

One Cell, Many

Compare how cell structures support life in two pond organisms.

LS.3.b "unicellular and multicellular organisms have comparative structures; and"

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline every named structure in the passage. Write P, H, or B in the margin to show whether each structure belongs to paramecium, hydra, or both organisms.

Pond Organisms at Work

- ① At the edge of a pond, a paramecium moves through water as one complete living cell. Tiny hairlike cilia cover its surface and beat together, pushing it forward. The same cell takes in food, releases wastes, senses its surroundings, and divides to make a new paramecium. Inside, a nucleus holds genetic material, while food vacuoles help digest captured food. Because it has only one cell, each structure must work within that single cell to keep the organism alive.
- ② A hydra living in the same pond is multicellular, meaning its body is made of many cells. Its tentacles contain stinging cells that help capture small prey. Other cells line a central digestive cavity, where food is broken down. Muscle-like cells contract to bend or shorten the body. Hydra cells also have nuclei and cell membranes, like paramecium cells do. However, these structures are found in many cooperating cells, and different cells perform different jobs.
- ③ Both organisms must obtain food, respond to their environment, and reproduce. Their structures meet these needs in different ways. A paramecium's cilia move the whole organism, but a hydra can use contracting cells to change its body position. A paramecium digests food in food vacuoles inside its one cell. A hydra digests prey in a central cavity lined by cells. Comparing structures shows how one cell can handle all life functions, while many cells can share the work in a multicellular organism.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Which two structures does the passage say are found in both paramecium cells and hydra cells?

2 Compare how paramecium and hydra use structures for movement.

3 Why does a paramecium need several different structures within its one cell?

4 How is food digestion different in paramecium and hydra?

3 YOUR TURN _____ Your own words

Write a 70-90 word field-guide note comparing paramecium and hydra. Include at least two named structures and explain what the comparison shows about how cells share, or do not share, life functions.

PART 1 • READ AND MARK

Underline every named structure in the passage. Write P, H, or B in the margin to show whether each structure belongs to paramecium, hydra, or both organisms. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Which two structures does the passage say are found in both paramecium cells and hydra cells?	Nuclei and cell membranes.
2	Compare how paramecium and hydra use structures for movement.	A paramecium uses beating cilia to move through water. A hydra uses contracting muscle-like cells to bend or shorten its body.
3	Why does a paramecium need several different structures within its one cell?	Because one paramecium cell must carry out all the life functions needed to keep the organism alive.
4	How is food digestion different in paramecium and hydra?	A paramecium digests food in food vacuoles inside its one cell. A hydra digests prey in a central cavity lined by cells.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Paramecium and hydra both have nuclei, but the nuclei are located in organisms organized very differently. In paramecium, one cell contains structures such as cilia and food vacuoles, so that cell carries out all life functions. In hydra, many cells cooperate. Stinging cells capture prey, cells lining the digestive cavity help break down food, and muscle-like cells help the body bend. These comparisons show that multicellular organisms can divide jobs among specialized cells.

Accept accurate comparisons drawn from the passage and clear descriptions of one cell doing all functions versus many cells cooperating. For the field-guide note, require two named structures and an explanation of the difference in cell organization.