Name: _____ Date: _____

Inquiry Investigation: Comparing Plant and Animal Cells

Always carry the microscope with two hands, one under the base and one on the arm. Keep the microscope upright.

Use the coarse-adjustment knob only with low power.

Use care when handling the slide and cover slip. They may shatter if dropped.

Question

How do plant cells differ from animal cells?

Hypothesis

If a microscope is used to view them, plant cells can be differentiated from animal cells by their structures.

Experimental Design

In this Investigation, you will prepare a wet mount of onion cells. You will use your slide to identify structures in plant cells. Then you will use a prepared slide to identify the structures in animal cells.

Materials

- apron
- safety goggles
- onion
- tweezers
- microscope slide
- water
- cover slip
- light microscope
- rubber gloves
- iodine stain (Lugol's)
- paper towel
- lens paper
- prepared slide of human epithelial (skin) cells

Analysis

(a) In what ways do the onion skin cells differ from the human skin cells?

_____

_____

_____

(b) Why is it a good idea to stain cells?

_____

_____

_____

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Inquiry Investigation: Comparing Plant and Animal Cells (continued)

(c) Predict the function of the onion cells you observed under a microscope. What prominent cell structures would justify your prediction?

(d) What typical plant cell structure appears to be missing from the cells of an onion bulb? Explain why this structure is missing. (Hint: Where is the bulb located?)

Evaluation

(e) A student viewing onion cells under a microscope sees just large, dark circles. What might have caused the dark circles? Did anyone in your class experience this difficulty?

(f) What microscope skills are important in this Investigation? Explain why they are important.

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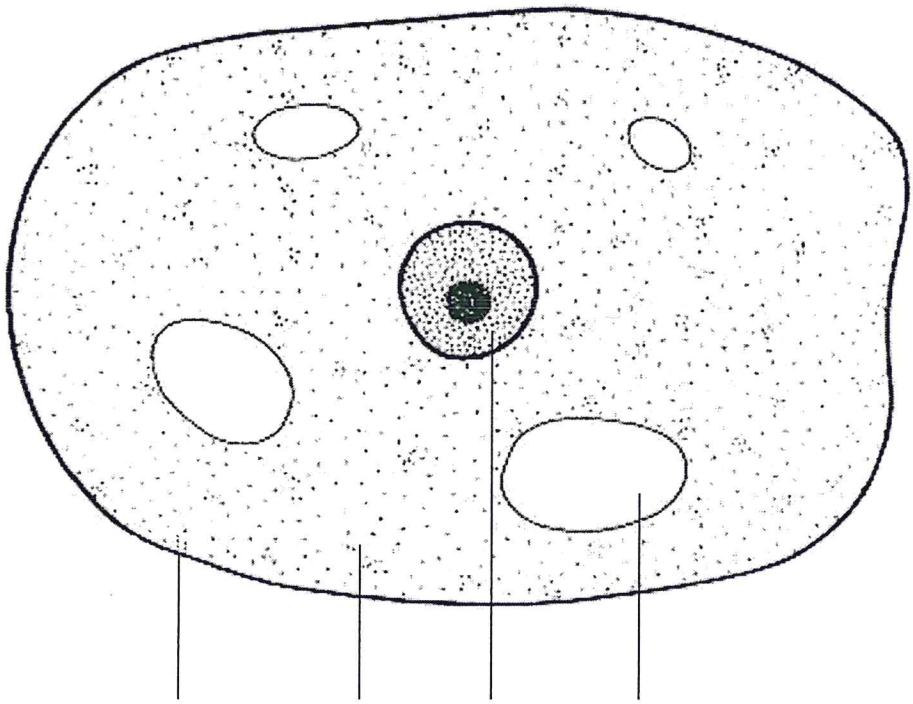
Diagram for Labelling: Parts of Plant and Animal Cells Seen through a Light Microscope



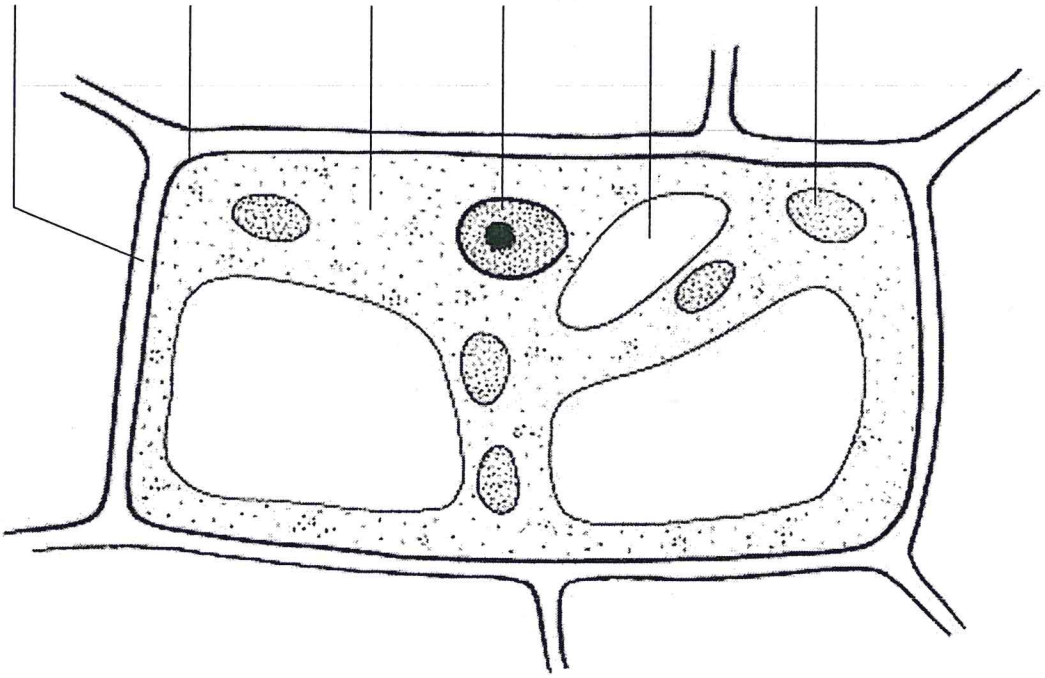


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Diagram for Labelling: Microscope