WEEK 2
TOPIC: MATERIALS

SUBTOPIC: MEANING,TYPES AND IDENTIFICATION OF MATERIALS

BEHAVIOURAL OBJECTIVES: AT THE END OF THE LESSON, PUPILS SHOULD BE ABLE TO:

1 .Define materials

2. Identify the materials used in technology

3. List types of materials

4. State what materials are used for.

INSTRUCTIONAL MATERIALS:

Wood

Plastic

Oil

Rag

Piece of metal

REFERENCE MATERIALS

Scheme of work

All relevant materials

9-Years Basic Education Curriculum

Online information

BUILDING BACKGROUND/CONNECTION TO PRIOR KNOWLEDGE: Pupils are familiar with the topic in their previous classes.

CONTENT OF THE LESSON

MEANING OF MATERIALS

A material is a substance or mixture of substances that constitutes an object. Materials can be pure or impure, living or non-living matter.

Materials can be classified based on their physical and chemical properties, or on their geographical origin or biological function. Materials are resources used in making products of technology.

TYPES OF MATERIALS

1. Wood materials

2. Plastic materials

3. Metal materials

EXAMPLES OF PRODUCTS MADE FROM WOOD MATERIALS

Products made from wood materials are bow and arrow, shelter, furniture, doors and windows bridges, electric poles etc.

EXAMPLES OF PRODUCTS MADE FROM PLASTIC MATERIALS

Products made from plastic materials include the following: rulers, toothbrushes, electronics, shirts and blouses buttons, plastic pipes, buckets etc

EXAMPLES OF PRODUCTS MADE FROM METAL MATERIALS

Products made from metal materials are pipes, roofing sheets, cylinder, pots, spoons, containers, bolts and nuts etc

USES OF WOOD MATERIALS
1. Wood materials are used for home construction. Domestic constructions made out of wood were popular many years ago and are still widely used.
2. It is used for making fence and decorating gardens
3. It is used for making utensils
4. It is used for creating art
5. It is used for making musical instruments
6. It is used for making sports equipment and toys

STRATEGIES AND ACTIVITIES
The Teacher revises the previous week lesson.

The Teacher introduces the new topic.

The Teacher explains the note in details.

The Teacher gives room for pupils to ask questions.

The Teacher evaluates the pupils.

ASSESSMENT AND EVALUATION

1 .Define materials

2. Identify the materials used in technology

3. List types of materials

4. State what materials are used for

WRAP-UP (CONCLUSION)

Teacher goes over the topic once again to enhance better understanding.

ASSIGNMENT

List and explain materials used for making products of technology.

WEEK3

TOPIC: SAFETY AND ACCIDENT

SUBTOPIC: CAUSES AND PREVENTION OF ACCIDENT

BEHAVIOURAL OBJECTIVES: AT THE END OF THE LESSON, PUPILS SHOULD BE ABLE TO:

1 .Define accident

2. State the causes of accident

3. Mention some ways we can prevent accident

4. List some safety devices

INSTRUCTIONAL MATERIALS:

Safety device

Apron

Boots

Hand gloves

Eye shield

REFERENCE MATERIALS

Scheme of work

All relevant materials

9-Years Basic Education Curriculum

Online information

BUILDING BACKGROUND/CONNECTION TO PRIOR KNOWLEDGE: Pupils are familiar with the topic in their previous classes.

CONTENT OF THE LESSON

MEANING OF SAFETY

Safety is the state of being safe, the condition of being protected from harm and other non-desirable outcomes. Safety means keeping yourself and other from harm and danger.

MEANING OF ACCIDENT

An accident is an unplanned event that sometimes has inconvenient or undesirable consequences. An accident is something harmful and takes pl ace suddenly and unexpectedly. IT may result in simple injuries to the body like bruise and cuts. But may also result in major complication like broken bones with heavy bleeding, failure to breathe, unconsciousness or even death.

ACCIDENT AT HOME AND SCHOOL

1. Falling into fire (fireplace or stove) will cause burns

2. Spilling hot liquids and food(saucepan being pulled over)cause scalds

3. Touching electric wires causes shock, breathing stops, heart stops.-death

4. Sharp instruments cause cuts

5. Swallowing poison drugs, kerosene, rat poison etc can cause death.

6. falling from trees can cause broken bones and cuts.

7. dogs can carry rubies

8. stings can cause pain

ACCIDEMTS ON THE ROAD

1.Motor vehicles can cause serious injury and death

2. Bicycles can cause broken bones, cuts and death

WAYS WE CAN PREVENT ACCIDENT

1.AT HOME

- Keep away from fire
- Keep cooking pots and hot food away from children
- Keep away loose electric wires and plugs
- Keep away from electrical wires, plugs, sockets or switches when you are wet. Electricity can be conducted through water.
- Use knives with great care
- Make sure the broken bottles are cleared from where people walk or play
- Put empty bottles in a safe place
- Climbing trees are very dangerous and keep away from dogs

IN THE SCHOOL

1.Donot play on waterlogged football field

2. keep school compound clean and tidy always

3. all electrical connections in the laboratory should be done under the supervision of the science teacher.

SAFETYU DEVICES

Fire extinguisher

Apron

Boots

Hand glove

Eye shield of goggles

Caution signs

Seatbelts

Road signs or zebra crossing

Hearing protection

STRATEGIES AND ACTIVITIES
The Teacher revises the previous week lesson.

The Teacher introduces the new topic.

The Teacher explains the note in details.

The Teacher gives room for pupils to ask questions.

The Teacher evaluates the pupils.

ASSESSMENT AND EVALUATION

1 .Define accident

2. State the causes of accident

3. Mention some ways we can prevent accident

4. List some safety devices

WRAP-UP (CONCLUSION)

Teacher goes over the topic once again to enhance better understanding.

ASSIGNMENT
1.define safety and accident
2. list three objects that cause accident at home and school
3.state 3 causes of accident at home and school.

WEEK4

TOPIC: MAINTENANCE

SUBTOPIC: MEANING AND USES OF MAINTENANCE MATERIALS

BEHAVIOURAL OBJECTIVES: AT THE END OF THE LESSON, PUPILS SHOULD BE ABLE TO:

1 .Define maintenance

2. State the need for maintenance

INSTRUCTIONAL MATERIALS:

Wood

Rag

Plastic

Oil

Pieces of metal

REFERENCE MATERIALS

Scheme of work

All relevant materials

9-Years Basic Education Curriculum

Online information

BUILDING BACKGROUND/CONNECTION TO PRIOR KNOWLEDGE: Pupils are familiar with the topic in their previous classes.

CONTENT OF THE LESSON

The purpose of maintenance is to ensure that our equipment are in good working conditions . a breakdown in plants and machines clouds be as a result of inadequate maintenance.

MEANING OF MAINTENANCE
Maintenance is an activities that should be carried out on regulsr basis in order to keep equipment in good working conditions.

IMPORTANCE OF MAINTENANCE
1.It makes our equipment last long
2. it prevents us from danger.
3. it saves us from embarrassment
4. it prevents our equipment and materials from rustling
5. it beautifies our home and environment
6. it saves money

WAYS OF MAINTENANCE AND MATERIALS NEEDED FOR MAINTENANCE

1.dusting the tables, refrigerator, fan etc
2. sweeping the floor
3. mopping the floor
4. polishing or cleaning the furniture
5. replacing faculty electrical parts
6. polishing or cleaning shoes

STRATEGIES AND ACTIVITIES
The Teacher revises the previous week lesson.

The Teacher introduces the new topic.

The Teacher explains the note in details.

The Teacher gives room for pupils to ask questions.

The Teacher evaluates the pupils.

ASSESSMENT AND EVALUATION

1 .Define maintenance

2. State the need for maintenance

WRAP-UP (CONCLUSION)

Teacher goes over the topic once again to enhance better understanding.

ASSIGNMENT

1 .Define maintenance

2. State the need for maintenance

WEEK5

TOPIC: DRAWING

SUBTOPIC: DRAWING INSTRUMENTS

BEHAVIOURAL OBJECTIVES: AT THE END OF THE LESSON, PUPILS SHOULD BE ABLE TO:

1 . Explain the meaning of drawing

2. Identify drawing instruments

3. State the names and uses of each drawing instruments

INSTRUCTIONAL MATERIALS:

Ruler

T-square

Protector

Set square

Drawing board

Compass

REFERENCE MATERIALS

Scheme of work

All relevant materials

Online information

BUILDING BACKGROUND/CONNECTION TO PRIOR KNOWLEDGE: Pupils are familiar with the topic in their previous classes.

CONTENT OF THE LESSON

Drawing is a form of visual art in which a person uses various drawing instruments to mark paper or another two-dimensional medium. Instruments include graphite pencils, pen and ink, various kinds of paints, inked brushes, colored pencils, crayons, charcoal, chalk, pastels, various kinds of erasers, markers, styluses, and various metals (such as silverpoint). Digital drawing is the act of using a computer to draw. A drawing instrument releases a small amount of material onto a surface, leaving a visible mark. The most common support for drawing is paper, although other materials, such as cardboard, wood, plastic, leather, canvas, and board, may be used. Temporary drawings may be made on a blackboard or whiteboard or indeed almost anything. Drawing is a way of making marks to represent an object.

Common drawing instruments are Set Square, French curve, divider, compass, drawing board, ruler, pencil, pen and ink, sharpener, and eraser etc.

USES OF DRAWING INSTRUMENTS

COMPASS
A compass is a drawing tools that can be used to draw circles or arcs, parts of a circle. Compasses are usually made of metal or plastic, and consist of two parts connected by hinge which can be adjusted to allow the changing of the radius of the circle drawn.
It is used for constructing angles.

DIVIDER
It is used for placing points on the drawing paper.

SET SQUARE
It is used for drawing verticals and horizontal lines turned in different.

RULER
It is used for measuring distances between two or more points.

PROTECTOR
It is used for measuring angles.

T-SQUARE
It is used for drawing verticals and horizontal lines.

STRATEGIES AND ACTIVITIES
The Teacher revises the previous week lesson.

The Teacher introduces the new topic.

The Teacher explains the note in details.

The Teacher gives room for pupils to ask questions.

The Teacher evaluates the pupils.

ASSESSMENT AND EVALUATION

1 . Explain the meaning of drawing

2. Identify drawing instruments

3. State the names and uses of each drawing instruments

WRAP-UP (CONCLUSION)

Teacher goes over the topic once again to enhance better understanding

ASSIGNMENT

1. What is drawing?
2. Mention 5 drawing instrument
3. Draw triangle, rectangle and square

WEEK6

TOPIC: ENERGY CONVERSION

SUBTOPIC: MEANING AND IMPORTANCE OF ENERGY CONVERSION

BEHAVIOURAL OBJECTIVES: AT THE END OF THE LESSON, PUPILS SHOULD BE ABLE TO:

1 . Explain the meaning of energy conversion

2. name forms of energy conversion

3. State the importance energy conversion

INSTRUCTIONAL MATERIALS:

Boiling ring

Electric Pressing iron

Kerosene stove

Charcoal pressing iron

REFERENCE MATERIALS

Scheme of work

All relevant materials

Online information

BUILDING BACKGROUND/CONNECTION TO PRIOR KNOWLEDGE: Pupils are familiar with the topic in their previous classes.

CONTENT OF THE LESSON

Energy is the ability to be active or to do work

MEANING OF ENERGY CONVERSION

Energy conversion is also known as energy transformation. It is the process of changing energy from one type of energy to another.

FORMS OF ENERGY CONVERSION

1. Mechanical energy can be transformed to heat energy.

2. Electrical energy can be transformed to mechanical energy. For example, blender, electric cooker etc.

3. Electrical energy can be transformed to heat energy. For example, pressing iron, electric stove etc

4. Mechanical energy can be transformed to electrical energy.

5. Chemical energy can be transformed to heat energy. For example, kerosene stove.

6. Solar energy can be transformed to heat energy, chemical energy and electrical energy.

7. light energy can be transformed to heat energy.

IMPORTANCE OF ENERGY CONVERSION

1. It saves money

2. It reduces pollution

3. It saves energy

4. It generates energy

5. It replaces non renewable energy.

STRATEGIES AND ACTIVITIES

The Teacher revises the previous week lesson.

The Teacher introduces the new topic.

The Teacher explains the note in details.

The Teacher gives room for pupils to ask questions.

The Teacher evaluates the pupils.

ASSESSMENT AND EVALUATION

1. Explain the meaning of energy conversion

2. Name forms of energy conversion

3. State the importance energy conversion

WRAP-UP (CONCLUSION)

Teacher goes over the topic once again to enhance better understanding

ASSIGNMENT

1.define energy conversion
2. list three forms of energy conversion
3. state 5 importance of energy conversion.

WEEK7

TOPIC: HEAT AND TEMPERATURE

SUBTOPIC: MEANING OF HEAT AND TEMPERATURE

BEHAVIOURAL OBJECTIVES: AT THE END OF THE LESSON, PUPILS SHOULD BE ABLE TO

1. Explain the meaning of heat and energy

2. Differentiate between heat and energy

INSTRUCTIONAL MATERIALS:

A chart showing different thermometers

Flask of hot water

Some ice water

REFERENCE MATERIALS

Scheme of work

All relevant materials

Online information

BUILDING BACKGROUND/CONNECTION TO PRIOR KNOWLEDGE: Pupils are familiar with the topic in their previous classes.

CONTENT OF THE LESSON

HEAT

Heat is a form of energy that increases the level of hotness of the body.

TEMPERATURE

Temperature is the degree of hotness or coldness of the body –water, iron, food etc.
Heat and temperature are often used as if they are used as the same thing.. When substance is hot,the temperature is high and when substance is less hot, the temperature is lower. Temperature can be measured with thermometer.

THERMOMETER

Thermometer is a device used for measuring the temperature of the body.

TYPES OF THERMOMETER

1. Clinical or medical thermometer: it is used to measure body temperature
2. Laboratory thermometer: it is used to measure the temperature of an experiment.
3. Infrared ear thermometer :it is used to measure the temperature in the ear.
4. Infrared thermometer: it is used to measure the temperature of a surface. For example, forehead.
5. Mercury thermometer
6. Digital or analogue thermometer: thermometer are either in digital or analogue mode.

USES OF THERMOMETER

By now you know that a thermometer is used for measuring temperature. You may wonder what other uses it has. What matters is the type of temperature being measured and the reason for Measuring it. Special thermometers are used for different purposes. You will have to study such thermometers in the actual places where they are used. So your teacher will take you out to the following places:

1. Any weather observation centre to see:
a) The simple thermometer and how it is used to record temperature at regular intervals.
b) The maximum-and-minimum thermometer and how it is used to record the maximum and minimum temperatures every 24 hours.

2. A hospital to see:
a) The simple thermometer and how it is used to measure the temperature of various substances.
b) The clinical thermometer and how it is used to measure the human body temperature.

3. A catering department or catering school to see:
a) How thermometers are used to measure the temperatures of various items.
b) How the thermometers that are built into some equipment work, particularly those built into stoves and ovens.
4. A chemical factory to see special types of thermometers and how they are used for measuring very high and very low temperatures.

STRATEGIES AND ACTIVITIES

The Teacher revises the previous week lesson.

The Teacher introduces the new topic.

The Teacher explains the note in details.

The Teacher gives room for pupils to ask questions.

The Teacher evaluates the pupils.

ASSESSMENT AND EVALUATION

1. Explain the meaning of heat and energy

2. Differentiate between heat and energy

WRAP-UP (CONCLUSION)

Teacher goes over the topic once again to enhance better understanding

ASSIGNMENT

Complete the following sentences

1. As water is being heated gradually, the temperature_____

_____.
When the source of heat is removed, the temperature ____
_____.

2.
The temperature of ice cube is _____ than that of ordinary water, but the temperature of boiling water is _____

WEEK 8

TOPIC: HEAT AND TEMPERATURE

SUBTOPIC: MEANING OF HEAT AND TEMPERATURE

BEHAVIOURAL OBJECTIVES: AT THE END OF THE LESSON, PUPILS SHOULD BE ABLE TO

1. identify and write the units and symbol of temperature scale
2. state the relationship between Degree Celsius and Degree Fahrenheit
3. State the use of thermometer to measure the temperature of objects accurately.

INSTRUCTIONAL MATERIALS:

A chart showing different thermometers

Flask of hot water

Some ice water

REFERENCE MATERIALS

Scheme of work

All relevant materials

Online information

BUILDING BACKGROUND/CONNECTION TO PRIOR KNOWLEDGE: Pupils are familiar with the topic in their previous classes.

CONTENT OF THE LESSON s

HEAT
Heat is a form of energy that increases the level of hotness of the body.

TEMPERATURE
Temperature is the degree of hotness or coldness of the body –water, iron, food etc.
Heat and temperature are often used as if they are used as the same thing.. When substance is hot, the temperature is high and when substance is less hot, the temperature is lower.
Temperature can be measured with thermometer.

THERMOMETER
Thermometer is a device used for measuring the temperature of the body.

UNITA AND SYMBOLS OF TEMPERATURE SCALE

DEGREE CELSIUS(*C)

Hint-*c to *f, divide by 5, then multiply by 9, then add 32

Example1: convert 10* Celsius to Fahrenheit

First,10*/5=2

Then,2×9=18

Then, 18±32=50·F

Example 2: convert 35* Celsius to Fahrenheit

First,35*/5=7

Then,7×9=63

Then, 63±32=95·F

Pupil’s activities

Convert

1.20* Celsius

2. 15*Celsius to Fahrenheit

UNIT AND SYMBOLS OF TEMPERATURE SCALE

DEGREE FAHRENHEIT

Hint-*F to*C: SUBTRACT 32. THEN MULTIPLY BY 5, AND THEN DIVIDE BY 9

Example 1: CONVERT 68*Fahrenheit to Degree Celsius

First, 68-32=36

Then, 36×5=180

Therefore, 180/9=20*celsuis.

Example 2: CONVERT 81*Fahrenheit to Degree Celsius

First, 81-32=49

Then, 49×5=245

Therefore, 245/9=27.*Celsius.

USES OF THERMOMETER

1. It is used to measure the outdoor temperature

2. It is used to measure body temperature

3. It is used to measure body temperature when someone is ill to determine if that person has fever.

4.it is used to measure the temperature of an experiment.

5. it is used to measure the temperature of a cold room

STRATEGIES AND ACTIVITIES

The Teacher revises the previous week lesson.

The Teacher introduces the new topic.

The Teacher explains the note in details.

The Teacher gives room for pupils to ask questions.

The Teacher evaluates the pupils.

ASSESSMENT AND EVALUATION

1. identify and write the units and symbol of temperature scale
2. state the relationship between Degree Celsius and Degree Fahrenheit
3. State the use of thermometer to measure the temperature of objects accurately.

WRAP-UP (CONCLUSION)

Teacher goes over the topic once again to enhance better understanding

ASSIGNMENT

Answer these questions

1.On a certain thermometer, the ice point reads 25 cm and the steam point reads 175 cm. What will this thermometer show for 30°C?

2.What is the average body temperature of a healthy human being? Why is a hospital thermometer marked to measure only to about 43°C? Draw and label a hospital thermometer.

3.

What does temperature have to do with the weather?

WEEK 9

TOPIC: YOU AND ENERGY

SUBTOPIC: BASIC ELECTRICITY

BEHAVIOURAL OBJECTIVES: AT THE END OF THE LESSON, PUPILS SHOULD BE ABLE TO

1. identify the types of energy
2. Explain how electricity is produced and used.

INSTRUCTIONAL MATERIALS:

Light bulb

Magnets

Circuit board

Paper clips

Bar magnets

Connecting wires

REFERENCE MATERIALS

Scheme of work

All relevant materials

Online information

BUILDING BACKGROUND/CONNECTION TO PRIOR KNOWLEDGE: Pupils are familiar with the topic in their previous classes.

CONTENT OF THE LESSONS

Electricity is a form of energy that can give things the ability to move and work. Electricity makes the following to do work or move: bulbs, toys, machines, cars, television etc.

PUPILS ACTIVITIES

Materials required

A plastic comb (or a glass rod or a plastic rod), pupils with dry hair, a piece of dry fur or silk, a desk, light paper, e.g. high-quality toilet paper or filter paper, your science notebook, biro.

Procedure

1. Tear the toilet paper (or filter paper) into many small pieces and spread them on a desk.
2. Use the plastic comb to comb your dry hair a few times and quickly place it above the pieces of paper on the desk.
3. Write your observations in your science notebook. Did you see the small pieces of paper jumping up to hang onto the comb? This may surprise you. But the Greeks also performed this type of activity about 2 600 years ago. They rubbed a material called amber with fur, and it attracted small pieces of paper just as your comb did. Something must be on the comb or the amber that attracts the pieces of paper.

TYPES OF ENERGY

1. Static energy
2. Current energy

METHOD OF GENERATING ELECTRICITY

Electricity generation is the process of generating electrical power from other sources of primary energy.

Electricity can be generated using the following;

1. Hydro (water)-KAINIIJI dam
2. solar –sun
3. machines-generator
4. Batteries
5. Wind
6. Coal
7. Wave

STRATEGIES AND ACTIVITIES

The Teacher revises the previous week lesson.

The Teacher introduces the new topic.

The Teacher explains the note in details.

The Teacher gives room for pupils to ask questions.

The Teacher evaluates the pupils.

ASSESSMENT AND EVALUATION

1. identify the types of energy
2. Explain how electricity is produced and used.

WRAP-UP (CONCLUSION)

Teacher goes over the topic once again to enhance better understanding

ASSIGNMENT

1. Describe how electricity is generated and conducted from one point to another.
2. Name the types of electricity.

WEEK 10

TOPIC: YOU AND ENERGY

SUBTOPIC: BASIC ELECTRICITY

BEHAVIOURAL OBJECTIVES: AT THE END OF THE LESSON, PUPILS SHOULD BE ABLE TO

1. Explain how electricity travels from one point to another
2. Group materials into conductor and non conductor
3. state the uses of electricity.

INSTRUCTIONAL MATERIALS:

Light bulb

Magnets

Circuit board

Paper clips

Bar magnets

Connecting wires

REFERENCE MATERIALS

Scheme of work

All relevant materials

Online information

BUILDING BACKGROUND/CONNECTION TO PRIOR KNOWLEDGE: Pupils are familiar with the topic in their previous classes.

CONTENT OF THE LESSONS

Electricity is a form of energy that can give things the ability to move and work. Electricity makes the following to do work or move: bulbs, toys, machines, cars, television etc.

CONDUCTOR AND NON CONDUCTOR
CONDUCTOR
Conductors are materials that allow energy to flow through them. For example, wire, iron, pin, spoon, etc. They are called electric conductors

NON CONDUCTOR
Non conductors are materials that do not allow energy to flow through them. For example, paper, broom, thread cloth etc.

MEANING AND COMPONENTS OF ELECTRICAL CIRCUITS
Electric circuit contains three (3) components:

1. Source-batteries

2, Electric conductor-wire

3. Resistor-the switch (on/off)

USES OF ELECTRICITY

1. Heating and cooling water
2. Water heater
3. Washer and dryer
4. Lights
5. Refrigerator
6. Electric oven
7. Dishwasher
8. Decoration-Christmas light
9. Cooking
10. Operating all our home appliances-television, computer, radio, fan, pressing iron.
11. Operating machinery and public transportation systems.

STRATEGIES AND ACTIVITIES

The Teacher revises the previous week lesson.

The Teacher introduces the new topic.

The Teacher explains the note in details.

The Teacher gives room for pupils to ask questions.

The Teacher evaluates the pupils.

ASSESSMENT AND EVALUATION

1. Explain how electricity travels from one point to another
2. Group materials into conductor and non conductor
3. state the uses of electricity.

WRAP-UP (CONCLUSION)

Teacher goes over the topic once again to enhance better understanding

ASSIGNMENT

Now complete the following sentences. Use these words: metals, non-metals, conductors, non-conductors.

1.
Metals are usually _____ of electricity.

2.
_____ are usually non-conductors of electricity.

3.
Non-metals are usually _____ of electricity.

4.
_____ are usually conductors of electricity.