

# iNewittAll — KS3 Biology

## The 7 Life Processes (MRS GREN): Complete Worksheet

Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

Total Marks: \_\_\_\_ / 100

### Section 1: Knowledge Recall (30 marks)

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*This section tests your understanding of key facts about MRS GREN and the 7 life processes.*

1. What does the letter M stand for in MRS GREN? [2]

- A) Minerals
- B) Movement
- C) Metabolism
- D) Mitochondria

2. Which life process is the chemical reaction that happens inside cells to release energy from food? [2]

- A) Breathing
- B) Digestion
- C) Respiration
- D) Excretion

3. A sunflower turns to face the sun during the day. Which life process does this demonstrate? [2]

- A) Movement
- B) Sensitivity
- C) Growth
- D) Nutrition

4. What is excretion? [2]

- A) Breathing out carbon dioxide only
- B) Going to the toilet
- C) Getting rid of waste products from chemical reactions in cells
- D) Sweating during exercise

5. Which of the following is an example of something that is DEAD (not never been alive)? [2]

- A) A plastic bottle
- B) A brick
- C) A wooden table
- D) A glass of water

6. For movement to be a sign of life, which TWO requirements must be met? [2]

- A) The organism must move quickly and make noise
- B) The organism must move itself (not be moved by something else)
- C) The organism must move to achieve something that helps it survive
- D) The organism must move in a straight line

*Circle TWO letters for full marks.*

7. State whether each of the following statements is TRUE or FALSE.

[8]

| Statement                                                                             | True or False |
|---------------------------------------------------------------------------------------|---------------|
| Respiration is the same thing as breathing                                            |               |
| Plants respire just like animals do                                                   |               |
| A car moving down the road is a sign of life                                          |               |
| All living organisms carry out all 7 life processes at some point in their life cycle |               |
| A seed is not alive because it doesn't move or reproduce                              |               |
| Bacteria are too small to move themselves                                             |               |
| Excretion means getting rid of waste products from chemical reactions                 |               |
| Growth only means getting bigger                                                      |               |

8. Complete the table below by writing what each letter in MRS GREN stands for and giving one example for each.

[6]

*The first one has been done for you.*

| Letter | What it stands for | Example                         |
|--------|--------------------|---------------------------------|
| M      | Movement           | A frog hopping to escape danger |
| R      |                    |                                 |
| S      |                    |                                 |
| G      |                    |                                 |
| R      |                    |                                 |
| E      |                    |                                 |
| N      |                    |                                 |

*1 mark per correctly completed row (2 marks total per letter - 1 for name, 1 for valid example). 6 rows to complete = 6 marks.*

## Section 2: Application & Understanding (40 marks)

*This section tests your ability to apply what you've learned about MRS GREN to different situations.*

9. Explain the difference between respiration and breathing. Why is it important not to confuse the two?

[6]

10. A Venus flytrap is a plant that can snap its leaves shut to trap insects. Explain which life processes this demonstrates and how.

[8]

*You should mention at least THREE different life processes in your answer.*

11. A frog goes through several stages in its life cycle: frogspawn (eggs), tadpole, froglet, and adult frog.

[8]

a) Explain why a frogspawn egg is still considered alive even though it cannot move, excrete waste, or reproduce at that stage.

[4]

b) Name TWO life processes that happen at ALL stages of the frog's life cycle and explain why these must always happen.

[4]

12. Different organisms get their nutrition in different ways.

[8]

a) Describe how animals get their nutrition.

[2]

b) Describe how plants get their nutrition.[2]

c) Explain why all organisms need nutrition, even though they get it in different ways.[4]

13. A car moves down the road. A frog hops across a pond. Explain why the frog's movement is a sign of life but the car's movement is not. [6]

*Your answer should refer to the two requirements for movement to be a sign of life.*

14. Look at the three items below:[6]

- A wooden table
- A plastic chair
- A dead leaf

Sort these items into the categories "dead" and "never been alive" and explain your reasoning for each.

### Section 3: Extension & Analysis (30 marks)

*This section requires you to think deeply and apply your knowledge to new situations.*

**15.** An acorn is the seed of an oak tree. At the seed stage, it respires to get energy, it is sensitive to moisture and temperature, and it can grow into a seedling. However, it does not move by itself, it does not excrete waste, and it does not reproduce. **[10]**

Using your knowledge of life processes and life cycles, write a detailed explanation of why an acorn is still considered to be alive.

*Your answer should include: what makes something alive, which life processes the acorn DOES carry out, why it doesn't carry out all 7 processes yet, and what will happen when it grows into a mature tree.*

**16.** Imagine you are a scientist who has discovered a mysterious object on another planet. You need to determine whether this object is living, dead, or has never been alive. **[10]**

Describe the tests or observations you would carry out to check for each of the 7 life processes. For each process, explain what result would indicate that the object is alive.

*Make sure you cover all 7 life processes: Movement, Reproduction, Sensitivity, Growth, Respiration, Excretion, and Nutrition.*

**17.** Plants carry out photosynthesis to make their own food, but they also respire just like animals do. Many students find this confusing. **[10]**

Write a clear explanation that would help another student understand:

- What photosynthesis is and why plants do it
- What respiration is and why plants need it
- Why plants need to do BOTH processes
- How the two processes are different from each other

*Use examples to make your explanation clear.*