

Cells and Systems: Homework Sheet

This sheet reviews how cells act as the basic unit of life and how they organize into tissues, organs and body systems ([Outcome](#), [Outcome](#)). You will also practice comparing organism structures and explaining how living things carry out similar functions in different ways ([Outcome](#)).

Exercises

1. Vocabulary matching

Match each term on the left with its correct description on the right. Write the matching letter on the line.

Term	Answer	Description
Cell	_____	A) A group of similar cells working together to do a job
Tissue	_____	B) A structure made of different tissues working together
Organ	_____	C) The basic unit of life
Diffusion	_____	D) The movement of particles from an area of high concentration to an area of low concentration

2. Plant cell vs. animal cell

Fill in the blanks using the word bank below.

Word bank: cell membrane, cell wall, animal, plant

- A rigid structure that surrounds and supports a plant cell is called the _____.
- Both plant and animal cells are surrounded by a _____, which controls what enters and leaves the cell.
- A cell without a cell wall, only a cell membrane, is most likely a(n) _____ cell ([Outcome](#)).

3. Short answer: single-celled vs. multicelled organisms

An amoeba is a single-celled organism, and a grizzly bear is a multicelled organism made of trillions of cells ([Outcome](#)).

- Name one thing an amoeba and a grizzly bear both need to do to survive.

- Explain one way a multicelled organism can carry out this function differently than a single-celled organism.

4. Multiple choice: body systems

Circle the best answer for each question.

- Which body system is mainly responsible for carrying oxygen and nutrients to tissues and organs?
A) Digestive system
B) Circulatory system
C) Excretory system
D) Sensory system

2. Which organ's main role is exchanging oxygen and carbon dioxide with the air?
 - A) Heart
 - B) Stomach
 - C) Lungs
 - D) Kidney
3. Which of these is an example of the body responding to a changing condition?
 - A) A cell dividing into two cells
 - B) Heart rate increasing during exercise
 - C) A plant cell having a cell wall
 - D) An amoeba moving toward food

(Refers to [Outcome](#))

5. Structure and function: food-gathering example

Different animals have different structures for gathering food, even though the function (getting food) is the same for all of them ([Outcome](#)).

Complete the table with one example structure for each animal, and briefly describe how it helps the animal gather food.

Animal	Food-gathering structure	How it helps
Bird		
Spider		
Human		

6. Short answer: cells, tissues, organs and systems

Skin contains several types of cells that work together to protect the body and sense the environment ([Outcome](#)).

- a) Put these terms in order from smallest to largest level of organization: organ, cell, tissue.

_____ !' _____ !' _____

- b) Using skin as your example, describe how cells combine to form a tissue, and how that tissue contributes to an organ.

Answer key

1. Cell = C, Tissue = A, Organ = B, Diffusion = D
2. a) cell wall, b) cell membrane, c) animal
3. a) Accept reasonable answers such as obtaining food, energy, oxygen or removing waste. b) Accept reasonable answers, such as: a multicelled organism can have specialized organs (like a stomach) to digest food, while a single-celled organism must carry out digestion within its one cell.
4. 1. B, 2) C, 3) B
5. Accept reasonable answers, for example: Bird - beak - used to pick up, crack or tear food; Spider - web/fangs - used to trap or capture prey; Human - hands and teeth - used to grasp and chew food.
6. a) cell !' tissue !' organ. b) Accept reasonable answers describing that similar skin cells group together to form skin tissue, and skin tissue combines with other tissues to form the skin organ, which protects the body and senses stimuli.

