

Science And Technology

Class – VIII

Sr. No.	Time	Topic	Subject Matter	Activities / T. L. M.
Unit – I Food				
1.	9 hrs.	Food production & Management	<ul style="list-style-type: none">❖ Introduction❖ Agricultural implements and practices (Rabi & Kharif)❖ Preparation of soil, sowing, weeding, excessive irrigation, manuring, bio-fertilizers, crop protection and rotation.❖ Harvesting, threshing and storage.❖ Animal products (brief)❖ Interdependence of plants and animals and man with special reference to forests.	<ul style="list-style-type: none">❖ Make a list of Rabi & Kharif crops of your area.❖ Visit a farm and study agricultural implements used by farmers.❖ Take a bucket half filled with water and put some seeds in it. Defective seeds will float on water and healthy seeds will settle down.❖ Observation of forests with local names of some plants and animals.
Unit - II Material				
2.	6 hrs.	Chemical	<ul style="list-style-type: none">❖ Introduction	<ul style="list-style-type: none">❖ Reaction of

		Transformation of substances	<ul style="list-style-type: none"> ❖ Purification of substances (distillation, crystallisation and sublimation, etc.) ❖ Characterisation of substances (melting point & boiling point) ❖ Chemical reaction and its characteristics ❖ Types of chemical reaction (brief) combination, decomposition, displacement, double displacement, Redox reactions. 	<p>Na₂CO₃ with dilute. acid (HCl) in a test tube and production of CO₂ showing the chemical reaction under supervision of teacher.</p> <ul style="list-style-type: none"> ❖ Aqueous KMnO₄ colour changes by adding citrus juice. ❖ Burning candle produces CO₂ which turns lime water milky. ❖ Production of H₂ shown as $\text{Zn} + \text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$ <ul style="list-style-type: none"> ❖ Red lead in a cavity in coke and then flame blown to it. Colour changes to rust yellow. $\text{Pb}_3\text{O}_4 + 2\text{C} \rightarrow 3\text{Pb} + 2\text{CO}_2.$
3.	8 hrs	3. Metals and	❖ General	❖ Make a chart

		Non Metals	<p>characteristics of elements.</p> <ul style="list-style-type: none"> ❖ Physical properties of metals. ❖ Chemical properties of metals. ❖ Difference between metal and non - metal regarding physical and chemical properties. ❖ Uses of metals and non metals. ❖ Displacement reaction of metals. ❖ Alloys ❖ Noble metals and their uses. ❖ Corrosion of metals (Brief) 	<p>of alloy metals with their components.</p> <ul style="list-style-type: none"> ❖ Displacement of Cu from CuSO_4 solution by Zn/Mg. ❖ Observe the process of corrosion in a half - painted iron rod. ❖ Observe the change in the iron nails kept in open air.
4.	6 hrs	4. Carbon	<ul style="list-style-type: none"> ❖ Introduction as a special element. ❖ Occurrence of carbon, allotropes of carbon (brief) ❖ Crystalline forms of carbon (diamond, graphite and fulrene). ❖ Non crystalline 	<ul style="list-style-type: none"> ❖ Activity can be shown by graphite conductivity with pencil, wire and a bulb. ❖ Kojal formation can be shown by keeping

			<p>forms of carbon (charcoal, coke, lamp black.</p> <ul style="list-style-type: none"> ❖ Compounds of carbon and oxygen. ❖ CO₂ in brief. ❖ Carbon cycle in nature. 	<p>aluminum plate above the burning candle/dhoop/lamp.</p> <ul style="list-style-type: none"> ❖ Make a model by sticks and beads/ balls to show the tetrahedral arrangement of carbon. ❖ Draw carbon cycle on a chart.
<p>Unit - III</p> <p>The World of Living</p>				
5.	9 hrs.	1. Health & Diseases	<ul style="list-style-type: none"> ❖ Health. ❖ Good health, factors affecting health: personal, hereditary, environmental , sociocultural ❖ Diseases- Deficiency diseases, e.g. Kwashiorkor, Marasmus, Rickets, goitre, anaemia, scurvy. ❖ Communicable diseases: air 	<ul style="list-style-type: none"> ❖ List out some common superstitions that you have come across in your life or neighbourhood ❖ Make a list of essential precautionary measures to keep good health.

				classroom.
Unit- IV				
Moving Things People & Ideas				
8.	5 hrs.	Sound	<ul style="list-style-type: none"> ❖ General discussion on sound ❖ Sound from vibrating body ❖ Characteristics of sound, frequency, intensity, loudness, time period. ❖ Audible and inaudible sound. ❖ Medium necessary for travelling of sound (solids, liquids and gases) ❖ Speed of sound ❖ Reflection and echo of sound ❖ Noise. 	<ul style="list-style-type: none"> ❖ Showing vibration by a vibrating ruler. ❖ Vibration in stretched rubber, comb, blade, etc. ❖ Echo of sound can be heard in a big empty hall/tunnel/ valley. ❖ Travelling of sound through solids like a long metallic object can be demonstrated, e.g. railway track ❖ Making a toy telephone with the help of match boxes and thread.

UNIT – V

How Things Work

9.	5 hrs.	1. Electricity and Magnetism	<ul style="list-style-type: none">❖ Introduction❖ Sources of electricity (Voltaic cell, Daniel cell, dry cell, button cell)❖ Electric circuit❖ Conductors and Insulators❖ Introduction of magnetism, poles of magnet, electromagnet, electric bell, electromagnetic induction.	<ul style="list-style-type: none">❖ Activity using a bulb, cell and key and connecting wire to show the flow of current.❖ List of objects as conductors and insulators.❖ Demonstrate how different substances (metal piece, match stick, tap water, rubber, lead of pencil, etc.) act as conductor or insulator.❖ Suspend a magnet in air to know north-south direction.❖ Like poles repel and opposite poles attract can be demonstrated with a pair of magnets.
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Unit – VI
Natural Phenomena

10.	9 hrs.	1. Refraction of light	<ul style="list-style-type: none"> ❖ Introduction ❖ Refraction of light ❖ Laws of refraction, refractive index ❖ Dispersion of light by prism. ❖ Lenses (Types and uses) ❖ Virtual and real image ❖ Image formation by convex lens (in brief). ❖ Eye structure, myopia and hypermetropia ❖ Care of eye. ❖ A brief idea about methods and technology which visually challenged people use to make the sense of word. 	<ul style="list-style-type: none"> ❖ With glass slab, prism & pins showing refraction. ❖ Refraction can be demonstrated by putting a coin in empty glass , then adding water. ❖ A torch covered with pin hole black paper and focussed in water, the light waves get deflected from its path. ❖ Spectrum of light can be shown through prism, rainbow etc. ❖ Focussing of light rays at a point with a convex lens.
11.	5 hrs.	2. The Universe	<ul style="list-style-type: none"> ❖ Introduction – Night sky, galaxy, 	<ul style="list-style-type: none"> ❖ Model of constellation

			<p>constellation & stars.</p> <ul style="list-style-type: none"> ❖ Life story of stars ❖ The Sun. ❖ Solar system, discuss about each planet, moon and its stages. ❖ Brief idea about artificial satellites. 	<ul style="list-style-type: none"> ❖ Model of Solar system ❖ Observing the night-sky-Pole star constellation etc. stages of moon etc.
<p>Unit - VII</p> <p>Natural Resources and Conservation</p>				
12.	5 hrs.	1. Soil	<ul style="list-style-type: none"> ❖ Introduction ❖ Composition ❖ Soil profile ❖ Texture of soil ❖ Types of soil ❖ Soil formation ❖ Importance of soil ❖ Soil pollution and erosion. ❖ Soil conservation. 	<ul style="list-style-type: none"> ❖ Showing presence of water in soil by heating gently a sample of soil in a test tube or glass ❖ Familiarization for soil profile ❖ Making a list of animal and human activities which result in soil erosion. ❖ Showing soil erosion by planting a plant in the pot & keeping another pot

				without plants. Keeping these in standing position & then adding water.
13.	6 hrs.	2. Air	<ul style="list-style-type: none"> ❖ Introduction ❖ Atmosphere and composition of air (percentage composition) ❖ Atmospheric pressure & measurement (Barometer) ❖ Uses of oxygen and nitrogen ❖ Nitrogen cycle ❖ Air pollution (different pollutants) ❖ Prevention of air pollution ❖ Acid rain and green - house effect in brief. 	<ul style="list-style-type: none"> ❖ Chart, model to show percentage distribution of gases in atmosphere. ❖ Activity to show atmospheric pressure (balloon and ink pen) ❖ Demonstration of nitrogen fixing in root nodules of pea/bean plant.