DELHI PUBLIC SCHOOL, PALI

ANNUAL CURRICULUM PLAN SESSION 2019-20

CLASS: **IX**
SUBJECT: **Science**

SUBJECT : Physics

Month	Theme/ Sub-theme	Learning Objectives		Activities &Resources	Expected Learning Outcomes	Assessment kkkk
		Subject Specific (Content Based)	Behavioural (Application based)			
April	**Chapter:- Motion (PHYSICS)** Distance, displacement, speed, velocity, acceleration, uniform and non uniform motion, elementary idea of circular motion, distance-time graph and velocity -time graph	Student must able to • Understand the difference between displacement and distance. • Understand the uniform and non-uniform motion. • To represent graphically motion of any object. • Find the relation v= u+at, s = ut+½ at ^{2}and $v^2 = u^2 + 2as$. • To understand the difference between	• To understand distance and displacement can be same in some situations and different in some situations. • Calculate the average walking or running by evaluating the distance and time. • Identify the nature or kind of motion of own or anybody. • To observe trend of motion by the help of	• Measure the time it takes you to walk from your house to bus stop or the school. If you consider that your average walking speed is 4km/h estimate the distance if the bus stops or school from your school. Calculation should be in CGS system of unit and also plot nature of motion of graph. • Take a meter scale and a long rope. Walk from one corner of a basket ball court to its opposite corner along its sides. Measure the distance covered by you and magnitude of the displacement. What difference would you notice between the two in	• They have learned the concept of various terms related to motion such as distance, displacement, speed,velocity and difference between them. • They have learned the concept and examples of the uniform and non-uniform motion. • They have learned to represent motion by using graph. • They have	• Measure the time it takes you to walk from your house to bus stop or the school. If you consider that your average walking speed is 4km/h estimate the distance if the bus stops or school from your school. Calculation should be in CGS system of unit and also plot nature of motion of graph. • **Unit test** • **Class Test**

		velocity and speed. • To understand the concept of uniform circular motion • To understand the concept of uniformly accelerated motion • Distinguish the average velocity and average speed and their calculation. • Understand the concept of instantaneous velocity and acceleration.	graph. • Understand the reading of speedometer and odometer used in vehicle.	this case? • An electron moving with a velocity of 5 x 10^4 m/s enters into a uniform electric field and acquires a uniform acceleration of $10^4 m/s^2$ in the direction of its initial motion. (i) Calculate the time in which the electron would acquire a velocity double of its initial velocity. (ii) How much distance the electron would cover in this time? • Observation of instantaneous speed from speedometer and distance from odometer. Identity the motion of type.	learned to find the relation v= u+at, s = ut+½ at^2 And $v^2 = u^2 + 2as$. • They have learned the term acceleration. • They have learned the concept of uniform circular motion and its application in daily life. • They have learned use of term average speed and average velocity while moving of any object.	Numerical problems of related content
May	**Chapter:- force and laws of motions** force (balanced and unbalanced force) and motion,	• Understand about types of forces i.e. balanced and unbalanced forces.	• To understand that mass and inertia are related. • Apply the inertia of rest and motion and direction to different situation	• To study the roll of friction take two different balls one with smooth surface and other of rough. Using inclined plane. • To just verify the concept of Newton's third law.	• They have learned the concept of force and difference between balance and unbalanced forces.	• Assignment • To study the roll of friction take two different balls one with smooth surface and other of rough. Using

	Newton's laws and its applications, inertia, momentum, Impulse, law of conservation of linear momentum.	• Understand the concept of force. • Find the relation f=ma. • Understand the concept of inertia and its type. • Understand the keys of Newton's laws. • Formulate the Newton's second law of motion. • Understand the concept of momentum and impulse and their applications. • To understand application of all the three laws in our daily life. • Understand the concept and types of collision.	like when a person standing in a bus falls backward when bus is start moving suddenly. • Use of balanced and unbalanced force in daily life. • Apply the concept and applications of Newton's second laws in daily actions like why a fielder pulls his hand backward; while catching a cricket ball? • To study motion of object in terms of momentum. • To understand that there is a reaction to every action.		• They have learned the relation f=ma. • They have learned the concept of inertia and its type. • They have learned the keys of Newton's laws and their applications. • They have learned the concept of momentum and impulse and their use in daily life. • They have learned the concept and types of collision. • They have learned the derivation of the relation between the KE and Momentum of body • They have	inclined plane. • Numerical problems of related content

		• Derivation of law of conservation of linear momentum and its application.			learned the application of inertia of rest and motion in day to day life • They have learned the application and concept of Newton's laws in daily actions. • They have learned the to calculate the force and momentum of object on the basis of Newton's laws. • They have learned to calculate the mass, velocity after and before the collision. And calculate the recoil velocity of gun.	

July	**Chapter:- gravitation** Newton's universal law of gravitation, free fall, acceleration due to gravity, mass, weight, pressure, thrust,	• Understand the concept of Newton's universal law of gravitation. • Understand the concept of free fall and acceleration due to gravity. • Understand the meaning and concept of mass and weight. • Differentiate between mass and weight. • Differentiate between the acceleration due to gravity and universal gravitation constant. • Understand the concept of pressure and thrust. • Differentiate between pressure and	• **To** understand how and why planets revolve around sun in different orbits. • Apply the concept of free fall during the rain fall or any object fall from certain height • Understand that weight changes with place due to change in acceleration due to gravity. • Analyses and conclude the situation for applying pressure or thrust for example why is it difficult to hold a school bag having a strap made of a thin and strong string?	• A sphere of mass 40kg is attracted by a second sphere of mass 15kg when their centres are 20 cm apart, with a force of 0.1 milligram weight. Calculate the value of gravitational constant. • A body of mass 1 kg is placed at a distance of 2m from another body of mass 10kg. At what distance from the body of 1 kg, another body of mass 5 kg be placed so that the net force of gravitation acting on the body of mass 1 kg is zero? • Gravitational force acts on all objects in proportion to their masses. Why then, a heavy object does not fall faster than a light object?	• The concept of Newton's universal law of gravitation. • The concept of free fall and acceleration due to gravity. • The meaning and concept of mass and weight. • The Difference between mass and weight. • The Difference between the acceleration due to gravity and universal gravitation constant. • The concept of pressure and thrust. • The Difference between pressure and thrust. • To Apply the concept of free fall during the rain fall or any	• To calculate the kinetic and potential energy in free fall. And also the average velocity. • Class test • Numerical problems of related content

		thrust.			object fall from certain height • To calculate the mass or weight of object at any instant using value of acceleration due to gravity. • To Analyses and conclude the situation for applying pressure or thrust for example why is it difficult to hold a school bag having a strap made of a thin and strong string? •	
August	**Chapter:- floatation** density, relative density, buoyancy, Archimedes'	• Understand the meaning of density ,relative density and concept of buoyancy. • Understand the	• Daily life application of density and relative density. • Apply the concept of Archimedes' principle when the	The volume of a 500 g sealed packet is 350 cm^3. Will the packet float or sink in water if the density of water is 1 g cm^{-3}? What will be the mass of the water displaced by this packet? **Lab Activitiy: -**	Students have learned • To apply the concept of Archimedes' principle when swimming or floating.	Determine the weight of object using Archimedes' principal. Numerical problems of related content

	principle , laws of floatation.	meaning and analyses the Archimedes' principle. • Understand and aware about the laws of floatation.	object will float or sink. • Calculate the force requires floating of an object on the water surface using buoyancy.	• Determine the weight of object using Archimedes' principal. • Determine the density of water. • Loss of weight in tap or salty water and effect on density.	• Understand about the concept of density and relative density. • To apply use of density and relative density in daily life. • To apply laws of floatation in different situation.	
September	**Chapter:- work and energy** work and types of work, energy and types of energy, conservation of energy ,power.	Student will be able to • Define the concept of work and its type. • Understand the concept of energy and its type. • Identify different forms of energy in our surrounding. • Formula	• Apply the concept of work in daily actions like person carries a load on his head. • Analyze the different forms and conversion of energy like chemical into electrical. • Calculate the power consumption of any mechanical body.	**Lab Activity: -** • Showing them work done against frictional force inclined plane. • Showing work done against gravitational force. • Identify different types of work in various situation.	Students have learned • The concept of work and its type. • The concept of energy and its type. • The meaning of different forms of energy and its uses	Showing them work done against frictional force inclined plane. Numerical problems of related content.

		derivation of kinetic energy and potential energy. • Understand and derive law of conservation of energy. • Differentiate between energy and work and their interconversion. • Understand the concept of power and average power	• Understands the concept that to carry work energy is always needed.		• The concept of conservation of energy. • To deriveconservation of energy mathematically. • To derive the expression for potential and kinetic energy. • To differentiate between energy and work. • The concept of power and average power. • To apply the concept of work in daily actions like person carries a load on his head. • To analyze the situation to differentiate which type of work being preceded in some situation like pulling or	

					pushing a roller. • The different forms and conversion of energy like chemical into electrical. • To calculate the power consumption in different situation.	
October	**Chapter:- Sound (PHYSICS)** sounds and wave & types of wave, terms related with sound like frequency, wavelength etc, reflection of sound, echo, Reverberation, sonic boom, ultrasound and its applications, SONAR,Differen t characteristics of sound wave. **Revision**	Students will be able to learn • Concept of sound and its propagation. • The meaning and concept of frequency, wavelength, time period. • Concept of loudness and pitch. • The meaning of intensity of sound. • The Difference	• Apply the concept of sound propagation in loudspeaker. • Use of the concept of loudness and pitch during public use of loudspeaker. • Analyze the concept of echo i.e. megaphone, stethoscope etc.	• Verify the law of reflection of sound. • Calculation of pitch, loudness wavelength numerical problems. • Identify types of waves in different situation.	They have learned • The Concept of sound and its propagation. • Different types of waves such as longitudinal and transverse. • The meaning and concept of frequency, wavelength, time period. • The Concept of loudness and pitch. • The Difference	• Annual exam

		between intensity of sound and loudness. • Meaning of echo and reflection of sound. • Concept of the reverberation of sound and its application. • Meaning of sonic boom and ultrasound and its application. • Concept of the SONAR.			between intensity of sound and loudness. • The Meaning of echo and reflection of sound. • The Concept of the reverberation of sound and its application. • Meaning of sonic boom and ultrasound and its application. • Concept of the SONAR. • Apply the concept of sound propagation in loudspeaker. • Analyze the concept of loudness and pitch during public use of loudspeaker. • Analyze the concept of intensity to know	

					the frequency, wavelength etc. Analyze the concept of echo i.e. megaphone, stethoscope etc.	

SUBJECT: Biology

Month	Theme/ Sub-theme	Learning Objectives		Activities &Resources	Expected Learning Outcomes	Assessment
		Subject Specific (Content Based)	Behavioural (Application based)			
April	**Theme - Improvement of food resources** i)Crop variety improvement ii) Crop production management iii) Cropping Patterns	Students will be able to: know different types of crops like zayed, kharif and rabi and understand about micro and macro nutrients and about manures and fertilizers Analyze different cropping patterns like-	To emphasized on development of skills like observational, experimental and inculcating values like Awareness, Responsibility, concern, Students will be able to identify kharif, rabi and zaid crop when they will had them in food They will be able to apply to Interpret their growing and harvesting seasons by classifying them according to the	To make a list of Rabi, Kharif and Zaid crops with their growing and harvesting season.	1) Learner learnt and understood about importance of animal husbandry. 2) Students were able to identify that livestock farming is done for dairy and drought and marine-culture not only provides seafood but also for pearl cultivation along with the difference between broilers (consuming) and layers (for eggs production). 3) Students were able to share their opinion on improvement of animal variety through breeding. 4) They were able to evaluate different types of	News Analysis Subject enrichment activities Unit Test Assignment

		Mixed, crop rotation, inter, organic farming. Share their opinion on improvement of crop variety. Explore their critical thinking by studying the importance of plant breeding.	availability in particular season. They will be able to evaluate that deficiency of nutrients affects the physiological processes in plants including reproduction, growth and susceptibility to disease. They will be able to construct biological waste into different types of manure. They will be able to Appreciate the importance of organic farming. They will be able to evaluate consequences of fertilizers over manure. To emphasized on development of skills like observational, diagrammatical and experimental and inculcating values like	class will be divided in a group of 7 following a star topology- Talking point will be given on cropping pattern will be conducted. It will be recorded and presented by the group leader. News analysis:- search a news on latest innovations in agricultural practices and crop production and analysis it	farming practices like – poultry, fish, bee-keeping of different states or places. 5) They were able to explore their critical thinking on the main aim of improvement of food resources and were able to justify different revolutions done by government for improvement of food resources. 6) They were able to apply their knowledge to relate quality of honey depends on pasturage (availability of flower for nectar collection). 7) They were to analyzing different adulterates present in food stuff. (like spices, arhar dal) as well as able to interpret that adulterated food items leads to health problems.	

	Animal Husbandry Cattle farming and poultry farming, Eggs and broiler production Fish production-i) marine ii) Inland, Bee keeping-Apiculture	To make them learne and understand about importance of animal husbandry. 2) To enhance the ability to analyses different types of animal livestock management 3) To make them share their opinion on improvement of animal variety through breeding. 4) To evaluate different types of farming practices like – poultry, fish, beekeeping of different states or places. 6) To justify the main aim of improvement of	Creativity (while drawing the diagram), Awareness (about different types of animal livestock management)**,** Care and Safety(Proper housing keeping of animals are required to keep them healthy and to increase production), Cleanliness(Its required to keep animals disease free), Environmental Concerns(Animals should not serve as source of diseases) Responsibility(concern for sustainable management) Students will be able to identify that livestock farming is done for dairy and drought and mari-culture not only provides seafood but also for pearl cultivation. They will be aware	according to understanding.		

		food resources. 7) To analyses different revolutions done by government for improvement of food resources.	about difference between broilers (consuming) and layers (for eggs production) as well as different breeds of cattle, fishes, honey bees etc. They will be able to apply their knowledge to relate role of pasturage (availability of flower for nectar collection) determines the quality of honey. They will able analyzing different adulterates present in food stuff. (like spices, arhar dal) They will interpret and will be able to share their opinion on that adulterated food items leads to certain disorders.	To test the presence of adulterants in food stuff.- present of starch and metanil yellow in tuar daal.and disorder cause by these adulterants.		
May	**Fundamental unit of life** Diffusion and	Students will be able to: 1) Know about cell and structural	1) Identify the process of Diffusion and osmosis with real life examples like salt on salad and Burning of	To prepare stained temporary mounts of onion peel and to record observation and draw their labelled diagrams.	**1.** Learner learnt and understood about cell and structural organization of cell. **2.** Skills like observational	To study the concept of Permeability, tonicity and osmosis with it types by preparing potato osmometer

	Osmosis Permeability-Impermeable, Semi-permeable, Permeable Tonicity of solution - Hypotonic, Isotonic and Hypertonic solution. Plasmolysis	orgization of cell. 2) Understand the role and importance of different organelles present 3) Analyze the function of cell membrane and cell wall with reference to their importance in vital role of life 4) Explore their critical thinking by studying the permeability concepts 5) Evaluate different types of tonicity depending on concentration of solute and solvent. 6) Justify the concept of osmosis and imbibitions with real life examples.	agarbatti or opening of perfume or fragrance of cooked food.. 2) Interpret swelling of raisin in desserts is due to imbibitions.. 3) Evaluate that if salt is added into vegetables during cooking its release water due to process of exosmosis.. 4) Analyze the concept of hypertonic solution is responsible for shrinkage of finger when we wash clothes for longer period of time. 5) Measure the consequences of swelling of different substances due to difference in concentration like swelling of gram or kidney beans in kitchen. 6) Recognize that if substance is boiled and then kept in different concentrated solution it will not show any difference as cell are dead example boil	To observe the result of hypertonic solution the concept of plasmolysis will be explained to the students. To study the concept of Permeability, tonicity and osmosis with it types by preparing potato osmometer	and experimental were developed in the students and values like division of labor and team work (as all the organelles divide the work among themselves), leadership (as nucleus work as controlling unit), obedience (as all organelles obey the command of controlling unit) were inculcated among the students. 3. Students were able to identified that cuts and wound heals due to the process of cell division 4. They were sensitized that genetic disorder cannot be cured. 5. They were able to analyze that formation of one organelle lead the formation of other organelle which inculcated the value of coordination, obedience etc. 6. Students ability were enhanced to understand the mechanism of different organelles with reference to their importance in vital role of life	Unit Test Assignment

	Division of labor, Prokaryotic versus Eukaryotic cell Structural organization of cell- Nucleus-Its role and functions, Cytoplasm-its role and importance, ER-its role, importance, functions and types, Golgi bodies-role and functions, Lysosomes and Mitochondria- role, functions and importance Ribosome and vacuoles- Types,	1) To make them learned and understand about cell and structural organization of cell. 2) To enhance the ability to comprehend the role and importance of different organelles present in the cell. 3) To make them share their opinion on	potato does not show any change with tonicity. 7) Relate importance of saline solution while giving injection to human. To emphasized on development of skills like observational and experimental and inculcating values like division of labor and team work (as all the organelles divide the work among themselves), leadership(as nucleus work as controlling unit), obedience (as all organelles obey the command of controlling unit) Students will be able to identify that cuts and wound heals due to the process of cell division They will be sensitized and will be able to apply their knowledge that genetic disorder	To prepare stained temporary mounts of human cheek cells and to record observation and draw their labelled diagrams.		To prepare stained temporary mounts of onion peel and human cheek cells and to record observation and draw their labeled diagrams.

	structure, role and function and Plastid	evolution of self autonomous organelles like- Mitochondria and plasmid 4) To enhance the ability to understand the mechanism of different organelles with reference to their importance in vital role of life 5) To make them understand about the flexibility of cell membrane and its significance with example of virus which they will correlate with the recent pandemic cause by virus as viruses lack cell membrane and therefore does not show any	cannot be cured. They will be analyzing that formation of one organelle facilitates the formation of other organelle which will inculcate the value of coordination. They will interpret and will be able to share their opinion on evolution of self autonomous organelles like- Mitochondria and plasmid			

		characteristics of life until they enter a living body.				
July	**Tissue** **Plant tissues-Meristematic tissue, permanent tissue -simple tissue, Complex permanent tissue** **animal tissues-epithelial tissue, Connective muscular and nervous tissues**	To make them learn and understand about tissues and structural organization of different tissues 2) To enhance the ability to analyses the role and importance of different tissues present in plants and animals. 3) To make them share their opinion on simple and complex tissues. 4).To evaluates different function of tissues depending on their location and structure.	To emphasized on development of skills like observational, diagrammatical and experimental and inculcating values like Creativity (while drawing the diagram), Awareness (about location of different tissues of plant and animal)**,** Responsibility(function of one tissue leads to the formation of other tissue), Coordination(collectively all the tissues works together in body to accomplish the work), Division of labor(works are divided among different tissues in the body to avoid overloading) Students will be able to identify that obesity is due to adipose tissue which stores fat in our	To observe permanent slides of different permanent tissues like parenchyma, collenchyma, sclerenchyma, Xylem and phloem. They will draw and their labelled diagrams. To identify striped, unstriped, cardiac, nerve tissue from prepared slides and draw their labelled diagrams. .	1. Learner learnt and understood about tissues and structural organization of different tissues 2) Students ability were enhanced to analysed the role and importance of different tissues present in plants and animals. 3) They were able to share their opinion on simple and complex tissues. 4).They were able to evaluate different function of tissues depending on their location and structure. Development of skills like observational, diagrammatical and experimental and inculcating values like Creativity (while drawing the diagram), Awareness (about location of different tissues of plant and animal)**,** Responsibility(function of one tissue leads to the formation of other tissue), Coordination(collectively	To observe permanent slides of different permanent tissues like parenchyma, collenchyma, striped, unstriped, nerve tissue from prepared slides and draw their labeled diagrams.

			body. They will be aware and will be able to apply their knowledge that wrong postures while sitting, lying or watching T.V affects different tissues present in the body. They will be analyzing that pumping of heart, jumping of frog and writing with hand or movement depends on different voluntary and involuntary muscles. They will interpret and will be able to share their opinion on occurrence of sprain is due to over stretched of ligaments, fatigue is due to accumulation of lactic acid in muscles.		all the tissues works together in body to accomplish the work), Division of labor(works are divided among different tissues in the body to avoid overloading) were enhanced in the students. Students wereable to identify that obesity is due to adipose tissue which stores fat in our body beneath the skin.. They were aware that wrong postures while sitting, lying or watching T.V affects different tissues present in the body. They were able to analyze that pumping of heart, jumping of frog and writing with hand or movement depends on different voluntary and involuntary muscles. They were able to interpret and were be able to share to their opinion on occurrence of sprain is due to over stretched of ligaments, fatigue is due to accumulation of lactic acid in muscles.	

August	**Theme -** **Why do we fall ill** **Subtopic-** **Healthy and disease-free** **Acute and chronic disease** **Principle of treatment and prevention**	To make them learned and understand about know about disease and their agents and to enable learners to differentiate between Healthy and Disease free person. To enhance the ability to learned and understand role and importance of different infectious agents, diseases and how to prevent and treat these disease and to make them understand about personal and community health. To make them share their opinion on various infectious agents and to understand the concept of Auto -Immune system. To explore their critical thinking by studying the application of Immunization and Vaccination the different various infectious agents, diseases and how to prevent and treat these disease. 5) To evaluate different function of various vaccines and to inculcate the knowledge of various	To emphasized on development of skills like observational, experimental and inculcating values like Awareness, Responsibility Students will be able to identify thathealthy and disease free do not convey same meaning. They will be aware and able to expand ORS, WHO and AIDS They will be able to apply their knowledge that lot of garbage and water accumulation provided ideal sites of breeding of mosquitoes and only female mosquitoes feed on human blood due to requirement of more nutrition to lay eggs and cause malaria and malarial antidrug Quinine is extracted from Cinchona tree. They will be able to analyze harmful effects of active and passive	**To observe a video on types of diseases.** Group discussion on IS PERSONAL AND COMMUNITY ISSUES BOTH MATTER FOR HEALTH. To make a case study on CORONA virus – COVID19 on the basis of- structure and genus and species, target organ, incubation, sign, and specific prevention and problems faced in making antiviral also stick a relevant picture related to the topic. Life cycle of mosquito	1.Learner learnt and understood about disease and their agents 2) Students ability were enhanced to analyze the role and importance of different infectious agents, diseases and how to prevent and treat these disease and to make them understand about personal and community health. . 3) They were able to share their opinion on concept of Auto -Immune system. 4).They were able to evaluates application of Immunization and Vaccination Development of skills like observational, experimental and inculcating values like Awareness, Responsibility They were aware that lot of garbage and water accumulation provided ideal sites for spreading of many diseases like malaria, cholera etc… They were able to analyze	To make a case study on any Chronic disease on the basis of-target organ, sign, and specific prevention.

		vaccines and preparation of vaccination chart of a child. 6) To justify the concept of vaccination in real	smoking and importance of NO SMOKING ZONES in the cities. They will be able to interpret the reasons AIDS is not considered as disease but syndrome. They will be able to evaluate the importance of vaccination in child.		that only female mosquitoes feed on human blood due to requirement of more nutrition to lay eggs. They were able to analyzed importance of NO SMOKING ZONES in the public places. They were able to interpret AIDS is not considered as disease but syndrome. They will understand the concept of viral disease and why making antiviral drug is difficult.	
September	**Diversity in living organism**	1) To make them learned and understand about know about bionomial nomenclature, hierarcy of groups classification. 2) To enhance the ability to analyses the role and importance of different level of classification among plantae and animalia 3) To make them share their opinion on various level of organisation. 4) To explore their critical thinking by studying different divisions of plant	To emphasized on development of skills like observational, experimental and inculcating values like Responsibility, Coordination and Collaboration, Creativity, Awareness**,** Concerns, Coordination Students will be able to classify the living organisms around them. They will be able to analyze the difference between evolution and	1.To study various types of plants and animals through permanent slides or specimens. 2. To draw the diagram of different division of plant kingdom and labeled it correctly	1) Learner learnt and understood about bionomial nomenclature, hierarcy of groups classification. 2) Students ability were enhanced to analysed the role and importance of different level of classification among plantae and animalia 3) They were able to share their opinion on on various level of organisation.	**To study the slides and specimens of agaricus, moss, fern, pinus, earthworm, cockroach, fish and birds and record their phylum, characteristic features and diagram.**

		kingdom. 5) To evaluate different phylum of animal kingdom. 6) To justify the concept like diploplastic triploplastic, and symmetry-asymmetry, bilateral etc.	classification. They will be able to understand that after monsoon blue green algae which is develop on moist soil is good sources of protein and act as crop yield booster.		. 4).They were able to evaluateapplication of blue green algae as crop yield booster. 5) Development of skills observational, experimental and inculcating values like Responsibility, Coordination and Collaboration, Creativity, Awareness**,** Concerns, Coordination 6) They were able to analyzed difference between evolution and classification. 7) They were able to interpret importance of algae in environmental concern.	
October	**Natural resources**	**1)** To make them learned and understand about Resources on earth**.** 2) To enhance the ability to analyses the role and importance of different bio-geo chemical cycle. 3) To make them share their	To emphasized on development of skills like observational, experimental and inculcating values like Care and Safety, Cleanliness, Environmental Concerns,	1) To demonstrate that air currents are caused by uneven heating of air 2) To study about ozone layer and then do the comparison in size of ozone hole in last few years.	1.Learner learnt and understood about Resources on earth**.** 2) Students ability were enhanced to analysed the role and importance of different bio-geo chemical	Draw Nitrogen cycle and name two biologically important compounds that contain both oxygen and nitrogen

		opinion on pollution 4) To explore their critical thinking by studying the importance of green house effect. 5) To evaluate the importance of ozone layer. 6) To justify the concept of water cycle	Obedience, Responsibility, Awareness**.** Students will be able to identify about environmental concern about Taj Mahal and heritage monument and effect of acid rain on these monuments They will be aware smog is due to pollution. They will be able to apply their knowledge that smog and zero visibility in Delhi is due to air pollution which leads to traffic jams and accidents. They will be able to analyze that excessive nutrient in water bodies due to pollution leads to eutrophication. They will be able to interpret the reasons Faecal matter of rhinoceros provided excess nutrients in water bodies leads to algal bloom which leads to	3) Draw a poster on consequences of global warming and name the green house gases. 4) Draw Nitrogen cycle and name two biologically important compounds that contain both oxygen and nitrogen. 5) Demonstrating Acid rain in lab.	cycle. 3) They were able to share their opinion on pollution and lichen as indicator of SO2 indicator and Mathura refinery causing marble cancer to The Taj-Mahal. 4).They were able to evaluate application importance of greenhouse effect and relate it with life on earth whereas other planet do not have life. 5) Development of skills like development of skills like observational, experimental and inculcating values like Care and Safety, Cleanliness, Environmental Concerns, Obedience, Responsibility, Awarenesswere incorporated in students**.** 6) They were aware about environmental concern and effect of acid rain on these monumentsand how it is formed. 7) They were able to	

			Eutrophication, Biomagnification and diseases caused due to accumulation of heavy metal. They will be able to evaluate the importance of sustainable management of natural resources .		analyze that smog and zero visibility is due to air pollution which leads to traffic jams and accidents 8) They were able to interpret that excessive nutrient in water bodies due to pollution leads to Eutrophication. 9) Understanding the concept of biomagnification of heavy metals. .	

SUBJECT : Chemistry

April - May	**Matter in our surrounding** Matter, classification of matter ,characteristics of particle of matter, states of matter, properties of different states of matter ,scales of measuring	To enable the students to: 1)Define matter 2) Classify matter on the basis of physical and chemical properties of matter. 3) Understand the characteristic of particles of matter. 4) Classification of matter into solid, liquid and gases	To enable the students to: 1)Appreciate the process of diffusion in detecting the leakage of LPG and to take the necessary steps to stop the leakage. 2) Appreciate the use of mercury in thermometer. 3) Appreciate the use of pressure cooker at high altitude to cook food	**Activity 1**: To perform an activity to show various characteristics of particles of matter like : a) Particles of matter have spaces between them. b) Particles of matter are very small c) Particles of matter are	The students have learnt about: 1) Matter and classification of matter on the basis of physical and chemical properties. 2) The characteristics of particles of matter. 3) Classification of matter into solid, liquid and gases on the basis of their physical	**1)** Assignment **2)** Periodical test Informal Assessment Activity1: To perform an activity to show various characteristics of particles of matter like a) Particles of matter have spaces between them.

	temperature, effect of change of temperature and pressure on states of matter, determination of melting point and boiling point, sublimation, evaporation and factors affecting evaporation	on the basis of their physical properties. 5)Know various scales of measuring temperature 6) Understand the effect of change of temperature and pressure on different states of matter. 7) Define melting and boiling point 8) Determine the boiling point of water and melting point of ice. 9)Define latent heat of vaporisation and fusion 10)Define sublimation and evaporation 11)Differentiate between evaporation and boiling 12) Understand various factors affecting evaporation.	faster and save fuel. 4) Appreciate the use of common salt /calcium chlorides on roads to clear road in winter season in cold countries and reduce in convenience. 5) Understand and appreciate the use of desert coolers to provide relief in summer. 6) Use wet strips of cotton on the forehead of the person suffering from high fever to reduce the temperature.	continuously in motion. **Activities 2** To determines melting point of ice and boiling point of water. **Activity 3.** To study the process of diffusion. **Activity 4 : To** compare the effect on boiling /cooking of rajma by adding salt and without adding salt. **Activity 5:**Compare the boiling of water at sea level and at high altitude from the data available. **Activity 6:** Study the effect of adding salt to water on its freezing point.	properties. 4) Various scales of measuring temperature. 5) Effect of change of temperature and pressure on different states of matter. 6)Melting and boiling point 7) Determination of boiling point of water and melting point of ice. 8) Latent heat of vaporisation and fusion 9) Effect of adding nonvolatile solute on boiling point of water. 10) Difference between evaporation and boiling 11) Understand various factors affecting evaporation. 12) Apply the process of evaporation in various area where cooling is needed. 13) Usepressure cooker to cook food faster and save fuel.	b)Particles of matter are very small c) Particles of matter are continuously in motion .
July-August	Chemical classificationof matter as pure and impure substances. Classification of pure substances – element and compound,	To enable the students to: 1)Know about pure and impure substances. 2)Classify pure substances as element and compound. 3)Classify mixture into homogeneous and	To enable the students to: 1) Appreciate the scattering of light by colloidal particles in dark room, in cinema halls. 2) Apply centrifugation technique at home to separate butter from	Activity 1: To study the difference in the properties of compound and mixture on the basis of: i) Homogeneous and heterogeneous nature ii)Behaviour towards magnet iii) Behaviour towards carbon	1) The students have learned about pure and impure substances. 2) The students have learned the classification pure substances as element and compound. 3)The students have learned	To study the difference between compound and mixture on the basis of: • Homogeneous and heterogeneous nature • Behaviour towards magnet Behaviour

	properties of element and compound and differences between them. Mixtures: Types of mixture as homogeneous and heterogeneous mixture. Concentration of solution: Ways to express concentration in terms of Mass by mass%, Mass by volume%. Solubility and Factors effecting solubility Classification of solution as True solution, colloidal solution and suspension. Separation techniques: Sedimentation, Centrifugation, Sublimation, Evaporation, distillation, fractional distillation, chromatography Physical and	heterogeneous substances. 4) Learn various ways of expressing concentration. 5) Calculate concentration in terms of mass and volume%. 6) Understand solubility and factors affecting solubility. 7) Classify solution into true solution, colloidal solution and suspension. 8) Illustrate the properties of true solution, colloidal solution and suspension. 9) Illustrate Tyndall effect and its applications. 10) Understand the various techniques to separate the components of mixture. 11) Understand the difference between physical and chemical changes. 12) Differentiate between element, compound and mixture.	milk. 3) Use naphthalene balls as an insect repellent home. 4) Appreciate the use of distillation techniques to obtain distill water which is used in inverter and in car radiators. 5) Apply the technique of crystallisation at home to obtain pure crystals of sugar or salt from its saturated solution. 6) Use alum at home to purify muddy water.	disulphide iv) action of Acid. **Activity 2:** To differentiate between true solution, colloidal solution and suspension on the basis of : i) Homogeneous and heterogeneous nature ii) Filterability iii) Stability **Activity 3:** To separate mixture of salt and ammonium chloride by sublimation. **Activity 4:** To study the various physical and chemical techniques to remove calcium and magnesium salt from water.	the various ways of expressing the concentration. 4) The students have learned how to calculate concentration in terms of mass and volume%. 5) The students have learned about solubility and factors affecting solubility. 6) The students have learned the properties of true solution, colloidal solution and suspension. 7) The students have learned about the various techniques to separate the components of mixture and their application. 8) The students have learned the differences between element, compound and mixture. 9) The students have learned to apply centrifugation technique at home to separate butter from milk. 10) The students were able to use naphthalene balls as an insect repellent in wash basins and to store woollen clothes. 11) The students have learned the importance of using distil water in	towards carbon disulphide and • Action of Acid. 2) Assignment 3) Periodical test

	chemical changes..				inverter. 12) The students have learned the use of alum for purification of muddy water.	
September-October	**Atoms and molecules:** Laws of chemical combination, postulates of Dalton atomic theory., atoms, molecules, molecule of element, molecule of compound, Ions, formation of ions Cations and anions, chemical formulae of compounds .formation of chemical formula by criss cross method..Empirical formula, Average atomic mass, molecular mass, formula unit mass. Mole concept. Numerical problem based on mole concept.	The students will be able to 1) Understand various laws of chemical combination 2) Solve the numerical based on law of conservation of mass and law of constant proportion 3) Perform an experiment to verify law of conservation of mass. 5) Understand the postulates of Dalton atomic theory. 6)Differentiate between molecule of element and molecule of compound. 7Understand formula formation by using criss cross method. 8) Understand mole concept. 9)Solve numerical based on mole concepts	To enable the students to: 1) Apply the concept of stoichiometry in their day to day life. 2) Appreciate the significance of relative atomic mass, molecular mass. 3) Conserve the available resources. 4) Justify why wheat cannot be buy in moles.	**Activity 1:** To verify law of conservation of mass practically. **Activity 2**: Discussion on the fact that element combine in the fixed proportion through various examples. **Activity 3:** To make the formulae of chemical compounds by criss cross method. **Activity 4:** a) To Find number of moles in Chinese population b) Calculate how many moles of people are there in your country. c) Can you imaginehow many moles of sand on all the beaches in the world or stars and planets in the universe?	1)The students have learned about laws of conservation of mass and law of constant proportion. 2)The students have learned how verify law of conservation of mass. 3) The students have learned about the postulates of Dalton's atomic theory. 4) The students have learned about the differences between molecule of element and molecules of compound. 5) The students have learned about the formation of chemical compound by criss cross method. 6)The students have learned to solve the numerical on mole concept. 7)The students have learned the difference between molecular mass and formula unit mass of compounds.	1) Assignment 2) periodical test 3) Informal assessment Activity: To verify law of conservation of mass with the help of double displacement reaction. Activity : a) Find number of moles in Chinese population b) Calculate howmany moles of people are there in your country.
November - December	**Structure of atom** : Discovery of	To enable the students to : 1) Understand the discharge	To enable the students to: 1) Appreciate the	Activity 1: 1) To make the static models	The students have learned about	a) Assignment b) Periodical test

	electron, proton and neutron, characteristics of anode rays and cathode rays. Thomson model of an atom, Rutherford scattering experiments and Rutherford model of an atom. Bohr model of an atom, representation of an atom, Distribution of atoms in shells, electronic configuration Valency, Isotopes, Isobars .Applications of isotopes. Calculation of average atomic mass.	tube experiment and discovery of electron, proton and neutron. 2) Understand the characteristics of anode rays and cathode rays. 3) Describe Thomson model , Rutherford model and Bohrs model of an atom 4) Represent an atom with the help of symbols. 5) Write the configuration of atom. 6) Define the terms isotopes and isobar 7)Calculate average atomic mass of an atom 8) Determine the valency of an element. 9) Recall the uses of isotopes.	discovery of electron, proton and neutron. 2) Appreciate the Rutherford scattering experiment. 3) Appreciate and understand the use of C14 Isotope in carbon dating, 131 Iodine in treatment of goiter,Co-60 in treatment of cancer.	displaying electronic configurations of first eighteen elements. **Activity 2:** Discussion on the topic:The problem of energy can be solved by using nuclear fuels. The age of fossil can be determined bycalculating the % of C-14 isotope in fossil.	1) The discovery of discharge tube experiment. 2) The students have learned discovery of electron, proton and neutrons. 3) The students have learned about Thomson model of an atom, Rutherford model of an atom and Bohr model of an atom. 4) Students have learned about the drawback of Rutherford model of an atom. 5) The student have learned how to calculate mass number, number of electron and protons 6) The students have learned about the distribution of electrons in different shells. 7) The students have learned how to determine the valency of element. 8) The students have learned about the formation of ions . 9) The students have learned how to calculate of average atomic mass. 10) The students have learned about isotopes,	c) Informal assessment activity: To make the static models displaying electronic configurations of first eighteen elements and deduce the valency of element on the basis of configuration.

					isobars, isotones and are electronic species. 11) The students have learnedabout applications of isotopes in our day to day life.	
January - February	**Revision for Final Assessment Test (FAT)**					