Cell Clue Lab

Compare structures that identify plant and animal cells.

S5L3.c "Construct an explanation that differentiates between the structure of plant and animal cells."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each structure found in both plant and animal cells. Circle each structure that helps tell plant cells from animal cells.

Maya Looks Closely

1. During a microscope lab, Maya compares a thin onion peel with cells from the inside of her cheek. Both kinds of cells have a cell membrane, cytoplasm, a nucleus, and mitochondria. The membrane controls what enters and leaves. Cytoplasm fills the cell, the nucleus holds genetic instructions, and mitochondria release usable energy from food molecules.

2. Onion cells often look like orderly boxes because each has a stiff cell wall outside its cell membrane. The wall gives support and protection. Plant cells also contain chloroplasts, which use light energy to make sugar, and a large central vacuole, which stores water and other materials. These structures help many plant cells make food and stay firm.

3. Cheek cells do not have a cell wall or chloroplasts. Their cell membrane is the outer boundary, so their shapes can be less boxlike. Animal cells may have small vacuoles, but they do not have one large central vacuole like a typical plant cell. Looking for the wall, chloroplasts, and vacuole helps Maya tell the two cell types apart.

2 ANSWER WITH EVIDENCE

Use the passage

1. Which four structures are found in both the onion cells and the cheek cells?

2. Why do onion cells often look like orderly boxes?

3. Name two structures found in plant cells but not cheek cells. Tell what each structure does.

4. How is the cell membrane positioned differently in an onion cell and a cheek cell?

3 YOUR TURN

Your own words

Write a three-sentence explanation for a student comparing an unknown plant cell and an unknown animal cell. Identify two structures that would help you recognize the plant cell, explain what they do, and name one structure both cells share.

ANSWER KEY

Cell Clue Lab

GRADE 5 · S5L3.c

PART 1 · READ AND MARK

Underline each structure found in both plant and animal cells. Circle each structure that helps tell plant cells from animal cells. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Which four structures are found in both the onion cells and the cheek cells?	**Cell membrane, cytoplasm, nucleus, and mitochondria.**
2	Why do onion cells often look like orderly boxes?	**They have a stiff cell wall outside the cell membrane. The cell wall gives support and protection.**
3	Name two structures found in plant cells but not cheek cells. Tell what each structure does.	**Answers may include: cell wall, gives support and protection; chloroplasts, use light energy to make sugar; large central vacuole, stores water and other materials.**
4	How is the cell membrane positioned differently in an onion cell and a cheek cell?	**In an onion cell, the cell membrane is inside the cell wall. In a cheek cell, the cell membrane is the outer boundary.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I would identify the plant cell by its cell wall and chloroplasts. The cell wall supports and protects it, and chloroplasts use light energy to make sugar. Both cells have a nucleus, but an animal cell does not have chloroplasts or a cell wall.

Accept accurate explanations that distinguish plant-only structures from structures shared by both cell types. For the open response, students should name two plant-identifying structures, explain their functions, and name a shared structure.