concept of reflection and refraction in daily observation, • Understand the application of spherical mirrors and state its uses. • Can make use of mirror formula • Apply sign conventions correctly • Apply the concept of refraction to day today life for e.g. twinkling of stars, apparent bending of	Students can be asked to draw image formation, predict the result by using laws and then check the same in lab. Students can also be asked to keep the screen at the estimated positions in order to verify the image formation of mirror. Activity- Various spherical mirrors will be will be shown and how they aredifferent than plane mirrors will be discussed. ot of image formation will be introduced. Lab Activity- refraction through glass slab will be performed by students and they will also be taught relation between emergent ray incident ray. Calculate the rough focal length of the convex lens and concave mirror.	**Students learnt to-** • Define reflection • State laws of reflection • Differentiate between types of reflection • Prove laws of reflection of light • Understand the application of spherical mirrors and state its uses. • Can make use of mirror formula • Apply sign conventions correctly • Apply the concept of refraction to day today life for e.g. twinkling of stars, apparent bending of straw/ spoon when kept in glass filled with water etc. • To apply that apparent depth is less than real	Unit test and numerical problems previous year board questions.

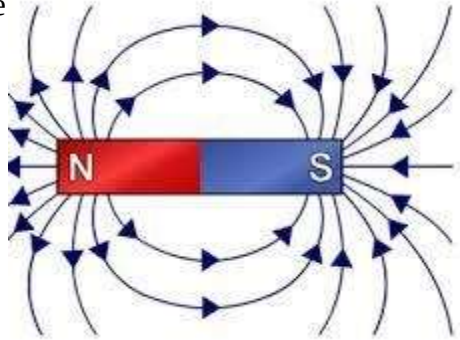
		spherical mirrors and state the nature and position of image. • Make use of mirror formula • Draw image formation by spherical lenses. • Apply sign conventions correctly • Calculate power of lens. • Calculate focal length of combinations • Draw the image formation through glass slab and able to calculate the refractive index • Draw the tracing of light through glass prism and able to understand the relation between emergent and incident ray.	straw/ spoon when kept in glass filled with water etc. • To apply that apparent depth is less than real depth. • Use various lenses. • Calculate focal length and power of lens.		depth. • Use various lenses. • Calculate focal length and power of lens.	

JUNE-JULY **16-26 Days** **(12 day)**	**Human Eye and Colourful World**	**I - <u>Specific Objectives</u>** **Students will be able to-** • **State cause and correction of defects of vision like myopia, hypermetropia, presbyopia etc.** • **Define phenomenon of dispersion and state its cause.** • **Explain Rayleigh Scattering.** • **Explain the working of human eye.** • **Draw the diagrams of defected eye and corrected eye.** • **Draw path of light through a glass prism.**	**II - <u>Behavioral Objectives</u>** **Students will be able to –** • Apply concepts to daily life- • Explain apparent position of stars. • Justify advanced and delayed sunrise and sun set. • Explain about the blue colour of clear sky. • Justify white colour of clouds etc.	Practical application of refraction will be introduced with the help of video. Twinkling of stars, delayed sunrise and sunset and many other applications will be discussed. Rayleigh experiment will be explained to the students and practical applications will be discussed in the class. Recapitulation of all the concepts will be done along with the exercises. Lab Activity- refraction through glass Prism will be performed by students and they will also be taught relation between emergent ray incident ray.	**Students learnt to-** • Explain the working of human eye. • State causes and correction of defects of vision like myopia, hypermetropia, presbyopia etc. • Draw the diagrams of defected eye and corrected eye. • Draw path of light through a glass prism. • Define phenomenon of dispersion and state its cause. • Explain Rayleigh scattering. • Apply concepts to daily life- • Explain apparent position of stars • Justify advanced and delayed sunrise and sun set. • Explain the reason for blue colour of clear sky. • Explain the reason for white colour of clouds.	• Class Test and FAQ for the some topics

AUGUST 20 DAYS (6 days)	**SOURCES OF ENERGY**	STUDENTS WILL BE ABLE TO – • Define Solar, Wind, Hydro And Ocean Energy • Explain The Working Of Solar Devices Along With Their Advantages And Disadvantages • Explain Working Of Hydro Power Plant, Wind Mills • Understand How Geothermal And Ocean Energy Is Harnessed • State advantages and limitations of various resources	STUDENTS WILL BE ABLE TO- • Appreciate various types of resources. • Make judicious use of these resources. • Will start using renewable resources in all the possible manners. • Spread awareness about conservation of resources. •	Class Activity- • Videos of working of – power plants mills ssing of geothermal and ocean energy. nts will be asked to find the locations of above plants and the energy harnessed by them. • Students will be asked to prepare ppt on various types of resources, their harnessing, advantages and disadvantages.	STUDENTS WILL BE ABLE TO – • Define Solar, Wind, Hydro And Ocean Energy • Explain The Working Of Solar Devices Along With Their Advantages And Disadvantages • Explain Working Of Hydro Power Plant, Wind Mills • Understand How Geothermal And Ocean Energy Is Harnessed • State advantages and limitations of various resources	
Month & Working Days	**Theme/ Sub-theme**	**Learning Objectives**		**Activities & Resources**	**Expected Learning Outcomes**	**Assessment**
		Subject Specific (Content Based)	**Behavioural (Application based)**			
SEPTEMBER - OCTOBER 24-22 Days (15 days)	**ELECTRICITY**	Students will be able to- • State properties of charges • State	Students will be able to – • Understand potential difference is	Activity- Various devices which provide potential difference will be discussed and will be shown. Class Activity- Teacher will	Students learnt to- • State properties of charges • State coulomb's law	• To verify Ohm's law.

		coulomb's law • Define and calculate current • Define and calculate potential difference, • Define and calculate resistance and resistivity. • Arrange various resistances in combinations to get desired result. • Explain factors affecting resistance and resistivity • Elaborate how electric appliance are rated • Understand uses of specific materials • Draw various circuit diagrams	required for the flow of current. • Identify sources of current • Relate transfer of charges in day today life. • Relate resistance of various objects in daily life. • Analyse the rating of various electric appliances. • Start using particular material on the basis of its property. • Understand the rating of various types of fuse and their functions. • Calculate and verify electricity bills. • Can assemble various electrical appliances correctly in	introduce various components of electric circuit in the lab/ classroom by elaborating how to connect it and its use. Lab Activity- Ohm's law will be verified by the students in the lab. They will note down observations and will calculate the result. Class Activity- Students will be explained about various combinations of resistors and will be asked to identify series and parallel combinations. Lab Activity- Students will be taken to lab and will be asked to calculate net resistance of the given resistors in series and parallel combinations. Class Activity- Students will be given various combinations and can be asked to calculate the result theoretically and then verify with the help of apparatus.	• Define and calculate current • Define and calculate potential difference, • Define and calculate resistance and resistivity. • Arrange various resistances in combinations to get desired result. • Explain factors affecting resistance and resistivity • Elaborate how electric appliance are rated • Understand uses of specific materials • Draw various circuit diagrams • Potential difference is required for the flow of current. • To Identify sources of current • To explain	• To calculate net resultant resistance in series combination. • To calculate net resultant resistance in parallel combination.

			electric circuits.		transfer of charges between two objects in day today life. • The application of Resistance of various objects. • To analyse the rating of various electric appliances. • To use particular material on the basis of its electrical property. • To rate of various types of fuse and their functions. • To Calculate and verify electricity bills. • To assemble various electrical appliances correctly in electric circuits.	

November December 20-20 days (13 days)	**MAGNETIC EFFECT OF ELECTRIC CURRENT**	Students will be able to- • Draw and State properties of magnetic field lines. • Explain and perform Orested experiment. • Draw and explain properties of magnetic field lines due to current carrying circular coil. • State and apply Right hand thumb rule. • Draw and explain properties of magnetic field lines due to current carrying straight conductor. • State and apply Clock rule. • Draw and explain properties of magnetic field lines due to current carrying	BEHAVIOURAL LEARNING OBJECTIVES: Students will be able to – • Appreciate the use of science in various applications like electric bell etc. • Apply Fleming's left hand rule to understand working of Dynamo. • Apply Fleming's right hand rule to Generator. • Can prepare electromagnets and make use of them.	1. Class Activity-Concept of the magnetic field is introduced with the help of following activity.  	Students learnt to- • Draw and State properties of magnetic field lines. • Explain and perform Orested experiment. • Draw and explain properties of magnetic field lines due to current carrying circular coil. • State Right hand thumb rule • Draw and explain properties of magnetic field lines due to current carrying straight conductor. • State and apply Clock rule. • Draw and explain properties of magnetic field lines due to current carrying solenoid.	**.**Lab Activity Ask them to draw magnetic lines of forces

		solenoid. • Differentiate between electromagnet and permanent magnet. • Explain Kicking wire experiment. • State and apply Fleming's left hand rule. • Explain and apply electromagnetic induction. • State and apply Fleming's right hand rule.			• Differentiate between electromagnet and permanent magnet. • Explain Kicking wire experiment. • State and apply Fleming's left hand rule to the working of Dynamo. • Deduce properties of magnetic field lines. • Draw and explain properties of magnetic field lines due to current carrying circular coil. • Apply Right hand thumb rule. • Deduce properties of magnetic field lines due to current carrying straight conductor. • Find out the direction of magnetic field	

					lines due to current carrying solenoid. • Differentiate between electromagnet and permanent magnet. • Explain electromagnetic induction. • State and apply Fleming's right hand rule to generator. • To appreciate the use of science in various applications like electric bell etc. • Can prepare electromagnets and make use of them.	

CHOITHRAM SCHOOL, MANIK BAGH, INDORE

ANNUAL CURRICULUM PLAN SESSION 2020-21

CLASS: X

SUBJECT: SCIENCE

CHEMISTRY

Month &	Theme/	Learning Objectives	Activities	Expected Learning	Assessment

Working Days	Sub-theme	Subject Specific (Content Based)	Behavioural (Application based)	&Resources	Outcomes	
April-21 **(3 pd)**	**Chemical reactions and equations**	Students will be able to • Know about the changes occur in our surroundings • Understand the characteristics of physical and chemical changes. • Differentiate between these changes into physical and chemical. • Learn the method to balance a chemical equation and need of balancing it. • Understand various types of reactions and their symbolic representation. • Understand phenomenon of rancidity and corrosion and its effects	Students will be able to • Observe the changes occur in our surroundings and in terms of physical and chemical changes. • Students will appreciate the use of photolytic decomposition reaction in photography and aluminium foil for packing food items • Students will recognize respiration and combustion as an oxidation reaction. • Students will analyse the harmful effects of corrosion of metals and rancidity on packaged food items. • Students will be sensitized towards the environmental impacts of combustion of fossil fuel and minimize their use. • Students will apply the methods to prevent iron from rusting and food items to become rancid	Students will perform a set of reaction including - burning of magnesium wire, electrolysis of water, reaction of zinc and sulphuric acid, reaction of barium chloride and magnesium sulphate solution, reaction of quick lime and water, reaction of iron nail and copper sulphate solution, heating of lead nitrate and - identify their type and characteristics of reactions accompanied with chemical change.	Students have learnt • Characteristics of physical and chemical change • Balancing of chemical equations and need of balancing. • To distinguish combination and decomposition reaction, displacement and double displacement reaction, exothermic and endothermic reaction • To identify the substance reduced, oxidized, oxidizing agent and reducing agent in a redox reaction. • The effects of oxidation of oils and fats resulting in to bad smell and bad taste and methods to prevent rancidity. • About corrosion of metals, rusting of iron, favourable conditions for corrosion and common methods to prevent rusting.	Assignment Unit test Activity - To study the characteristics of chemical reactions and identify their type. Activity - To collect the various samples of food like groundnut, almond, chips, walnut, coconut, cashew nut, chirongi and keep them in an open bowl for 15 days and observe the change in colour taste and smell and perform chemical test to check rancidity.

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June –July 17+26 **(12pd)**	**ases and salts**	nts will be able to: • Know indicators and their types. • Identify acids and bases with the help of indicators. • Understand chemical properties of acids and bases. • Compare, contrast and classify properties of acids and bases. • Illustrate chemical reactions of acids with metal, metallic oxide and bases. • Express the chemical reaction of bases with metal, non metallic oxides and acids. • Explain the use of PH scale in comparing the strength of acids and bases. • Describe use of PH in day to day life.	nts will be able to • Recognize acid and base on the basis of taste. • Test acid and base with the help of indicators • Use china rose, red cabbage, turmeric, bougainvillea, beet root as natural indicator. • Prepare olfactory indicators like onion and clove oil. • Appreciate and use lemon and tamarind to clean corrosive layer on utensils like brass and copper. • Handle and store acids safely. • Treat acidity in stomach and tooth decay.	Reaction of NaCl and H_2SO_4 to show the release of HCl gas which is exposed to dry and moist blue litmus paper). reaction of HCl & NaOH with • Metal • Meta l oxide • Metal carbonate	Students have learnt About indicators and their types. To identify acids and bases with the help of indicators. Chemical properties of acids and bases. To compare, contrast and classify properties of acids and bases. Chemical reactions of acids with metal, metallic oxide and bases. Chemical reaction of bases with metal, non metallic oxides and acids. The use of PH scale in comparing the strength of acids and bases. The importance of PH in day to day life. Students developed environmental sensitivity .	Action of indicators like litmus, methyl orange, phenolphthalein etc on acids and bases. Activity 2. Action of following chemicals on PH Paper . HCl, acetic acid ,baking soda, citric acid, sodium hydroxide and water Activity 3. Determination of PH of different samples used in day to day life he help of universal indicator and predict their nature and how will you bring change in pH and colour of the solution.
August &	Metals and	Students will be able to	Students will be able to	• Reaction of	The students have learnt	**Assignment**

September 20+24 **(15pd)**	Non metals	• Know physical properties of elements as metals and non-metals. • Understand the chemical properties of metals. • Learn the reactivity series of metals. • Compare and contrast the properties of metals and non-metals on the basis of their physical and chemical properties. • Understand ionic bond formation between atoms and properties of ionic compound. • Define ore and mineral. • Understand the differences between ores and minerals. • Describe the different steps of metallurgy of metals. • Differentiate between roasting and calcinations. • Illustrate various methods to prevent corrosion of metals. • Understand the	• Avoid the storage of acidic food in metal containers. • Prevent corrosion of iron articles at home by oiling/painting/greasing. • Encourage the use of solder as a fuse wire due to its low melting point and high resistance. • Make use of sour substances like lemon or tamarind to regain the shine of copper vessels. • To collaborate to yield better output or results like in alloying a better property is obtained by mixing two or more metal or non-metal. • To discourage and stop practicing giving gold jewellery to goldsmith for polishing to restore their glitter.	metals with acids. • Reaction of metals with salt solution in lab to compare the reactivity of metals Al, Zn, Fe and Cu	• The physical and chemical properties of metals and non-metals.and differences between them. • The reactivity series of metals & its applications. • The properties and formation of ionic compounds. • The ores of several metals and the different steps of metallurgy • The differences between roasting and calcinations. • The methods to prevent corrosion of metals. • The purpose of making alloys and their uses. • To avoid the storage of acidic food like lemon pickle /curd in metal containers. • To prevent corrosion of iron articles at home by oiling /painting/greasing.	**Unit test** **Activity** – Reactivity toward oxygen and nature of metal and non-metal oxide. The teacher will demonstrate the burning of magnesium ribbon and sulphur powder and show the nature of their oxides with the help of litmus paper. **Reactivity series**

		purpose of making alloys and their uses.				
October & November 22+20 **(15-Pd)**	Carbon and its compounds	Students will be able to • Define combustion, oxidation, hydrogenation, addition and substitution reactions. • Distinguish between combustion of saturated and unsaturated carbons • Know about the terms covalent bond, tetravalency, catenation, homologous series and functional group. • Learn electron dot structure and IUPAC nomenclature. • Understand properties of covalent compound, • Understand various properties of carbon compounds,	• Students will learn the use of **alcohol** as a fuel, as an antiseptic in hospitals, as a preservative for biological specimen. • Students will be sensitized about the harmful effects of consumption of ethanol on human health and will be aware how consumption of alcohol leads to addiction and lack of control and coordination in the body which may result in accidents. • Students will analyse ill effects of drinking alcohol on society. • Students will be familiarized about denaturation of ethanol to make it unfit for drinking. • Students will appreciate the use of soap for washing clothes in soft water and detergent in hard water.	•Making Ball and stick model of saturated and unsaturated carbon compounds. •Combustion of saturated and unsaturated compounds •reaction of ethanol with sodium metal and observe the evolution of hydrogen gas. •Test acidic nature of ethanoic acid by using litmus and methyl orange. •Conduction of electricity by acidic and basic solution	Students have learnt • About Versatile nature of carbon • To distinguish between saturated and unsaturated hydrocarbon • chemical properties of saturated and unsaturated hydrocarbon • IUPAC nomenclature of compounds containing functional group • Chemical properties of ethanol and ethanoic acid. • Saponification reaction and method of preparation of soap. • Mechanism of Cleansing action of soap	**Class test** **Written Assignment** 1.Prepare soap from vegetable oil. 2.Identification of hard water and soft water by foaming capacity of soap. 3.To study different properties of ethanoic acid

		cleaning action of soap, action of soap on hard and soft water.				
December (20) **(8 -pd)**	Periodic classification of elements	Students will be able to - • Understand the need of classifying elements. • Know how the concept of grouping elements in accordance to their properties led to the development of Periodic Table. • Compare the positive points and drawbacks of previous models of classification of elements e.g. laws of triads and octaves, Mendeleev's law • Appreciate the utility of Mendeleev's periodic classification in designing of the modern periodic classification • understand the Periodic Law; understand the significance of atomic number and electronic configuration as the basis for periodic classificat recognize the periodic trends in physical and chemical	Students will be able to • Understand and appreciate the importance of classification and will learn how to proceed to study, analyze and solve a problem through a systematic and sequential approach. • They will develop the skills of analysis, classification (sorting) and critical thinking. • They will also develop analytical and critical thinking through thoughtful study of the pattern of the classification and the properties of elements followed by discussion on normal & exceptional trends in the properties. • Through study and discussion on work done by the scientists, they will be motivated to follow a path of optimum values and life skills so that they can get success in life.	•To predict group and period of the elements having same valence electrons. •To predict the formula oxide and hydride of the elements through periodic table chart.	• Students have developed an understanding about the need & importance of classification of elements and knowledge of historical back ground of the classification of elements. • With the help of the above information and subsequent discussion held thereon they have developed an insight into significance of having skills of classifying & arranging things systematically so that further studies become easier and effective. • They have developed the skills of analysis, sorting, arranging through the study of this chapter and now critically think before explaining reasons about particular pattern of classification. • Students can predict periodic position of elements and can predict probable trends	**Unit test** **Written assignment** **Activity** To find the position of elements through its electronic configuration. To name the elements having Z > 100

		properties of elements; • compare the reactivity of elements and correlate it with their occurrence in nature; • explain the relationship between ionization enthalpy and metallic character; • ion; • properties of atoms e.g., atomic/ ionic radii, ionization enthalpy, electron gain enthalpy, electronegativity, valence of elements			in properties of the elements in terms of their metallic/ non-metallic nature, ionization enthalpy, size, electro affinity, electronegativity, nature of compounds etc. • They can explain the periodic trends in the properties of the elements.	

SUBJECT: BIOLOGY

Month & Working Days	Theme/ Sub-theme	Learning Objectives		Activities &Resources	Expected Learning Outcomes	Assessment
		Subject Specific (Content Based)	Behavioural (Application based)			
APRIL **21 Days** **(3 day)**	Life Process	To make the students learn and understand about different modes of nutrition and differentiate between autotropic and heterotropic nutrition. 2. To enhance the ability to	Students will be able to – 1. Identify that different food items consumed by them take different duration of time for digestion. 2. Analyze that heavy food items should be consumed during morning hours and	To prove that chlorophyll,CO_2, light is essential for photosynthesis. Students will observe the activity carefully and note down all the components required for photosynthesis Following activity will be conducted in lab were students will prepare	1. Students understood different modes of nutrition involved in life process. 2. They were able to analyze that duration for digestion of fats is more than protein	• The video will be shown while explanation and the same video without the audio will be shown and the children will be asked to label the different organs and specify its

		understand that autotrophic nutrition involves the intake of simple inorganic materials from the environment and by using an external energy source like sun to synthesize complex high energy organic material. 3. To comprehend that the heterotrophic nutrition involves the intake of complex material prepared by other organisms. 4. To understand and summarize the various steps of digestion in human beings in the alimentary canal and the mode of absorption in the small intestine.	lighter in evening. 3. Interpret that problem of acidity is due to the presence Different gastric enzymes.	temporary mount of a leaf peel to show stomata. They will observe the slide and identify the stomata and will draw a well labeled diagram as stomata helps in the exchange of gases. A Self made video will be shown in the class on the process of human digestion. After observing this video they will draw the well labeled diagram of Human digestive system and also locate the parts where digestion of carbohydrate, protein and fats starts along with the name of enzyme associated with it.	and carbohydrates. 3. They were able to evaluate the importance of enzymes and gastric juices in the process of digestion. 4. They were able to recognize that problem of acidity or ulcer or any other disorder is due to improper function of different organs of digestive system. 5. They were able to synthesized the importance of light, water and co2 for the light and dark reaction of photosynthesis along with the role of stomata.	function. **Assignment** **Unit test** **Practical**

JUNE-JULY **17-26 Days** **(5 +8)**	Respiration- Aerobic and Anaerobic Transportation- 1.blood, heart, arteries, vein capillaries, double circulation 2. Xylem and phloem and ascent of sap, transpiration. Excretion- kidney, nephron, dialysis	Students will be able to learn and understand the concept of respiration and can compare between aerobic and anaerobic respiration. * They will be able to comprehend and relate how in cellular respiration, complex organic compounds such as glucose are broken down to provide energy in the form of ATP which is used to provide energy for other reactions in the cell. *They will be able to infer the mechanism of circulatory system where materials such as oxygen, carbon-dioxide, food and excretory products are transported. *They will explore their critical thinking by studying the importance of transport of water, minerals, food and	Students will be able to – 1. Identify the process of fermentation is due to anaerobic respiration which is used in production of alcohol, vinegar and bakery industries as well as in making of dosa etc. and also heavy exercise leads to anaerobic respiration which is responsible for cramps in muscle in human 2. Apply their knowledge that improper functioning of these organs like lungs, heart and kidneys	Following activity will be conducted in the class were the process of inspiration and expiration with the help of a working model of lungs will be demonstrated. An activity will be conducted in a lab. were student will be given opportunity to do and observe themselves that CO_2 is given out during the process of breathing. TRANSPORTATION- A video chart of human heart will be shown in the class were different parts will be explained. Students will be asked to draw the well labeled diagram of human heart and will locate the path of double circulation of blood. EXCRETION- A Self made video will be shown in the class on the process of human excretion. Students will be aware of different parts of excretory system and will understand that process of removal of nitrogenous waste from the blood and importance of nephron. After observing this video they will draw the well labeled diagram of Human excretory system and nephron also locate the	1. Students understood the importance of different life process and were able to understood mechanism of circulatory system where materials such as oxygen, carbon-dioxide, food and excretory products are transported 2. They were able to analyze that cramps in muscle as well as bakery products, south Indian dishes and production of alcohol is due to anaerobic respiration. 3. They were able to analyze the importance of valve in veins and heart and will also able to evaluate the reason behind cardiovascular diseases and BP. 4. They were able to analyze the importance of blood group and Rh factors play major role in blood	• The video will be shown while explanation and the same video without the audio will be shown and the children will be asked to label the different organs and specify its function. **Assignment** **Unit test** **Practical**

		other materials in highly differentiated plants * To enhance the ability to understand the mechanism of excretion in human beings in the form of soluble nitrogenous compounds. * To understand and summarize about different technologies and its implementation for survival like renal dialysis, pacemaker etc.		parts where ultra-filtration and selective re-absorption takes place.	transfusion and childbirth. 5. They were able to recognize that problem in improper functioning of kidney or nephron leads to accumulation of toxic substances in the blood which are fatal. 5. They were able to synthesize the importance of dialysis, heart surgery, pace-maker for vital function.	
August -20 & September-24 (6+7)	CONTROL & COORDINATION	**Students will be able to** Describe the structure and types of neurons. Explain Reflex action, Involuntary and Voluntary actions. Describe the Central Nervous system- Structure of Brain and its function To understand the	Students will be able to learn to appreciate the leadership quality of brain to control hunger, anxiety, anger ,memory ,thirst, riding, writing, balancing of the body, body postures etc are controlled by the Central Nervous System and it coordinates with different systems in the body to maintain oneness in running all the physiological activities together. Sensitize the body	A self made video on Brain, highlighting the different parts of brain and its function. There after the teacher will cite different daily life examples to explain the various parts of brain that are responsible to carry various function. Reflex action will be introduced by demonstrating some activities in which the student responds to the stimuli without thinking. The students will be asked to make the diagram of brain and label its various	Students have learnt to : Illustrate and describe the structure of brain Analysed the concept of reflex action, voluntary and involuntary actions and could apply in real life situation Analyse and interpret the role of different hormones and its secretion in	• The students will be asked to make the diagram of brain and label its various parts & relate with different the physiological activity controlled by it. • Assignments • Unit test, Term end exam .

		role of Plant hormones, plant movement, Understand the role of Human hormones and their secretions. Comprehend that control and coordination in human beings is the sum of nervous system and endocrine system	response during adverse situation like touching hot water or any utensils, when suddenly any foreign object comes in contact with our eyes, etc through reflex action. Infer the effect of hormones for the changes in human after puberty . Appreciate the role of hormone to cope stress. Realize the role of plant hormones in regulating the process of phototropism, geotropism, hydrotropism, chemotropism etc. Illustrate examples from daily life to relate the effect of hormones on living system. Learn to imbibe positive qualities of others and ignore the negative ones.	parts & relate with different the physiological activity controlled by it.	the life span of the organism. Interpret and describe various plant movements with phytohormones.	

Oct- 22 Nov-20 (6+5)	**Chapter:- How do organism reproduce?**	*Students will be able to learn and understand the concept DNA its structure, DNA copying and its importance. *They would be able to analyze and relate the concept of DNA copying with variation. *They would be able to acquire knowledge about different modes of reproduction and apply the concept in different living organisms. *They would be able to comprehend the mechanism of sexual reproduction in flowering plants and human beings. *They will be able to analyze and think critically about the changes in the human body at puberty. *They will explore their critical thinking by studying the importance of reproductive health their problems and	• To emphasized on development of skills like observational, experimental and inculcating values like Awareness, Responsibility, Accuracy, • Students will be able to identify the significance of bright colour of flower for pollination. • They will be able to interpret that night blooming flowers are white whereas the day blooming flowers are brightly coloured. • They will be able to evaluate that congenital anomalies are due to genetic and environmental factors. • The noticeable changes that occur during puberty such as-	*To study the binary fission and budding in Amoeba and yeast through permanent slides. *To study the different parts of dicot seeds. dding and binary fission with f slides. **e vegetative** Propagation in , Bryophyllum leaf.	1) Learner learnt and understood about the concept DNA its structure, DNA copying and its importance. 2) Students were able to identify the significance of bright colour of flower for pollination. 3) Students were able to share their opinion on DNA copying with variation. 4) They were able to evaluate different types of High- Yielding varieties of wheat and rice. 5) They were able to explore their critical thinking by studying the importance of reproductive health their problems and strategies 6) They were able to apply their knowledge to relate congenital anomalies are due to genetic and	*To study the different parts of dicot seeds. ***Unit test** ***Class Test** *Assignment

		strategies	increase in height, body shape, change in voice of males, appearance of pimples • Mental and emotional maturity bodily changes during adolescence • Myths and taboos regarding bodily changes during adolescence • To get aware regarding prevention of sexually transmitted disease • To relate the importance of government raising awareness campaign regarding birth control measures. . .		environmental factors. 7) They were to analyzing importance and male and female sex ratio and sex determination of child is male heterogamy.	
Dec-20-	**Chapter:-**	*Students will be	*To emphasized on	**To observe the ears of all**	1) Learner learnt	**To make a puneet square**

Jan 23 **6 +1days**	Heredity and Evolution	able to learn and understand the concept DNA its structure, DNA copying and its importance in variation. *They will be able to understand variations arising during the process of reproduction can be inherited. ***S**tudents will comprehend about different Mendel laws of inheritance. *They will able to understand about sex determination in human *They will able to differentiate between inherited and acquired traits and will able to understand to trace evolutionary relationships.	development of skills like observational, experimental, knowledge ,understanding, analysis, interpretation and inculcating values like Awareness, Responsibility, responsibility, coordination and empathy Students will be able to identify the existence of wisdom teeth, auricular muscles and excessive growth of body hairs are vestigial organs in human population. They will be able to interpret inheritance of blood groups in human being. They will be able to evaluate that increased incidence of female foeticide in northern India and on basis of sex chromosome who is responsible for sex determination of sex of baby. They will be able to interpret that illegal abortion of female foetus is a crime that affect sex ratio in future. They will be able to appreciate fossils help to	**students in class to study the rule of inheritance.** **To make a punnet square for dihybrid cross.** To flip the coin and to sketch a face with different traits using genetic trait chart. To observe the specimens of evidence of evolution:. *Homologous and Analogous organ in plants and animals, Vestigial organs by specimens and charts. To analyze their genetical character through pedigree analysis	and understood about the concept DNA its structure, DNA copying and its importance in variation. 2) Students were able to identify the existence of wisdom teeth, auricular muscles and excessive growth of body hairs are vestigial organs in human population. 3) Students were able to share their opinion on sex determination in human 4) They were able to evaluate between inherited and acquired traits and will able to understand to trace evolutionary relationships. 5) They were able to explore their critical thinking that illegal abortion of female foetus is a crime that affects sex ratio in future. 6) They were able to apply their knowledge to	**for dihybrid cross.** To analyze their genetical character through pedigree analysis **Assignment** **Unit Test**

			unfold the mystery of evolution reflects phylogeny They will be able to evaluate the transmission of resemblances, with ancestors or parent is due to genes.		relate congenital anomalies are due to genetic and environmental factors. 7) They were to analyzing importance of transmission of resemblances, with ancestors or parent is due to genes.	
-Jan-3	**Chapter:-** **Our Environment**	***To** make the students learn and understandabout the various abiotic and biotic factorsthat interacts in the environment. ***S**tudents will learn about various food chain and web in ecosystems. ***T**hey will be able to analyze the impact of human in the deteriorating the environment. *They will able to interpret the cause of global warming and depletion of ozone layer. *They will learn about how to use and manage biodegradable substances. *They will be able	*To emphasized on development of skills like observational, experimental, knowledge, understanding, analysis, interpretation and inculcating values like Awareness, Responsibility, responsibility, coordination and empathy towards environment. Students will be able to identify that tertiary consumers required more energy according to 10% law and therefore depends on multiple food options. They will be able to interpret layer of atmosphere in which ozone is present (stratosphere) and its	The students will be asked to calculate the total amount of waste generated at home per day. They will be segregating into biodegradable and non biodegradable. Create an aquarium- Design an aquarium on a paper. What are the things we keep in mind when we create?….(O2 pump to provide oxygen, Aquatic plants and animals for self sustaining…etc) What would happen if you do not take care while putting the aquatic animals	1) Learner learnt and understood about the various abiotic and biotic factorsthat interacted in the environment. 2) Students were able to identify that tertiary consumers required more energy according to 10% law and therefore depends on multiple food options. 3) Students were able to share their opinion on cause of global warming and depletion of ozone layer. 4) They were able to evaluate that increased increase in size of ozone hole is due to	**Pannel discussion on Global Warming** **Assignment** **Unit Test**

		to analyzeThree concepts of 'R'. *The students would be familiarized with various methods to manage the garbage	importance. They will be able to evaluate that increased increase in size of ozone hole is due to human activities. They will be able to interpret the importance of bacteria and decomposers and consequences if decomposers are removed from environment. They will be able to evaluate the hazards of burning plastic and biological magnification.	which would eat others?	human activities. 5) They were able to explore their critical thinking with various methods to manage the garbage 6) They were able to apply their knowledge to relate Three concepts of 'R'. 7) They were to analyzing importance of bacteria and decomposers and consequences if decomposers are removed from environment.	
Jan-2	Management of Natural Resources	*Students will able to understand about use of different natural resources. *They will be able to comprehend and infer their knowledge in deciding the ways by which these resources will be managed for sustainable development.	*To emphasized on development of skills like observational, experimental, knowledge, understanding, analysis, interpretation and inculcating values like Awareness, Responsibility, responsibility, coordination and empathy towards environment. Students will be able to identify that how we and our family member can	*The students will be asked to find out about the international norms to regulate emission of carbon dioxide. *Panel discussion on how we can contribute towards meeting those norms.	1) Learner learnt and understood about the use of different natural resources. 2) Students were able to identify that how we and our family member can play important role in regulation the daily use of some natural resources. 3) Students were able to share their opinion onin deciding the ways	Panel discussion on how we can contribute towards meeting the international norms to regulate emission of carbon dioxide.

			play important role in regulation the daily use of some natural resources. They will be aware of importance of sustainable management. They will be able to interpret importance of making water potable and consequences of drinking unclean water. They will be able to evaluate that energy can be produce from waste. They will be able to interpret the use of new technology in India like WTE programme i.e. waste to energy project. They will be able to evaluate the hazards of burning fossil fuels.		by which these resources will be managed for sustainable development. 4) They were able to evaluate that energy can be produce from waste. 5) They were able to explore their critical thinking with importance of making water potable and consequences of drinking unclean water. 6) They were able to apply their knowledge to interpret the use of new technology in India like WTE programme i.e. waste to energy project.	

SUBJECT: PHYSICS

APRIL **21 Days** **(7 day)**	**LIGHT- Reflection and Refraction**	**SPECIFIC LEARNING OBJECTTIVES:** **Students will be able to-** • Define reflection • State laws of reflection • Differentiate	**BEHAVIOURAL LEARNING OBJECTIVES:** **Students will be able to –** • Understand the difference between	Students can be asked to draw image formation, predict the result by using laws and then check the same in lab. Students can also be asked to keep the screen at the estimated positions in order to verify the image formation of mirror.	**Students learnt to-** • Define reflection • State laws of reflection • Differentiate between types of reflection • Prove laws of	Unit test and numerical problems previous year board questions.

		between types of reflection • Differentiate between real and virtual image. • Define terms related to spherical mirror. • Define refraction • State laws of refraction • State causes for refraction • Define and calculate refractive index • State factors affection refractive index • Explain refraction through spherical lenses • Draw image formation for spherical mirrors and state the nature and position of image. • Make use of mirror formula • Draw image formation by spherical lenses.	reflection and refraction. • Apply the concept of reflection and refraction in daily observation, • Understand the application of spherical mirrors and state its uses. • Can make use of mirror formula • Apply sign conventions correctly • Apply the concept of refraction to day today life for e.g. twinkling of stars, apparent bending of straw/ spoon when kept in glass filled with water etc. • To apply that apparent depth is less than real depth. • Use various	Activity- Various spherical mirrors will be will be shown and how they aredifferent than plane mirrors will be discussed. t of image formation will be introduced. Lab Activity- refraction through glass slab will be performed by students and they will also be taught relation between emergent ray incident ray. Calculate the rough focal length of the convex lens and concave mirror.	reflection of light • Understand the application of spherical mirrors and state its uses. • Can make use of mirror formula • Apply sign conventions correctly • Apply the concept of refraction to day today life for e.g. twinkling of stars, apparent bending of straw/ spoon when kept in glass filled with water etc. • To apply that apparent depth is less than real depth. • Use various lenses. • Calculate focal length and power of lens.	

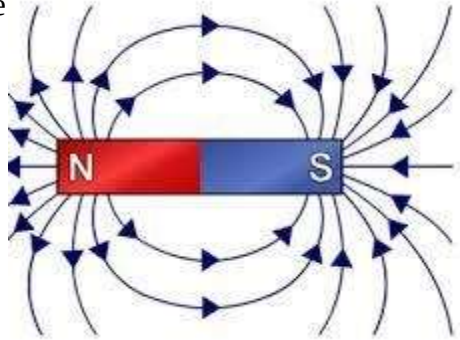
		• Apply sign conventions correctly • Calculate power of lens. • Calculate focal length of combinations • Draw the image formation through glass slab and able to calculate the refractive index • Draw the tracing of light through glass prism and able to understand the relation between emergent and incident ray.	lenses. • Calculate focal length and power of lens.			

JUNE-JULY **16-26 Days** **(12 day)**	**Human Eye and Colourful World**	**I - <u>Specific Objectives</u>** **Students will be able to-** • **State cause and correction of defects of vision like myopia, hypermetropia, presbyopia etc.** • **Define phenomenon of dispersion and state its cause.** • **Explain Rayleigh Scattering.** • **Explain the working of human eye.** • **Draw the diagrams of defected eye and corrected eye.** • **Draw path of light through a glass prism.**	**II - <u>Behavioral Objectives</u>** **Students will be able to –** • Apply concepts to daily life- • Explain apparent position of stars. • Justify advanced and delayed sunrise and sun set. • Explain about the blue colour of clear sky. • Justify white colour of clouds etc.	Practical application of refraction will be introduced with the help of video. Twinkling of stars, delayed sunrise and sunset and many other applications will be discussed. Rayleigh experiment will be explained to the students and practical applications will be discussed in the class. Recapitulation of all the concepts will be done along with the exercises. Lab Activity- refraction through glass Prism will be performed by students and they will also be taught relation between emergent ray incident ray.	**Students learnt to-** • Explain the working of human eye. • State causes and correction of defects of vision like myopia, hypermetropia, presbyopia etc. • Draw the diagrams of defected eye and corrected eye. • Draw path of light through a glass prism. • Define phenomenon of dispersion and state its cause. • Explain Rayleigh scattering. • Apply concepts to daily life- • Explain apparent position of stars • Justify advanced and delayed sunrise and sun set. • Explain the reason for blue colour of clear sky. • Explain the reason for white colour of clouds.	• Class Test and FAQ for the some topics

AUGUST 20 DAYS (6 days)	**SOURCES OF ENERGY**	STUDENTS WILL BE ABLE TO – • Define Solar, Wind, Hydro And Ocean Energy • Explain The Working Of Solar Devices Along With Their Advantages And Disadvantages • Explain Working Of Hydro Power Plant, Wind Mills • Understand How Geothermal And Ocean Energy Is Harnessed • State advantages and limitations of various resources	STUDENTS WILL BE ABLE TO- • Appreciate various types of resources. • Make judicious use of these resources. • Will start using renewable resources in all the possible manners. • Spread awareness about conservation of resources. •	Class Activity- • Videos of working of – power plants mills ssing of geothermal and ocean energy. ıts will be asked to find the locations of above plants and the energy harnessed by them. • Students will be asked to prepare ppt on various types of resources, their harnessing, advantages and disadvantages.	STUDENTS WILL BE ABLE TO – • Define Solar, Wind, Hydro And Ocean Energy • Explain The Working Of Solar Devices Along With Their Advantages And Disadvantages • Explain Working Of Hydro Power Plant, Wind Mills • Understand How Geothermal And Ocean Energy Is Harnessed • State advantages and limitations of various resources	
Month & Working Days	**Theme/ Sub-theme**	**Learning Objectives**		**Activities & Resources**	**Expected Learning Outcomes**	**Assessment**
		Subject Specific (Content Based)	**Behavioural (Application based)**			
SEPTEMBER - OCTOBER 24-22 Days (15 days)	**ELECTRICITY**	Students will be able to- • State properties of charges • State	Students will be able to – • Understand potential difference is	Activity- Various devices which provide potential difference will be discussed and will be shown. Class Activity- Teacher will	Students learnt to- • State properties of charges • State coulomb's law	• To verify Ohm's law.

		coulomb's law • Define and calculate current • Define and calculate potential difference, • Define and calculate resistance and resistivity. • Arrange various resistances in combinations to get desired result. • Explain factors affecting resistance and resistivity • Elaborate how electric appliance are rated • Understand uses of specific materials • Draw various circuit diagrams	required for the flow of current. • Identify sources of current • Relate transfer of charges in day today life. • Relate resistance of various objects in daily life. • Analyse the rating of various electric appliances. • Start using particular material on the basis of its property. • Understand the rating of various types of fuse and their functions. • Calculate and verify electricity bills. • Can assemble various electrical appliances correctly in	introduce various components of electric circuit in the lab/ classroom by elaborating how to connect it and its use. Lab Activity- Ohm's law will be verified by the students in the lab. They will note down observations and will calculate the result. Class Activity- Students will be explained about various combinations of resistors and will be asked to identify series and parallel combinations. Lab Activity- Students will be taken to lab and will be asked to calculate net resistance of the given resistors in series and parallel combinations. Class Activity- Students will be given various combinations and can be asked to calculate the result theoretically and then verify with the help of apparatus.	• Define and calculate current • Define and calculate potential difference, • Define and calculate resistance and resistivity. • Arrange various resistances in combinations to get desired result. • Explain factors affecting resistance and resistivity • Elaborate how electric appliance are rated • Understand uses of specific materials • Draw various circuit diagrams • Potential difference is required for the flow of current. • To Identify sources of current • To explain	• To calculate net resultant resistance in series combination. • To calculate net resultant resistance in parallel combination.

			electric circuits.		transfer of charges between two objects in day today life. • The application of Resistance of various objects. • To analyse the rating of various electric appliances. • To use particular material on the basis of its electrical property. • To rate of various types of fuse and their functions. • To Calculate and verify electricity bills. • To assemble various electrical appliances correctly in electric circuits.	

November December 20-20 days (13 days)	**MAGNETIC EFFECT OF ELECTRIC CURRENT**	Students will be able to- • Draw and State properties of magnetic field lines. • Explain and perform Orested experiment. • Draw and explain properties of magnetic field lines due to current carrying circular coil. • State and apply Right hand thumb rule. • Draw and explain properties of magnetic field lines due to current carrying straight conductor. • State and apply Clock rule. • Draw and explain properties of magnetic field lines due to current carrying	BEHAVIOURAL LEARNING OBJECTIVES: Students will be able to – • Appreciate the use of science in various applications like electric bell etc. • Apply Fleming's left hand rule to understand working of Dynamo. • Apply Fleming's right hand rule to Generator. • Can prepare electromagnets and make use of them.	1. Class Activity-Concept of the magnetic field is introduced with the help of following activity.  	Students learnt to- • Draw and State properties of magnetic field lines. • Explain and perform Orested experiment. • Draw and explain properties of magnetic field lines due to current carrying circular coil. • State Right hand thumb rule • Draw and explain properties of magnetic field lines due to current carrying straight conductor. • State and apply Clock rule. • Draw and explain properties of magnetic field lines due to current carrying solenoid.	**.**Lab Activity Ask them to draw magnetic lines of forces

		solenoid. • Differentiate between electromagnet and permanent magnet. • Explain Kicking wire experiment. • State and apply Fleming's left hand rule. • Explain and apply electromagnetic induction. • State and apply Fleming's right hand rule.			• Differentiate between electromagnet and permanent magnet. • Explain Kicking wire experiment. • State and apply Fleming's left hand rule to the working of Dynamo. • Deduce properties of magnetic field lines. • Draw and explain properties of magnetic field lines due to current carrying circular coil. • Apply Right hand thumb rule. • Deduce properties of magnetic field lines due to current carrying straight conductor. • Find out the direction of magnetic field	

					lines due to current carrying solenoid. • Differentiate between electromagnet and permanent magnet. • Explain electromagnetic induction. • State and apply Fleming's right hand rule to generator. • To appreciate the use of science in various applications like electric bell etc. • Can prepare electromagnets and make use of them.	

MISTRY

Month & Working Days	Theme/ Sub-theme	Learning Objectives		Activities &Resources	Expected Learning Outcomes	Assessment
		Subject Specific (Content Based)	**Behavioural (Application based)**			
April-21 **(3 pd)**	**Chemical reactions and equations**	Students will be able to • Know about the changes occur in our surroundings • Understand the characteristics of	Students will be able to • Observe the changes occur in our surroundings and in terms of physical and chemical changes.	Students will perform a set of reaction including - burning of magnesium wire, electrolysis of water, reaction of zinc and	Students have learnt • Characteristics of physical and chemical change • Balancing of chemical equations	Assignment Unit test Activity - To study the characteristics of

		physical and chemical changes. • Differentiate between these changes into physical and chemical. • Learn the method to balance a chemical equation and need of balancing it. • Understand various types of reactions and their symbolic representation. • Understand phenomenon of rancidity and corrosion and its effects	• Students will appreciate the use of photolytic decomposition reaction in photography and aluminium foil for packing food items • Students will recognize respiration and combustion as an oxidation reaction. • Students will analyse the harmful effects of corrosion of metals and rancidity on packaged food items. • Students will be sensitized towards the environmental impacts of combustion of fossil fuel and minimize their use. • Students will apply the methods to prevent iron from rusting and food items to become rancid	sulphuric acid, reaction of barium chloride and magnesium sulphate solution, reaction of quick lime and water, reaction of iron nail and copper sulphate solution, heating of lead nitrate and - identify their type and characteristics of reactions accompanied with chemical change.	and need of balancing. • To distinguish combination and decomposition reaction, displacement and double displacement reaction, exothermic and endothermic reaction • To identify the substance reduced, oxidized, oxidizing agent and reducing agent in a redox reaction. • The effects of oxidation of oils and fats resulting in to bad smell and bad taste and methods to prevent rancidity. • About corrosion of metals, rusting of iron, favourable conditions for corrosion and common methods to prevent rusting. .	chemical reactions and identify their type. Activity - To collect the various samples of food like groundnut, almond, chips, walnut, coconut, cashew nut, chirongi and keep them in an open bowl for 15 days and observe the change in colour taste and smell and perform chemical test to check rancidity.
June –July 17+26 **(12pd)**	**bases and salts**	nts will be able to: • Know indicators and their types. • Identify acids and bases with the help of indicators.	nts will be able to • Recognize acid and base on the basis of taste. • Test acid and base with the help of indicators	Reaction of NaCl and H_2SO_4 to show the release of HCl gas which is exposed to dry and moist blue litmus paper). reaction of HCl &	Students have learnt About indicators and their types. To identify acids and bases with the help of indicators. Chemical properties of acids and bases.	Action of indicators like litmus, methyl orange, phenolphthalein etc on acids and bases.

		• Understand chemical properties of acids and bases. • Compare, contrast and classify properties of acids and bases. • Illustrate chemical reactions of acids with metal, metallic oxide and bases. • Express the chemical reaction of bases with metal, non metallic oxides and acids. • Explain the use of PH scale in comparing the strength of acids and bases. • Describe use of PH in day to day life.	• Use china rose, red cabbage, turmeric, bougainvillea, beet root as natural indicator. • Prepare olfactory indicators like onion and clove oil. • Appreciate and use lemon and tamarind to clean corrosive layer on utensils like brass and copper. • Handle and store acids safely. • Treat acidity in stomach and tooth decay.	NaOH with • Metal • Meta l oxide • Metal carbonate	To compare, contrast and classify properties of acids and bases. Chemical reactions of acids with metal, metallic oxide and bases. Chemical reaction of bases with metal, non metallic oxides and acids. The use of PH scale in comparing the strength of acids and bases. The importance of PH in day to day life. Students developed environmental sensitivity .	Activity 2. Action of following chemicals on PH Paper . HCl, acetic acid ,baking soda, citric acid, sodium hydroxide and water Activity 3. Determination of PH of different samples used in day to day life he help of universal indicator and predict their nature and how will you bring change in pH and colour of the solution.
August & September 20+24 **(15pd)**	Metals and Non metals	Students will be able to • Know physical properties of elements as metals and non-metals. • Understand the chemical properties of metals. • Learn the reactivity series of metals. • Compare and	Students will be able to • Avoid the storage of acidic food in metal containers. • Prevent corrosion of iron articles at home by oiling/painting/greasing. • Encourage the use of solder as a fuse wire	• Reaction of metals with acids. • Reaction of metals with salt solution in lab to compare the reactivity of metals Al, Zn, Fe and Cu	The students have learnt • The physical and chemical properties of metals and non-metals.and differences between them. • The reactivity series of metals & its applications. • The properties and	**Assignment** **Unit test** **Activity** – Reactivity toward oxygen and nature of metal and non-metal oxide. The teacher will demonstrate the burning of magnesium ribbon

		contrast the properties of metals and non-metals on the basis of their physical and chemical properties. • Understand ionic bond formation between atoms and properties of ionic compound. • Define ore and mineral. • Understand the differences between ores and minerals. • Describe the different steps of metallurgy of metals. • Differentiate between roasting and calcinations. • Illustrate various methods to prevent corrosion of metals. • Understand the purpose of making alloys and their uses.	due to its low melting point and high resistance. • Make use of sour substances like lemon or tamarind to regain the shine of copper vessels. • To collaborate to yield better output or results like in alloying a better property is obtained by mixing two or more metal or non-metal. • To discourage and stop practicing giving gold jewellery to goldsmith for polishing to restore their glitter.		formation of ionic compounds. • The ores of several metals and the different steps of metallurgy • The differences between roasting and calcinations. • The methods to prevent corrosion of metals. • The purpose of making alloys and their uses. • To avoid the storage of acidic food like lemon pickle /curd in metal containers. • To prevent corrosion of iron articles at home by oiling /painting/greasing.	and sulphur powder and show the nature of their oxides with the help of litmus paper. **Reactivity series**
October & November 22+20 **(15-Pd)**	Carbon and its compounds	Students will be able to • Define combustion, oxidation, hydrogenation, addition and	• Students will learn the use of **alcohol** as a fuel, as an antiseptic in hospitals, as a preservative for biological specimen. • Students will be sensitized about the harmful effects of	•Making Ball and stick model of saturated and unsaturated carbon compounds. •Combustion of	Students have learnt • About Versatile nature of carbon • To distinguish between saturated and unsaturated hydrocarbon	**Class test** **Written Assignment** 1.Prepare soap from vegetable oil. 2.Identification of hard water and

		substitution reactions. • Distinguish between combustion of saturated and unsaturated carbons • Know about the terms covalent bond, tetravalency, catenation, homologous series and functional group. • Learn electron dot structure and IUPAC nomenclature. • Understand properties of covalent compound, • Understand various properties of carbon compounds, cleaning action of soap, action of soap on hard and soft water.	consumption of ethanol on human health and will be aware how consumption of alcohol leads to addiction and lack of control and coordination in the body which may result in accidents. • Students will analyse ill effects of drinking alcohol on society. • Students will be familiarized about denaturation of ethanol to make it unfit for drinking. • Students will appreciate the use of soap for washing clothes in soft water and detergent in hard water.	saturated and unsaturated compounds •reaction of ethanol with sodium metal and observe the evolution of hydrogen gas. •Test acidic nature of ethanoic acid by using litmus and methyl orange. •Conduction of electricity by acidic and basic solution	• chemical properties of saturated and unsaturated hydrocarbon • IUPAC nomenclature of compounds containing functional group • Chemical properties of ethanol and ethanoic acid. • Saponification reaction and method of preparation of soap. • Mechanism of Cleansing action of soap	soft water by foaming capacity of soap. 3.To study different properties of ethanoic acid
December (20) **(8 -pd)**	Periodic classification of elements	Students will be able to - • Understand the need of classifying elements. • Know how the	Students will be able to • Understand and appreciate the importance of classification and will learn how to proceed to	•To predict group and period of the elements having same valence electrons. •To predict the	• Students have developed an understanding about the need & importance of classification of	**Unit test** **Written assignment** **Activity**

		concept of grouping elements in accordance to their properties led to the development of Periodic Table. • Compare the positive points and drawbacks of previous models of classification of elements e.g. laws of triads and octaves, Mendeleev's law • Appreciate the utility of Mendeleev's periodic classification in designing of the modern periodic classification • understand the Periodic Law; understand the significance of atomic number and electronic configuration as the basis for periodic classificat recognize the periodic trends in physical and chemical properties of elements; • compare the reactivity of elements and correlate it with their occurrence in nature; • explain the relationship between	study, analyze and solve a problem through a systematic and sequential approach. • They will develop the skills of analysis, classification (sorting) and critical thinking. • They will also develop analytical and critical thinking through thoughtful study of the pattern of the classification and the properties of elements followed by discussion on normal & exceptional trends in the properties. • Through study and discussion on work done by the scientists, they will be motivated to follow a path of optimum values and life skills so that they can get success in life.	formula oxide and hydride of the elements through periodic table chart.	elements and knowledge of historical back ground of the classification of elements. • With the help of the above information and subsequent discussion held thereon they have developed an insight into significance of having skills of classifying & arranging things systematically so that further studies become easier and effective. • They have developed the skills of analysis, sorting, arranging through the study of this chapter and now critically think before explaining reasons about particular pattern of classification. • Students can predict periodic position of elements and can predict probable trends in properties of the elements in terms of their metallic/ non-metallic nature, ionization enthalpy, size, electro affinity, electronegativity, nature of compounds etc. • They can explain	To find the position of elements through its electronic configuration. To name the elements having Z > 100

		ionization enthalpy and metallic character; • ion; • properties of atoms e.g., atomic/ ionic radii, ionization enthalpy, electron gain enthalpy, electronegativity, valence of elements			the periodic trends in the properties of the elements.	

SUBJECT: BIOLOGY

Month & Working Days	Theme/ Sub-theme	Learning Objectives		Activities &Resources	Expected Learning Outcomes	Assessment
		Subject Specific (Content Based)	**Behavioural (Application based)**			
APRIL **21 Days** **(3 day)**	Life Process	To make the students learn and understand about different modes of nutrition and differentiate between autotropic and heterotropic nutrition. 2. To enhance the ability to understand that autotrophic nutrition involves the intake of simple inorganic materials from the environment and by using an external	Students will be able to – 1. Identify that different food items consumed by them take different duration of time for digestion. 2. Analyze that heavy food items should be consumed during morning hours and lighter in evening. 3. Interpret that problem of acidity is due to the presence Different gastric enzymes.	To prove that chlorophyll,CO_2, light is essential for photosynthesis. Students will observe the activity carefully and note down all the components required for photosynthesis Following activity will be conducted in lab were students will prepare temporary mount of a leaf peel to show stomata. They will observe the slide and identify the stomata and will draw a well labeled diagram as stomata helps in the exchange of gases. A Self made video will be	1. Students understood different modes of nutrition involved in life process. 2. They were able to analyze that duration for digestion of fats is more than protein and carbohydrates. 3. They were able to evaluate the importance of enzymes and gastric juices in the process of	• The video will be shown while explanation and the same video without the audio will be shown and the children will be asked to label the different organs and specify its function. **Assignment** **Unit test** **Practical**

		energy source like sun to synthesize complex high energy organic material. 3. To comprehend that the heterotrophic nutrition involves the intake of complex material prepared by other organisms. 4. To understand and summarize the various steps of digestion in human beings in the alimentary canal and the mode of absorption in the small intestine.		shown in the class on the process of human digestion. After observing this video they will draw the well labeled diagram of Human digestive system and also locate the parts where digestion of carbohydrate, protein and fats starts along with the name of enzyme associated with it.	digestion. 4. They were able to recognize that problem of acidity or ulcer or any other disorder is due to improper function of different organs of digestive system. 5. They were able to synthesized the importance of light, water and co2 for the light and dark reaction of photosynthesis along with the role of stomata.	
JUNE-JULY **17-26 Days** **(5 +8)**	Respiration- Aerobic and Anaerobic Transportation- 1.blood, heart, arteries, vein capillaries, double circulation 2. Xylem and phloem and ascent of sap, transpiration. Excretion- kidney, nephron, dialysis	Students will be able to learn and understand the concept of respiration and can compare between aerobic and anaerobic respiration. * They will be able to comprehend and relate how in cellular respiration, complex organic compounds such as glucose are broken down to provide	Students will be able to – 1. Identify the process of fermentation is due to anaerobic respiration which is used in production of alcohol, vinegar and bakery industries as well as in making of dosa etc. and also heavy exercise leads to anaerobic respiration which is responsible for cramps in muscle in human 2. Apply their	Following activity will be conducted in the class were the process of inspiration and expiration with the help of a working model of lungs will be demonstrated. An activity will be conducted in a lab. were student will be given opportunity to do and observe themselves that CO_2 is given out during the process of breathing. TRANSPORTATION- A video chart of human heart will be shown in the class	1. Students understood the importance of different life process and were able to understood mechanism of circulatory system where materials such as oxygen, carbon-dioxide, food and excretory products are transported 2. They were able to analyze that cramps in muscle	• The video will be shown while explanation and the same video without the audio will be shown and the children will be asked to label the different organs and specify its function. **Assignment** **Unit test** **Practical**

		energy in the form of ATP which is used to provide energy for other reactions in the cell. *They will be able to infer the mechanism of circulatory system where materials such as oxygen, carbon-dioxide, food and excretory products are transported. *They will explore their critical thinking by studying the importance of transport of water, minerals, food and other materials in highly differentiated plants * To enhance the ability to understand the mechanism of excretion in human beings in the form of soluble nitrogenous compounds. * To understand and summarize about different technologies and its implementation for	knowledge that improper functioning of these organs like lungs, heart and kidneys	were different parts will be explained. Students will be asked to draw the well labeled diagram of human heart and will locate the path of double circulation of blood. EXCRETION- A Self made video will be shown in the class on the process of human excretion. Students will be aware of different parts of excretory system and will understand that process of removal of nitrogenous waste from the blood and importance of nephron. After observing this video they will draw the well labeled diagram of Human excretory system and nephron also locate the parts where ultra-filtration and selective re-absorption takes place.	as well as bakery products, south Indian dishes and production of alcohol is due to anaerobic respiration. 3. They were able to analyze the importance of valve in veins and heart and will also able to evaluate the reason behind cardiovascular diseases and BP. 4. They were able to analyze the importance of blood group and Rh factors play major role in blood transfusion and childbirth. 5. They were able to recognize that problem in improper functioning of kidney or nephron leads to accumulation of toxic substances in the blood which are fatal. 5. They were able to synthesize the importance of dialysis, heart	

		survival like renal dialysis, pacemaker etc.			surgery, pace-maker for vital function.	
August -20 & September-24 (6+7)	CONTROL & COORDINATION	**Students will be able to** Describe the structure and types of neurons. Explain Reflex action, Involuntary and Voluntary actions. Describe the Central Nervous system- Structure of Brain and its function To understand the role of Plant hormones, plant movement, Understand the role of Human hormones and their secretions. Comprehend that control and coordination in	Students will be able to learn to appreciate the leadership quality of brain to control hunger, anxiety, anger ,memory ,thirst, riding, writing, balancing of the body, body postures etc are controlled by the Central Nervous System and it coordinates with different systems in the body to maintain oneness in running all the physiological activities together. Sensitize the body response during adverse situation like touching hot water or any utensils, when suddenly any foreign object comes in contact with our eyes, etc through reflex action. Infer the effect of hormones for the	A self made video on Brain, highlighting the different parts of brain and its function. There after the teacher will cite different daily life examples to explain the various parts of brain that are responsible to carry various function. Reflex action will be introduced by demonstrating some activities in which the student responds to the stimuli without thinking. The students will be asked to make the diagram of brain and label its various parts & relate with different the physiological activity controlled by it.	Students have learnt to : Illustrate and describe the structure of brain Analysed the concept of reflex action, voluntary and involuntary actions and could apply in real life situation Analyse and interpret the role of different hormones and its secretion in the life span of the organism. Interpret and describe various plant movements with phytohormones.	• The students will be asked to make the diagram of brain and label its various parts & relate with different the physiological activity controlled by it. • Assignments • Unit test, Term end exam .

		human beings is the sum of nervous system and endocrine system	changes in human after puberty . Appreciate the role of hormone to cope stress. Realize the role of plant hormones in regulating the process of phototropism, geotropism, hydrotropism, chemotropism etc. Illustrate examples from daily life to relate the effect of hormones on living system. Learn to imbibe positive qualities of others and ignore the negative ones.			
Oct- 22 Nov-20 (6+5)	**Chapter:- How do organism reproduce?**	*Students will be able to learn and understand the concept DNA its structure, DNA copying and its importance. *They would be able to analyze and relate the concept of DNA copying with variation. *They would be able to acquire knowledge about	• To emphasized on development of skills like observational, experimental and inculcating values like Awareness, Responsibility, Accuracy, • Students will be able to identify the significance of bright colour	*To study the binary fission and budding in Amoeba and yeast through permanent slides. *To study the different parts of dicot seeds. dding and binary fission with f slides. **vegetative** Propagation in , Bryophyllum leaf.	1) Learner learnt and understood about the concept DNA its structure, DNA copying and its importance. 2) Students were able to identify the significance of bright colour of flower for pollination. 3) Students were	*To study the different parts of dicot seeds. ***Unit test** ***Class Test** *Assignment

		different modes of reproduction and apply the concept in different living organisms. *They would be able to comprehend the mechanism of sexual reproduction in flowering plants and human beings. *They will be able to analyze and think critically about the changes in the human body at puberty. *They will explore their critical thinking by studying the importance of reproductive health their problems and strategies	of flower for pollination. • They will be able to interpret that night blooming flowers are white whereas the day blooming flowers are brightly coloured. • They will be able to evaluate that congenital anomalies are due to genetic and environmental factors. • The noticeable changes that occur during puberty such as- increase in height, body shape, change in voice of males, appearance of pimples • Mental and emotional maturity bodily changes during adolescence • Myths and taboos regarding		able to share their opinion on DNA copying with variation. 4) They were able to evaluate different types of High- Yielding varieties of wheat and rice. 5) They were able to explore their critical thinking by studying the importance of reproductive health their problems and strategies 6) They were able to apply their knowledge to relate congenital anomalies are due to genetic and environmental factors. 7) They were to analyzing importance and male and female sex ratio and sex determination of child is male heterogamy.	

			bodily changes during adolescence • To get aware regarding prevention of sexually transmitted disease • To relate the importance of government raising awareness campaign regarding birth control measures. . .			
Dec-20-Jan 23 6 +1days	**Chapter:-** Heredity and Evolution	*Students will be able to learn and understand the concept DNA its structure, DNA copying and its importance in variation. *They will be able to understand variations arising during the process of reproduction can be inherited. ***S**tudents will	*To emphasized on development of skills like observational, experimental, knowledge ,understanding, analysis, interpretation and inculcating values like Awareness, Responsibility, responsibility, coordination and empathy Students will be able to identify the existence of	**To observe the ears of all students in class to study the rule of inheritance.** **To make a punnet square for dihybrid cross.** To flip the coin and to sketch a face with different traits using genetic trait chart. To observe the specimens of evidence of evolution:.	1) Learner learnt and understood about the concept DNA its structure, DNA copying and its importance in variation. 2) Students were able to identify the existence of wisdom teeth, auricular muscles and excessive growth of body hairs are vestigial	**To make a puneet square for dihybrid cross.** To analyze their genetical character through pedigree analysis **Assignment** **Unit Test**

		comprehend about different Mendel laws of inheritance. *They will able to understand about sex determination in human *They will able to differentiate between inherited and acquired traits and will able to understand to trace evolutionary relationships.	wisdom teeth, auricular muscles and excessive growth of body hairs are vestigial organs in human population. They will be able to interpret inheritance of blood groups in human being. They will be able to evaluate that increased incidence of female foeticide in northern India and on basis of sex chromosome who is responsible for sex determination of sex of baby. They will be able to interpret that illegal abortion of female foetus is a crime that affect sex ratio in future. They will be able to appreciate fossils help to unfold the mystery of evolution reflects phylogeny They will be able to evaluate the transmission of resemblances, with ancestors or parent is due to genes.	*Homologous and Analogous organ in plants and animals, Vestigial organs by specimens and charts. To analyze their genetical character through pedigree analysis	organs in human population. 3) Students were able to share their opinion on sex determination in human 4) They were able to evaluate between inherited and acquired traits and will able to understand to trace evolutionary relationships. 5) They were able to explore their critical thinking that illegal abortion of female foetus is a crime that affects sex ratio in future. 6) They were able to apply their knowledge to relate congenital anomalies are due to genetic and environmental factors. 7) They were to analyzing importance of transmission of resemblances, with ancestors or parent is due to genes.	

-Jan-3	**Chapter:-** **Our Environment**	***To** make the students learn and understandabout the various abiotic and biotic factorsthat interacts in the environment. ***S**tudents will learn about various food chain and web in ecosystems. ***T**hey will be able to analyze the impact of human in the deteriorating the environment. *They will able to interpret the cause of global warming and depletion of ozone layer. *They will learn about how to use and manage biodegradable substances. *They will be able to analyzeThree concepts of 'R'. *The students would be familiarized with various methods to manage the garbage	*To emphasized on development of skills like observational, experimental, knowledge, understanding, analysis, interpretation and inculcating values like Awareness, Responsibility, responsibility, coordination and empathy towards environment. Students will be able to identify that tertiary consumers required more energy according to 10% law and therefore depends on multiple food options. They will be able to interpret layer of atmosphere in which ozone is present (stratosphere) and its importance. They will be able to evaluate that increased increase in size of ozone hole is due to human activities. They will be able to interpret the importance of bacteria and decomposers and consequences if decomposers are	The students will be asked to calculate the total amount of waste generated at home per day. They will be segregating into biodegradable and non biodegradable. Create an aquarium- Design an aquarium on a paper. What are the things we keep in mind when we create?….(O2 pump to provide oxygen, Aquatic plants and animals for self sustaining…etc) What would happen if you do not take care while putting the aquatic animals which would eat others?	1) Learner learnt and understood about the various abiotic and biotic factorsthat interacted in the environment. 2) Students were able to identify that tertiary consumers required more energy according to 10% law and therefore depends on multiple food options. 3) Students were able to share their opinion on cause of global warming and depletion of ozone layer. 4) They were able to evaluate that increased increase in size of ozone hole is due to human activities. 5) They were able to explore their critical thinking with various methods to manage the garbage 6) They were able to apply their knowledge to relate Three concepts of 'R'.	**Pannel discussion on Global Warming** **Assignment** **Unit Test**

			removed from environment. They will be able to evaluate the hazards of burning plastic and biological magnification.		7) They were to analyzing importance of bacteria and decomposers and consequences if decomposers are removed from environment.	
Jan-2	Management of Natural Resources	*Students will able to understand about use of different natural resources. *They will be able to comprehend and infer their knowledge in deciding the ways by which these resources will be managed for sustainable development.	*To emphasized on development of skills like observational, experimental, knowledge, understanding, analysis, interpretation and inculcating values like Awareness, Responsibility, responsibility, coordination and empathy towards environment. Students will be able to identify that how we and our family member can play important role in regulation the daily use of some natural resources. They will be aware of importance of sustainable management.	*The students will be asked to find out about the international norms to regulate emission of carbon dioxide. *Panel discussion on how we can contribute towards meeting those norms.	1) Learner learnt and understood about the use of different natural resources. 2) Students were able to identify that how we and our family member can play important role in regulation the daily use of some natural resources. 3) Students were able to share their opinion onin deciding the ways by which these resources will be managed for sustainable development. 4) They were able to evaluate that	Panel discussion on how we can contribute towards meeting the international norms to regulate emission of carbon dioxide.

			They will be able to interpret importance of making water potable and consequences of drinking unclean water. They will be able to evaluate that energy can be produce from waste. They will be able to interpret the use of new technology in India like WTE programme i.e. waste to energy project. They will be able to evaluate the hazards of burning fossil fuels.		energy can be produce from waste. 5) They were able to explore their critical thinking with importance of making water potable and consequences of drinking unclean water. 6) They were able to apply their knowledge to interpret the use of new technology in India like WTE programme i.e. waste to energy project.	

SUBJECT: PHYSICS

APRIL **21 Days** **(7 day)**	**LIGHT- Reflection and Refraction**	**SPECIFIC LEARNING OBJECTTIVES:** **Students will be able to-** • Define reflection • State laws of reflection • Differentiate between types of reflection • Differentiate between real and virtual image. • Define terms	**BEHAVIOURAL LEARNING OBJECTIVES:** **Students will be able to –** • Understand the difference between reflection and refraction. • Apply the concept of reflection and refraction in daily	Students can be asked to draw image formation, predict the result by using laws and then check the same in lab. Students can also be asked to keep the screen at the estimated positions in order to verify the image formation of mirror. Activity- Various spherical mirrors will be will be shown and how they aredifferent than plane mirrors will be discussed. t of image formation will be introduced.	**Students learnt to-** • Define reflection • State laws of reflection • Differentiate between types of reflection • Prove laws of reflection of light • Understand the application of spherical mirrors and state its uses.	Unit test and numerical problems previous year board questions.

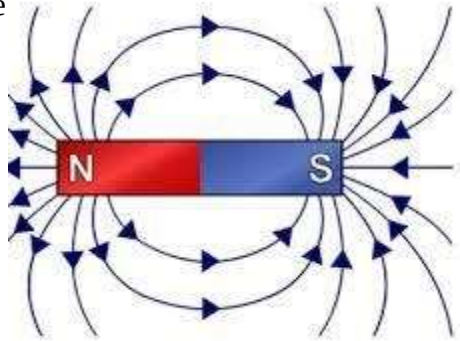
		related to spherical mirror. • Define refraction • State laws of refraction • State causes for refraction • Define and calculate refractive index • State factors affection refractive index • Explain refraction through spherical lenses • Draw image formation for spherical mirrors and state the nature and position of image. • Make use of mirror formula • Draw image formation by spherical lenses. • Apply sign conventions correctly • Calculate power of lens. • Calculate focal length of	observation, • Understand the application of spherical mirrors and state its uses. • Can make use of mirror formula • Apply sign conventions correctly • Apply the concept of refraction to day today life for e.g. twinkling of stars, apparent bending of straw/ spoon when kept in glass filled with water etc. • To apply that apparent depth is less than real depth. • Use various lenses. • Calculate focal length and power of lens.	Lab Activity- refraction through glass slab will be performed by students and they will also be taught relation between emergent ray incident ray. Calculate the rough focal length of the convex lens and concave mirror.	• Can make use of mirror formula • Apply sign conventions correctly • Apply the concept of refraction to day today life for e.g. twinkling of stars, apparent bending of straw/ spoon when kept in glass filled with water etc. • To apply that apparent depth is less than real depth. • Use various lenses. • Calculate focal length and power of lens.	

		combinations • Draw the image formation through glass slab and able to calculate the refractive index • Draw the tracing of light through glass prism and able to understand the relation between emergent and incident ray.				
JUNE-JULY **16-26 Days** **(12 day)**	**Human Eye and Colourful World**	**I - <u>Specific Objectives</u>** **Students will be able to-** • **State cause and correction of defects of vision like myopia, hypermetropia, presbyopia etc.** • **Define phenomenon of dispersion and state its cause.** • **Explain Rayleigh Scattering.** • **Explain the working of human eye.** • **Draw the diagrams of defected eye**	**II - <u>Behavioral Objectives</u>** **Students will be able to –** • Apply concepts to daily life- • Explain apparent position of stars. • Justify advanced and delayed sunrise and sun set. • Explain about the blue colour of clear sky.	Practical application of refraction will be introduced with the help of video. Twinkling of stars, delayed sunrise and sunset and many other applications will be discussed. Rayleigh experiment will be explained to the students and practical applications will be discussed in the class. Recapitulation of all the concepts will be done along with the exercises. Lab Activity- refraction through glass Prism will be performed by students and they will also be taught relation between emergent ray incident ray.	**Students learnt to-** • Explain the working of human eye. • State causes and correction of defects of vision like myopia, hypermetropia, presbyopia etc. • Draw the diagrams of defected eye and corrected eye. • Draw path of light through a glass prism. • Define phenomenon of dispersion and state its cause.	• Class Test and FAQ for the some topics

		and corrected eye. • **Draw path of light through a glass prism.**	• Justify white colour of clouds etc.		• Explain Rayleigh scattering. • Apply concepts to daily life- • Explain apparent position of stars • Justify advanced and delayed sunrise and sun set. • Explain the reason for blue colour of clear sky. • Explain the reason for white colour of clouds.	
AUGUST 20 DAYS (6 days)	**SOURCES OF ENERGY**	STUDENTS WILL BE ABLE TO – • Define Solar, Wind, Hydro And Ocean Energy • Explain The Working Of Solar Devices Along With Their Advantages And Disadvantages • Explain Working Of Hydro Power Plant, Wind Mills • Understand How Geothermal	STUDENTS WILL BE ABLE TO- • Appreciate various types of resources. • Make judicious use of these resources. • Will start using renewable resources in all the possible manners. • Spread awareness about conservation of resources.	Class Activity- • Videos of working of – power plants mills ssing of geothermal and ocean energy. nts will be asked to find the locations of above plants and the energy harnessed by them. • Students will be asked to prepare ppt on various types of resources, their harnessing, advantages and disadvantages.	STUDENTS WILL BE ABLE TO – • Define Solar, Wind, Hydro And Ocean Energy • Explain The Working Of Solar Devices Along With Their Advantages And Disadvantages • Explain Working Of Hydro Power Plant, Wind Mills • Understand How Geothermal	

		And Ocean Energy Is Harnessed • State advantages and limitations of various resources	•		And Ocean Energy Is Harnessed • State advantages and limitations of various resources	
Month & Working Days	**Theme/ Sub-theme**	**Learning Objectives**		**Activities & Resources**	**Expected Learning Outcomes**	**Assessment**
		Subject Specific (Content Based)	**Behavioural (Application based)**			
SEPTEMBER - OCTOBER 24-22 Days (15 days)	**ELECTRICITY**	Students will be able to- • State properties of charges • State coulomb's law • Define and calculate current • Define and calculate potential difference, • Define and calculate resistance and resistivity. • Arrange various	Students will be able to – • Understand potential difference is required for the flow of current. • Identify sources of current • Relate transfer of charges in day today life. • Relate resistance of various objects in daily life.	Activity- Various devices which provide potential difference will be discussed and will be shown. Class Activity- Teacher will introduce various components of electric circuit in the lab/ classroom by elaborating how to connect it and its use. Lab Activity- Ohm's law will be verified by the students in the lab. They will note down observations and will calculate the result. Class Activity- Students will be explained about various	Students learnt to- • State properties of charges • State coulomb's law • Define and calculate current • Define and calculate potential difference, • Define and calculate resistance and resistivity. • Arrange various resistances in	• To verify Ohm's law. • To calculate net resultant resistance in series combination. • To calculate net resultant resistanc

		resistances in combinations to get desired result. • Explain factors affecting resistance and resistivity • Elaborate how electric appliance are rated • Understand uses of specific materials • Draw various circuit diagrams	• Analyse the rating of various electric appliances. • Start using particular material on the basis of its property. • Understand the rating of various types of fuse and their functions. • Calculate and verify electricity bills. • Can assemble various electrical appliances correctly in electric circuits.	combinations of resistors and will be asked to identify series and parallel combinations. Lab Activity- Students will be taken to lab and will be asked to calculate net resistance of the given resistors in series and parallel combinations. Class Activity- Students will be given various combinations and can be asked to calculate the result theoretically and then verify with the help of apparatus.	combinations to get desired result. • Explain factors affecting resistance and resistivity • Elaborate how electric appliance are rated • Understand uses of specific materials • Draw various circuit diagrams • Potential difference is required for the flow of current. • To Identify sources of current • To explain transfer of charges between two objects in day today life. • The application of Resistance of various objects. • To analyse the rating of various electric appliances. • To use	e in parallel combination.

					particular material on the basis of its electrical property. • To rate of various types of fuse and their functions. • To Calculate and verify electricity bills. • To assemble various electrical appliances correctly in electric circuits.	
November December 20-20 days (13 days)	**MAGNETIC EFFECT OF ELECTRIC CURRENT**	Students will be able to- • Draw and State properties of magnetic field lines. • Explain and perform Orested experiment. • Draw and explain properties of magnetic field lines due to current carrying circular coil. • State and apply Right hand	BEHAVIOURAL LEARNING OBJECTIVES: Students will be able to – • Appreciate the use of science in various applications like electric bell etc. • Apply Fleming's left hand rule to understand working of Dynamo. • Apply Fleming's right hand rule	1. Class Activity-Concept of the magnetic field is introduced with the help of following activity. 	Students learnt to- • Draw and State properties of magnetic field lines. • Explain and perform Orested experiment. • Draw and explain properties of magnetic field lines due to current carrying circular coil. • State Right hand thumb rule	**.**Lab Activity Ask them to draw magnetic lines of forces

		thumb rule. • Draw and explain properties of magnetic field lines due to current carrying straight conductor. • State and apply Clock rule. • Draw and explain properties of magnetic field lines due to current carrying solenoid. • Differentiate between electromagnet and permanent magnet. • Explain Kicking wire experiment. • State and apply Fleming's left hand rule. • Explain and apply electromagnetic induction. • State and apply Fleming's right hand rule.	to Generator. • Can prepare electromagnets and make use of them.		• Draw and explain properties of magnetic field lines due to current carrying straight conductor. • State and apply Clock rule. • Draw and explain properties of magnetic field lines due to current carrying solenoid. • Differentiate between electromagnet and permanent magnet. • Explain Kicking wire experiment. • State and apply Fleming's left hand rule to the working of Dynamo. • Deduce properties of magnetic field lines. • Draw and explain properties of	

					magnetic field lines due to current carrying circular coil. • Apply Right hand thumb rule. • Deduce properties of magnetic field lines due to current carrying straight conductor. • Find out the direction of magnetic field lines due to current carrying solenoid. • Differentiate between electromagnet and permanent magnet. • Explain electromagnetic induction. • State and apply Fleming's right hand rule to generator. • To appreciate the use of science in various	

					applications like electric bell etc. • Can prepare electromagnets and make use of them.	