

Cells and Systems

This worksheet reviews how living things are organized into cells, tissues, organs and systems, and how these parts work together to keep an organism healthy ([Topic](#), [Outcome](#)). You will also practise describing human body systems and the cells that make them function ([Outcome](#), [Outcome](#)).

Exercises

1. Matching: Cell structures

Match each term to its correct description. Write the matching letter on the line beside each number.

Term	Answer	Description
1. Cell membrane	_____	A) Found only in plant cells, gives rigid support
2. Cell wall	_____	B) Basic unit of life found in all organisms
3. Cell	_____	C) Controls what enters and leaves the cell

2. Short answer: Single-celled vs. multicelled organisms

Choose one single-celled organism and one multicelled organism (for example, an amoeba and a grizzly bear, or a single-celled alga and a poplar tree) ([Outcome](#)).

- a) Name your two organisms: _____ and _____
- b) Describe one similarity between them: _____
- c) Describe one difference between them: _____

3. Multiple choice: Diffusion and osmosis

Circle the best answer for each question.

i) Diffusion is the movement of substances from an area of:

- A) low concentration to high concentration
- B) high concentration to low concentration
- C) equal concentration in all directions
- D) inside the cell only, never outside

ii) Osmosis specifically refers to the movement of:

- A) oxygen
- B) water
- C) solid food particles
- D) electricity

([Outcome](#))

4. Fill in the blank: Human body systems

Use the words below to complete the sentences. Each word is used once.

circulation digestion excretion respiration sensory

- a) The _____ system breaks down food so the body can absorb nutrients.

- b) The _____ system carries oxygen and nutrients to tissues through the blood.
- c) The _____ system removes waste products from the body.
- d) The _____ system brings oxygen into the body and removes carbon dioxide.
- e) The _____ system allows the body to detect and respond to its surroundings.

([Outcome](#))

5. Short answer: Cells that keep the body healthy

For each cell type below, describe one job it does in the human body ([Outcome](#)).

a) Nerve cell: _____

b) Muscle cell: _____

c) Blood cell: _____

6. Extended response: Body response to change

Describe one way the human body changes its function in response to a changing condition. Choose one example: heart rate during exercise, metabolism in cold temperatures, or a reflex response to a stimulus ([Outcome](#)). You may also mention one factor that could affect the healthy function of the system involved, such as illness, aging or air quality ([Outcome](#)).

Condition or stimulus: _____

How the body responds: _____

A factor that could affect this system: _____

Answer key

- 1. 1-C, 2-A, 3-B
- 2. Answers will vary. Similarity might note both are made of cells and carry out life functions; difference might note one is single-celled and one is multicelled, or differences in size and structure ([Outcome](#)).
- 3. i) B, ii) B
- 4. a) digestion, b) circulation, c) excretion, d) respiration, e) sensory
- 5. Answers will vary. Nerve cells carry signals through the body; muscle cells contract to produce movement; blood cells carry oxygen, nutrients or fight infection ([Outcome](#)).
- 6. Answers will vary. Example: heart rate increases during exercise to deliver more oxygen to muscles; illness or air quality could affect the respiratory system's healthy function ([Outcome](#), [Outcome](#)).