

Year 7 Science Study Material Unit 4: Grouping and Identifying Organisms – Term 2

MRS GREN is a mnemonic used in biology to remember the **seven characteristics of living organisms**.

Letter	Life Process	Meaning
M	Movement	The ability of an organism to move or change position.
R	Respiration	The chemical process that releases energy from food in cells.
S	Sensitivity	The ability to detect and respond to changes in the environment.
G	Growth	An increase in size or number of cells.
R	Reproduction	The ability to produce offspring.
E	Excretion	The removal of waste products produced by the body.
N	Nutrition	Taking in food or nutrients for energy, growth, and repair.

Simple Year 7 Explanation

All **living things show these seven life processes**. If something shows **all of them**, it is considered **living**.

Example

A **cat**:

- moves when it walks
- respire to release energy
- responds to sound (sensitivity)
- grows from kitten to adult
- reproduces
- excretes waste
- eats food (nutrition)

Useful Question for Students

Which life process is described as releasing energy from food in cells?

Answer: **Respiration**

Fill in the Missing Words

The seven life processes are often remembered as **MRS GREN**.

Complete the list.

M – _____

R – _____

S – _____

G – _____

R – _____

E – _____

N – _____

Matching Questions

1. Match the Scientific Terms to Their Meanings

Draw a line to match each term with the correct definition.

Term	Definition
1. Species	A. A tool used to identify organisms
2. Dichotomous Key	B. Offspring that can reproduce
3. Fertile	C. A group of organisms that can reproduce together
4. Offspring	D. A key that gives two choices at each step
5. Classification Key	E. The young of an organism

2. Match the Life Process to the Correct Description

Life Process	Description
1. Movement	A. Removing waste products
2. Respiration	B. Responding to changes in the environment
3. Sensitivity	C. Releasing energy from food
4. Excretion	D. Changing position or moving body parts
5. Growth	E. Increasing in size

3. Match the Organism to Its Group

Organism	Group
1. Bacteria	A. Virus

2. Influenza	B. Animal
3. Snake	C. Microorganism
4. Oak Tree	D. Plant

Living and Non-Living Things

1. Multiple Choice – Circle the correct answer

1. Which of the following is a living organism?

- A) Sand
- B) Rock
- C) Rat
- D) Water

2. Which of the following shows a characteristic of living things?

- A) Rusting
- B) Breathing
- C) Melting
- D) Freezing

2. True or False

Write **True** or **False**.

- a) Living organisms grow.
- b) Dead things were once living.
- c) Non-living things can reproduce.
- d) All living organisms respire.

Species and Reproduction

Complete the Sentences

Use the words:

species – fertile – offspring – variations – identical – infertile

- a) A group of organisms that can reproduce together is called a _____.
- b) Differences between organisms of the same species are called _____.
- c) The young of animals or plants are called _____.
- d) Organisms that cannot reproduce are called _____.

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e) Organisms that can reproduce are called _____.

f) If two organisms are exactly the same they are _____.

Multiple Choice

1. Two organisms belong to the same species if they:

- A) Look the same
- B) Live in the same place
- C) Produce fertile offspring
- D) Eat the same food

2. When a horse reproduces with a donkey, the offspring is called:

- A) A horse
- B) A donkey
- C) A mule
- D) A pony

Short Answer

Define the term species.

Explain

Explain why a mule cannot reproduce.

Classification Keys

Multiple Choice

A classification key is used to:

- A) Measure the size of organisms
- B) Identify organisms
- C) Count organisms
- D) Feed organisms

Complete the Sentence

A **dichotomous key** gives _____ choices at each step.

Short Answer

Describe how a dichotomous key helps scientists identify organisms.

Complete the Missing Steps of a Dichotomous Key

Information Table

Step	Question	Next Steps
1	Does it have wings?	Yes → Go to Step 2 No → Go to Step 3
2	_____	Yes → It is an Eagle
3	Does it have scales?	Yes → It is a Lizard No → Go to Step 4
4	Does it have fur?	Yes → It is a Bat No → _____

Multiple Choice Question

What is the main purpose of a dichotomous key? Tick the box with the correct answer.

- A Measures how fast an organism moves
- B Measures the size of organisms
- C Identifies and classifies organisms
- D Feeds organisms

True or False

Write **True** or **False**.

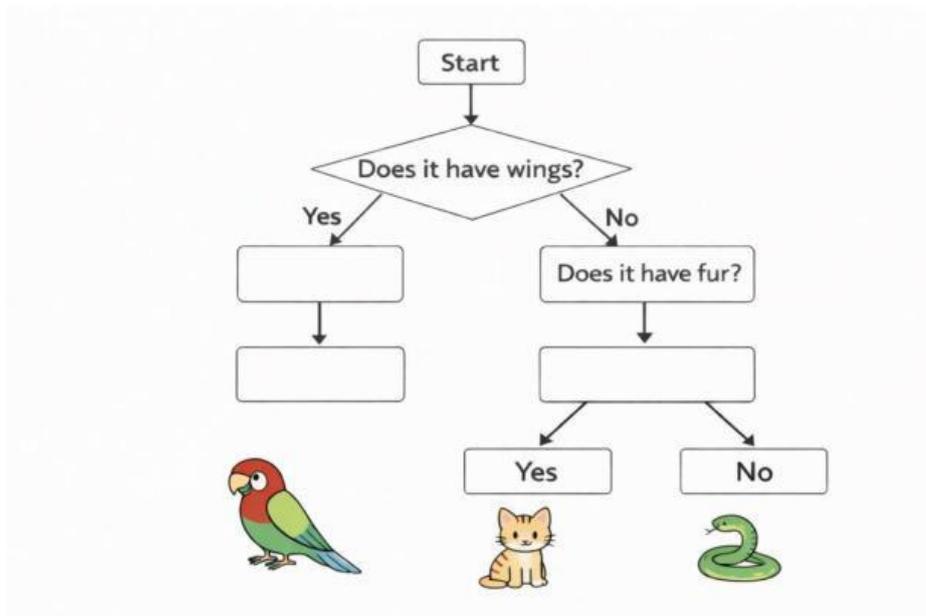
- a) A dichotomous key asks questions about animals. _____
- b) A dichotomous key helps scientists identify unknown organisms. _____
- c) A dichotomous key is the same as a microscope. _____
- d) A dichotomous key gives **two choices** at each step. _____

Complete the Diagram

A dichotomous key helps classify animals.

Label the blank parts using:

Yes / No / Cat / Parrot / Snake



Study the dichotomous key.

Answer the questions:

a) What is the first question in the key?

b) Which animal has wings?

c) Which animal has fur?

d) Which animal has scales?

Application Question

Fahad is making a key to identify different snakes.

Two snakes have different patterns:

- Snake A has **stripes**
- Snake B has **diamond patterns**

Write **one question** Fahad could include in the key to distinguish between them.

Example format:

"Does the snake have _____?"

Question: _____

Viruses

Multiple Choice – Circle the correct answer.

Which statement about viruses is correct?

- A) Viruses are made of cells
- B) Viruses can grow independently
- C) Viruses reproduce inside a host cell
- D) Viruses can respire

Answer True or False to the following statements:

- a) Viruses contain genetic material. _____
- b) Antibiotics can kill viruses. _____
- c) Viruses reproduce inside host cells. _____
- d) Viruses carry out all life processes. _____

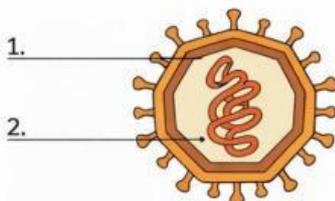
Short Answer

Describe the **basic structure of a virus**.

Explain how viruses reproduce.

Label the Structure of a Virus. Write your answers in the box below.

The Structure of a Virus



1. _____
2. _____

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Explain how scientists decide if two organisms belong to the same species.

Compare **living, dead and non-living things**.

Evaluate the following:

A student says:

"A car is a living thing because it moves."

Explain why this statement is incorrect.

Many scientists do not classify viruses as living organisms.

Suggest **two reasons** why viruses are considered non-living.

Classification Practice

Sorting Activity

Place the following into the correct group.

Kangaroo – rat – rock – sand – seaweed

Living Things	Things That Have Never Lived (Non-living)