SECTION 1 DIVERSITY OF MATTER

- 1. recognise the variety of living and non-living things and their interconnectedness.
- 2. recognize that non-living things have characteristics that can be utilized to change the environment
- 3. recognize that non-metals serve as insulators and prevent heat and electricity from leaking out of metals.
- 4. show understanding of the causes and prevention of rusting of iron

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1	The pupil will be able to:		Let pupils:	
METALS AND NON- METALS	1.1.1 list types of materials in the environment.1.1.2 describe the characteristics of metals.	Types of materials: metals, glass, plastic, paper, wood Characteristics of Metals > Usually hard > Shiny surfaces when new > Can be beaten into shapes > Conduct heat and electricity > Produce high pitch sound when struck > Make musical sound. > Metals are heavy, some are light > Often in solid state > Have different colours	Build a stock of materials found in the environment. Explore and discuss the characteristics of metals as stated in the content.	State two characteristics of metals.
	1.1.3 group materials into metals and non-metals	 Can be drawn into wires Very strong Metals and non-metals 	Sort out metals from a group of materials based on the characteristics of metals.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
	The pupil will be able to:		Let pupils:	
UNIT 1 METALS	1.1.4 name some metals.	Metals: e.g. Silver, Iron, Copper, Gold, Zinc, Aluminium, Tin	List names of some metals: Silver, Iron, Copper, Gold, Zinc, Aluminum, Note: Chemical symbols not required.	Distinguish between metals and non-metals.
AND NON- METALS (CONT'D)	1.1.5 state some uses of metals in everyday life.	Uses of metals: > Construction of bridges, buildings and dams > Building cars, train, aeroplane, Cutlery and Agricultural tools > Computers	Explore the uses of metals in everyday life.	metals.
	1.1.6 make simple tools and toys from metals.	Making simple tools from metals.	Design and make toys, simple kitchen tools and vehicles from metals. Note: The toys could be powered with motors to move where possible.	
	1.1.7 name some non- metallic materials.	Non-Metals e.g. Plastic, Glass, Polythene, Sulphur, Wood, Rubber, Carbon.	Explore the community to identify and record materials made up of non-metals.	
	1.1.8 describe the characteristics of non-metals.	Characteristics of non-metals: > Have dull surfaces. > Poor conductors of heat and electricity > Make low pitch sound > Usually break easily(brittle)	Discuss the characteristics of non-metals as stated in the content.	
	1.1.9 list some uses of non-metals.	Uses of non-metals	Observe a number of objects and identify the non-metallic and metallic components.	
			Discuss various ways in which non-metals are used. Design and construct a model of a house with non-metals.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2 RUSTING	The pupil will be able to: 1.2.1 identify materials that rust.	Rusting	Let pupils: Collect some new iron nails, pieces of new iron roofing sheets and examine the surfaces and record your observation. Collect some old iron nails and some pieces of old iron roofing sheets. Examine their surfaces and compare them with those of the new iron nails and pieces of new iron roofing sheets. Record your observation.	What are the conditions necessary for iron to rust?
	1.2.2 explain causes of rusting.	Causes of Rusting	In groups, pupils leave new iron nails in the open where they will be exposed to air and water. Record what happens after three days. Compare the change in the nails used for the experiment with the new nails. Observe an old iron roofing sheets and buckets and compare them with new ones.	
	1.2.3 explain the effects of rusting on iron.1.2.4 clean rust from the surface of iron.	Effects of rusting on Iron Cleaning rust from the surface of iron	Discuss the effects of rusting on iron, household items, vehicles and iron rods in construction work. Use sand paper to rub the surface of rusty nail or cutlery. Place rusty iron metals in lemon juice and observe what happens after three days.	Describe two ways by which rust can be removed.
	demonstrate how to prevent iron from rusting.	Methods of prevention of rusting: Painting Oiling/greasing Insulating the surface of iron from air	Take two new nails, paint one, leave the other and expose both to air and water and observe what happens to them after three days. Discuss and demonstrate the different methods of preventing iron from rusting.	Why do carpenters oil their tools after work?

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 3 MEASUREMENT	The pupil will be able to:		Let pupils:	
OF TEMPERATURE	1.3.1 infer that temperature is a measure of how hot a substance is.	Meaning of temperature.	Brainstorm to come out with the meaning of the term temperature. Note: Temperature is a measure of the degree of hotness of a body.	
	1.3.2 state the units for measuring temperature.	Units of temperature; Degree celsius, °C and degree farenheit, °F	Discuss the units for measuring temperature.	
	1.3.3 read temperature on an analogue and digital thermometers.	Reading temperature on an analogue and digital thermometers.	Observe the calibrations on both analogue and digital laboratory and clinical thermometers and practice how to read temperature on them.	
	1.3.4 handle and use different types of thermometer.	Handling and using thermometers.	Observe the structural differences between laboratory and clinical analogue thermometers.	State two differences between the
			Pour a sachet of 'ice water' into a container and use the laboratory thermometer to measure its temperature.	analogue clinical and laboratory thermometers.
			Use the clinical thermometer to measure the body temperature of their classmates. Pupils discuss the body temperatures recorded.	

SECTION 2 CYCLES

- recognize that there are repeated patterns of change in nature and understand how these patterns arise.
 appreciate that understand patterns of change is necessary for making predictions about the future
- 3. recognize ventilation as a purifying mechanism in homes, industry and the environment.

UNIT	SP	PECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
	The p	upil will be able to:		Let pupils:	
UNIT 1 VENTILATION	2.1.1	explain the concept of convection.	Meaning of Convection	Discuss the meaning of the term convection.	
	2.1.2	demonstrate convection current.	Convection current	Use experiment to demonstrate convection current.	
	2.1.3	explain ventilation in terms of convection current.	Ventilation and Convection current	Explain ventilation in terms of convection current.	
	2.1.4	identify applications of convection in everyday life.	Applications of convection: sea breeze, land breeze, air conditioning, fridge, chimney.	Discuss everyday life applications of convection.	
			Conditioning, mage, criminey.	Use the principle of convection to explain how land breeze and sea breeze reduce room temperature. Explore the internet for animation on land and sea breeze.	With the help of a diagram explain sea breeze and land breeze.
				Describe how they feel when they first enter rooms with all doors and windows closed for some days and compare to that of a room where all the windows and doors are opened.	
	2.1.5	explain the need to ventilate rooms.	Ventilation of rooms.	Discuss why our homes and classrooms must be ventilated.	With the help of a labeled diagram show how ventilation makes
	2.1.6	describe what leads to poor ventilation in our homes.	Causes of poor ventilation in the homes	Outline the causes of poor ventilation in our homes. Develop ways of increasing ventilation in our homes.	air in room safe for use.

SECTION 3 SYSTEMS

- 1. recognise that a system is a whole consisting of parts that work together to perform a function
- 2. recognize that the Moon and planets in the solar system do not give out light
- 3. infer that an object can be seen when it reflects light or when it is a source of light.
- 4. show awareness that there is regularity in the movements of the Earth and the Moon in the solar system.

UNIT	SPECIFIC OBJECTIVES		CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1	The po	upil will be able to:		Let pupils:	
THE SOLAR SYSTEM	3.1.1	identify the components of the solar system.	Components of the solar system: Sun, Moon and Earth and other planets	Use models or pictures to show the components of the solar system e.g. Sun, Earth and Moon and other planets. Note: Names of the other planets are not required	List two materials that produce light on their own.
	3.1.2	describe the movement of the Moon around the Earth.	Movement of the Moon around the Earth	Use models to demonstrate that the Moon goes round the Earth and it does so in a regular manner.	
	3.1.3	identify the relative positions of the Sun, Moon and the Earth in the solar system.	Relative positions of the Sun, Moon and the Earth in the solar system	Use models or video clip/CD-ROM or any appropriate methods to describe the relative positions of the Sun, Moon and the Earth in the solar system.	
	3.1.4	distinguish between luminous and non-luminous bodies.	Luminous and Non-luminous bodies	Discuss materials that produce light on their own and those that do not produce light on their own but absorb or reflect light from other bodies.	What is the difference between luminous and non-luminous bodies?
	3.1.5	explain the concept of satellite.	Satellite: a smaller body that moves round a bigger body	Demonstrate the concept of satellite using a football and a tennis ball.	
	3.1.6	list some uses of artificial satellites.	Uses of artificial satellites: Communication, space exploration, observation of weather patterns and navigation	Discuss the uses of man-made satellites e.g. transmission of radio and television programmes.	List some uses of artificial satellites.

SECTION 4 ENERGY

- 1. Recognise that energy has a source, can be transferred and can be transformed into various forms.
- 2. Understand the behaviour of P-N junction diodes in an electronic circuit.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1	The pupil will be able to:		Let pupils:	
SOURCES OF ENERGY	4.1.1 explain the term energy.	Meaning of energy	Brainstorm to come out with the meaning of the term energy	List four sources of energy.
	4.1.2 identify some sources of energy.	Sources of energy: Food, Sun, Wind, Water, battery, crude oil and natural gas	Discuss sources of energy.	
	4.1.3 demonstrate some uses of solar energy.	Uses of Solar energy: ✓ Burning	Gather materials such as, battery, kerosene and hand lens and a sheet of paper. Use the hand lens to direct sunlight until a small bright spot is seen on the paper. Keep the lens at this position for about five minutes. Observe and discuss what happens.	
		✓ Heating	Place an empty Milo tin painted black in an open space but not under a shade. Pour 50ml of water into the tin Place a hand lens above the tin. Adjust the hand lens until a small bright spot is seen at the base of the milo tin. Keep the hand lens at this position for about ten minutes and observe what happens. Pour the same volume of water into another black painted milo tin and use it as a control.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2 BASIC ELECTRONICS	The pupil will be able to: 4.2.1 describe the behaviour of a P-N Junction diode in an electronic circuit.	P-N Junction semiconductor diode > Forward bias > Reverse bias.	Let pupils: Examine a P-N junction diode and identify the P (Positive) region and N (negative region). Connect a series circuit comprising a 3V battery, a switch, a diode, and an LED as shown in the figure below. Close the switch and observe what happens to the LED. Open the switch. Reverse the diode connection and close the switch again, Observe the effect on the LED	What is the use of a P-N junction diode in an electronic circuit?
			Brainstorm to come out with the meaning of the terms, forward bias and reverse bias	

SECTION 5 INTERACTIONS OF MATTER

- 1. appreciate that interaction between and within matter helps humans to better understand the environment and their role in it.
- 2. recognise forces in terms of the effects they produce.
- 3. recognize the relationship between skin diseases, poor personal hygiene and unsanitary environmental conditions

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING	EVALUATION
			ACTIVITIES	
UNIT 1	The pupil will be able to:		Let pupils:	
FORCES	5.1.1 explain the term force.	Force: A push or pull	Brainstorm and come out with the meaning of the term force. Demonstrate that an object can be moved by a pull or a push.	State two uses of
	5.1.2 describe different types of force.	Examples of force: ✓ Frictional ✓ Elastic ✓ Magnetic ✓ Gravitational ✓ Compression	Discuss examples of force in nature. Demonstrate the uses of force listed in the content in everyday life. e.g. use of friction in walking, use of magnetic force for lifting object.	friction in everyday life.
	5.1.3 describe the effects of force on objects.	 Effects of force on objects: ✓ A force can move a stationary object. ✓ A force can speed up, slow down or change the direction of an object in motion. ✓ A force can stop a moving object. ✓ A force may change the shape of objects. 	Demonstrate the effects of force as described in the content.	Explain why a kicked ball moves and slowly comes to a stop.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2 CARE OF THE SKIN	The pupil will be able to: 5.2.1 list some diseases of the skin.	Diseases of the skin: ✓ Ringworm ✓ Eczema ✓ Chicken pox ✓ Measles	Let pupils: Brainstorm to bring out the names of diseases that affect the skin. Explore the causes of some skin diseases by interviewing people, use of internet, reading and radio.	What are the causes and prevention of eczema and ringworm?
	5.2.2 describe preventive measures for some common skin diseases.	Prevention of skin diseases.	Note: Teacher to invite a Health worker to give a talk on the occurrence and prevention of skin diseases.	

SECTION 1 DIVERSITY OF MATTER

- recognise the variety of living and non-living things and their interconnectedness.
 be aware of the parts and functions of a flower.
- 3. acquire skills in how to measure areas and volumes of objects

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1	The pupil will be able to:		Let pupils:	
PARTS OF FLOWERS AND THEIR FUNCTIONS	1.1.1 describe a flower. 1.1.2 identify the four main parts of a flower	Flower Parts of a flower: Sepal, Petal, Pistil and Stamen.	Describe a flower. Go on a nature walk. Collect different types of flowers. Examine the flowers and report on colour, smell and shape of the flower. Identify and separate the parts of a flower. Draw and label the parts of the flower. Note: Use Flamboyant or Pride of Barbados	What are the functions of the following parts of flowers? 1. Sepal 2. Petal 3. Pistil and 4. Stamen
	1.1.3 state the functions of the parts of a flower	Functions of parts of a flower	Discuss the functions of the parts of a flower.	
	1.1.4 describe pollination and fertilization	Pollination and Fertilization	Discuss the processes involved in pollination and fertilization. Note: Simple treatment of fertilization required.	
	1.1.5 State the uses of flowers	Uses of flowers. ✓ Make fruits and seeds ✓ Beautifies the environment. ✓ Source of dye	Discuss the uses of flowers. Watch a digitized/video clip on the development of a flower. Project: Mould a flower using corn husk, paper marché and synthetic materials.	State some uses of flowers.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2 MEASUREMENT OF LENGTH AND VOLUME	The pupil will be able to: 1.2.1 measure the length of the sides of plane figures. 1.2.2 calculate the area of plane figures. 1.2.3 measure the volume of objects using measuring cylinder.	Measuring length with a rule Calculating the area of plane figures: Square and, Rectangle Measurement of volume of objects:	Let pupils: Measure and record the length of a plane figure such as book, table, writing board with a rule. Measure the sizes of a regular shaped plane figure and calculate its area. Measure the volume of liquids using a measuring cylinder. Calculate the volume of regular objects, e.g. cube and cuboids. Measure the volume of irregular objects e.g. stones, using measuring cylinder.	Find the area of the square base of an aluminum tin of dimension 3cm x 5cm. If the height of the tin is 10cm, what is the volume of the tin in centimetre cubed?

SECTION 2 CYCLES

- 1. recognise that there are repeated patterns of change in nature and understand how these patterns arise.
- 2. show understanding of the roles of condensation, evaporation, transpiration and precipitation in the water cycle.
- 3. show understanding of the importance of the water cycle.
- 4. show an awareness of the need to conserve water.

UNIT	SPECIFIC OBJECTIVES		CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 WATER CYCLE	The p	upil will be able to:		Let pupils:	
WATER CYCLE	2.1.1	explain water cycle and the terms associated with it.	Water cycle Terms associated with the water cycle: Evaporation, Transpiration, Condensation and Precipitation	Brainstorm to explain the terms water cycle, evaporation, transpiration, condensation and precipitation.	With the help of a labeled diagram explain the water cycle.
	2.1.2	demonstrate the process of evaporation and condensation.	Demonstrating Evaporation and Condensation	Heat water until it boils. Cover the boiling water with a sheet of transparent glass. Record and explain your observation. Watch video clip/CD-ROM on condensation and evaporation.	Trace how water from plants and rivers become rain.
	2.1.3	demonstrate loss of water from plants into the atmosphere.	Transpiration.	Observe a dry potted plant. Cover potted plant/leaves of plant with a dry transparent polythene. Observe any changes in the polythene bag after two hours. Note: Plant should have no water on the leaves at the beginning of the experiment.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 WATER CYCLE (CONT'D)	The pupil will be able to: 2.1.4 describe how water is conserved in the home.	Ways of conserving water in the home: Repair of leaking pipes, harvesting rain water, storing water in containers	Let pupils: Identify the different forms water can take (e.g. cloud, rain) as it moves through the water cycle. Discuss different methods of conserving water in the home.	Explain different methods of conserving water in the home.

SECTION 3 SYSTEMS

- 1. recognise that a system is a whole consisting of parts that work together to perform a function.
- 2. be aware that there are systems in nature.
- 3. be aware of the various organ systems in the human body.
- 4. appreciate the various organ systems and their interdependence in carrying out life functions.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 THE HUMAN BODY SYSTEMS	The pupil will be able to: 3.1.1 identify some organ systems in the human body.	Organ systems in Humans: Respiratory, Reproductive Circulatory, Digestive, Nervous, Skeletal, and Excretory.	Let pupils: Use charts/models to discuss the various organ systems in the human body. Watch a digitized/video clip on the structure and functions of the various organ systems in humans. Note: Detailed treatment of functions of parts not required	Give one function each of the human organ systems.
			Project In groups, model one each of the various organ systems of humans using a collage. Each group makes a presentation to the class.	
	3.1.2 name the organs of an organ system in humans.	Names of the organs in the respiratory, circulatory and digestive systems	Discuss names of the organs that make up the organ systems of humans. Watch digitized/ video clip on the structure and operations of the various organ systems in humans.	List names of four organs of the digestive system.
	3.1.3 explain the interdependence of the organ systems in carrying out a life function.	Interdependence of the organ systems	Discuss the interdependence of the different organ systems in carrying out a life function.	

SECTION 4 ENERGY

- 1. show understanding that energy has a source, can be transferred and can be transformed into various forms of energy.
- 2. recognise that the Sun is a major source of energy on Earth
- 3. show understanding of how energy is converted from one form to another
- 4. show understanding that matter can change from one form to another.
- 5. be aware of the sources and effects of heat loss or gain in daily life and understand the modes of heat transfer.
- 6. understand the behavior of capacitors in electronic circuits.

UNIT	SPECIFIC OBJECTIVES		CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
		,			
UNIT 1	The po	upil will be able to:		Let pupils:	
FORMS OF ENERGY	4.1.1	explain the term energy.	Meaning of energy	Brainstorm to come out with the meaning of the term energy	List six different forms of energy.
	4.1.2	identify different forms of energy.	Forms of Energy: Heat, light, electrical, chemical, sound, kinetic, potential and solar	Discuss the different forms of energy and give examples: Heat, light, electrical, chemical, sound, kinetic, potential and solar.	
UNIT 2 CONVERSION AND CONSERVATION OF ENERGY	4.2.1	explain how energy is converted from one form to another.	Change of energy from one form to another.	Demonstrate various ways of converting one form of energy to another. Use a piece of wire to connect a flashlight bulb to a battery to make the bulb light. Discuss the different forms of energy involved in this process. Use a piece of wire to connect a door bell to a battery and make the	List as many sources of energy as possible. Give five reasons why people get worried when there
				bell ring. Discuss the different forms of energy involved in this process.	is no electricity.
	4.2.2	describe ways of conserving energy.	Ways of conserving energy: ✓ Use of energy saving bulbs ✓ Switching off light periodically ✓ Use of new electrical gadgets	Discuss ways of conserving energy in the home. Compare incandescent and fluorescent light with respect to their energy saving efficiency.	Describe the changes of energy between a lit flashlight bulb a battery.

UNIT	SPECIFIC OBJECTIVES		CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
LINUT O	The p	upil will be able to:		Let pupils:	
UNIT 3 LIGHT	4.3.1	infer that light is a form of energy.	Light as a form of energy	Demonstrate that light is a form of energy.	
	4.3.2	identify different sources of light.	Sources of light: > Natural > Artificial	Discuss natural and artificial sources of light.	
	4.3.3	explain that an object can be seen when it reflects	Reflection of light.	Demonstrate reflection of light using plane mirrors and polished surfaces.	
		light.		Project : Design and make a periscope.	
	4.3.4	use hand lens to produce magnified images of objects.	Magnifying objects	Carry out activities to produce magnified images of objects using hand lens	
	4.3.5	demonstrate that white light is made up of different colours.	Colours that make up white light	Demonstrate that white light can be broken up into many different colours. Mention names of colours that form white light.	
	4.3.6	describe the formation of rainbow colours.	Rainbow	Discuss the formation of the rainbow.	
	4.3.7	explain the terms transparent, translucent and	Transparent, Translucent and Opaque materials	Discuss the terms Transparent, Translucent and Opaque materials	Identify the rainbow colours.
		opaque.		Place different materials in the path of light and determine whether the materials are, translucent, transparent or opaque.	Distinguish among transparent, translucent
	4.3.8	distinguish among Transparent, translucent and opaque materials.	Distinguishing among Transparent, translucent and opaque materials	Sort and group materials into transparent, translucent and opaque materials according to the degree to which they allow light to pass through them.	and opaque materials.
		-Frades maremans.		Outline the uses of transparent, translucent and opaque materials based on their properties.	
				Project: Design and make a light shade using suitable materials.	

UNIT	C	SPECIFIC DBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4	The p	oupil will be able to:		Let pupils	
HEAT	4.4.1	give the meaning of temperature.	Meaning of temperature	Review temperature from P4(Measurement).	
	4.4.2	explain the term heat.	Meaning of heat	Brainstorm to bring out the meaning of the term heat.	
	4.4.3	list some common sources of heat.	Sources of heat	Brainstorm to bring out some common sources of heat.	Explain why wet clothes dry up when ironed.
	4.4.4	list some effects of heat gain/loss in daily life.	Effects of heat loss or gain : Expansion,	Heat cubes of ice, candle, solidified shea butter and palm oil and discuss their observation.	
		daily iiio.	Evaporation, Contraction,	Heat water until it boils and discuss their observation.	
			Condensation	Wet a piece of cloth/handkerchief and leave it in the sun. Pupils discuss their observation.	
				Carry out the ball-and-ring experiment and any appropriate experiment e.g. bi- metallic strip to demonstrate expansion and contraction of materials. Discuss the effects of expansion and contraction on materials.	
	4.4.5	explain the different modes of heat transfer.	Modes of heat transfer:	Discuss the different modes of heat transfer.	
			Conduction	Place drops of candle wax at intervals of 6cm on a long metal rod (cutlass) Place the metal rod horizontally with one end in a source of heat. Keep the metal rod in that position. Observe and discuss what happens.	Explain how heat is transferred by conduction, convection and radiation.
			Convection	Discuss examples of good and bad conductors of heat and some of their uses. Cut pieces of paper and place them in a transparent container (beaker). Pour water into the container and heat the content until it boils. Discuss their observation.	and radiation.
			Radiation	Go closer to a lighted fire or charcoal fire and comment on what they feel.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
	The pupil will be able to:		Let pupils	
UNIT 5 CHANGE OF STATE OF	4.5.1 explain the term matter.	Meaning of matter.	Review the meaning of matter from P3 (States of Matter). Give examples of matter.	What happens to liquid water when put in a freezer for a day?
MATTER	4.5.2 describe the three states of matter.	States of matter	Discuss the three states of matter in terms of shape, volume and ability to flow.	in a needed for a day.
	4.5.3 demonstrate how matter changes from one state to	Change of state of matter	Carry out an activity to show that matter changes from one state to another when there is either heat gain or heat loss.	
	another.	melting: solid-liquid	Heat ice until it melts and changes into water.	
		Evaporation/boiling: Liquid - gas	Heat the water until it boils and changes into steam. Place a cold glass sheet across the path of the escaping steam. Record what happens.	
		Condensation: Gas-liquid		
		Freezing	Place water in a freezer for a day and record what happens.	
		Liquid –solid Sublimation Solid-gas	Place some ammonium chloride/ naphthalene balls /camphor in a beaker and cover with a glass/sauce pan cover. Warm the ammonium, chloride/ camphor solid in the beaker and record and communicate their observation to the class Place solid iodine on a glass sheet. Observe and record what happens.	
			Teacher to use concept map to sum up discussions on change of state of matter.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 6 BASIC ELECTRONICS	The pupil will be able to: 4.6.1 investigate the behaviour of a capacitor in a d.c circuit.		Let pupils: Observe the negative mark on the (electrolytic) capacitor and identify the negative and positive leads of the capacitor. Construct a simple circuit made up of a 6V battery a switch, a $1000\mu F$ capacitor, a $1000~\Omega$ resistor and an LED as shown in the figure below. $R = 1000~\Omega$ $C = 1000\mu F$	Explain the function of the capacitor in a d.c electric circuit.
			Close the switch and quickly and carefully observe what happens to the LED. Open the switch. Remove the battery from the circuit. Carefully disconnect the capacitor, ensuring that the leads do not touch each other. Reconnect the capacitor in a reversed position and complete the circuit without the battery. Close the switch and carefully observe the effect on the LED. Repeat the above activity using a 9V battery and comment their observation.	

SECTION 5 INTERACTIONS OF MATTER

- 1. appreciate that interaction between and within matter helps humans to better understand the environment and their role in it.
- 2. develop skills in the formation and separation of mixture.
- 3. be aware of the uses of mixtures in the home and industry.
- 4. be aware of the symptoms of some water borne diseases and their prevention.
- 5. recognize the causes, effects and prevention of HIV/AIDS.
- 6. understand the mechanics and application of magnets in everyday life.

UNIT		SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1		upil will be able to:		Let pupils:	
MAGNETISM	5.1.1	identify the properties of magnets.	Properties of magnets	Carry out activities to show the properties of magnets. For example, magnets have two poles, unlike poles attract.	
	5.1.2	differentiate between magnetic and non-	Differences between magnetic and non-	Assemble iron nails, steel nails, a piece of aluminum foil, pieces of coins, glass, wood, paper and paper clips.	
		magnetic substances.	magnetic substances	Bring a bar magnet close to each of the materials assembled and observe what happens.	
				Use the above activity to group the materials into magnetic and non-magnetic substances.	
	5.1.3	make a magnet by the 'Touch'/ 'Stroking' method.	Making a magnet by the 'Touch'/'Stroking' method	Place a steel bar/nail on a table. Use the stroking method to magnetize steel bar/nail. Communicate their observation to the class.	Describe how you magnetize a steel bar using the stroking method.
	5.1.4	list some uses of magnets in some objects.	Uses of magnets	Identify items at home and school that contain magnets. Discuss the uses of magnets in objects e.g. electric motor, fridge doors, wardrobes and speakers.	List three household appliances that use magnets.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2 MIXTURES	The pupil will be able to: 5.2.1 explain the term mixture.	Mixtures	Let pupils: Brainstorm to come out with the meaning of the term mixture	Describe how you separate the following
	5.2.2 distinguish types of mixtures.	Types of Mixtures ✓ Solid-solid ✓ Solid-liquid ✓ Liquid-liquid ✓ Liquid-gas ✓ Gas-gas ✓ Solid-gas	Observe and identify the following types of mixtures: 1. Iron filings in sand. 2. Powdered chalk in water. 3. Common salt dissolved in water 4. Vinegar in water 5. Oil in water. 6. A bottle of fizzy drink (Coca cola, Fanta, Sprite). 7. Smoke rising from burning substance	mixtures: i. Sugar and water ii. Beans and chaff iii. Palm oil and water
	5.2.3 identify appropriate method for separating a particular mixture.	Methods of separation of mixtures: Filtration, Evaporation, Magnetization, Decantation, Winnowing, Distillation	Demonstrate how to separate iron filing from sand. Demonstrate how to separate common salt from water. Demonstrate how to separate chalk from water. Explore other methods of separating mixtures.	
	5.2.4 list some uses of mixtures in industry and in everyday life.	Uses of mixtures	Discuss the importance of mixtures in everyday life.	
UNIT 3 WATER BORNE	5.3.1 List some water borne diseases.	Water Borne Diseases: Typhoid, Cholera, Polio	Brainstorm to come out with the meaning of water borne diseases.	State some water borne diseases.
DISEASES	6.3.2 state the symptoms of some water borne diseases.	Symptoms of water borne diseases	Discuss the symptoms of Typhoid, Cholera, and Polio as examples of water borne diseases using a chart.	Describe how you will control the spread of cholera in your
	6.3.3 outline the causes of water borne diseases.	Causes of water borne diseases	Discuss the causes of water borne diseases. Teacher to invite a health worker to give a talk on water borne diseases.	community.
	6.3.4 describe the prevention of some water borne diseases.	Prevention of water borne diseases: Typhoid, Cholera, Polio	Watch digitized/video clip on some causes, effect and prevention of water borne diseases. Make a poster educating pupils on Typhoid, Cholera and Polio prevention.	

OBJECTIVES ACTIVITIES	EVALUATION
UNIT 4 HIV/AIDS The pupil will be able to: 5.4.1 state the causes of HIV/AIDS Causes of HIV/AIDS Discuss the causes of HIV/AIDS. Teacher to invite a resource person to talks to the pupils on HIV/AIDS. Discuss the effects of HIV/AIDS. Discuss the effects of HIV/AIDS. Write messages on HIV/AIDS educating people on the causes, effects and prevention of the disease.	List the effect of HIV/AIDS on the family. PROJECT Develop posters with messages on HIV/AIDS educating people on the causes, effects and prevention of the disease.

SECTION 1 DIVERSITY OF MATTER

- 1. recognise the variety of living and non-living things and their interconnectedness.
- 2. distinguish a fruit from a seed and fleshy fruit from dry fruits.
- 3. recognize the uses of fruits and seeds in the home and industry
- 4. recognize the importance of dispersal of seeds and fruits.
- 5. recognize the conditions necessary for germination
- 6. be aware of the composition, properties and uses of air.

UNIT	SPECIFIC	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
	OBJECTIVES			
UNIT 1	The pupil will be able to:		Let pupils	
FRUITS AND SEEDS	1.1.1 group fruits into fleshy and dry fruits.	Types of fruits Dry—okro, bean Fleshy—coconut, mango, tomato	Classify fruits into fleshy and dry fruits. Note: Details like drupe, berry, dehiscent and non dehiscent not required.	Name two examples each of fleshy and dry fruits.
	1.1.2 describe the external structure of a typical seed.	External structure of a typical seed(bean seed)	Describe the external structure of a bean seed.	
	1.1.3 distinguish a fruit from a seed.	Physical appearance of fruits and seeds: ✓ Fruits have two scars for attachment ✓ Seeds have one scar for attachment	Discuss the physical appearance of fruit and seed e.g. Testa(seed coat), micropyle, hilum (scar) Project Mount on a cardboard variety of fruits. Explore their domestic and industrial uses and record them. Name the fruits and the area where they are commonly located.	

UNIT	SPECIFIC CONTENT OBJECTIVES		CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION	
	The pupil w	will be able to:		Let pupils:		
	whi see	entify ways by nich fruits and eds are spersed.	Methods of dispersal of fruits and seeds: Wind, Water, Animals, Explosive mechanism	Assemble various fruits and seeds and discuss how they are dispersed. Watch digitized content/video on dispersal of fruits and seeds.	Describe three ways by which fruits and seeds are dispersed. What are the	
	and	ate the vantages of fruit d seed spersal.	Advantages of seed and fruit dispersal.	Brainstorm on the advantages of dispersal to fruits and seeds.	advantage of dispersal of fruits and seeds to plants?	
		itline some uses fruits and seeds	Uses of fruits and seeds	Discuss uses of fruits and seeds.	What conditions are	
	con	ate the nditions cessary for rmination.	Conditions necessary for a seed to germinate: Air, moisture, suitable temperature, viability of seed	Brainstorm to bring out the conditions necessary for a seed to germinate. In groups, carry out an activity to demonstrate the conditions necessary for germination of seed. Share your finding with class.	necessary for a viable seed to germinate?	
				Project: Explore the conditions necessary for germination to take place. Write a report on your findings.		
UNIT 2 AIR		ate the mposition of air.	Composition of Air Nitrogen 78.0% Oxygen 21.0% Carbon dioxide 0.03% Rare gases 1.0% Water vapour Variable Dust particles Variable	Brainstorm to bring out the composition of air. Perform activity to show that air contains about 20% oxygen.	What is the composition of air?	
	1.2.2 state	ate the operties of air.	Properties of air. Air has mass and occupies space.	Turn a bottle upside-down and dip it completely into water. Turn the mouth of the bottle up quickly and discuss their observation. Use two balloons of equal size to demonstrate that air has mass.	State two main properties of air.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
	The pupil will be able to: 1.2.3 show that air exerts pressure.	Air exerts pressure.	Let pupils Hold a closed umbrella behind them. Run against the direction of the wind. Now open the umbrella against the direction of the wind. Compare the effects of air in both states.	
	1.2.4 list some uses of air.	Uses of air: Breathing, sailing, Hoovering Winnowing, Burning, Ventilation, inflating tyres and footballs	Light two candle sticks and place them on a table. Cover one candle with a transparent container. Observe and discuss what happens. Brainstorm on the uses of air.	What are the uses of air to humans in everyday life?

SECTION 2 CYCLES

- recognize that there are repeated patterns of change in nature and understand how these patterns arise.
 show understanding of the life cycle of a mosquito and how to control it.
- show understanding of the life cycle of okro and maize.

UNIT	SPECIFIC	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
	OBJECTIVES			
	The pupil will be able to:		Let pupils	
UNIT 1 LIFE CYCLE OF OKRO AND MAIZE PLANTS	2.1.1 demonstrate the life cycle of okro or maize plant.	Life cycle of okro and maize plant.	Plant viable maize and okra seeds. Care for them until they bear fruits. Observe weekly and record the changes that take place until other viable seeds are produced.	Describe the life cycle of named plant you have studied.
UNIT 2 WATER RELATED DISEASES	2.2.1 list some water related diseases.	Water related diseases e.g. Malaria, Yellow fever and River blindness	Brainstorm to explain what water related disease mean and give examples.	
DISEASES	2.2.2 list some symptoms of malaria disease.	Symptoms of malaria disease	Discuss the symptoms of the malaria disease. Show the similarities in symptoms between typhoid fever and malaria.	
	2.2.3 describe the prevention of malaria disease.	Prevention of malaria	Discuss the prevention of malaria disease. e.g. taking prophylactics, by breaking the life cycle of mosquito.	
UNIT 3 LIFE CYCLE OF A MOSQUITO	2.3.1 demonstrate the life cycle of a mosquito.	Life cycle of a mosquito	Place uncovered clean water at a suitable place, preferably in the classroom to observe how mosquitoes breed. Watch the setup and record what you see daily until a mosquito comes out. When the larvae emerge, cover the container with a piece of net (mosquito net) to trap the adult	Use a flow chart to show the life cycle of a mosquito.
			nosquito when it emerges. Note: Use a hand lens to detect the presence of the eggs of mosquito.	Mention two ways of controlling mosquitoes

SECTION 3 SYSTEMS

- recognize that a system is a whole consisting of parts that work together to perform a function.
 identify the different organs that form the digestive system.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION	
UNIT 1 THE DIGESTIVE SYSTEM OF HUMANS	The pupil will be able to: 3.1.1 identify the main organs that form the digestive system.	Main organs of the digestive system: Mouth, Stomach, Small intestine, Large intestine	Let pupils Identify the main organs of the digestive system with the aid of chart/model.	Draw or model and label the main organs of the digestive system.	
	3.1.2 describe the functions of the organs of the digestive system.	Functions of parts of the digestive system.	Discuss the functions of the various parts of digestive system. Discuss end products of digestion of the different types of food. Note: Names of enzymes are not required.		

SECTION 4 ENERGY

- 1. recognise that energy has a source, can be transferred and can be transformed into various forms of energy.
- 2. recognise that animals obtain their food by eating plants and other animals.
- 3. recognise that plants use sunlight, water and air for making food.
- 4. recognize the importance of respiration as one of the sources of energy to living things
- 5. acquire skills in the design and making of simple electrical devices
- 6. show understanding of the behaviour of inductors in electronic circuits.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 FEEDING IN PLANTS	The pupil will be able to: 4.1.1 list the materials plants need to make their food.	Materials for making Plants' food: (Water, carbon dioxide, Sunlight, Green substance in plants(chlorophyll)	Let pupils: Discuss the materials plants need to make their food with the aid of a chart. Note: 1. There are some plants without green substance(chlorophyll) but they make plant food. 2. Introduce the term photosynthesis at this stage.	List the materials plants need to make their food.
	4.1.2 state the sources of the materials needed by plants to make their food.	Sources of the materials needed by plants to make their food.	Discuss sources of materials plants need to make their food.	
	4.1.3 demonstrate that sunlight is needed in the preparation of plant's food.	Sunlight and preparation of plant food	Sow two maize/bean seeds in polythene bags/suitable materials. After germination, place one in a cupboard and the other at a suitable place where it will have access to sunlight. Observe and record any changes in the plants for a week. Discuss their observation.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
	The pupil will be able to:		Let pupils	
UNIT 2 FEEDING IN ANIMALS	4.2.1 list names of animals found in the community.	Animals found in the community.	Brainstorm to come out with name of animals found in the community.	List three animals you have found in the community around your school.
	4.2.2 match animals in the community with the food they eat.	Animals and what they eat.	Observe and discuss animals in the community in relation to the food they eat.	Match animals, cat, goat, rabbit, chicken and dog with the food they feed on
	4.2.3 describe the mode of feeding in animals.	Mode of feeding in animals: Feeding on plants alone (herbivore) Feeding on the flesh of animals alone (carnivore) Feeding on plants and animal flesh(omnivore)	Put into a table form, names of animals and their method of feeding as described in the content.	e.g. grass, meat, maize, cassava.
UNIT 3 RESPIRATION	4.3.1 explain the term respiration.	Respiration	Brainstorm to come out with the meaning of the term respiration.	How is energy obtained from the food we eat?
	4.3.2 state the importance of respiration.	Importance of respiration	Discuss the importance of respiration in terms of the energy it gives to the human body. Compare the rate of respiration in the following activities: sitting down and running.	Name three sources of heat.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 4 SIMPLE ELECTRICAL CIRCUIT	The pupil will be able to: 4.4.1 list the components and functions of a simple electrical circuit.	Components of electrical circuit: Dry cell/battery Switch Bulb/lamp Connecting wires	Let pupils: Brainstorm to come out with the meaning of electrical current. Construct a complete electrical circuit using a battery, switch, a bulb and connecting wire.	State the importance of a battery, switch and connecting wire in an electrical circuit.
	4.4.2 construct simple circuit from circuit diagrams.	Constructing simple circuits from circuit diagrams	Construct a simple electrical circuit from circuit diagrams involving bulbs and cells in series and in parallel. Investigate the brightness of the bulbs based on number of cells and bulbs.	
	4.4.3 identify electrical conductors and insulators.	Electrical conductors and insulators	Discuss some examples of electrical conductors and insulators.	
	4.4.4 construct simple electric circuit to produce light, heat and sound.	Circuit to produce light, heat and sound	Construct a simple electric circuit to produce light, heat and sound. Draw your arrangement and discuss.	
			Project Construct a simple electrical circuit using a battery, a switch, and motor. Use the motor to power a miniature device like fan/ corn mill.	Draw a simple electrical circuit and label the parts.
	4.4.5 Construct a simple electric circuit to produce a magnet.	Electromagnets.	Design and make a solenoid and use it to make a magnet.	Describe how you will use an electric current to produce a magnet.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 5	The pupil will be able to:		Let pupils:	
BASIC ELECTRONICS	4.5.1 design and make an inductor or coil.	Making an Inductor(coil)	Wind a copper wire tightly on a short plastic tube so that the adjacent turns are as close as possible. Remove the insulations from the ends of the coil.	
	4.5.2 investigate the behavior of an inductor in an electronic circuit.	Behaviour of an inductor in an electronic circuit	Connect a 3V battery, a switch, and LED1(left) and LED 2(right) in series such that the negative (short terminal) of LED 2 is connected to the negative (short terminal) of LED 1 as shown in the figure below.	
			LED 2 (right) Inductor	
			Connect an inductor across the two LEDs as shown in the circuit diagram. Close the switch and observe what happens to the LED 1 and LED 2 Open the switch and observe what happens to the two LEDs. Repeat the process of switching on and off.	
			Discuss the sparks (arcing) action of the inductor Note: You may use the primary windings of a small step-down transformer (240V/12V) as an inductor.	
			Caution: Do not use more than 3V battery since a large d.c source can be dangerous.	

SECTION 5 INTERACTIONS OF MATTER

- 1. appreciate that interaction between and within matter helps humans to better understand the environment and their role in it.
- 2. be aware of food processing and preservation as a method of keeping food for lean seasons.
- 3. appreciate causes and signs of food poisoning.
- 4. develop positive attitude towards the prevention of flooding.

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 1 FOOD PROCESSING AND PRESERVATION	The pupil will be able to: 5.1.1 identify foods that are processed for preservation in their community.	Food Processing and Preservation	Let pupils: List foods that are processed for preservation in their community Demonstrate how the foods listed are processed and preserved.	Describe how a named food substance is preserved in your community.
	5.1.2 explain food preservation and give reasons for preserving them.	Methods of food preservation: drying, smoking salting, frying, canning	Explore other ways of processing and preserving the foods identified. Discuss why food should be preserved. Demonstrate any three methods of food preservation. Note: Food additives and preservatives should be used with care.	

UNIT	SPECIFIC OBJECTIVES	CONTENT	TEACHING AND LEARNING ACTIVITIES	EVALUATION
UNIT 2	The pupil will be able to:		Let pupils:	
FOOD POISONING	5.2.1 explain food poisoning.	Food poisoning	Discuss to come out with the meaning of the term food poisoning.	How would you identify an expired food product?
			Teacher to make available expired preserved food/badly preserved foods which have gone mouldy for pupils to observe and make comments.	List three signs of food poisoning.
LIMIT 2	5.2.2 describe signs of food poisoning.	Signs of food poisoning: Vomiting, diarrhea, stomach pains and cramps	Discuss common signs of food poisoning.	What causes flooding in some parts of Ghana during rainy season?
UNIT 3 NATURAL DISASTER - FLOODING	5.3.1 identify causes of flooding.5.3.2 List some effects of flooding.	Causes of flooding. Effects of flooding	Discuss the causes of flooding e.g. excessive rain, poor drainage, building on water ways and choked gutters. Collect pictures, video clips on flooding and watch them. List some of the effects flooding e.g. loss of life and property and outbreak of diseases. Watch documentary on flooding in Ghana.	

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