

Cell Team Showdown

Compare the structures and jobs of plant and animal cell organelles.

SC.6.L.14.4 "Compare and contrast the structure and function of major organelles of plant and animal cells, including cell wall, cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria, and vacuoles."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each organelle name. Circle the words that tell what each organelle does, then number 1 beside details about both cell types, 2 beside plant-only details, and 3 beside animal-cell details.

Cells at Work

- ① Every living thing is made of cells. In a greenhouse, young bean plants use plant cells to build leaves, while the gardener's cat has animal cells in its muscles and skin. Both kinds of cells have a cell membrane, a nucleus, cytoplasm, mitochondria, and vacuoles. The membrane controls what enters and leaves the cell. The nucleus holds genetic instructions that direct cell activities. Cytoplasm is the jellylike material where organelles are found. Mitochondria release usable energy from food.
- ② Plant cells also have a cell wall outside the membrane. This stiff layer supports and protects the cell, helping a bean stem stay firm. Chloroplasts capture light energy to make sugars, so they are found in plant cells, not animal cells. Plant cells often have one large central vacuole that stores water and other materials. Animal cells usually have smaller vacuoles. In both cell types, vacuoles store materials for later use and help manage water.
- ③ Imagine a bean leaf cell and a cat's muscle cell working on the same sunny day. Both need a membrane to regulate movement of materials, a nucleus to guide activities, cytoplasm to hold organelles, mitochondria to release energy, and vacuoles for storage. Only the leaf cell has a cell wall and chloroplasts. The wall adds rigid support, while chloroplasts make sugars using light. The muscle cell gets sugars from food instead because it does not have chloroplasts.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Name four organelles found in both plant and animal cells. State one function for each.

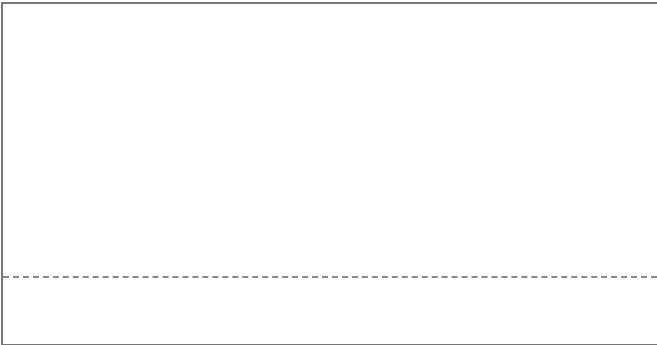
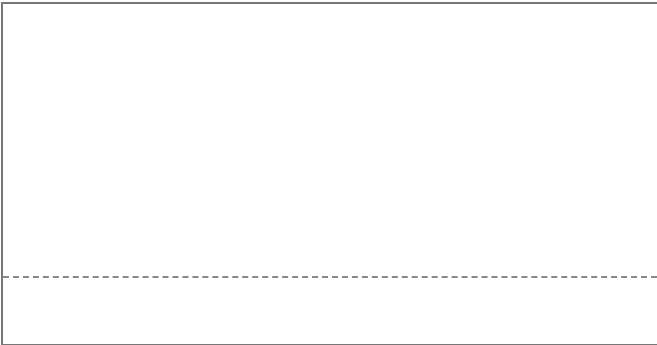
2 How is a cell wall different from a cell membrane in structure and function?

3 Why does a bean leaf cell have chloroplasts, but a cat's muscle cell does not?

4 Compare vacuoles in plant and animal cells. Include one similarity and one difference.

3 YOUR TURN _____ Your own words

Draw a simple plant cell in one panel and a simple animal cell in the other. Label the seven organelles named in the passage where they belong, then write two sentences comparing one shared organelle and one plant-only organelle.

	
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PART 1 • READ AND MARK

Underline each organelle name. Circle the words that tell what each organelle does, then number 1 beside details about both cell types, 2 beside plant-only details, and 3 beside animal-cell details. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Name four organelles found in both plant and animal cells. State one function for each.	Cell membrane, controls what enters and leaves. Nucleus, holds genetic instructions that direct activities. Cytoplasm, jellylike material where organelles are found. Mitochondria, release usable energy from food. Vacuoles also occur in both and store materials.
2	How is a cell wall different from a cell membrane in structure and function?	A cell wall is a stiff outer layer found in plant cells that supports and protects the cell. A cell membrane is found in both cell types and controls what enters and leaves the cell.
3	Why does a bean leaf cell have chloroplasts, but a cat's muscle cell does not?	A bean leaf cell has chloroplasts to capture light energy and make sugars. A cat's muscle cell does not have chloroplasts and gets sugars from food instead.
4	Compare vacuoles in plant and animal cells. Include one similarity and one difference.	Both plant and animal cells have vacuoles that store materials and help manage water. Plant cells often have one large central vacuole, while animal cells usually have smaller vacuoles.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Plant cell panel: label cell wall, cell membrane, nucleus, cytoplasm, chloroplasts, mitochondria, and one large central vacuole.

Animal cell panel: label cell membrane, nucleus, cytoplasm, mitochondria, and smaller vacuoles. Both cells have mitochondria, which release usable energy from food. Only the plant cell has chloroplasts, which capture light energy to make sugars.

Accept equivalent wording for organelle functions when the structure, location, and job remain accurate. In the drawing, accept varied shapes and placements if plant-only and shared organelles are correctly identified.