

PRIMARY FIVE SCIENCE

TOPIC: POULTRY

LESSON 1

- Learners will be helped to define:
 - a) Poultry
 - b) Poultry keeping
- Mention examples of poultry.
- Identify reasons why people keep poultry.
- Explain terms used in poultry keeping.

Evaluation exercise

1. Define the following terms:
 - a) Poultry
 - b) Poultry keeping
2. List down three examples of poultry.
3. Identify any three reasons why people keep domestic birds.
4. Define the following terms in relation to poultry keeping.
 - a) Capon
 - b) Cockerel
 - c) Culling
 - d) Pullet
 - e) Brooder

LESSON 2: EXTERNAL FEATURES OF A BIRD

- Learners will draw and name the external features of a bird.
- Learners will be helped to identify the difference between a cock and a hen using external features.
- State the function of some parts.

Evaluation exercise

1. Draw and name the external parts of a bird.
2. State any physical structural differences between a hen and a cock.

LESSON 3: TYPES OF POULTRY

- Using the textbooks learners will name the three types of poultry.
- Define the tern type of poultry.
- Identify the purpose of keeping each type of poultry.
- Give examples of poultry kept for specific purpose.

Evaluation exercise

1. Name the three types of poultry.
2. Mention the main product got from each type of poultry.
3. List down at least two examples of poultry for each type kept.

LESSON 4: BREEDS

- Learners will define the term “Breed of poultry”.
- List down the breeds of poultry.
- Identify and explain characteristics of:
 - a) Local breeds
 - b) Exotic breeds
- State any examples of exotic breeds.
- State any reasons why farmers prefer rearing
 - a) Local breeds
 - b) Exotic breeds

Evaluation exercise

1. Define the term breed in relation to poultry.
2. Write down the breeds of poultry.
3. Give two characteristics of:
 - a) Local breeds
 - b) Exotic breeds
4. Why do farmers prefer keeping local breeds to exotic?

LESSON 5: MANAGEMENT OF POULTRY

- Learners should be helped to mention the reasons for feeding poultry.
- Describing and mentioning the feeding apparatus.
- Give the examples of poultry feeds.
- Stating examples of feeds for each type of poultry.

Evaluation exercise

1. State any three reasons for feeding poultry.
2. Name the feeding apparatus used in poultry management.
3. State the examples of feeds for each type of poultry.

LESSON 6: DIGESTIVE SYSTEM OF FOWL

- Learners should be guided to draw and name the digestive system of a bird.
- Learners should be helped to state the function of each part of the digestive system of a bird.

Evaluation exercise

1. Draw the digestive system of a bird.
2. Label the parts of the digestive system of a bird.
3. Identify the function of some parts of the digestive system of a bird.
4. State the use of a grit in the digestive system of a bird.
5. State any three things that happen to the food in the crop of a bird.

LESSON 7: REPRODUCTION IN BIRDS

- Learners should be helped to know how birds reproduce.
- Drawing the structure of an egg.
- Naming the parts of an egg.
- Stating the functions of the parts of an egg.

Evaluation exercise

1. How do birds reproduce?
2. Draw and name the parts of an egg.
3. State the function of each part of an egg.
4. Where does a chick get its fast food during development of an egg?

LESSON 8: INCUBATION OF EGGS

- Learners should be helped to define the term incubation.
- State the incubation period of each type of bird.
- They should state the types of incubation.
- Stating the advantages and disadvantages of each type of incubation.
- State the factors that may fail an egg to hatch out into a chick.

Evaluation exercise

1. Define the term incubation.
2. Name the two types of incubation.
3. State the incubation of a;
a) Hen b) Duck c) Turkey
4. Write down any advantages of natural incubation.
5. Mention any two advantages of artificial incubation.
6. Give one disadvantage of:
a) Natural incubation
b) Artificial incubation
7. State any two factors that may fail an egg to hatch.

LESSON 9: BROODING CHICKS

- Learners should be helped to define the term brooding.
- Learners should name the types of brooding.
- Learners should be able to define;
a) A brood hen b) A brooder
- They should be able to name the brooders.
- State the disadvantages and advantages of each type of brooding.

Evaluation exercise

1. Define the term brooding.
2. Name the two types of brooding.
3. What is a brooder?
4. Write down any three types of brooders.
5. State the advantages and disadvantages of natural brooding.
6. Write down any two advantages and disadvantages of artificial brooding.

LESSON 10: SYSTEMS OF POULTRY KEEPING (FREE RANGE SYSTEM)

- Learners will be helped to list down the four systems of poultry rearing.
- They should explain the meaning of free range system.
- State the advantages and disadvantages of free range system.

Evaluation exercise

1. Name the four systems of poultry keeping.
2. Define free range system.
3. State the advantages of free range system.
4. Write down any two advantages of free range system.

LESSON 11: FOLD/PEN/ARK SYSTEM

- Learners should be able to define fold system.
- Should state the advantages of fold system.
- Stating the disadvantages of fold system.

DEEP LITTER SYSTEM

- They should define deep litter system.
- They should state the advantages of deep litter system.
- They should identify the disadvantages of deep litter system.
- They should identify the importance of litter in the poultry house.

BATTERY CAGE SYSTEM

- Learners should define battery cage system.
- They should identify the advantages and disadvantages of battery cage system.

Evaluation exercise

1. Define the following systems of poultry keeping.
 - a) Fold system

- b) Deep litter system
- c) Battery cage system
- 2. State at least two advantages and disadvantages of fold system.
- 3. Mention any two advantages and disadvantages of deep litter system.
- 4. Why deep litter system is said to be good for commercial farming.
- 5. Write down one advantage and one disadvantage of battery cage system.

LESSON 12: POULTRY VICES

- Learners should be able to define the term poultry vices.
- Stating the types of vices in poultry.
- Identifying the causes of poultry vices.
- Stating ways of controlling vices in poultry.
- They should identify the effects of vices to a farmer.

Evaluation exercise

1. Define the term vices as used in poultry.
2. Name all the poultry vices.
3. State the causes of poultry vices.
4. Mention any four ways of controlling vices in poultry.
5. State the effects of vices to poultry farmers.

LESSON 13: POULTRY DISEASES

- Learners will be helped to list down the poultry diseases.
- Stating the causes of named diseases.
- They should be able to write down the signs and symptoms of poultry diseases.
- Identifying the prevention, control and treatment of poultry diseases.

Evaluation exercise

1. List down any four poultry diseases.
2. Name the causes of the named diseases.
3. State the ways diseases spread in poultry.
4. List down the signs and symptoms of each disease named above.
5. Suggest the control, prevention and treatment measures of poultry diseases.

13. State the effect of poultry diseases to poultry farmers.
14. Name one example of endo parasites in chicken.
15. Write down one example of farm records.
16. Of what value is farm record keeping to a poultry farmer?
17. Define the term capon.
18. Suggest one advantage of carrying culling on a poultry farm.
19. Why do you think that many farmers prefer keeping local breeds to exotic?
20. Name one example of exotic breed of poultry.
21. Where in the alimentary canal of a bird is softening, moisturizing of food done?
22. Name the mode of reproduction in birds.
23. Suggest one reason why a fertilized egg may hatch even when incubated.
24. Identify one importance of litter in the deep litter house.
25. Write one advantage of free range system of poultry rearing.

TOPIC: BEE KEEPING

LESSON 17

- Learners should be helped to state the reasons why people keep bees.
- They should name the kinds of bees.
- They should be able to identify the types of bees in the hive.
- Learners should be able to define the terms related to bee farming.

Evaluation exercise

1. State any three reasons why people keep bees.
2. Define the following kinds of bees.
 - a) Solitary bees
 - b) Social bees
3. Name the three types in the bee hive.
4. Define the following terms:
 - a) Apiculture
 - b) Colony
 - c) Swarming
 - d) Apiary
 - e) A swarm

LESSON 18: ROLES OF DIFFERENT TYPES OF BEES IN THE HIVE

- Learners should be able to write down the different roles of the following types of bees.
 - a) Queen bees
 - b) Drone bees
 - c) Worker bees
- They should be guided to draw and name the stages in the life cycle of a honey bee.
- They should be helped to know the type of food for the queen bee.

Evaluation exercise

1. State any two functions of the worker bees in the hive.
2. State the role of the following bees in the hive.
 - a) Drones
 - b) Queen bee
3. Which bees have a sting in the bee hive?
4. Which bees are referred to as sterile bees?
5. Define royal jelly.
6. What is the lava stage of a bee called?

LESSON 19: SWARMING IN BEES

- Learners should be helped to define the term:
 - a) A swarm
 - b) Swarming
- They will identify the reasons why bees swarm.
- The learner will be helped to explain how the following are done:
 - a) Sitting a hive
 - b) Feeding bees
 - c) Stocking of bee hives

Evaluation exercise

1. Define the following terms.
 - a) A swarm of bees
 - b) Swarm in bees
2. Write down at least three reasons why bees swarm.
3. What is sitting a hive?
4. Suggest one substance that bees can be fed on.
5. There are many methods of stocking bee hives, name one way.

LESSON 20: BEE HIVES

- Learners should be helped to define a bee hive.
- They will identify the types of bee hives.
- Learners should be able to categorise the bee hives.
- Stating the advantages of top bar hive over other types of hives.
- They should be able to draw and name the internal structure of a modern hive.

Evaluation exercise

1. What is a bee hive?
2. Name any two examples of:
 - a) Traditional bee hives
 - b) Modern bee hives
3. Write down any one advantage a top bar hive has over traditional bee hives.
4. What is the use of a queen excluder in a modern bee hive?

LESSON 21: HARVESTING OF HONEY

- Learners should be helped to know the requirement for harvesting honey combs.
- Learners will be helped to know how honey is extracted from the honey combs.
- Listing down the bee enemies.

Evaluation exercise

1. Name the protective wears a bee farmer needs before harvesting honey combs.
2. Name the two ways of extracting honey from the honey combs.
3. Write down any three enemies of bees.

LESSON 22: BEE PRODUCTS

- Learners should be helped to list the products got from bees.
- They will identify the uses of those products.
- Learners will state the economic importance of bees.

Evaluation exercise

1. Name the three products got from bees.
2. State any two uses of honey to people.
3. What food value do we get from eating honey?
4. State any two products got from bee wax.
5. How are bees important to crop farmers?

LESSON 23: SAMPLE TOPICAL QUESTIONS

BEE KEEPING

1. Define the following terms.
a) Solitary insects b) Social insects
2. Why are honey bees referred to as social insects?
3. Define the following terms:
a) Apiculture b) Apiary
4. Name the three types of bees in the hive.
5. Give one role of each of the bees below:
a) Queen bee b) Worker bees c) Drone bees
6. Why are worker bees called sterile bees?
7. Name the special for the queen bee. (**question not clear**)
8. What is bee swarming?
9. List down any two reasons why bees swarm.
10. Give two examples of traditional bee hives.
11. State the use of a queen excluder in a bee hive.
12. Name any two protective wears a bee farmer needs before going to harvest honey combs.

13. What is the use of a smoker?
14. Name any two products of bees.
15. What food value is got from eating honey?

TOPIC: CHANGES IN THE ENVIRONMENT

LESSON 24: NATURAL AND MAN MADE CHANGES

- Learners should be able to identify all the types of changes in the environment.
- They will give examples of each of the following:
 - a) Biological changes
 - b) Chemical changes
 - c) Physical changes
- Learners will be helped to differentiate between natural and man made changes in the environment.
- They will give the effects of the changes in the environment.

Evaluation exercise

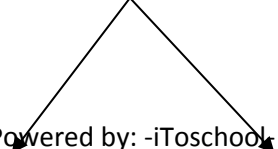
1. Give one example of each of the following.
 - a) Biological changes
 - b) Physical changes
 - b) Change in the atmosphere
2. Differentiate between natural changes and man-made changes.
3. List down any two effects of changes in the environment.

TOPIC: CHANGES IN THE ENVIRONMENT

SAMPLE TOPICAL QUESTIONS

1. Name the three types of changes that take place in the environment.
2. What is a biological change?
3. Give three biological changes in the environment.
4. What type of change takes place and a new substance is formed?
5. Give two examples of physical changes.
6. What type of change occurs when:
 - a) Wood burns to ash?
 - b) An egg hatches into a chick?
 - c) Candle wax melts?
 - d) A pupa turns into larva?
7. What type of change is said to be reversible?
8. Name one natural change in the environment.
9. State one man made change in the environment.
10. Name the process shown below

Solid



(i) A _____

LESSON 28: HOUSING AND MANAGEMENT OF GOATS AND SHEEP

- Learners should be able to explain how the house of goats and sheep should be built.
- Learners should explain the importance of proper housing of goats and sheep.
- They should be able to explain and give the importance of:
 - a) Shearing
 - b) Castrating
 - c) Docking
 - d) Deworming

Evaluation exercise

1. Write down any one reason why there should be proper housing of sheep and goats.
2. Give the meaning of the following terms:
 - a) Shearing
 - b) Castration
 - c) Docking
 - d) Deworming
3. Write down any two methods of castration.
4. Give one importance of castrating goats.
5. Why is docking a good practice in sheep.
6. Name one method of deworming farm animals.

LESSON 29: DISEASES AND PARASITES

- Learners should be able to list down the diseases of goats and sheep.
- Stating the signs and symptoms of some diseases.
- Learners should be able to differentiate between external and internal parasites.
- They should name the parasites in goats and sheep.
- Learners will be helped to identify the prevention and control measures of diseases and parasites in goats.

Evaluation exercise

1. List down any two diseases of :
 - a) Goats
 - b) Sheep
2. Identify common parasites in goats and sheep.
3. Suggest the prevention and control measures of diseases and parasites in sheep.

LESSON 30: PIGGERY

- Learners should be guided to identify the reasons why people rear pigs.
- They will define the terms related to piggery.
- Identify the breeds of pigs kept in Uganda.
- Stating the products from pigs.

Evaluation exercise

1. Write down any two reasons of rearing pigs.

2. Define the following terms:

- | | |
|------------|--------------|
| a) Lard | c) Pork |
| b) Piglets | d) Farrowing |

3. Write down any three breeds of pigs kept in Uganda.

4. Why would it not be advisable for you to keep pigs when living in Islamic community?

LESSON 31: PROPER PIG HOUSING AND MANAGEMENT

- Learners should be helped to name the house of pigs.
- Explaining what a good sty should have.
- Stating the advantages of proper housing of pigs.

Evaluation exercise

1. What name is given to the house of pigs?
2. Draw and show the internal appearance of a sty.
3. Why should the floor of a sty be slanting?
4. State two advantages of proper housing of pigs.

LESSON 31: FEEDING PIGS, WEANING AND DEWORMING

- Learners should be able to name the feeds for the pigs.
- Stating the advantages of proper feeding of pigs.
- They should be able to define the term weaning in piglets.
- Learners should know the right time for weaning piglets.
- Identify the methods of deworming pigs.

Evaluation exercise

1. Name the three types of feeds for pigs.
2. Write down any one advantage of proper feeding of pigs.
3. What is weaning in piggery?
4. At what age should piglets be weaned?
5. Write down the methods used in deworming pigs.
6. Why should piglets be dewormed regularly?

LESSON 32: HEAT PERIOD

- Learners should be helped to define the term heat period.
- They should be able to identify the signs of heat period.
- Learners should state the gestation period of a sow.
- They should define the term steaming up.
- Stating the advantages of steaming up.

Evaluation exercise

1. Define the term heat period in mammals.
2. Write down at least two signs of heat period in a sow.
3. What is meant by the term gestation?
4. State the gestation period of a sow.
5. What is steaming up in farm animals?
6. Write down any two advantages of steaming up in a sow.

LESSON 32: CASTRATION OF PIGLETS

- Learners will be helped to define the term castration.
- Identifying the methods of castration.
- Learners should state the advantages of castrating piglets.

Evaluation exercise

1. Define the term castration.
2. Name the three methods of castration.
3. Draw the structure of the burdizzo.
4. Write down any two advantages of castration to the farmer.

LESSON 33: DISEASES AND PARASITES

- Learners will be helped list down the diseases that attack pigs.
- Stating the causes of the diseases.
- Identifying the signs and symptoms of the diseases.
- Listing down the parasites both external and internal.
- Stating the mode of spread of diseases and parasites in pigs.
- Identifying the prevention, control and treatment of parasites and diseases.

Evaluation exercise

1. Write down at least four diseases that attack pigs.
2. State the cause of the above named diseases.
3. State how these diseases spread in pigs.
4. List down common parasites in pigs.
5. Suggest the prevention; control and treatment measures of parasites and diseases in pigs.

LESSON 34: STARTING A PIGGERY PROJECT

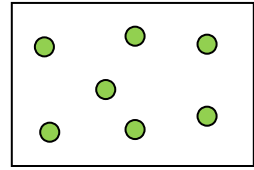
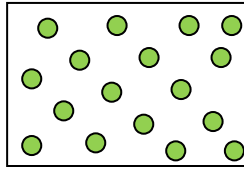
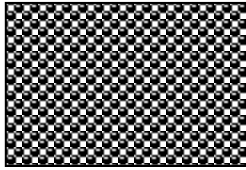
- Learners should be helped to state the factors to consider when starting a piggery project.
- Suggesting the factors to consider when selecting a good piglet to rear.
- Learners should be able to list down the factors affecting the piggery industry.

4. Define the following terms:

a) An atom

b) A molecule

5. Name the states of matter shown below.



6. Which of the above states of matter has a definite shape?

LESSON 37: CHANGES OF STATES OF MATTER

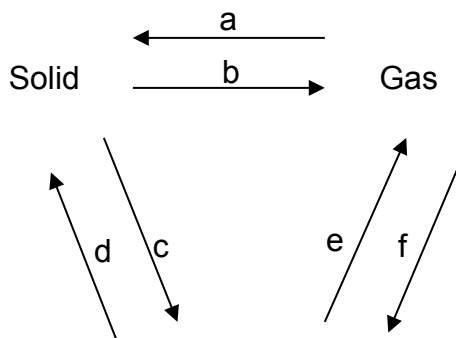
- Learners should be helped to state the cause of the change in the state of matter.
- Naming the processes in the change of state.
- They will show the diagrammatic representation of the changes of states.

Evaluation exercise

1. What causes a change in the state of matter?

a) Define the following terms: a) Evaporation b) Condensation c) Sublimation

2. Name the process shown below:



- a _____
- b _____
- c _____
- d _____
- e _____

LESSON 38: HEAT ENERGY

- Learners will be helped to:
 - a) Define heat
 - b) State the sources of heat
 - c) State the uses of heat in our daily life
- They should explain expansion and contraction in different substances.

Evaluation exercise

1. What is heat?
2. Name any two natural sources of heat.
3. Write down the main natural source of heat.
4. Write down two artificial sources of heat.

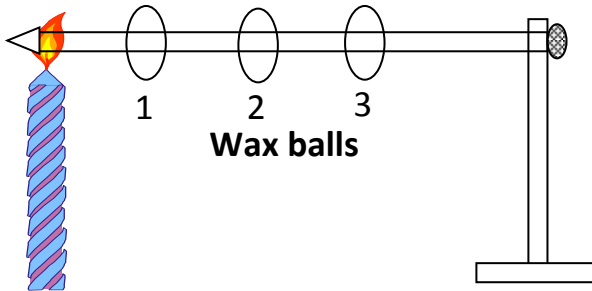
5. List down two uses of heat to man.
6. What happens to metals when heated?
7. What happens to metals when they cool down?
8. Why do electric wires appear loose on a hot afternoon?
9. Why are gaps left between rails along the railway line?

LESSON 39: HOW HEAT TRAVELS

- Learners will be able to explain the methods of heat transmission in different states of matter.
- They should define what the following terms mean.
 - a) Conduction
 - b) Convection
 - c) Radiation
- Differentiating between heat transfer by conduction and convection from radiation.

Evaluation exercise

1. Name the three methods of heat transfer.
2. How does heat travel through the following media:
 - a) Solids
 - b) Liquids
 - c) Gases
3. How is heat transfer by conduction and convection different from radiation?
4. How does heat from the sun reach the earth?
5. What is the order taken by the wax balls to fall off the nail?



LESSON 40: APPLICATION/IMPORTANCE OF CONDUCTION, CONVECTION AND RADIATION IN EVERYDAY LIFE

- Learners should be able to state the uses of conduction, convection and radiation.
- They will draw and name the internal structure of a thermos flask.
- Learners should state functions of the parts of the thermos flask.
- Identifying the use of the thermos flask at home.

Evaluation exercise

1. Write down any two uses of conduction at home.
2. How does heat from the sun reach the earth?

3. Draw the structure of a thermos flask and name the parts.
4. How do the following prevent heat loss or gain?
 - a) The vacuum
 - b) The silvered walls
 - c) The cork
5. What is the use of the thermos flask at home?
6. Why are thermos flasks not common in many homes in rural areas?

LESSON 41: INSULATORS, CONDUCTORS, REFLECTORS AND ABSORBERS

- Learners should be able to define:
 - a) Insulators
 - b) Conductors
- They should differentiate between insulators and conductors.
- Giving examples of insulators and conductors.
- Learners should identify the application of conductors and insulators in every day life.

- Explaining the bimetallic strip and its uses.
- Explaining and giving examples of reflectors and absorbers.

Evaluation exercise

1. Define the following terms.
 - a) Insulators
 - b) Conductors
2. Give two examples of insulators.
3. Write down any examples of conductors.
4. Write down any two uses of conductors of heat.
5. How can a village woman cooking food at home use insulators?
6. Write down any one device that uses bimetallic strip.
7. Why are people advised to put on white or light coloured clothes during hot days?
8. Why do black clothes dry faster than white clothes?

LESSON 42: TEMPERATURE

- Learners will be helped to define temperature.
- They will state the difference between temperature and heat.
- Learners will state the temperature scales.
- They should state the units for measuring temperature.
- Naming the types of thermometers stating their functions.

Evaluation exercise

1. What is temperature?
2. State the difference between temperature and heat.
3. Write the two temperature scales.
4. State the units for measuring temperature.
5. What instrument is used to measure temperature?
6. Name the four types of thermometers.
7. State the functions of the following terms.
 - a) Clinical thermometer

- b) The ordinary scientific thermometer
- c) The six's maximum and minimum thermometer
- d) The wall thermometer

LESSON 43: THERMOMETERS

- Learners should be guided to draw and name parts of a clinical thermometer.
- Identify the functions of parts of the clinical thermometer.
- Stating the use of a clinical thermometer.
- Learners should name the liquids used in thermometers.
- They should state the advantages and disadvantages of those liquids over others.

Evaluation exercise

1. What is the use of a clinical thermometer?
2. Draw the diagram of a clinical thermometer and name: the kink, the bore and bulb.
3. Write one different between a clinical thermometer and other thermometers.
4. Give two reasons why mercury is preferred in a clinical thermometer to alcohol.
5. Why is alcohol a better substance for measuring minimum temperature?

LESSON 44: TEMPERATURE CONVERSION

- Learners should be helped to carry out temperature conversion.
- Learners should change Fahrenheit to centigrade.
- Learners should also change centigrade to Fahrenheit.

Evaluation exercise

1. Change Fahrenheit degrees to centigrade.
 - a) 95⁰F
 - b) 84⁰F
 - c) 104⁰F
 - d) 59⁰F
 - e) 32⁰F
2. Change centigrade degrees to Fahrenheit.
 - a) 20⁰C
 - b) 100⁰C
 - c) 95⁰C
 - d) 35⁰C
 - e) 85⁰C

LESSON 45: BURNING

- Learners should be helped to explain the term burning (combustion).
- They should state the condition necessary for burning.
- State the by-products of burning.
- Carrying out the experiment about burning.
- Learners should suggest the ways of putting out fire.
- Naming the zones of the candle flame.

11. What is the use of a thermos flask?
12. Why are vacuum flasks not common in many homes in rural areas?
13. Why are handles of ironing boxes covered with wood?
14. Define the term temperature.
15. Name the two temperature scales.
16. Give one reason why mercury is used in a clinical thermometer.
17. Convert 84°F to $^{\circ}\text{C}$.
18. Change 95°C to $^{\circ}\text{F}$.

LESSON 47

TOPIC: RESPIRATION

Learners should be helped in defining respiration.

- Mentioning requirements for respiration.
- Naming the products got after respiration.
- Defining the term inspiration.
- Stating the activities which take place in the nose when air is inspired or inhaled.
- Identifying the use of hair (cilia) found in the nose.
- Giving the danger of breathing directly through the mouth.

Evaluation exercise

1. Define the term 'Respiration'.
2. Mention the requirements for respiration.
3. Name any **two** products after respiration.
4. What is inspiration or inhalation?
5. Write down **three** activities which take place in the nose during inhalation or air.
6. Name the hair found in the nose.
7. State the importance of the hair found in the nose.
8. Give the danger of breathing directly through the mouth.

LESSON 48: THE STRUCTURE OF THE RESPIRATORY SYSTEM

Learners will draw, name and give the functions of the parts of the respiratory system.

- Giving the adaptations of the lungs and air sacs.

Evaluation exercise

1. List down at least five parts which make up the respiratory system.
2. State the function of the epiglottis.
3. Name the structures found in the larynx or voice box.
4. Why is the trachea (wind pipe) made of rings of cartilages?
5. Identify the membrane that surrounds the lungs.
6. What name is given to the fluid produced by the membrane in (No. 5) above?
7. How is the fluid named in (No. 6) useful during breathing?

8. Where does gaseous exchange take place?
9. How are lungs adapted to their work?
10. Give two ways air sacs are suited to their function.

LESSON 49: INSPIRATION AND EXPIRATION

Learners will be helped to:

- Define inspiration.
- Give what happens to the lungs, ribs and diaphragm when an individual inspires.
- Draw the diagram showing the behaviour of the diaphragm during inspiration.
- Define expiration.
- Mention what happens to lungs, ribs and diaphragm when an individual expires.
- Show the behaviour of diaphragm during expiration.

Evaluation exercise

1. What is meant by the term 'inspiration'?
2. Write down three activities that take place during inhalation (inspiration).
3. What happens to the following during inspiration?
a) Lungs b) Ribs c) Diaphragm
4. In the given space below show the direction of movement of diaphragm when on inhales.
5. Define "expiration" (exhalation).
6. Write down three activities which take place during expiration.
7. What will happen to the lungs, ribs and diaphragm when we breathe out (expire)?
a) Lungs b) Ribs c) Diaphragm
8. By use of a diagram, show how the diaphragm behaves when one expires.

LESSON 50: INSPIRED AND EXPIRED AIR (COMPOSITION)

Learners will be helped to draw a table showing percentage composition of inspired and expired air.

- Giving reasons why
 - a) Carbondioxide increases when we breathe out.
 - b) Oxygen expired decreases.
 - c) Nitrogen does not change for both inspired and expired.
- Mentioning reason (s) why:
 - a) We breathe faster during a vigorous exercise.
 - b) The heart beat is faster during a vigorous exercise.

Evaluation exercise

1. Below is a table showing percentage composition of inhaled (inspired) and exhaled (expire) air.

Name of gas	% of inspired air	% of expired air
-------------	-------------------	------------------

Oxygen	21%	16%
Carbondioxide	0.03%	4%
Nitrogen	79%	79%

- (a) Why was there a decrease in the percentage of oxygen expired?
 - (b) Give the reason why the percentage of expired carbondioxide increased.
 - (c) State a reason why the percentage of the nitrogen expired did not change.
2. Why do we breathe faster when running?
 3. Mention a reason why the heart beat is faster during vigorous work?

LESSON 51: THE ARTIFICIAL BREATHING APPARATUS

Learners will be helped to draw and name the breathing apparatus.

- Giving similarities between parts of the artificial breathing apparatus and those of the natural breathing system.
- Demonstration how an artificial breathing apparatus works.

Evaluation exercise

1. Which parts in the natural breathing system is similar to the following parts of the artificial respiratory system?
 - a) Breathing tube
 - b) Balloons
 - c) A gas jar
 - d) A rubber sheet
2. What will happen to the rubber sheet when air is blown in the gas jar?

LESSON 52: DISORDERS, DISEASES AND MANAGEMENT OF THE RESPIRATORY SYSTEM

Learners will be helped in:

- Defining a disorder.
- Mentioning respiratory diseases.
- Listing down the respiratory diseases.
- State the diseases of the respiratory system caused by:
 - a) Smoking
 - b) Bacteria
 - c) Viruses
- Giving immunisable diseases of the respiratory system.
- Mentioning ways of promoting the proper working of the respiratory system.

Evaluation exercise

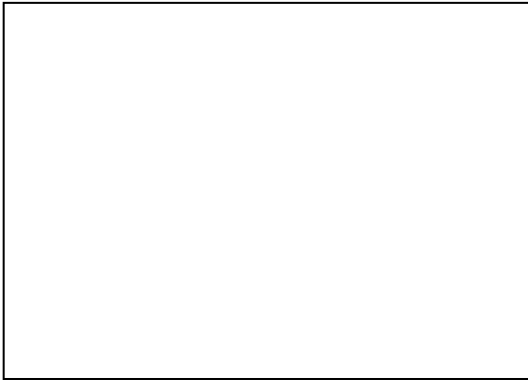
1. What is a disorder?
2. Mention two respiratory disorders.
3. Write down five diseases of the respiratory system.
4. State three respiratory diseases caused by smoking.
5. Name one viral disease of the respiratory system.
6. Give two bacterial diseases of the respiratory system.
7. Identify three immunisable diseases of the respiratory system.

8. Mention three ways of promoting the proper working of the respiratory system.

SAMPLE TOPICAL QUESTIONS

1. What do you understand by the term 'Respiration'?
2. Name the main waste product released during respiration.
3. Identify the importance of cilia in the nose.

Study the diagram shown below and answer questions that follow.



4. Name the parts labeled:
i) C _____ ii) D _____ iii) E _____
5. State the value of part labeled A.
6. Why is part B made of rings of cartilages?
7. To which body system does the above organs belong?
8. What will happen to part D when an individual takes in air?
9. Why does the person breathe faster when doing a vigorous exercise?
10. Give a reason why the heart beats faster when running.

The diagram below shows an artificial breathing apparatus. Study it and answer questions that follow



11. What are the breathing parts in the artificial breathing apparatus represent in the natural respiratory system?

1. In which part of the body are white blood cells manufactured?
2. State the function of white blood cells.
3. How are white blood cells able to fight germs in the body?
4. In the given space below, draw a white blood cell.



5. Identify any one characteristic of a white blood cell.
6. State one physical difference between a white blood cell and a red blood cell.

LESSON 55: BLOOD PLATELETS AND PLASMA

Learners will be helped to:

- Knowing where blood platelets are manufactured.
- Explain how blood platelets function.
- Give the importance of blood clotting to the body.
- Define the term blood plasma.
- Mention the substances found in the blood plasma.
- State the functions of blood plasma.

Evaluation exercise

1. In which part of the body are blood platelets manufactured?
2. Mention the function of blood platelets.
3. Identify the importance of blood clotting action to the body.
4. What is "blood plasma"?
5. Write down at least two substances found in the blood plasma.
6. Mention three functions blood plasma.
7. Which component of blood helps to transport a drug from the buttocks to the head when an injection is given to a patient?

LESSON 56: BLOOD GROUPS

Learners shall be helped to:

- Know the amount of litres of blood in a normal healthy person.
- Know that shortage of blood in the body brings out anaemia.
- Know the causes of blood shortage in the body.
- Know what blood transfusion is and why it is done.
- Tell the four blood groups namely; A, B, AB and O.
- Explain that a person who gives blood is known as a donor and the one who received blood is called a receiver or recipient.
- Know the Austrian scientist who first discovered the blood groups.

- Mention the reason why veins have valves.
- Identify the biggest vein in the body and the only vein which carries oxygenated blood.
- Give the smallest blood vessels in the body.
- Suggest the importance of blood capillaries in the body.

Evaluation exercise

1. What are veins?
2. List down four characteristics of veins.
3. Why do you think veins have valves?
4. Name the only vein the body which carries oxygenated blood.
5. Identify the biggest vein in the body.



6. Name the blood vessel shown above.
7. Give a reason to support your answer.
8. Identify the smallest blood vessels in the body.
9. How are blood capillaries useful in the body?

LESSON 59: THE HEART

Learners shall be helped in:

- Defining the heart.
- Mentioning the membrane which surrounds the heart.
- Suggesting how many times the heart beats per minute.
- Stating the chambers of the heart.
- Mentioning the thick wall (partition) which divides the heart into two halves that blood doesn't mix.
- Identifying the name of arteries which supply the heart with oxygenated blood.
- Telling the first scientist who discovered the circulation of blood all round the body.
- Mentioning the instrument used to listen to heart beat and sounds.
- Naming the medical instrument used by health workers to measure blood pressure.
- Mentioning the adaptations of the heart.

Evaluation exercise

1. What is a heart?
2. State the main function of the heart.
3. Name the membrane which surrounds the heart.
4. Under normal circumstances, how many times does the heart beat per minute?
5. There are four chambers in the heart, name them.

6. Identify the thick wall (partition) which divides the heart into two halves to prevent blood from mixing.
7. Name the arteries which supply the heart with oxygenated blood.
8. Who was the first scientist to discover the circulation of blood all around the body?
9. Mention the instrument used by doctors to listen to the heart beat and sounds.
10. State the importance of the sphygmomanometer to medical doctors.
11. Give two ways the heart is adapted to its function.

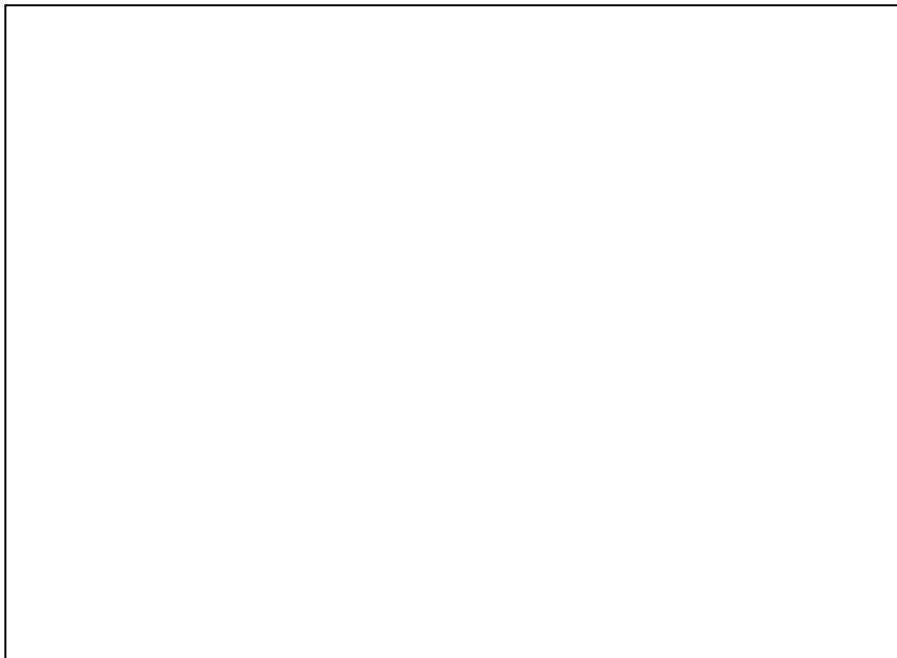
LESSON 60: THE STRUCTURE OF THE HEART

Learners will draw and name the parts of the heart.

- Mention the diseases of the heart and circulatory system.
- State ways of promoting the proper working of the circulatory system.

Evaluation exercise

The structure of the heart



1. Name the blood vessels labeled:

A _____ B _____
C _____ D _____

2. Name the type of blood carried by blood vessels:

A _____ B _____
C _____ D _____

3. Write down four chambers of the heart marked:

P _____ R _____
Q _____ S _____

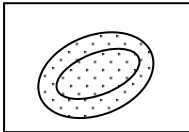
4. Identify the thick wall (partition) that divides the heart into two halves to prevent blood from wither side from mixing.
5. Why is the left side of the heart thicker than the right side?
6. State the importance of the valves in the heart.
7. Mention at least three diseases of the heart.
8. Complete the table below

Blood vessels	Carries blood from	Carries blood to	Type of blood
Vena cava	Body	Right auricle	(i)
(ii)	Right ventricle	Lungs	Deoxygenated
Pulmonary vein	(iii)	Left auricle	Oxygenated
Aorta	Left ventricle	(iv)	Oxygenated

9. Write down at least five diseases of the circulatory system.
10. State three ways of promoting proper working of the circulatory system.

LESSON 61: SAMPLE TOPICAL QUESTIONS

1. Write down two components of blood.
2. Name the component of blood which is oxygen carrier.
3. Why do you think the blood cell shown below is a red blood cell?



4. Name the pigment which gives the blood red colour.
5. Identify any one part of the body where red blood cells are manufactured.
6. State the function of the white blood cells.
7. In the space given below, draw and name a blood cell.



8. In what way are white blood cells able to fight germs?
9. Give the function of the blood platelets.
10. Mention any two functions of blood plasma.
11. List down any two blood groups you know.
12. Who is known as a universal donor?
13. Name the disease you can be protected against with the help of blood screening before blood transfusion is done.
14. Mention the blood vessels which:
 - a) Carry blood away from the heart.
 - b) Carry blood towards the heart.
15. Identify the blood vessels which are:
 - a) Thin walled
 - b) Thick walled
16. Name the smallest blood vessels in the body.
17. Why does the left side of the heart have thicker muscles than the right side?
18. Suggest any one disease of the heart.

19. State the importance of valves found in the human heart.

20. Mention one way of promoting the proper working of the circulatory system.

LESSON 62

TOPIC: TYPES OF SICKNESS

COMMON SICKNESSES AT HOME

Learners will be helped in:

- Knowing the causes of sickness at home.
- Stating the type of germs.
- Giving common places where germs are found.

Evaluation exercise

1. List down five common causes of sickness at home.
2. Write down three diseases found in places with poor sanitation and hygiene.
3. Name three diseases caused due to poor feeding (nutrition).
4. Mention four types of germs.
5. Identify any two common places where germs are found.

LESSON 63: COMMUNICABLE DISEASES (INFECTIOUS DISEASES)

Learners should be helped to:

- Define the term communicable diseases.
- Mention examples of communicable diseases.
- Identify ways in which communicable diseases spread.
- Suggest methods of controlling/preventing communicable diseases.

Evaluation exercise

1. What are communicable diseases?
2. List down six examples of communicable diseases.
3. Mention five ways through which communicable diseases spread.
4. Write down five methods used in the control/prevention of communicable diseases.
5. Write C.C.Ds in full.

LESSON 64: NON COMMUNICABLE DISEASES (NON-INFECTIOUS)

Learners will be helped in:

- Defining non-communicable diseases.
- Giving examples of non-communicable diseases.
- Stating common health and social problems in the communities.

- Identify the value of humus, air and water in the soil.
- Carry out experiments to show that soil contains air and water.

Evaluation exercise

1. What is 'soil'?
2. State the importance of soil as a resource.
3. List down four components of soil.
4. Identify the importance of humus, air and water in the soil.
5. Describe a simple experiment to show that soil contains:
 - a) Air
 - b) Moisture

LESSON 66: TYPES OF SOIL

Learners will be helped in:

- Mentioning the types of soil.
- Giving the use of each type of soil.
- Stating the properties of each type.
- Defining the terms related to soil study.
 - a) Soil profile
 - b) Soil texture
 - c) Soil drainage

Evaluation exercise

1. Mention three types of soil.
2. Give one use of each type of soil named in (2) above.
3. State three properties of loam soil.
4. Why is loam soil said to be the best for crop growing?
5. Mention three properties of sand soil.
6. Give three properties of clay soil.
7. Why is clay soil not suitable for crop growing?

The diagrams below show drainage of water through different types of soil.



8. Name the types of soil labeled:

P _____ Q _____ R _____

9. In accordance with the diagram, which type of soil has:
- Highest soil capillarity?
 - Moderate soil capillarity?
 - Lowest soil capillarity?
10. Define the term "soil capillarity".

LESSON 67: SOIL EROSION

Learners shall be assisted to:

- Define the term soil erosion.
- Mention causes of soil erosion.
- Identify how these causes will be able to cause soil erosion.
- Give the types of soil erosion.
- State the agents of soil erosion.
- Mention ways of controlling soil erosion.

Evaluation exercise

1. Define "soil erosion".
2. Identify at least three agents of soil erosion.
3. Mention four causes of soil erosion.
4. How are the following able to cause soil erosion?
 - a) Deforestation?
 - b) Over stocking?
 - c) Bush burning?
5. Give three common types of soil erosion.
6. Write down three ways of controlling soil erosion.

LESSON 68: SOIL EXHAUSTION

Learners will be helped in:

- Defining soil exhaustion.
- Stating causes of soil exhaustion.
- Giving the dangers of soil exhaustion.
- Mentioning methods of preventing soil exhaustion.

Evaluation exercise

1. Define the term "soil exhaustion".
2. Mention three causes of soil exhaustion.
3. Identify the danger of soil erosion.
4. State two dangers of soil exhaustion.
5. Write down three ways of preventing soil exhaustion.

LESSON 69: SOIL CONSERVATION

Learners shall be helped to:

- Define soil conservation.
- Write down various methods used in soil conservation.
- Methods used to conserve soil in hilly areas.
- Suggest ways of improving/maintaining soil fertility.

Evaluation exercise

1. What is “soil conservation”?
2. Write down seven methods used in soil conservation.
3. Mention three methods used to conserve soil in hilly areas.
4. Suggest three ways of improving soil fertility.

LESSON 70: MULCHING

Learners shall be helped in:

- Defining the term “mulching”.
- Mentioning the plant materials used for mulching.
- Stating the advantages of mulching.
- Identifying ways how mulching is able to improve on soil fertility, improve on crop yields and maintain soil moisture.
- Giving the disadvantages of mulching.

Evaluation exercise

1. Define “mulching”.
2. Mention three plant materials used for mulching.
3. Write down three advantages of mulching.
4. How is mulching able to:
 - a) Improve on soil fertility?
 - b) Conserve soil moisture?
 - c) Control soil erosion?
5. State three advantages of mulching.

LESSON 71: CROP ROTATION

Learners will be assisted to:

- Define the term crop rotation.
- Explain how crop rotation is carried out and what things to consider when practicing crop rotation.
- Mention the advantages of crop rotation.

Evaluation exercise

1. Define the term “crop rotation”.
2. Explain briefly why crops with shallow roots should be crop rotated with crops with deep roots.
3. Mention any two advantages of crop rotation.
4. How is crop rotation able to prevent crop pests?
5. In what way is crop rotation able to maintain soil fertility?
6. State the advantage of including leguminous crops when carrying out crop rotation.

LESSON 72: MANURE (NATURAL FERTILIZERS)

Learners shall be helped in:

- Knowing the three types of manure.
- Defining green, compost and farmyard manure.
- Stating the advantages and disadvantages of using manure.

Evaluation exercise

1. Mention three types of manure.
2. What do you understand by:
 - a) Green manure?
 - b) Compost manure?
 - c) Farmyard manure?
3. State the advantages of using manure (give two).
4. Mention any one disadvantage of using manure.

LESSON 73: ARTIFICIAL FERTILIZERS

Learners will be helped to:

- Mention examples of artificial fertilizers.
- State advantages and disadvantages of artificial fertilizers.
- Define the term soil pollution.
- Mention soil pollutants.
- Give the dangers of soil pollution.

Evaluation exercise

1. Mention four examples of artificial fertilizers.
2. State two advantages of using artificial fertilizers.
3. Mention two disadvantages of using artificial fertilizers.
4. What is soil pollution?
5. Give two examples of soil pollutants.
6. Identify one danger of soil pollution.

SAMPLE TOPICAL QUESTIONS

1. How is soil useful to a crop farmer?
2. Mention two components of soil.
3. By use of diagrams or description, prove that soil contains air.
4. Name one type of soil.
5. State the importance of clay soil to man.
6. Give one reason why loam soil is regarded as the best for agriculture.
7. Why is clay soil not suitable for growing crops?
8. Identify the type of soil with the highest and lowest capillarity.
 - a) Highest capillarity _____
 - b) Lowest capillarity _____
9. What is soil erosion?
10. Name one agent of soil erosion common in slopy areas.
11. How does bush burning cause of soil erosion?
12. Mention one type of soil erosion.
13. Define the term "soil exhaustion".
14. State one cause of soil exhaustion.
15. Identify one danger of soil exhaustion.
16. What do understand by the term "soil conservation".
17. Mention any two methods of soil conservation.
18. Define the term "mulching".
19. State one plant material used in mulching.
20. Identify the method used to conserve soil in a tomato garden.
21. How is mulching able to conserve moisture in the soil?
22. State any one disadvantage of mulching.
23. What is "crop rotation"?
24. Mention at least one advantage of crop rotation.
25. Why is it advisable to include leguminous crops in the garden?
26. Mention any one type of manure.
27. Give a reason why crop farmers prefer manure to artificial fertilizers.
28. Define "soil pollution".
29. Give one example of a soil pollutant.
30. How are polythene bags (buveeras) dangerous to the environment?

LESSON 74

TOPIC: IMMUNITY/IMMUNISATION

Learners will be helped to;

- Define immunity.
- State two types of immunity.
- Mention ways how immunity is acquired.

Evaluation exercise

1. What is immunity?
2. Mention two types of immunity and define each.
3. List three ways in which immunity is acquired.

LESSON 75

TOPIC: IMMUNISATION

Learners will be guided to;

- Mention which type of immunization one gets when a drug is introduced into the body to make it resistant to specific diseases.
- Define a vaccine.
- Mention the drug introduced in the body to make it resistant to a specific disease.
- List four examples of drugs.

Evaluation exercise

1. Which type of immunization does one get when a drug is introduced into his body to make it resistant to specific diseases?
2. Define a vaccine.
3. What name is given to a drug introduced in the body to make it resistant to a specific disease?
4. List four examples of vaccines.

LESSON 76

TOPIC: IMMUNISATION

Pupils are helped to;

- Mention the ways of administering vaccines.
- List down childhood immunisable diseases.
- Give ways in which childhood immunisable diseases are spread/transmitted.
- Mention one sign of each immunisable disease.

Evaluation exercise

1. Give two ways of administering vaccines in the individuals' body.
2. Mention at least five childhood immunisable diseases.
3. List at least four ways in which childhood immunisable diseases are spread/transmitted.
4. Give at least one sign of each of the following diseases.
 - a) Tuberculosis
 - b) Measles

LESSON 77

TOPIC: IMMUNISATION

Pupils will be guided to mention the;

- Causes of a number of immunisable diseases.
- List a number of preventive measures and control of immunisable diseases.

Evaluation exercise

1. Match the following diseases with their causes.
2. How can you control/prevent immunisable diseases (give two reasons).

LESSON 78

TOPIC: IMMUNISATION

- Learners will be guided in a discussion about the immunization schedule and sites.
- Learners will mention the importance of a child health card.

Evaluation exercise

1. Fill in the blank spaces provided below in the immunization schedule.

Vaccine	Age at which vaccine is given	Diseases protected against	How the vaccine is administered
BCG	At birth		
	At birth 6 weeks 10 weeks 14 weeks		Putting drops in the mouth
Measles			By injection on the left upper arm
	6 weeks 10 weeks 14 weeks	<ul style="list-style-type: none"> - Diphtheria - Pertusis (whooping cough) - Tetanus - Hepatitis B - Haemophilus influenza type B 	

2. How can a school health committee tell whether a child was immunized against tuberculosis without referring to the child's health card?
3. Give two importance of a child health card.

LESSON 79

TOPIC: IMMUNISATION

Learners will be helped to:

- Mention other immunisable diseases besides eight.
- List the causes of each disease or match it with its cause.
- Give at least one sign of each disease.

Evaluation exercise

1. Give other four immunisable diseases besides eight killer diseases.
2. Match the diseases listed above with their specific causes.
3. Give at least one sign of each disease listed in number (1) above.

Sign or symptom _____

Prevention or control _____

16. Use the table below to fill in the missing information.

Sn	Disease	Vaccine	Site
1.	Polio (poliomyelitis)	_____	_____
2.	Tuberculosis	_____	_____
3.	_____	Measles vaccine	_____
4.	Tetanus	_____	_____
5.	Pertusis	_____	_____
6.	Diphtheria	_____	_____
7.	Pregnant mothers and girls above 15 years.	_____	_____

17. Why are your brothers and sisters taken for immunization?

18. Mention the causative agent of the following diseases.

a) Polio

b) Tuberculosis

c) Whooping cough

19. Why should girls above 15 years and mother be immunized before and during pregnancy?

20. Use the table below of the immunization schedule and fill in the missing information.

Age	Disease	Vaccine
At birth	(i) _____	(i) _____
	(ii) _____	(ii) _____
At 6, 10 and 14 weeks	(i) _____	(i) _____
	(ii) _____	(ii) _____
	(iii) _____	(iii) _____
All pregnant women and girls above 15 years.	_____	_____

21. Give three reasons why immunization is important to a child.

22. Give two reasons why a child health card is useful.

23. Name at least two sources of information we can find on a health card.

LESSON 81

TOPIC: FOOD AND NUTRITION (FOOD)

- Pupils will be guided to define;
 - a) Food
 - b) Nutrition
 - c) Feeding
- Give reasons why people eat.

Evaluation exercise

1. Define the following terms;
 - a) Food
 - b) Nutrition
 - c) Feeding
2. Give five reasons why people eat.

3. What are vulnerable groups of people?
4. List down three groups of vulnerable people.

LESSON 85

TOPIC: FOOD

Learners will be helped to;

- Define breast feeding.
- List down advantages of breast feeding.
- Mention advantages of bottle feeding.
- Mention disadvantages of bottle feeding.

LESSON 86

TOPIC: FOOD

Learners will be helped to;

- Define deficiency diseases.
- List down four deficiency diseases.
- Mention causes of each deficiency disease.
- Give ways in which each deficiency disease can be prevented.

Evaluation exercise

1. What are deficiency diseases?
2. List down at least four deficiency diseases.
3. What causes deficiency diseases?
4. Mention how the following deficiency diseases can be prevented.
 - a) Marasmus
 - b) Scurvy
 - c) Kwashiorkor
 - d) Night blindness

LESSON 87

TOPIC: FOOD

Pupils will be helped to;

- Define weaning.
- Give the time at which a baby should be weaned.
- Mention why a baby should be weaned at the time given in (2) above.
- Mention how weaning should be started.

SAMPLE TOPICAL QUESTIONS

1. What is feeding?
2. Define food.
3. Write down the 5H's why people eat food.
4. (a) What is a food taboo?
b) Write down at least two examples of food taboos.
5. (a) What is a food belief?
b) Give two examples of food beliefs in our community.
6. (a) How are food taboos and beliefs advantageous?
b) How are food taboos and beliefs disadvantageous?
7. (a) What does the term breastfeeding mean?
b) For how long should a mother breastfeed her baby?
8. Write down two advantages of breastfeeding to a baby.
9. Suggest two advantages of breastfeeding to a mother.
10. Give two reasons why breastfeeding may be discouraged.
11. Who are the vulnerable groups of people?
12. Write down five groups of vulnerable people.
13. Why does a pregnant woman a balanced diet?
14. Why is breast milk the best food for a newly born child?
15. Why should a breastfeeding woman take extra fluids?
16. (a) What does the term "weaning" mean?
b) When should weaning a child start?
c) Write down two examples of weaning foods.
d) Why do young children need frequent feeding?
17. (a) What is malnutrition?
b) Suggest two causes of malnutrition.
18. (a) Define kwashiorkor.
b) Write down at least two signs of kwashiorkor.
c) Suggest two ways in which you can prevent kwashiorkor.

LESSON 88

TOPIC: CROP GROWING

Pupils will be guided to;

- State the importance of a school garden.
- Identify factors to consider when starting a school garden.
- List stages in land preparation.

Evaluation exercise

1. Mention at least four importance of a school garden.
2. Identify four factors to consider when starting a school garden.
3. List the three stages of land preparation before growing crops.

LESSON 89: PLANTING

Learners will be helped to;

- Define planting.
- Mention two types of planting.
- Define each type of planting.
- Mentioning advantages and disadvantages of each.

Evaluation exercise;

1. What is planting?
2. Mention two types of planting.
3. Define the following terms.
 - a) Row planting
 - b) Broadcasting
4. Mention two advantages of row planting.
5. How is broadcasting method advantageous?

LESSON 90: A NURSERY BED

Learners will be helped to;

- Identify qualities of a good planting material.
- Define a nursery bed.
- Mention factors to consider when making a nursery bed.

Evaluation exercise

1. List down five qualities of a good planting material.
2. Define a nursery bed.
3. Mention at least three factors to consider when making a nursery bed.

LESSON 91: CROP GROWING

Learners will be helped to;

- Identify seeds planted in a nursery bed.
- Identify a site for the necessary care of a nursery bed.
- List down advantages of a nursery bed.

Evaluation exercise

1. Name at least 4 seeds planted in a nursery bed.
2. Which place should be favourable for nursery bed allocation?
3. List down 4 advantages of a nursery bed.

LESSON 92

TOPIC: TRANSPLANTING

Learners will be helped to;

- Define transplanting.
- Name a garden tool used for transplanting.
- Give a reason why a trowel is used in transplanting.
- Define seedlings.
- Mention types of crops grown.

Evaluation exercise

1. What is transplanting?
2. Which garden tool is used in transplanting?
3. Why do you think a trowel is used in transplanting?
4. Define a seedling.
5. Mention four types of crops grown.

LESSON 93: CARE OF CROPS

Learners will be helped to;

- Define pruning.
- Mention advantages of pruning.
- Define thinning.
- Mention advantages of thinning.

Evaluation exercise

1. What is pruning?
2. Mention at least three advantages of pruning.
3. Define thinning.
4. Mention at least three advantages of thinning.

LESSON 94: CARE OF CROPS (PINCHING OFF/STAKING/TRAINING/GAP FILLING)

Learners will be helped to;

- Define the following terms;
 - a) Pinching off
 - b) Staking/training
 - c) Gap filling
- Mention advantages of each.

Evaluation exercise

1. Define the following terms.
 - a) Pinching off
 - b) Training/staking
 - c) Gap filling
2. Mention two advantages of each of the following:
 - a) Training/staking
 - b) Pinching off

LESSON 95: CARE OF CROPS

Pupils will be guided to discuss;

- Care and management of seedlings in a nursery bed which include:
 - a) Thinning (definition)
 - Advantages of thinning
 - b) Watering
 - Advantages of watering
 - c) Hardening off

Evaluation exercise

1. What is thinning?
2. Outline at least three advantages of thinning.
3. Define watering.
4. Why is it advisable to water crops favourably in the evenings?
5. What do we mean by "hardening off"?

LESSON 96

TOPIC: WEEDS AND WEED CONTROL

Learners will be helped to define;

- Weeds
- Mention examples of weeds.
- List advantages of weeds.
- List disadvantages of weeds.
- Give ways of controlling weeds in a garden.

Evaluation exercise

1. What are weeds?
2. Mention examples of weeds.
3. Give at least three advantages of weeds.
4. List down three disadvantages of weeds.
5. Give at least four ways of controlling weeds in our gardens.

LESSON 97

TOPIC: PESTS AND DISEASES

Learners will be helped to;

- Define pests.
- Mention pests which destroy their crops.
- Mention diseases with their causes.

Evaluation exercise

1. What are pests?
2. Mention eight pests which attack our crops.
3. Match the following diseases with their causes.

A

Wheat rust
Potato blight
Coffee berry disease
Bacterial wilt
Black rot
Mosaic virus

B

bacteria
fungi
virus

4. Name the pests which destroy crops in;
a) Field/garden b) Store

LESSON 98: EFFECTS OF PESTS AND DISEASES

Learners will be helped to;

- Mention effects of pests and diseases on crops.
- List down the methods of controlling pests and diseases.

Evaluation exercise

1. Mention four effects of pests and diseases on crops.
2. List down five methods of controlling pests and diseases.

LESSON 99: HARVESTING

Learners will be helped to;

- Define harvesting.
- Mention when harvesting should be done.
- Give disadvantages of early harvesting.

Evaluation exercise

1. What is harvesting?
2. When should harvesting be done?
3. Give four disadvantages of early harvesting.

LESSON 100: STORAGE

Learners will be helped to;

- Define storage
- Give examples of stores.
- Mention reasons why people store.
- Mention condition of proper storage.

Evaluation exercise

1. What is storage?
2. Give two examples of stores in Uganda.
3. Why do you think people store crops?
4. List at least three conditions needed for proper storage of crops.

LESSON 101: MARKETING

Learners will be helped to;

- Define marketing.
- Define cooperative societies.
- List the functions of cooperative societies.

Evaluation exercise

1. What is marketing?
2. Define cooperative societies.
3. Give at least three functions of cooperative societies.

LESSON 102: LEGUMINOUS CROPS

Learners will be helped to;

- Define leguminous crops.

- (a) Name the structure marked X.
 - (b) What is the use of the structure marked X?
 - (c) What is the use of the organism living in the structure marked X?
 - (d) Which root system is shown in the diagram?
10. (a) What is pruning?
- b) Suggest two advantages of pruning crops.
11. (a) What does the term thinning mean?
- b) Suggest at least two advantages of thinning.
12. (a) What is plant staking?
- b) Suggest at least two advantages of plant staking.
13. (a) What are weeds?
- b) Mention at least four common weeds you know.
 - c) Suggest at least two advantages of weeds.
 - d) Write down at least two disadvantages of weeds.
 - e) Mention at least four ways of controlling weeds in a garden.
14. (a) What is a pest?
- b) Suggest two ways in which pests and diseases affect our crops.
15. Give four ways in which a farmer can control pests and diseases on a farm.
16. (a) What is harvesting?
- b) What is the proper time of harvesting ripe crops?
 - c) Give at least four dangers of early harvesting.
17. (a) Where do farmers store their harvested crops?
- b) Suggest four conditions for the proper storage of harvested crops.
18. What is marketing?
19. Suggest for reasons why cooperative societies are important to a farmer.
20. Mention at least two examples of cooperative societies.
21. What are farm records?
22. Give two reasons why it is important to keep farm records.
23. What name is given to government granaries?
24. Give an example of;
- a) A cereal crop
 - b) A legume
 - c) A vegetable crop
 - d) A root crop
 - e) A fruit crop

LESSON 105

TOPIC: SANITATION

- Definition of sanitation.
- Factors to consider when choosing a site for a habitable house.
- Requirements of a clean home and their importance.
- Ways of maintaining/improving sanitation in a home.

Evaluation exercise

1. Define the term sanitation.
2. List down any four factors to consider when choosing a site for a house.
3. State any two requirements for a good/clean home.
4. Identify three ways of maintaining sanitation in a home, school and classroom.

LESSON 106: CONSTRUCTION OF DIFFERENT TYPES OF HOUSES

- Learners will discuss in groups to identify the qualities of a habitable house.
 - a) A well drained site, at least 20 metres from the main road, spacious rooms, well ventilated, damp proof course, roofing.
- Types of houses.
- Outline dwellings for domestic animals.
- State disadvantages of sharing habitable houses with domestic animals.

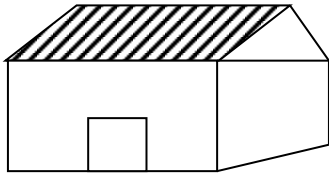
Evaluation exercise

1. State the qualities of a good/clean habitable house.
2. List down the types of houses.
3. List down the materials used to construct houses.
4. Give three methods used for keeping a human house clean.

LESSON 107: SAMPLE TOPICAL QUESTIONS

SANITATION

1. Define the term sanitation as used in health science.
2. State the importance of a latrine in a home.
3. List down any three factors to consider when choosing a site for a habitable house.
4. Write down any two diseases which may break out and spread in a home due to poor sanitation.
5. How far should a pit latrine be from a water source?
6. Why should we drain away stagnant water around our homes?
7. State the value of ventilators on a habitable house.
8. Why should walls of houses be painted with white or light shiny colours?
9. Indicate and name any two important parts missing on the house.



a) _____

b) _____

10. Name the three types of houses which can be built.
11. Write down any two ways in which you can improve sanitation at school.
12. State the importance of a dust bin in a classroom.
13. Identify any three disadvantages of sharing a habitable house with domestic animals.

LESSON 108: BACTERIA

Learners will read textbooks and be helped to;

- Define the term bacteria.
- Habitat for bacteria, feeding and breeding mode.
- Draw the breeding cycle of bacteria.

Evaluation exercise

1. Define the term bacteria.
2. List down any four places where bacteria can live.
3. How do bacteria reproduce?
4. Draw and show the breeding stages of bacteria.
5. How do bacteria obtain its food?

LESSON 109

TOPIC: TYPES OF BACTERIA

Learners will be helped to;

- Identify types of bacteria.
- List examples of harmful bacteria.
- Mention diseases caused by harmful bacteria to people, animals and plants.
- Give examples of useful bacteria.
- Stating instances where they (useful bacteria) are useful.
- Prevention and control of dangers caused by harmful bacteria.

Evaluation exercise

1. Mention the types of bacteria.
2. List down any two examples in each case.
 - a) Useful bacteria
 - b) Harmful bacteria
3. Identify any three ways how bacteria is useful to man.
4. State any two diseases caused to people by bacteria.

LESSON 110

TOPIC: FUNGI

- Learners will be helped to define the term fungi.
- Examples of fungi.
- Identifying useful and harmful fungi and their feeding mode.
- Mentioning the importance of fungi.
- Draw and name external parts of a mushroom.
- Listing down diseases caused by fungi to:
 - a) Man/people
 - b) Plants
- Discussing prevention and control of fungal diseases.

Evaluation exercise

1. List down examples of fungi.
2. How do fungi feed?
3. Draw and name the external parts of a mushroom.
4. Write down any two fungal skin diseases in man.
5. How do fungi reproduce?
6. List down any two places where fungi can grow favourably.
7. How can fungal diseases be controlled in man?

LESSON 111

TOPIC: THE PIONEERS OF SCIENCE

With the help of the recent science knowledge from previous knowledge, learners will be helped to identify pioneers of science and their contributions like;

- | | |
|-------------------|-------------------------|
| - Edward Jenner | - Louis Pasteur |
| - Sir Ronald Ross | - Sir Alexander Fleming |
| - Joseph Lister | - Sir William Harvey |

Evaluation exercise

1. Match the pioneers' list with their contributions to science.

LESSON 112: SAMPLE TOPICAL QUESTIONS

BACTERIA AND FUNGI 2008 (25 marks)

1. What are bacteria?
2. Name any place where bacteria can be found.
3. List down any two conditions needed for bacteria to reproduce.
4. Write down the four types of bacteria.
5. How do bacteria reproduce?

6. What name is give to bacteria which;
 - a) Which need oxygen to respire?
 - b) Which don't need oxygen to respire?
7. Give two ways in which some bacteria are useful.
8. Give two ways in which some bacteria is called harmful.
9. What are antibiotics?
10. Why are fungi and bacteria not man's friends?
11. Write down at least four examples of fungi.
12. Suggest four reasons why some fungi is useful.
13. Give two reasons why fungi is harmful.
14. Mention two ways in which we can prevent and control dangers caused by harmful fungi.
15. From which fungi do we get an antibiotic called penicillin?

LESSON 113

TOPIC: PHC (Primary Health Care)

- Learners will be helped to define the following terms;
 - a) PHC
 - b) Health
 - c) Elements of PHC, identifying them.
- Identifying the principles of PHC.

Evaluation exercise

1. What is meant by the following terms as used in health science?
 - a) PHC
 - b) Health
2. List down any four elements of PHC.
3. Write the following abbreviations in full.
 - a) PHC
 - b) EHC

LESSON 114: PHC

- Learners with the help of a teacher will discuss the roles of;
 - a) Individuals.
 - b) Family
 - c) Community in promoting PHC
- Identifying suitable health life styles and health practices.

Evaluation exercise

1. Define the principles of PHC.
2. State roles of an individual, family and community in promoting PHC.

LESSON 115: PHC

Learners will hold group discussions and resolve with the help of the teacher about:

- Ways of controlling diseases without treatment.
- Mentioning examples of diseases controlled without treatment.
- Importance of physical exercises to the body.

Evaluation exercise

1. Identify any three ways of controlling diseases without treatment.
2. List down any three diseases which can be controlled without treatment.
3. State any three values of having regular physical body exercises.

LESSON 117: SAMPLE TOPICAL QUESTIONS

PHC

1. What is Primary Health Care?
2. What does the term health mean?
3. Write down for elements of primary health care.
4. Why is primary health care called essential health care?
5. List down two ways in which people can be educated and informed about primary health care.
6. Suggest two activities done in maternal and child healthcare.
7. Write down two activities performed to control communicable diseases.
8. Give four examples of communicable diseases.
9. Suggest four ways of observing environmental sanitation.
10. Mention four ways in which an individual can prevent communicable diseases without using drugs.
11. Write down two ways in which regular exercises are important to the body.
12. Why should we rest after work?
13. As a P.5 pupil, how can you observe personal hygiene (give four ways)?
14. Write down two ways in which a family can promote the following activities in primary health care.
 - a) Family health education
 - b) Health family life style
 - c) Family hygiene
15. Write down three ways how a community can participate in primary health care.
16. How can a community health committee participate in primary health care?
17. How many members make up a community health committee?