

Cell Model Detectives

Read cell details, then identify labels for accurate models.

S5L3.b "Develop a model to identify and label parts of a plant cell (membrane, wall, cytoplasm, nucleus, chloroplasts) and of an animal cell (membrane, cytoplasm, and nucleus)."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline every cell-part name in the passage. Write P beside each part found only in a plant cell model, so you can compare the two models.

Labels Tell the Story

- ① Cells are tiny living units. A scientist can make a model, such as a labeled sketch, to show parts that cannot be seen easily. In a cell model, each label should point to one part. The cell membrane forms an outer boundary. It controls what enters and leaves the cell. Both plant and animal cell models include a membrane, cytoplasm, and nucleus.
- ② Inside the membrane is cytoplasm, a jellylike material that fills much of the cell. The nucleus is also inside the cell. It helps direct the cell's activities. A labeled animal cell model needs arrows or lines from the words membrane, cytoplasm, and nucleus to the correct parts. These three parts are also found in a plant cell.
- ③ Plant cells have two additional labels. The cell wall is a stiff layer outside the membrane. It helps support and protect the plant cell. Chloroplasts are parts where sunlight is used to make food for the plant. An accurate plant cell model labels the membrane, wall, cytoplasm, nucleus, and chloroplasts. An animal cell model does not include a cell wall or chloroplasts.

2 ANSWER WITH EVIDENCE Use the passage

1 Which three parts must be labeled on both a plant cell model and an animal cell model?

2 In a plant cell model, which label belongs outside the membrane, and what does this part do?

3 Why should an accurate animal cell model leave out chloroplasts?

4 A student draws a plant cell with an outer membrane and another layer outside it. Which two labels should point to those layers, from inner to outer?

3 YOUR TURN Your own words

Draw a plant cell model in one panel and an animal cell model in the other panel. Use label lines to name every required part, and place the cell wall outside the membrane only on the plant cell model.

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PART 1 • READ AND MARK

Underline every cell-part name in the passage. Write P beside each part found only in a plant cell model, so you can compare the two models. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Which three parts must be labeled on both a plant cell model and an animal cell model?	cell membrane, cytoplasm, and nucleus
2	In a plant cell model, which label belongs outside the membrane, and what does this part do?	The cell wall belongs outside the membrane. It supports and protects the plant cell.
3	Why should an accurate animal cell model leave out chloroplasts?	Animal cells do not include chloroplasts.
4	A student draws a plant cell with an outer membrane and another layer outside it. Which two labels should point to those layers, from inner to outer?	cell membrane, then cell wall

PART 3 • YOUR TURN (SAMPLE ANSWER)

Plant cell panel: label lines identify the membrane, cell wall outside the membrane, cytoplasm, nucleus, and chloroplasts. Animal cell panel: label lines identify the membrane, cytoplasm, and nucleus.

Accept simple shapes and label lines if all required parts are named and placed accurately. The plant model must include a wall outside its membrane and chloroplasts, while the animal model must not include either part.