Cell Balance Crew

Trace the cell processes that support homeostasis.

SC.6.L.14.3 "Recognize and explore how cells of all organisms undergo similar processes to maintain homeostasis, including extracting energy from food, getting rid of waste, and reproducing."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each sentence that gives a detail about energy, waste removal, or making new cells. Write E, W, or R beside each underlined sentence to show which process it describes.

Cells at Work

1 Every living thing is made of cells. Whether a cell belongs to a bean plant, a mushroom, or a person, it must keep its inside conditions steady. This balance is called homeostasis. Cells take in food molecules and use them to release energy for their work. In plant cells, sunlight helps make sugars, and the cells later release energy from those sugars. Animal cells get food molecules from digested meals. Energy lets cells build materials, move substances, and repair damage.

2 As cells use food, they make waste materials. If waste built up, it could harm the cell and upset homeostasis. Cells move some wastes across their cell membranes into nearby fluids. In people, blood carries carbon dioxide from body cells to the lungs, where it leaves during exhaling. Cells also release other wastes that the kidneys help remove in urine. A single-celled paramecium can move wastes directly into the water around it. Removing waste helps cells keep working safely.

3 Cells also maintain living things by making new cells. Before a cell divides, it copies its DNA, the set of instructions inside the cell. Then one cell can split into two cells with matching DNA. In a growing child, cell division adds cells to bones and skin. After a cut, nearby skin cells divide to replace damaged cells. Single-celled organisms, such as many bacteria, use cell division as reproduction because each new cell becomes a separate organism. Thus cell division supports growth, repair, or reproduction.

2 ANSWER WITH EVIDENCE

Use the passage

1. What do cells do with food molecules, and what can the released energy help cells do?

2. How does carbon dioxide waste travel out of body cells in people?

3. What happens before a cell divides, according to the passage?

4. How is cell division useful in a growing child, and how is it reproduction for many bacteria?

3 YOUR TURN

Your own words

Choose a living organism not named in the passage. In three panels, sketch one of its cells getting energy from food, removing waste, and dividing to make new cells. Label the panels Energy, Waste, and New Cells, and write an 8- to 12-word caption under each panel.

ANSWER KEY

Cell Balance Crew

GRADE 6 · SC.6.L.14.3

PART 1 · READ AND MARK

Underline each sentence that gives a detail about energy, waste removal, or making new cells. Write E, W, or R beside each underlined sentence to show which process it describes. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What do cells do with food molecules, and what can the released energy help cells do?	**Cells use food molecules to release energy. The energy helps cells build materials, move substances, and repair damage.**
2	How does carbon dioxide waste travel out of body cells in people?	**Blood carries carbon dioxide from body cells to the lungs, where it leaves during exhaling.**
3	What happens before a cell divides, according to the passage?	**The cell copies its DNA.**
4	How is cell division useful in a growing child, and how is it reproduction for many bacteria?	**In a growing child, cell division adds cells to bones and skin. In many bacteria, each new cell becomes a separate organism.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Energy. Sketch of an earthworm cell receiving glucose. Caption: An earthworm cell releases energy from glucose absorbed from body fluid. Waste. Sketch of an earthworm cell releasing carbon dioxide. Caption: The cell moves carbon dioxide waste into surrounding body fluid. New Cells. Sketch of one cell splitting into two. Caption: After copying DNA, one earthworm cell divides into two cells.

Accept equivalent descriptions of extracting energy from food, removing cell waste, and cell division. In the three-panel response, each panel should show the named process and the captions should match the sketch.