Clues Under Glass

Use microscope observations as evidence for cell theory.

L.6.1.2 "Obtain and communicate evidence to support the cell theory."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline one observation in each paragraph that supports cell theory. Number the observations 1, 2, and 3 so you can use them as evidence in your answers.

Three Slides, Three Clues

1. A drop of pond water can hold tiny living things called paramecia. Under a microscope, a student watched one paramecium swim toward a bit of food and pull it inside its body. The student could see that its entire body was just one cell. This observation supports a part of cell theory: living things are made of one or more cells. A single cell can carry out the activities needed for life, such as taking in food and moving through water.

2. Next, the student placed a thin layer of onion skin and a swab of cheek cells on separate slides. Under the microscope, the onion skin showed many box-shaped cells packed together; the cheek sample showed many rounder cells. Each kind looked different, but both came from living things made of cells. Cells are the basic units that build living things and carry out life processes. In an onion, groups of cells help form the bulb. In a person, cheek cells help form the lining of the mouth.

3. Finally, the student checked a slide of living yeast twice, several minutes apart. At first, a small bump grew from one yeast cell. Later, the bump was larger and had become a new cell still attached to the first. Yeast can reproduce by budding. Watching this change supports another part of cell theory: new cells come from cells that already exist. One glimpse of a bump would not show where a new cell came from. Comparing observations over time gives stronger evidence that the new yeast cell grew from an older one.

2 ANSWER WITH EVIDENCE

Use the passage

1. A classmate says the paramecium must be made of many cells because it moves. What observation challenges that claim?

2. Which observations from the onion and cheek slides support the idea that different living things are made of cells?

3. What changed between the two yeast observations? Which cell theory idea does this support?

4. Why do two observations of the yeast provide stronger evidence about where the new cell came from than one observation of a bump?

3 YOUR TURN

Your own words

Imagine you watch one root-tip cell in a seedling divide into two cells under a microscope. In three or four sentences, state which cell theory idea this supports, explain how your observation supports it, and name one more observation that would strengthen your case.

ANSWER KEY

Clues Under Glass

GRADE 6 · L.6.1.2

PART 1 · READ AND MARK

Underline one observation in each paragraph that supports cell theory. Number the observations 1, 2, and 3 so you can use them as evidence in your answers. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	A classmate says the paramecium must be made of many cells because it moves. What observation challenges that claim?	**The student saw a paramecium swim and take in food, yet its entire body was one cell.**
2	Which observations from the onion and cheek slides support the idea that different living things are made of cells?	**The onion skin had many packed, box-shaped cells, and the cheek sample had many rounder cells.**
3	What changed between the two yeast observations? Which cell theory idea does this support?	**A bump on a yeast cell grew into a new cell attached to the first. This supports the idea that new cells come from existing cells.**
4	Why do two observations of the yeast provide stronger evidence about where the new cell came from than one observation of a bump?	**The observations show the bump growing from the older yeast cell into a new cell. One observation would not show that change.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

This supports the idea that new cells come from existing cells. I watched one root-tip cell divide into two cells. Both new cells came from the cell I was already watching. Seeing another root-tip cell divide the same way would strengthen my case.

Accept accurate observations paired with the cell theory idea they support. For Part 3, the added observation should provide further evidence about where new cells come from.