Name: **Date:**

HANDS-ON LAB

Comparing Cells

Plant cells and animal cells share many structures. However, each cell type has some unique characteristics. In this lab, you will use the microscope to examine and compare cells from different organisms.

PREDICT

What characteristics do plant and animal cells share? Make a prediction about the structures you expect to observe in both types of cells.

MATERIALS

- celery stalk, thinly sliced
- cover slips (2)
- *Elodea* leaf
- methylene blue stain
- microscope
- microscope slides (2)
- onion pieces, thinly sliced
- pipette, plastic disposable
- prepared slides of human cheek cells

PROCEDURE

1. If necessary, review the instructions for using a microscope and making a wet mount.
2. Use the Data Table to organize your observations and drawings.
3. Peel a thin slice of onion and place it on the slide.
4. Carefully add a drop of methylene blue to the onion. Avoid getting the stain on your clothes. Place one side of the cover slip against the methylene blue, and gently lower, being careful not to trap air bubbles.
5. Examine the onion under the microscope in low and high power, and draw what you see. Large structures such as the nucleus, cell membrane, and cell wall should be visible. Label as many cell structures as you can.
6. Repeat Steps 2 through 5 for the celery and the *Elodea*.
7. Examine prepared slides of human cheek cells under the microscope in low and high power. Draw what you see, and label as many structures as you can.

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DATA TABLE: COMPARISON OF PLANT AND ANIMAL CELLS

	OBSERVATIONS	DRAWINGS
Onion cells		
Celery cells		
Elodea cells		
Human cheek cells		

ANALYZE AND CONCLUDE

1. Identify the unique characteristics of each cell type.

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2. Which of the cells that you examined were animal cells, and which were plant cells? Was your prediction correct about the characteristics these cell types have in common? Explain your answer.

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3. What type of cells did you examine, eukaryotic or prokaryotic? Explain your answer.

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