

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

Month	Lesson / Content / Name of the Book	Expected Learning Objective	Activities/FAs Planned
	<p style="text-align: center;">Unit 1- Matter in Our Surroundings Physical nature of matter, Unit 15-Improvement in food resources Food Improvement and management of crop production Unit 8 Motion basic terms- state of motion,state of rest,scalars,vectors ,uniform and non uniform motion,speed,velocity,acceleration</p>	<p style="text-align: center;">students will be able to define matter , state particulate nature f matter students will be able to define crop rotation multiple cropping Students will know ,understand and define the various terms and differentiate between a scalar and a vector.</p>	<p style="text-align: center;">Numericals related to Motion are all real life situations that we encounter.</p>
	<p style="text-align: center;">Unit 1- Matter in Our Surroundings Characteristics of Particles of Matter,States of matter Unit 15- Improvement in food resources- crop variety improvement Unit 8 Motion distance - time ,velocity time graphs</p>	<p style="text-align: center;">students will be able to compare states of matter students will be able to discuss policies regarding crop protection To differentiate between uniform and non uniform motion. To be able to draw graphically types of motions.</p>	

MARCH/APRIL	<p>,Unit 1- Matter in Our Surroundings Change of state, Unit 15- Improvement in food resources- nutrient management Unit 8 Motion distance - time ,velocity time graphs</p>	<p>students will be able to analyse conversion of matter from one state to the other</p> <p>students will be able to differentiate between manure and fertiliser Students will solve numericals based on the given graphs</p>	<p>Practical : Testing of starch</p>
	<p>Unit 1- Matter in Our Surroundings - Evaporation. Unit 15- Improvement in food resources- cropping pattern and storage of grains Unit 8 Motion Equations of motion</p>	<p>students will be able to explain factors facilitating evaporation students will be able to discuss different cropping pattern and their utility Students will derive the three equations of motion and solve numericals.</p>	
	<p>Unit 1- Matter in Our Surroundings Evaporation. Unit 15- Improvement in food resources Improvement Animal Husbandry , Cattle farming Unit 8 Motion Equations of motion,Uniform circular motion</p>	<p>students will be able to explain applications of evaporation in everyday life students will be able to describe the importance and application of animal husbandry Students will understand the concept of uniform circular and apply it to solve real life situation question.</p>	<p>Practical : Melting point of ice and boiling point of water. Science Concept Check Test</p>
	<p>Unit 2-Is matter around us pure? Matter, types and states Unit 15- Improvement and Management of crop production Improvement Animal Husbandry , Cattle farming Unit 8 Motion Equations of motion,Uniform circular motion</p>	<p>students will be able to state properties of matter and states of matter</p> <p>students will be able to discuss applications of beekeeping cattle farming etc Students practice solving numericals.</p>	<p>Lab Activity:Preparation of solutions, mixture and compounds</p>

JUNE	<p>Unit 2- Is Matter around us Pure ? ..Types of mixture and solutions.</p> <p>Unit 5- The fundamental unit of life. Structural organisation of the cell.</p> <p>Unit 9 Force and Laws of motion (contd) Force-push or pull, effects of force,balanced and unbalanced forces</p>	<p>students will be able to differentiate between different types of solutions</p> <p>students will be able to discuss components of cell</p> <p>Students will be able to differentiate between balanced and unbalanced forces and state the effects of force.</p>	<p>Practical - Chemical reaction - Lead nitrate, Barium chloride.</p> <p>Practical: Study of cell.</p>
	revision	recap interpret and solve the portions taught	
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FA 1			
	<p>Unit 2- Is Matter around us Pure ?- Properties of mixtures and compounds using iron and sulphur.</p> <p>Unit 5- The fundamental unit of life.- Structure and function of cell membrane and cell wall</p> <p>Unit 9 Force and Laws of motion</p> <p>Law of Inertia ,Inertia and mass</p>	<p>students will be able to discuss properties of compounds and mixtures</p> <p>students will be able to explain why cell is structural and functional unit</p> <p>Students will state the first law of motion or law of inertia.They will differentiate between inertia and mass.</p>	<p>Study of plant cells from onion peel</p>

JULY	<p>Unit 2- Is Matter around us Pure ?- Properties of mixtures and compounds</p> <p>Unit 5- The fundamental unit of life - structures of E.R golgi bodies</p> <p>Unit 9 Force and Laws of motion</p> <p>Newton's Second law of motion</p>	<p>students will be able to discuss properties of mixtures and compounds</p> <p>students will be able to state functions of organelles</p> <p>Students will state and explain the second law of motion giving an example.They also solve numericals based on the law.</p>	
	<p>Unit 2- Is Matter around us Pure suspension and colloids</p> <p>Unit 5- The fundamental unit of life- Lysosome, plastids etc</p> <p>Unit 9 Force and Laws of motion</p> <p>Newton's Third law of motion</p>	<p>students will be able to explain different properties of colloids and solution</p> <p>students will be able to state functions of different organelles</p> <p>Students will state and explain Newton's third law of motion with examples and solve numericals based on it.</p>	
	<p>.Unit 2- Is Matter around us Pure separating mixtures</p> <p>Unit 5- The fundamental unit of life- Mitochondria, vacuole</p> <p>Unit 9 Force and Laws of motion</p> <p>Law of Conservation of momentum</p>	<p>students will be able to discuss different methods of separating components of mixtures</p> <p>students will be able to describe structures and functions of organelles</p> <p>Students state and explain the law of conservation of momentum with example.</p>	
	<p>Unit 2- Is Matter around us Pure ?separating imiscible liquids</p> <p>Unit 5- The fundamental unit of life- comperative study between plant and animal cell</p> <p>Unit 9 Force and Laws of motion numericals continued</p>	<p>students will be able to explain the procedures</p> <p>students will be able to compare structures of plant and animal cell</p> <p>Students solve numericals based on the learnt concepts.</p>	<p>Practical - Seperation of substances.</p>

	<p>Unit 2- Is Matter around us Pure physical and chemical change Unit 6- Tissues - Types of plant tissue Unit 10 Gravitation Gravitation and Universal law of gravitation,its Mathematical expression ,Gravitational constant</p>	<p>students will be able to differentiate between different changes students will be able to differerentiate between different types of plant tissues Students will state the law and derive the mathematical expression for it.</p>	<p>Practical - Identification of tissues</p>
<p>AUG</p>	<p>Unit 2- Is Matter around us Pure separation of different types of mixtures using different techniquesUnit 6- Tissues . Identification of plant tissue Unit 10 Gravitation Importance of the universal law of gravitation, Free fall, to calculate value of g acceleration due to gravity</p>	<p>students will be able to analyse different techniques of seoparation students will be able to draw and identify different types of tissues Students will explain the concept of freefall and calculate the value of g</p>	
	<p>Unit 2- Is Matter around us Pure physical and chemical changeUnit 6- Tissues Types of animal tissue Unit 10 Gravitation motion of objects under the influence of gravitational force of the earth.</p>	<p>students will be able to differentiate between different changesv students will be able to compare different types of animal tissue Students will explain the motion of objects under the influence of gravitational force of the earth.</p>	
	<p>Unit 2- Is matter around us Pure separation of different types of mixtures usinUnit 6- Tissues Animal tissues. Identification of animal tissues. Unit 10 Gravitation mass ,weight,weight of an object on the moon</p>	<p>students will be able to analyse different techniques of seoparation ststudents will be able to describe different types of tissues in animals with drawings Students will differentiate between mass and weight of an object.</p>	<p>Science concept test</p>

FA 2			
SEPT	<p align="center">Bio Chem -revision Unit 10 Gravitation Thrust and Pressure,Pressure in fluids,Buoyancy,Factors affecting buoyancy</p>	<p align="center">Bio-Chem recap interpret and solve the portions taught Students will conclude whether an object sinks or floats in a given liquid.They also state the factors affecting buoyancy.</p>	<p align="center">Practicals - Revision in the form of orals and MCQ tests.</p>
	<p align="center">Bio Chem -revision Unit 10 Gravitation Archimedes Principle,Relative density</p>	<p align="center">Bio-Chem recap interpret and solve the portions taught Students state the Archimedes principle and define relative density.They calculate the density of the given object.</p>	
	<p align="center">Unit 10 Gravitation</p>	<p align="center">recap interpret and solve the portions taught Students solve numericals on the learnt concepts.</p>	
	<p align="center">revision</p>	<p align="center">recap interpret and solve the portions taught</p>	
	<p align="center">revision</p>	<p align="center">recap interpret and solve the portions taught</p>	
SA 1			

OCT	<p>Unit 4 Structure of the atom parts of atom and charge</p> <p>Unit 13 Why do we fall ill - Health- personal and community health</p> <p>Unit 11 Work and Energy Concept of work done,Negative work ,Positive work,zero work done,work done by a constant force</p>	<p>students will be able to To know about the strucutre of atom,atomic number,mass number and isotopes.</p> <p>students will be able to describe personal and community health</p> <p>Students will explain theconcept of work done- positive,negative and zero.</p>	<p>Practical: To study the features of plant and animal specimens.</p>
	<p>Unit 4 Structure of the atom thompson's model and rutherford's model</p> <p>Unit 13 Why do we fall ill - causes of diseases</p> <p>Unit 11 Work and Energy Energy,Types of energies - mechanical,chemical etc ,Kinetic energy</p>	<p>students will be able to compare both the models and discuss</p> <p>students will be able to explain causes of diseases and ways to prevent them</p> <p>Students will define energy and classify the different forms of energy.</p>	
	<p>Unit 4 Structure of the atom Drawbacks of Rutherford's model and drawbacks</p> <p>Unit 13 Why do we fall ill - Infectious disease</p> <p>Unit 11 Work and Energy Derivation of formula for kinectic energy,Potential energy</p>	<p>students will be able to explain the model</p> <p>students will be able to state causes of infectious diseases</p> <p>Students will derive the formula for kinectic energy and will explain potential energy with examples.</p>	<p>They solve numericals based on the formula</p>
	<p>Unit 4 Structure of the atom Model of BohrUnit and valency</p> <p>Unit 13 Why do we fall ill - treatments and preventions</p> <p>Unit 11 Work and Energy Potential energy of an object at a height,Law of conservation of energy</p>	<p>Students will derive the formula for potential energy</p> <p>They will state the law of conservation of energy.</p>	<p>They solve numericals based on the formula</p>

NOV	<p>Unit 4 Structure of the atom atomic and mass numbers</p> <p>Unit 7-Diversity in Living Organisms - Classification and evolution</p> <p>Unit 11 Work and Energy Rate of doing work-Power,Commercial unit of energy</p>	<p>students will be able to solve numericals on this concept</p> <p>students will be able to classify organisms based on classification system</p> <p>Students define power and state the SI unit of energy</p>	<p>Practical - T.S. of ovary of a flower.</p> <p>Practical - To determine the density of solid (denser than water) by using a spring balance and a measuring cylinder.</p>
	<p>Unit 4 Structure of the atom Revision</p> <p>Unit 7-Diversity in Living Organisms - hierarchy of classification</p> <p>Physics- revision</p>	<p>students will be able to recap interpret and solve the portions taught</p> <p>students will be able to analyse the order of classification</p>	<p>Practical - To establish the relation between the loss in weight of a solid when fully immersed in</p> <p>a. tap water</p> <p>b. strongly salty water, with the weight of water displaced by it</p>
FA 3			

DEC	<p>Unit 3 -Atoms and molecules Laws of chemical reaction Unit 7-Diversity in Living Organisms - plantae- division and features Unit 12 Sound Production and propogation of sound,Sound needs a medium to travel</p>	<p>students will be able to explain different types of chemical reactions students will be able to compare different groups according to features Students will be able to explain how sound is produced and propogated through a medium.</p>	<p>Practical-To study the features of plant and animal specimens. Practical - To observe and compare the pressure exerted by a solid iron cuboid on fine sand/ wheat flour while resting on its three different faces and to calculate the pressure exerted in the three different cases.</p>
	<p>Unit 3 -Atoms and molecules concepts of atoms and symbols Unit 7-Diversity in Living Organisms - plantae- division and features Unit 12 Sound Types of waves,characteristics of a sound wave</p>	<p>students will be able to analyse different symbols and write students will be able to classify different specimens according to their features Students will state the different types of waves and explain the characteristics of a sound wave.</p>	<p>Practical 11- T.S. of ovary of a flower. Practical - To determine the velocity of a pulse propagated through a stretched string/slinky</p>
	<p>Unit 3 -Atoms and molecules What is a molecule Unit 7-Diversity in Living Organisms - features of animalia Unit 12 Sound Characteristics of a sound wave- amplitude,frequency ,wavelength</p>	<p>students will be able to explain concept of molecule students will be able to differentiate between different groups Students will solve numericals based on the characteristics of a sound wave.</p>	<p>Practical- To verify laws of reflection of sound..</p>
	<p>Unit 3 -Atoms and molecules Writing chemical formula Unit 7-Diversity in Living Organisms - features of animalia group continuation Unit 12 Sound Speed of sound in different media,reflection of sound</p>	<p>students will be able to write formula using valency and atomic number students will be able to compare features of different groups with example Students will explain reflection of sound in different media.</p>	

JAN	<p>Unit14- Natural resources - role of atmosphere wind rain</p> <p>Unit 3 -Atoms and molecules - formula of simple compounds</p> <p>Unit 12 Sound</p> <p>Echo,reverberation,Uses of multiple reflection of sound</p>	<p>students will be able to describe the role of atmosphere and wind and rain in environment</p> <p>students will be able to write simple formulae of compounds</p> <p>Students will understand the concept of echo and enlist the ways to avoid reverberation.They will also state the uses of multiple reflection.</p>	
	<p>Unit14- Natural resources Air and water pollution</p> <p>Chapter3 -Atoms and molecules - Molecular mass concept</p> <p>Unit 12 Sound</p> <p>Range of hearing,Applications of ultra sound</p>	<p>students will be able to discuss the effects of pollution.</p> <p>students will be able to solve problems of molecular mass concept</p> <p>Students will state and explain the applications of ultrasound.</p>	
	<p>Unit14- Natural resources - biogeo chemical cycles- Green house effect and global warming</p> <p>Unit 3-Atoms and molecules - mole concept</p> <p>Unit 12 Sound</p> <p>SONAR,Structure of human ear</p>	<p>students will be able to draw biogeo chemical cycles</p> <p>students will be able to solve numericals and explain mole concept</p> <p>Students will state the principle and explain the working of SONAR.They will know how the human ear works.</p>	

	revision	recap interpret and solve the portions taught	Practicals - Revision in the form of orals and MCQ tests.
FA 4			
FEB	Revision	recap interpret and solve the portions taught	
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SA 2			