SCIENCE
CLASS VI

Unit I Food

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
1 Sources of food	What are the various sources of food?	- Sources of food are obtained from plant parts and animal products.	- Examples of food from different parts of plant and food from animal product. - Pictures of a child drinking milk, eating butter with bread.	Germination of seed such as beans, gram, pea.
Components of food	What is our food made up of? - Why do we eat a variety of food? - Which food group is not present in your daily diet? - If any one group of food is absent then how will it affect your health? -	- Classification of food components which provide nourishment to the body - No single food can provide all the nutrients. Therefore, diet should contain adequate amount of all essential nutrients – Balanced diet. - Lack of nutrient in the	- Carbohydrates, proteins, fats, vitamins, minerals, etc. Mid day meal, chart of a balanced diet. - Chart of a Balanced diet - Showing charts/ pictures/ films of children suffering from food deficiencies.	- Classifying foods according to food components, test for starch, sugars, proteins and fats. Asking children to name the food items they take during breakfast, lunch and dinner. - Preparing daily meals from each component. - Compare a menu of balanced diet of class VI students from that of an adult labourer.

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
		diet is called Deficiency diseases. - Insufficient and unbalanced food leads to malnutrition	- Showing chart/ pictures of children affected by protein energy - Malnutrition – Kwashiorkor, Marasmus mineral deficiency and vitamin deficiency diseases. - Night blindness, Scurvy, rickets, anemia, etc. - Chart showing an obese child - Pictures.	
	How is overeating of food harmful to health?	Over weight and bulkiness of a person's body occurs when a person eats more food than his body consume. This is called obesity		Discussing with student and making them aware that intake of inadequate and unbalanced diet leads to deficiency diseases.

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes

Unit II Materials

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Materials of daily use	Have you ever wondered what materials people used in ancient times for clothes? How did people manage when there were no clothes?	In ancient times people used bark of trees, big leaves, animal skins/ fur etc. for clothes.	Pictures of clothes worn by people during an ancient period. - bark of trees - leaves, skin of animals	
Variety in fabrics	Have you ever visited a tailoring shop? Do you wonder what these different fabrics are made of? What is fibre? Where these fibers come from? Do some of our clothes come from plants and animals sources? Name the fibres which are	Fabric is made up of yarns arranged together. Yarn splits up into thin strands called fibres. Natural fibers Cotton, jute, silk, wool etc. are obtained from plants and animals. Synthetic fibres – (made from	Jute, cotton, wool, etc. Fleece of sheep, goat, hair of rabbits, cocoon of silkworm, etc. Polyester, nylon	- Select a piece of cotton fabric, try to find a loose thread at one of the edges and pull it out. - Take out a yarn from a piece of cotton fabric. Place this piece of yarn on the table. Press one end of the yarn with a thumb; scratch the other end of the yarn along its length with your nail. Ask the student what do they observe? - Visit a nearby tailoring shop, collect cuttings of fabrics left over after

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
	not obtained from plant or animal. Which parts of the animals yield the yarn? How is the yarn extracted?	chemical substances) Wool, silk, etc. Process of extraction of silk	Samples of wool and silk, brief account of silkworm rearing and sheep rearing.	stitching. Feel and touch each piece of fabric. Label some of the fabrics as cotton, silk, wool or synthetic asking for help from the tailor. - Ask the students to pull out 6 – 8 yarns from the fabric. Hold one end of the yarn with a long and bring the other end over the flame of a candle. Observe carefully. Do the yarns shrink away from the flame? Do the yarns melt or burn? What type of odour is given off. Note down your observation. - Collection of different samples of woolen and silk cloth. Activities to differentiate natural silk and wool from artificial fibres. - Discussion.
Some plant fibres	Where does the cotton wool come from? - Can you name some state of our country	Cotton		- Field survey, collecting information on locally available plant fibre (coconut, silk, cotton

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
	where cotton is grown. - Name some states or country which is famous for wool production - Have you ever seen a cotton field that is ready for picking - What do you call the process of separating fibres from the seeds?	Production of cotton, jute and other locally available plant fibres. Types of soil required for the growth of different fibrous plants. - Ginning – Traditionally done by hard. These days machines are also used for ginning.	Sharing of prior knowledge with parent teachers and community Pictures of a cotton field Picture, charts - Ginning	etc.)
Separation of solids from liquids	- How do we separate solids from liquids? - What will the easiest way of separating the clay from the water? - Can sedimentation and decantation processes be carried	The process of setting down of heavier, insoluble particles from a mixture is called sedimentation, and the solid settled is called the sediment. The process of transferring the clear liquid without disturbing sediments is known as Decantation. The process of separating an insoluble solid from a liquid	Sand, water, beaker, test tube Example of tea leaves settling down, washing of dal or rice. Clay, water, test tube Tea at home is filtered through sieve	- Ask the student to make a mixture of sand and water in a beaker. - Ask them to stir the mixture for sometime and allow it to settle. Let them observe. Tell them that sand settled at the bottom. - Ask the student to pour out the clear liquid of the above experiment without disturbing sediments – Decantation - Ask the student to make

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
	out to separate chalk from water? - How will you separate soluble solids from liquids?	by passing the liquid through a filter paper or muslin cloth is known as filtration. The process of converting a liquid into its vapour by heating is called evaporation	Brine, China dish, tripod stand, wire gauge	a mixture of chalk with water in a test tube. Ask them to take a funnel. Put a beaker under it. Fold the filter paper and fix it up in the funnel. Pour the mixture of chalk in water slowly over the filter paper. Ask the student to observe – Help the student to infer that the clear water filtered through the filter paper and collects in the beaker. The suspended chalk powder remains on the filter paper. - Ask the students to take brine (common salt solution) in a china dish. Heat it by placing it over a wire gauge on a tripod stand. Go on heating till all the water present in the solution evaporates. What do they observe in the China dish?
Changes of	- How will a solid	The process in which a solid	Sand, Ammonium	- Ask the students to put

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Solid into Water Vapour	change directly into water vapour?	directly changes to vapour state on heating is called Sublimation	Chloride, China dish	the mixture of sand and Ammonium Chloride in a China dish and cover it with a funnel. Plug the tip of the funnel with cotton. A perforated filter paper is put over the China dish. The China dish is heated gently. What do they observe? - Ammonium Chloride changes into vapour - While sand will remain behind in the China dish
Separation of immiscible liquid	- How will you separate immiscible liquids?	The method of separating a mixture of two liquids which do not mix one another.	Kerosene oil and water.	- Pour the given mixture of kerosene oil and water into water into a separating funnel and allow it to stand for some time. What do they see?

Unit III THE WORLD OF THE LIVING

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
1 The Habitat of the Living	Do we find same kind plants and animals in different places of the earth? What types of plants and animals are found in deserts, Polar Regions in swamps and in seas? How does habitat affect plants and animals? How do fish line in water? Why do plants and animals adapt.	Different kinds of plants and animals are found in different regions of the earth, The various kinds of habitat are- apiatic, desert, mountains etc, plants and animals show adaptation; plants has modified parts like tendrils, thorns etc. animals in deserts and water.	Recollection form experience, libraries, field visits etc.	Listing the diverse set of living organism around us; Listing of all the animals and plants that children can think of in different clausans say – forest, mountains, desert, sea, any other; Preparation of herbarium specimens of different leaves, plants; studying modifications in plants and animals; observing how different environmental factors (water availability, temperature) affect living organisms.

2	Structural Organisation of Animals and Plants.	What does our legs help us to do? Do we have same organs that perform various functions? What will happen to a plant if its shoot is cut?	1) Plants and animals have definite parts which differ in shape size and other features. 2) Different of an organism perform different functions, 3) Lost or removal of a part effects functioning of an organism.	Recollection of the different features in plants and animals from experience, from pictures, libraries etc.	1) Observing collecting, recording and identifying of the different parts of the plants and animals body. 2) Appreciating the relationship between different parts of the living body with regard to structure and function.
3	Plants-Form and Function	What is the structure and function of various parts of the plants-stems, leaf, and roots? How do different flowers differ from one another? How does one study flowers?	Morphological structure and function of roots, stem and leaves, Structure of the flowers-differences.	Plants, flowers, blade and hand lens.	Studying plants parts-types of stems, roots, leaves, seeds- drawing and labeling them. Experiment to show conduction by stem, activity to show anchorage by roots, absorption by roots. Studying of any flower, counting number of plants, names of plants, cutting section of ovary to observe ovules- drawing and labeling them in note-books.
4	Animals – Form and Function	What is inside our bodies? How do animals move? Do all animals have bones in their bodies? How do fishes move? And birds fly? What about snakes, snails and earthworms? How do they eat, digest, breathe, excrete and	Structure and functions of both internal and external organs of the animal body; Human's skeletal system, some other animals e.g., fish, bird, cockroach, snail.	Observation of external features of animals, models of different internal organs of animals, model of skeleton, x-rays of arms or legs, chest, hips, jaws, vertebral column.	- Activities to study x-rays, find out the direction in which joints bend, feel the ribs, back-bone etc. - Observation/discussion on movement and skeletal system in other animals.

	reproduce?			- Observing and listing of different external parts of animals like fish, bird, cockroach, snail and identifying their functions. - Studying the internal parts of earthworm/frog/cockroach from models or charts or by dissecting, of man from models or charts. - Drawing external and internal parts of some animals and labeling them.

Unit IV MOVING THINGS, PEOPLE AND IDEAS

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Moving	How did people travel from one place to another in earlier times? How did they know how far they had traveled? How do we know that something is moving? How do we know how far it has moved?	Need to measure distance(length). Measurement of length. Motion as change in position with time.	Everyday experience; Equipment (scale etc.) to measure length. Stories for developing context for measuring distances.	Measuring lengths and distances. Observation of different types of moving objects on land, in air, water and space. Identification and discrimination of various types of motion. Demonstrating objects having more than one type of movement (screw motion, bicycle wheel, fan, top etc.) Observing the periodic motion in hands of a clock/watch, sun, moon, earth.

UNIT – V HOW THINGS WORK

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Electric current and circuits	How does a torch work? Do all materials allow current to flow through them?	Electric current. Electric circuit (current flows only when a cell and other components are connected in an unbroken loop) Conductor Insulator	Torch Cell, bulb or LED, wire, key Mica, paper, rubber, plastic, wood, glass metal clip, water, pencil	Activity using a bulb, cell and key and connecting wire to show flow of current and identify closed and opening up a dry cell Experiment to show that some objects (conductors) allow current to flow and others (insulators) do not.

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
			(graphite), etc.	
Magnets	What is a magnet? Where on a magnet do things stick? How is a magnet used to find direction? How do two magnets behave when brought close to each other?	Magnet Poles of a magnet A freely suspended magnet always aligns in a particular direction. North and South poles. Like poles repel and unlike poles attract each other.	Magnet, iron pieces Magnet, iron pieces, iron filings, paper Bar magnet, stand, thread, compass Two bar magnets, thread, stand	Demonstrating how things are attracted by a magnet. Classification of objects into magnetic/non-magnetic classes. Activity to locate poles of a magnet, activity with iron filings and paper. Activities with suspended bar magnet and with compass needle. Activities to show that like poles repel and unlike poles attract.

UNIT – VI NATURAL PHENOMENA

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Rain, thunder and lightning	Where does rain come from? How do clouds form?	Evaporation and condensation, water in different states Water cycle	Everyday experience; kit items	Condensation on outside of a glass containing cold water; activity of boiling water and condensation of steam on a spoon. Simple model of water cycle.
Light	When are shadows formed? Do you get a shadow at night – when	A shadow is formed only when there is a	Child's own experience,	Discussion; observing shadow formation of various

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
	there is no light in the room, no moonlight? What colour is a shadow? On what kinds of surfaces can we see images?	source of light and an opaque material obstructs a source. A shadow is black irrespective of the colour of the object. Reflecting surfaces; images are different from shadows.	candle/torch/lamp, white paper, black paper, coloured objects. Experience, objects with polished surfaces, mirror etc.	objects of different shapes, and of same shape and different colours; playing and forming shadows with region during daytime; making a pinhole camera and observing static and moving objects. Observing differences between the image and the shadow of the same object.

UNIT – VII NATURAL RESOURCES

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Water Composition, properties, salinity of water, hardness and softness of water.	What is water made of? What colour, odour, and taste does water has? At what temperature does water boils? Why we cannot drink sea water? Why do we have to apply lots of soap while washing cloth in hilly areas?	Water is made up of two parts of hydrogen and one part oxygen. Pure water is colourless, odourless, tasteless and is transparent. It has low melting and high boiling points. Water as a good solvent has high concentration of dissolved salt in the seas. In hilly areas water has high mineral contents that makes it hard.	Text book, library resource, child's experience. Laboratory testing.	- Demonstrating electrolysis of water and comparing the volume of hydrogen and oxygen. - Taking water sample from the spring and observe its physical properties. - Laboratory experiment to test the melting and boiling point of water. - Laboratory method of separation of salt from sea water - Applying soap on cloth with water from a hilly

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
				area and then with water from plains and observe for which water makes lather faster.
Air – Constituent, properties, dependence of plants and animals on air.	What is air made up of? Does constituents of air remain fixed? Is empty glass really empty? Why can't we see air? From where do we get oxygen for our breathing?	Air is a mixture of gases, water vapour, fine solid particles, oxygen, nitrogen and carbon-dioxide. Water vapour and dust particles of air vary in percentage from place to place. Air occupies every available space. Air is important for plants and animals for breathing.	Library resources, Experience.	- Demonstrating deposition of water droplets on very cold surface (condensation of water vapour from air) - Determining the percentage of oxygen in air. - Demonstrating that combustion produces carbon – dioxide which can be tested by using lime water.

SCIENCE

CLASS VII

Unit I Food and Nutrition

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Mode of procuring food	How do plants and animals get their food? How the living organisms having different structures adopt different methods of procuring food?	- All living organisms have to perform some basic activities for their survival. For example, they	- Diagram showing nutrition in green plants. - Iodine solution, alcohol,	- Ask the student to take a fresh variegated leaf, kill the cells of this leaf by boiling it in water. Decolourize it by boiling in the rectified

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
		have to eat, digest their food, derive energy etc. Mode of procuring food: - Autotrophic Nutrition - Heterotrophic Nutrition - Saprophytic Nutrition - Parasitic Nutrition	variegated leaf (Leaf is partly white and partly green.) - Showing the chart of an insectivorous plant.	spirit over a water bath. Place the leaf in dilute iodine solution. Ask them to observe what do they conclude? - Need for light, green leaf for photosynthesis. - Looking at any saprophyte, parasite and noting differences from a green plant
Utilization of food	How do plants and animals utilize their food?	- Steps of Holozoic (Animal) nutrition - Ingestion - Digestion - Absorption - Assimilation - Egestion	- Model of human teeth, chart of the elementary canal of man. - Pictures showing mode of procuring food in frogs, amoeba, butterfly, spider.	- Give some pieces of bread to the students and ask them to chew it thoroughly for sometime. - Ask the children to draw and label the elementary canal of man. - Effect of saliva on starch, make the student realize that by chewing and grinding the food is broken into smaller particles. - Permanent slides of amoeba.

Unit II Materials & Their Properties

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Materials of daily use.	How will you classify objects on the basis of some common characteristics?	Materials are characterized by certain characteristics, properties such as colour, shape, hardness, softness, etc.	- Green, Round, Stone, Cotton, Spoon.	Collect small pieces of different materials like paper, wood, copper wire , aluminium sheet, chalk, etc. – Ask the children – do any of these appear shiny. Separate the shiny materials into groups - Asking children to classify a given set of materials on the basis of colour, shape, hardness, etc. - Asking the children to write five objects which are round in shape.
Different kinds of materials and their properties	What kinds of clothes help us to keep warm?	Heat flow – Wool conducts very slowly the heat of our bodies to the outside and thus the feeling of warmth is maintained. In wool, there are pores of air that air is a bad conductor of heat consequently, preventing the flow of	Aluminium, metal strips of rod, steel, saw dust, gunny bags, ice, kettle teapots with a wooden handle, etc.	- Demonstrating that wood, wool, gunny bag, saw dust, etc. are poor conductor of heat while steel, metallic rids are good conductors of heat. - Experiment to show conduction, convection and radiation.

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
		heat. - Classification of materials according to their heat conductivity. - Classification according to breakable and unbreakable - Classification of the materials on the basis of their solubility in water. - Materials which can be scratched, compressed easily are called soft, and those which are difficult to compress are	Wood, glass, Steel rod, Rubber, Plastic slate, Marble etc. Sugar in water, milk, jaggery, coffee, mustard oil, candle wax, paint, lemon juice, vinegar etc, saw dust, common salt etc. Wool, iron, cotton, sponge, etc. Glass, light, wood, paper, etc.	- Reading thermometer is shown to the students. - Ask the students to hammer glass, slate, marble, plastic, wood, rubber etc. Ask them to name the materials which do not break easily. - Ask the students to put in water saw dust, sand, iron filings, sugar, common salt, candle wax, vinegar and let the student find out which material dissolve readily and which material do not dissolve in water. - Ask the student to classify between hard and soft material

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
	Why does turmeric stain become red on applying soap?	called hard. - Some objects are transparent, white. Some opaque and translucent - Some materials float on the surface of water and others sink to the bottom of water. - Classification of substances into acidic, basic and neutral, indicators.	Dried leaves, stone. Common substances like sugar, salt, vinegar, test tube plastic etc.	- Ask one student to go out and stand behind the wall. Ask the same student to stand behind a closed glass window or put his fingers under a glass light. - Ask the students to list a few items used in their daily life which are transparent, opaque and translucent. - Asking students to throw dried leaves on the surface of the pond and also to throw some stone in the pond. - Testing solution of common substances like sugar, salt, vinegar, lime juice, etc. with turmeric, litmus paper etc. - Activity to show neutralization
How things change/react with one	What gets deposited on a tawa if left in a moist state?	Chemical substances; in a chemical reaction a new substance is formed.	Test tubes, droppers, common pins, vinegar, baking powder, $CuSO_4$,	- Experiments involving chemical reaction like rusting of iron,

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
another	Why does the exposed surface of a cut brinjal become black? Why is sea- water salty? Is it possible to separate salt from sea-water?	Substances can be separated by Crystallization.	etc. Urea, copper sulphate, alum, etc, beaker, spirit lamb, watch class, plate, petridish etc.	neutralization (vinegar and baking soda) Displacement of Cu from CuSO4 etc. (Introduce chemical formulae without explaining them) - Making Crystals of easily available substance like urea, alum, copper sulphate etc using supersaturated solution and evaporation.

Unit III THE WORLD OF THE LIVING

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
1 Surroundings affect the living	Why are nights cooler? How does having winters and summers affect soil? Are all soils similar? Can we make a pot with sand? Is soil similar when you dig into the ground? What happens to water when it falls on the cemented/bare ground?	Climate, soil types, soil profile, absorption of water in soil, suitability for animals to different climates.	Date on earth, sun – size, distance etc., daily changes in temperature, humidity from the newspaper, sunrise, sunset, etc.	Graph for daily changes in temperature, day-length, humidity etc. texture of various soils by wetting and rolling; absorption, percolation of water in different soils, which soil can hold more water.

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
2 Control and coordination in Plants and animals.	Why do some plants fold their leaflets in the evening and plants wilts or droops down if not watered? How do birds balance themselves on tree branches or wires? What happens to your mouth the moment you see some food? What happens to your body when you hear a loud sound or why do you tend to run away on sensing danger? How are the animals and plants survive successfully in adverse conditions? How so they coordinate their activities in response to conditions?	Organisms can successfully react to different situations in a dramatic reaction called stimulus response reactions. Response to stimulus is called reflex which is automatic and spontaneous. Stimulus is of – External and Internal. Different organs are in valued in coordination – Nervous systems, Sense organs – tongue, nose, eyes, ears called receptors for nervous coordination. Hormones secreted by endocrine or ductless glands for chemical coordination in animals, coordination in plants only through chemical that is – hormones.	Daily experiences, nature, potted plant, instrument that produces loud sound, small rod for heating.	- Place a potted plant in one corner of the class room, leave it without water for 2 – 3 days. Observe what happens to its leaves and young branches. - Touching and observing what happens to touch – me – not plants when touched. - Produce a loud sound with out first informing the students. Observe how they react. - Heat the rod slightly at one end and without warning touch one of the students with it. Observe how does he/she reacts. - Study models/charts of nervous system/location of endocrine glands in the body. - Drawing and labeling nervous system and sense organs.
3 The Breath of	Why do we/animals breathe? Do	Respiration in plants and	Lime water, germinating	Experiment to show plants

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Life	plants also breathe? Do they respire? How do plants/animals live in water?	animals.	seeds, kit materials.	and animals respire; rate of breathing; what do we breathe out? What do plants breathe out? Respiration in seeds; heat release due to respiration. Anaerobic respiration, root respiration.
4 Movement of Substances	How does water move in plants? How is food transported in plants? Why do animals drink water? Why do we sweat? Why and how is there blood in all parts of the body? Why is blood red? Do all animals have blood? What is there in Urine?	Herbs, shrubs, trees; Transport of food and water in plants; circulatory and excretion system in animals; sweating.	Twig, stain; improvised stethoscope; plastic bags, plants, egg, sugar, slat, starch, benedicts solution, silver nitrate solution ($AgNO_3$)	- Translocation of water in stems demonstration of transpiration, measurement of pulse rate, heart beat; after exercise etc. - Discussion of dialysis, importance; experiment on dialysis using egg membrane.
5 Multiplication in Plants and animals	Why are some plant parts like potato, onion swollen – are they of any use to the plants? What is the function of flowers? How are fruits and seeds formed? How are they dispersed? How do reproduction in animals take place? Do they all reproduce young ones? What happens when there is uncontrolled birth?	Vegetative, asexual and asexual reproduction in plants, pollination – cross, self – pollination; pollinators, fertilization, fruit, seed. Sexual reproduction in animals. Birth can be controlled by preventing fertilization.	Bryophyllum leaves, potato, onion etc; yeast powder, sugar. Pictures of animals with babies, a bird with eggs in a nest, pictures of male and female reproductive organs.	- Study tuber, corm, bulb etc. Budding in yeast; TS/LS of ovaries, Mount of pollen grains, comparison of wind pollinated and insect pollinated flowers; observing fruit and seed development in some plants; collection and discussion of fruits/seeds dispersed by different means.

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
				- Naming reproductive organs in animals, studying different parts of human reproductive organs – male and female. Drawing and labelling them - Visit to a family welfare center to study various family planning.

Unit IV MOVING THINGS, PEOPLE AND IDEAS

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Moving objects	Why do people feel the need to measure time? How do we know how fast something is moving?	Appreciation of idea of time and need to measure it. Measurement of time using periodic events. Idea of speed of moving objects – slow and fast motion along a straight line.	Daily – life experience; metre scale, wrist watch/stop watch, string etc.	Observing and analyzing motion (slow or fast) of common objects on land, in air, water and space. Measuring the distance covered by objects moving on a road in a given time and calculating their speeds. Plotting distance vs. graph for uniform motion. Measuring the time taken by moving objects to cover a given distance and

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
				calculation their speeds. Constancy of time period of a pendulum.

UNIT – V HOW THINGS WORK

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Electric current and circuits	How can we conveniently represent an electric circuit?	Electric circuit symbols for different elements of circuit.	Recollection of earlier activities. Pencil and paper.	Drawing circuit diagrams
	Why does a bulb get hot?	Heating effect of current.	Cell, wire, bulb.	Activities to show the heating effect of electric current.
	How does a fuse work?	Principle of fuse.	Cells, wire, bulb or LED, aluminium foil.	Making a fuse.
	How does the current in a wire affect the direction of a compass needle?	A current-carrying wire has an effect on a magnet.	Wire, compass, battery.	Activity to show that a current-carrying wire has an effect on a magnet.
	What is an electromagnet?	A current-carrying coil behaves like a magnet.	Coil, battery, iron nail.	Making a simple electromagnet.
	How does an electric bell work?	Working of an electric bell.	Electric bell.	Identifying situations in daily life where electromagnets are used. Demonstration of working

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
				of an electric bell.
Sound	How can sound be produced in the environment? How is it produced? How sound is reflected? In what way did human and animals hear the sound?	Types of sound heard in the environment. Reflection of sound; sensory organ.	Different musical instrument; waterfall etc. Everyday experience; Model of human ear.	Demonstrate different types of sand that are produced by different bodies. Demonstrate that body produces sound only when it vibrates. Asking children to ring the school bell. Demonstrating a production of echo.

UNIT – VI NATURAL PHENOMENA

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
Rain, thunder and lightning	What causes storms? What are the effects of storms? Why are roofs off?	High speed winds and heavy rainfall have disastrous consequences for human and other life.	Experience; newspaper reports. Narratives/stories.	Making wind speed and wind direction indicators. Activity to show “lift” due to moving air. Discussion on effects of storms and possible safety measures.
Light	Can we see a source of light through a bent tube? How can we throw sunlight on a wall?	Rectilinear propagation of light. Reflection, certain surfaces reflect light.	Rubber/plastic tube/straw; any source of light. Glass/metal sheet foil, white paper.	Observation of the source of light through a straight tube, a bent tube. Observing reflection of light on wall or white paper

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
	What thins give images that are magnified or diminished in size? How can we make a colour disappear white?	Real and virtual images. White light is composed of many colours.	Convex/concave lenses and mirrors. Newton's disc.	screen. Open ended activities allowing children to explore images made by different objects, and recording observations. Focused discussions on real and virtual images. Making the disc and rotating it.

UNIT – VII NATURAL RESOURCES

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
1 Water- Forms, Water cycle, Pollution and purification of water, water management (Rain water harvesting)	In what form water exists in polar regions? How do we get rain? What causes water pollution? How can impure water be purified? How do we harvest rain water?	Water exists in three different forms. Water is continuously circulating from water bodies to air and back to water bodies. Unwanted impurities in it pollute water. Water is scarce; it has to be used judiciously.	Experience from surroundings, laboratory experiments, media reports, case material.	- Taking children to observe discharge of sewage to water bodies. - Listing of sources of water pollution in the locality, collecting and demonstrating samples of polluted water. - Heating, condensing and cooling water and their observation. - Purifying water by distillation,

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
				condensation of steam. - Taking children to the conservation ponds to observe collection of rain water in it and to the place/building where rain water is being harvested by collecting in large storage tanks.
2 Air – pollution and harmful effects of air pollution.	Why do we feel choke in the places which is full of smoke, dust particles emitted from factories? What causes air pollution? Why there are increases in respiratory tract diseases in cities and in industrial estates?	Air is polluted by unwanted particles in it which is harmful to animals and plants as it causes diseases and disorders in plants and animals.	Experience, library sources, media reports, case materials.	- Demonstrating the toxic effect of sulphur, ammonia etc. by putting insect in a gas jar containing these gases. - Asking children to test how they feel when they breathe air smoke. - Discussing how pollutants affect respiratory systems in man and animals and cause respiratory diseases.
3 Soil – erosion, conservation.	Why soil turns barren, rocky and sandy after jhum cultivation? How can soil be conserved?	Soil devoid of plants gets washed off – the process is called soil erosion Plants prevents soil erosion, hence planting more trees can conserve soil.	Case material	- Case study

Sub – Theme	Questions	Key Concept	Resources/ Teaching Learning Materials	Activities/ Processes
4 Natural Sources of energy	From where do we obtain energy for lighting our houses? What type of energy is produced when coal is burnt? Name the two types of natural sources of energy.	We obtain energy for doing various works from natural resources like coal, petroleum, water and sun. Sources of energy are of two categories – Non-renewable or conventional energy resources and Renewable or non-conventional energy resources.	Case material, library sources, experience.	- Taking children to visit hydro-electricity generation stations. - Asking children to list uses of non-conventional energy resources. - Taking children to visit installation of devices that absorbs sun's energy for production of heat and light.

Class - VI

Units	Periods	Marks
Term – I 1. Food	20	12
2. Materials	50	20
3. The World of the living	40	25
4. Moving things, people and ideas	13	8
Term – II 5. How things work	25	15
6. Natural Phenomena	25	15
7. Natural Resources	10	5
Total	**183**	**100**
- Revision	10	
Grand Total	**193**	

Class - VII

Units	Periods	Marks
Term – I 1. Food	30	15
2. Materials	37	15
3. The World of the living	40	20
Term – II 4. Moving things, people and ideas	15	12
5. How things work	15	12
6. Natural Phenomena	25	13
7. Natural Resources	25	13
Total	**187**	**100**
Revision	10	
Grand Total	**197**	

Suggested Textbooks

1. FRANK EVERYDAY SCIENCE CLASS VI & VII by GUPTA, K.K. & MALHOTRA STALIN FRANK BROS & CO
2. NCERT, Text books