

WEEK 1

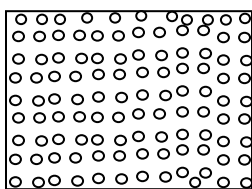
INTEGRATED SCIENCE

THEME: MATTER AND ENERGY.

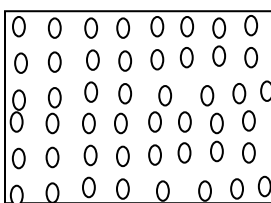
TOPIC: HEAT ENERGY.

Hints:

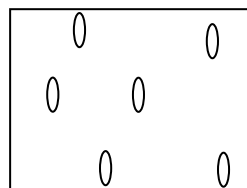
- ⊗ Matter is any thing that has weight and occupies space.
- ⊗ Molecules are the small particles of matter.
- ⊗ An atom is the smallest particle of matter.
- ⊗ Substance is material that is made up of only one kind of matter.
- ⊗ Mass is the quantity of matter contained in an object.
- ⊗ Cohesion force is a force of attraction between molecules of the same kind. Cohesion is always great in solids.
- ⊗ Adhesion force is the force of attraction between molecules of different substances.
- ⊗ Heat is a form of energy that increases the temperature of matter.
- ⊗ ***The illustrations below show the arrangement of molecules in each state of matter.***



Solids



Liquids



Gases

- ⊗ Heat can change the state of matter.
- ⊗ Heat can also make matter to expand.
- ⊗ Heat transfer is the flow of heat from a point of high temperature to a point of low temperature. Heat will never flow from the point of low temperature to a point of high temperature.

Activity

1. Why is a pen regarded as matter?

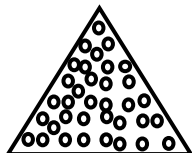
2. Give any **two** characteristics of solids.

(i) _____

(ii) _____

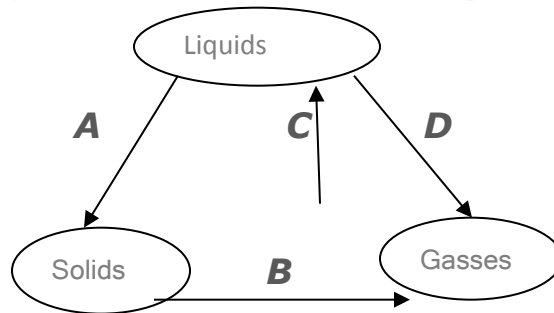
3. State the difference between cohesion force and adhesion force.

4. Identify the state of matter illustrated below.



5. State the difference between melting and condensation.

Use the diagram below to answer question 6-9.



6. Name the process marked by letter **B**.

7. Which form of energy is needed for process **D** to take place?

8. Give **one** way in which process marked C is useful to the environment.

9. Name any one substance which can under go process marked "B".

10. State what will happen to a piece of ice when put under the sun.

11. Which type of force exists between molecules of the same kind?

12. What change of state takes place when water changes to ice?

13. How does heat differ from temperature?

14. Mention **one** major source of heat energy.

15. State any **two** ways in which heat is useful to our daily life.

(i) _____

(ii) _____

16. Name the form of energy which is transferred in solids by means of conduction.

17. How does heat from the sun reach to the earth?

Study the diagram below and answer questions that follow.

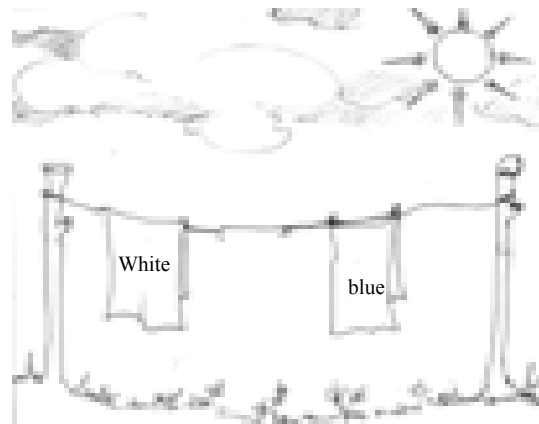
18. What does the diagram above illustrate?

19. How does heat pass through the saucepan to reach the water?

20. What do arrows in the saucepan represent?

21. Give any **one** importance of convection in our daily life.

James washed his two handkerchief white one and a black of the same size and material. He hanged them at the as illustrated below.



22. Which of the above handkerchiefs dried first?

23. Give a reason to support you answer above.

24. State any **one** way in which heat transfer by means of radiation is useful in our daily life.

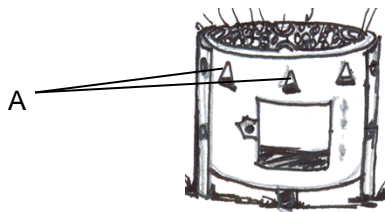
25. What are heat conductors?

26. State any **two** uses of insulators in our daily life.

(i) _____

(ii) _____

Study the diagram below and answer questions that follow.



27. State the use of holes marked **A**

28. By what process does heat from the charcoal stove reach to the girl seated one metre from it.

29. Give any **two** example of insulators.

(i) _____

(ii) _____

30. Give the importance of ventilators in a house.

31. Why isn't it good to wear black clothes on a hot day?

Study the diagram of a vacuum flask and answer question that follow.

32. What is the importance of a thermos flask?

33. Name parts marked.

Y _____

W _____

34. How does part marked **x** prevent loss of heat.

35. Why is a vacuum flask common in many homes?

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36. State any **two** reasons why mercury is commonly used in a clinical thermometer.
- (i) _____
- (ii) _____
37. Why does a doctor shake the thermometers before using it again?
- _____
38. Why can't ordinary thermometers be used to measure the human body temperature?
- _____
39. Why is alcohol used as a thermometric liquid in very cold places?
- _____
40. A boy pumped air into a balloon and left it under hot sunshine after sometime, It burst why did it burst?
- _____
41. Why are electric wires loosely fixed on poles?
- _____

Practical activity

THEME: ENVIRONMENT

TOPIC: SOIL

WEEK 2

SOIL:

Soil is a material that covers the surface of the earth. All plant nutrients are found in the soil.

Components of soil include Humus, water, Air, small rock particles, living organisms.

- Ⓞ Water is very important in the soil because it dissolves mineral salts in the soil for plant roots to absorb.
- Ⓞ Examples of mineral salts needed by plants include:
 - Ⓞ Magnesium and iron which are responsible for formation of chlorophyll.
 - Ⓞ Calcium which helps strengthen the plant stem and leaves.
- Ⓞ Soil profile is the vertical arrangement of soil layers.
- Ⓞ Soil exhaustion is the loss of soil fertility.
- Ⓞ Soil fertility is the ability of the soil to support plant growth.

- ⌚ Crop rotation is the growing of different types of crops on the same piece of land seasonally.
- ⌚ Bush fallowing is the act of leaving land to rest without cultivating it.
- ⌚ Cover cropping is the planting of crops which provide covers to the soil.
- ⌚ Soil leaching is the sinking of plant nutrients from the upper layers to the bottom layers of soil where plant roots cannot reach.

Activity

1. Give any **two** components of soil.
(i) _____
(ii) _____
2. Apart from weathering of rocks, give any other way in which soil is formed.

3. Give any **two** uses of soil to people.
(i) _____
(ii) _____
4. Name **one** component of soil which is used as a raw material during photosynthesis.

5. Name the type of soil which is the best for plant growth.

6. How is humus formed?

7. How is humus important to plants?

8. Why is clay soil most suitable for making pots?

9. How are earthworms useful to the soil?

10. State one way in which earthworms benefit from soil.

11. Why do earthworms come out of the soil soon after it has rained?

12. Mention any **two** causes of soil erosion.
(i) _____
(ii) _____
13. State any **two** ways of controlling soil erosion in the school compound.
(i) _____
(ii) _____
14. How does terracing control soil erosion on a hilly area.

15. In one sentence define the term soil exhaustion.

16. State any **two** ways of improving soil fertility.

(i) _____

(ii) _____

17. How does crop rotation control soil erosion?

Study the experiment below and answer questions that follow.

18. Name part marked with letter **x**.

19. What does the experiment above prove about soil?

20. Why does clay soil retain water for along time?

21. Which type of soil has the highest capillarity rate?

22. Why is crop rotation essential in a garden?

23. How does crop rotation in controlling crop pests?

24. Why is bush fallowing important in crop husbandry?

25. Study the diagram below and answer questions that follow.

26. Name the layers of the soil marked **B** and **C**.

(i) **B** _____ (ii) **C** _____

27. Which layer supports plant growth?

28. What is soil conservation?

29. How does mulching control the loss of moisture from the soil?

30. Give any **one** advantage of using natural fertilizers over artificial fertilizers.

31. Name any types of soil erosion.

32. Mention any one organism found in the soil.

33. Why do farmers plant their seeds in the soil?

34. How does short grass planted in the school compound control soil erosion?

35. Give the meaning of the following terms as used in soil.

(i) Leaching _____

(ii) Agro-forestry _____

(iii) Bush fallowing _____

36. Mention any **two** bad farming practices which can lead to soil exhaustion.

(i) _____

(ii) _____

Practical activity

WEEK 3

THEME: SCIENCE IN HUMAN ACTIVITIES AND OCCUPATIONS.

TOPIC : GROWING CROPS

Roots crops are crops with roots swollen with food growing underground.

Stem tubers are crops with stems swollen with food growing underground.

Examples of stem tubers include Irish potatoes and yams.

- ⓐ Cassava and sweet potatoes are propagated by stem cuttings.
- ⓑ Carrots are propagated by means of seeds
- ⓒ Pruning is the removal of excess branches on a plant.
- ⓓ Thinning is the removal of excess seedling growing in the garden.

- ⓐ Cassava mosaic is the commonest disease which attacks cassava.
- ⓑ Cassava mosaic is caused by a virus which is spread by the whit fly.
- ⓒ Cassava mosaic makes leaves to turn yellow.
- ⓓ Irish potatoes are propagated by means of stem tubers.

Activity.

1. What are root crops?

2. Apart from cassava, name any other two examples of root crops.

3. How is the propagation of sweet potatoes different from that of Irish potatoes?

4. Name the root crop shown in the diagram above.

5. How is the above root crop propagated?

6. Name **two** examples of stem tubers.

(i) _____

(ii) _____

7. State any **two** ways of caring for root crops in the garden.

(i) _____

(ii) _____

8. Give any **two** advantages of thinning crops.

(i) _____

(ii) _____

9. State any **two** ways of controlling weeds in the garden.

(i) _____

(ii) _____

10. Name any **two** pests that attack root crops in the garden.

(i) _____

(ii) _____

11. Give any **two** effects of pests on root crops.

(i) _____

(ii) _____

12. Apart from using chemicals, give any other way a farmer controls pests in his garden.

13. Give any one disease which attacks cassava.

14. Name the part of cassava which is destroyed by the disease you have named above.

15. State any one way of controlling cassava mosaic.

16. Name the germ which causes cassava mosaic.

Study the diagram of the Irish potato and answer the question that follow.

17. Name part marked with letter **A**.

18. How is part A important to the Irish potato?

19. Where does an Irish potato store its food?

20. What food value is got from eating Irish potatoes?

21. To which group of crops does a white Yam belong?

22. Why is a sugar cane plant not regarded as a stem tuber?

23. How are sweet potatoes propagated?

24. Name one disease which attacks sweet potatoes.

25. State any **two** ways in which young farmers clubs are important in schools?



WEEK 4

THEME: WORLD OF LIVING THINGS

TOPIC: BACTERIA AND FUNGI

HINTS:

- ⊖ Bacteria are tiny organisms made up of one cell.
- ⊖ Bacteria can be seen using a microscope.
- ⊖ Bacteria reproduce by cell division or binary fission.

The following are factors that can allow bacteria reproduce rapidly.

- Presence of moisture
- Optimum temperature
- Absence of chemicals

Bacteria can stay in air, water, soil, bodies of organisms, Decaying organic matter. Bacteria are grouped according to their shapes namely; Bacilli bacteria, spherical bacteria, spirilla and vibrio bacteria.

- ⊖ Fungi are simple organisms in their own kingdom.
- ⊖ Most fungi reproduce by means of spores.
- ⊖ Yeast reproduced by budding.
- ⊖ Fungi feed saprophytically.
- ⊖ Organisms that feed saprophytically are called saprophytes.

Activity

1. Name any **two** examples of micro – Organisms.

(i) _____

(ii) _____

2. State the medical instruments that health workers use to view microorganisms.

3. Name any **two** diseases caused by a virus.

(i) _____

(ii) _____

4. State any **two** ways in which bacteria are useful to people.

(i) _____

(ii) _____

5. Name the micro organisms that help in the formation of humus.

6. Mention any two ways in which bacteria are harmful to people.

(i) _____

(ii) _____

7. The diagram below shows a shape of bacteria.

8. Name structures marked with letter **x**.

9. How are structures marked with letter **x** useful to the organism above?

10. State any **two** ways of controlling dangers caused by bacteria.

(i) _____

(ii) _____

11. Mention any one example of a disease caused by bacteria.

12. How can germs enter into our bodies?

13. Give any **two** activities that the community can do to control the spread of bacteria.

(i) _____

(ii) _____

14. Give any **two** examples of fungi.

(i) _____

(ii) _____

15. How do bacteria reproduce?

16. State any **two** uses of fungi to people.

(i) _____

(ii) _____

17. Name any **two** ways in which fungi are harmful to people.

(i) _____

(ii) _____

Use the diagram below to answer the questions that following.

18. Name parts marked labeled with letters **B** and **C**.

B _____

C _____

19. How is part marked with letter **D** useful to the mushroom?

20. How do mushrooms feed?

21. In **one** sentence define the term "food preservation."

22. State any **two** ways of preserving food.

(i) _____

(ii) _____

23. How does the sun help in food preservation?
