Pond Cell Detectives

Use cell evidence to classify living things

L.6.1.5 "Provide evidence that organisms are unicellular or multicellular."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline evidence about how many cells each organism has, and circle evidence about what its cells do. Use your marks to decide which organisms are unicellular and which are multicellular.

Life in a Drop of Water

1 A drop of pond water can hold a whole living world. To decide whether an organism is unicellular or multicellular, look for evidence about its cells, not just its size. A unicellular organism is one cell that does all the work needed to live. A multicellular organism has many cells working together. Under a microscope, a paramecium swims by beating tiny hairs along its surface. Its body has no separate cells to count: the entire swimmer is one cell. That cell takes in food, moves, and gets rid of waste.

2 A patch of duckweed can look like green dots floating beside the paramecium. Each duckweed plant has a small leaflike body and often a root hanging below it. A thin slice of that body under a microscope shows many cells arranged side by side. Some cells contain green structures that capture light for making food. In the same water, a water flea darts through the pond. Its legs, gut, and outer covering contain many cells. Muscle cells help its legs move, while cells in its gut absorb nutrients.

3 Now imagine adding a speck of baking yeast to a drop of water on a slide. Each yeast cell can take in nutrients and grow on its own. Sometimes a small bud grows from a yeast cell. The bud may stay attached for a while, but it can separate and live as a new yeast cell. A cluster of attached yeast cells does not mean they form one body with parts that do different jobs. When you make a claim about any of these organisms, point to cell counts or cell jobs as evidence.

2 ANSWER WITH EVIDENCE

Use the passage

1. Is a paramecium unicellular or multicellular? Give evidence from the passage.

2. Is a duckweed plant unicellular or multicellular? Give evidence from the passage.

3. What cell evidence shows that a water flea is multicellular?

4. A yeast bud can stay attached to its parent cell for a while. Why is this not enough evidence to call yeast multicellular?

3 YOUR TURN

Your own words

Imagine scientists find a new pond organism. Write three sentences that give two observations about its cells and use those observations to argue that it is multicellular.

Pond Cell Detectives

PART 1 · READ AND MARK

Underline evidence about how many cells each organism has, and circle evidence about what its cells do. Use your marks to decide which organisms are unicellular and which are multicellular. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Is a paramecium unicellular or multicellular? Give evidence from the passage.	**Unicellular. The entire paramecium is one cell that takes in food, moves, and gets rid of waste.**
2	Is a duckweed plant unicellular or multicellular? Give evidence from the passage.	**Multicellular. A slice of its body shows many cells arranged side by side.**
3	What cell evidence shows that a water flea is multicellular?	**Its legs, gut, and outer covering contain many cells. Muscle cells move its legs, while gut cells absorb nutrients.**
4	A yeast bud can stay attached to its parent cell for a while. Why is this not enough evidence to call yeast multicellular?	**The bud can separate and live as a new yeast cell. Each yeast cell can take in nutrients and grow on its own.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The new organism has many connected cells that form one body. Some cells move the body, while other cells take in food. It is multicellular because its many cells work together and do different jobs.

Accept any accurate claim supported by cell evidence from the passage. For Your Turn, look for two invented observations that support the claim, not just a description of the organism's size.