

Body Building Levels

Trace how living structures work together from cells to an organism.

S7L2.b "Develop and use a conceptual model of how cells are organized into tissues, tissues into organs, organs into systems, and systems into organisms."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each name for a level of organization, then number the levels 1 through 5 where they first appear, from cell to organism.

From Small Parts to a Whole Body

- ① Your body is built in levels, like a team with jobs that fit together. A cell is the smallest living unit. Muscle cells can shorten and pull. When many similar muscle cells work together, they form muscle tissue. Tissue is a group of similar cells working together on one job. Nerve cells also have a job: they send messages. Groups of nerve cells form nervous tissue, which carries messages through the body. The organization does not stop at one tissue type.
- ② An organ is made of two or more kinds of tissue that work as a unit. Consider the stomach. Muscle tissue in its wall squeezes food, nervous tissue helps control those movements, and epithelial tissue covers surfaces that touch food. Together, these tissues allow the stomach to mix food and begin digestion. The stomach is an organ because its different tissues cooperate on related tasks. A tissue alone cannot do all of the stomach's work, just as one musician cannot perform every part of an orchestra.
- ③ Organs that coordinate for a major body function make an organ system. The circulatory system includes the heart, blood vessels, and blood. The heart pumps blood, and blood vessels provide paths for it to travel. This system delivers oxygen and nutrients to cells and carries some wastes away. It works with other systems, including the respiratory system, which brings oxygen into the body. All organ systems in one person interact to keep that person alive. A complete living individual made of cooperating systems is an organism.

2 ANSWER WITH EVIDENCE Use the passage

1 Write the five levels of organization in order, starting with cell.

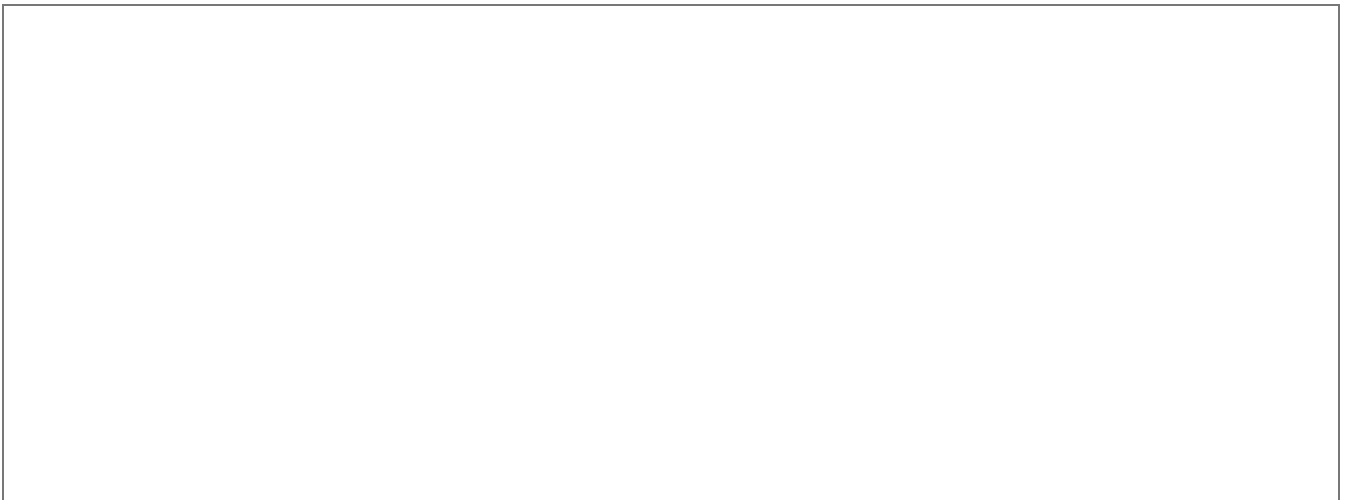
2 Why is the stomach an organ instead of a tissue? Use one detail from the passage.

3 Explain how the heart and the circulatory system show the relationship between an organ and an organ system.

4 What makes one person an organism, according to the passage?

3 YOUR TURN Your own words

Choose a body function not discussed in the passage. In the box, draw a labeled arrow model showing cell, tissue, organ, organ system, and organism for that function. Then write one sentence explaining how the levels work together.



PART 1 • READ AND MARK

Underline each name for a level of organization, then number the levels 1 through 5 where they first appear, from cell to organism. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Write the five levels of organization in order, starting with cell.	cell, tissue, organ, organ system, organism
2	Why is the stomach an organ instead of a tissue? Use one detail from the passage.	The stomach is an organ because it contains different tissues, including muscle, nervous, and epithelial tissue, that cooperate to mix food and begin digestion.
3	Explain how the heart and the circulatory system show the relationship between an organ and an organ system.	The heart is an organ. It works with blood vessels and blood as part of the circulatory system, an organ system.
4	What makes one person an organism, according to the passage?	A person is an organism because all of the person's organ systems interact and work together to keep the person alive.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Kidney tubule cell → epithelial tissue → kidney → urinary system → organism. The cell helps form tissue in a kidney, and urinary organs work together to remove wastes from the organism.

Accept accurate models that show the correct order: cell, tissue, organ, organ system, organism. The chosen example and explanation should show that smaller levels combine and cooperate to make the next level.