

Plant and Animal Cell Mystery

Background information:

In order to determine the cause of an accident or solve a crime, investigators rely on many factors, including witnesses, physical evidence, logic, and forensic science. In examining any tissue samples, for example, a preliminary step would be to investigate the type of cellular structure and organelles found in the cell. How can you determine if the sample is from a plant or an animal?

Most cellular features are too small to be viewed with a classroom compound microscope. The cell wall or cell membrane is visible as a boundary between cells. The nucleus will be visible inside the cell, although it may not be in the “center” of every cell. Plant and animal cells have many organelles in common, including the nucleus, nucleolus, rough & smooth endoplasmic reticulum, Golgi apparatus, ribosome, cell membrane and mitochondria.

Some organelles found in plant cells are not found in animal cells and vice versa. Centrioles, which help organize cell division in animal cells, do not occur in higher order plant cells. Vacuoles serve as sites for the storage of food molecules, breakdown of waste products, and hydrolysis of macromolecules in plant cells. The enlargement of plant cell vacuoles is a major mechanism of plant growth.

Introduction:

Mrs. Kruse and her dog Shadow stepped out the front door for their usual morning walk on a blustery December morning. The next thing she knows - she is lying at the bottom of the icy steps and bleeding from her hand!

Mrs. Kruse has a concussion and cannot remember how she wound up injured at the bottom of the stairs. A neighbor informed police that she saw Mrs. Kruse's dog barking and chasing after a hopping object around the time in question. With the icy winter conditions, it is possible that this incident was nothing more than an excited dog and icy stairs. In order to rule out foul play, however, evidence was collected from the scene. The purpose of this lab is to examine four unlabeled slides obtained from the staircase and front yard and to determine if the slides contain plant cells or animal cells.

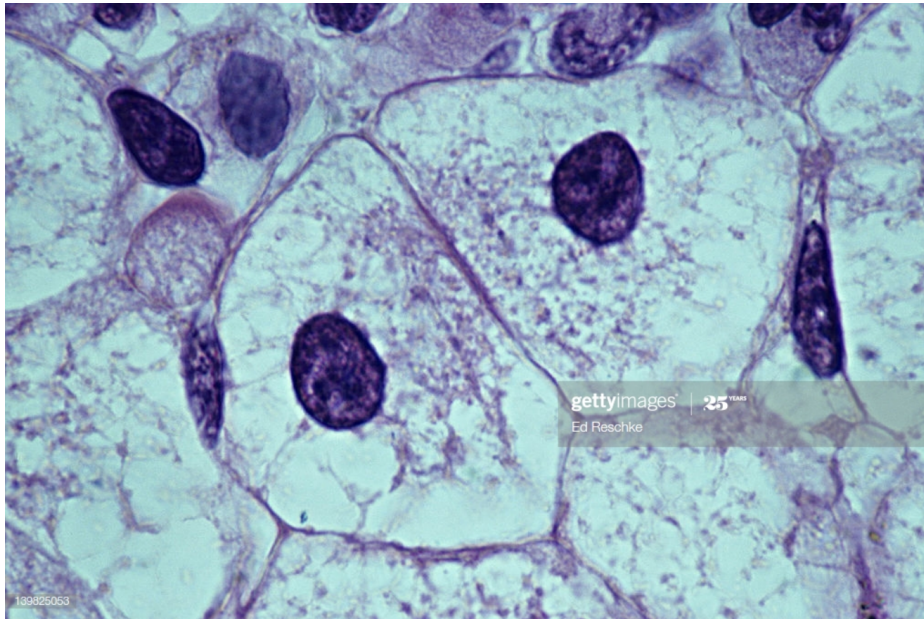
First, go to [the cells alive website to see a model of an animal and plant cell.](#)

Examine the images below. They are pictures taken through a microscope of the slides of tissue samples collected from the scene to figure out the rest of the story! Please complete the table below the images based on your observations!

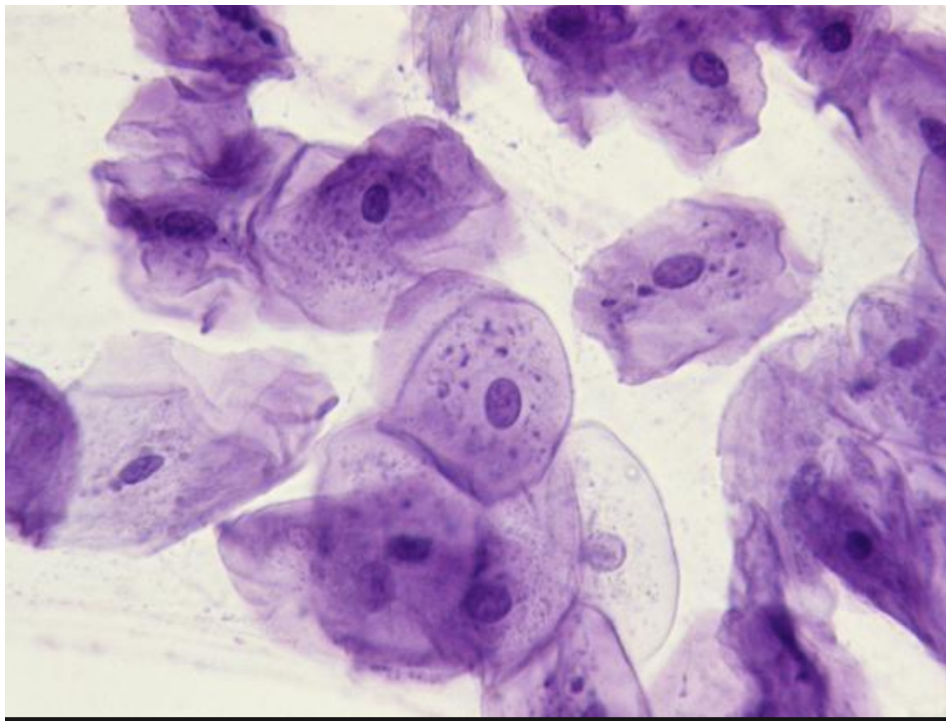
Unknown Slide/Picture #1:



Unknown Slide/Picture #2:



Unknown Slide/Picture #3:



Unknown Slide/Picture #4:



Make observations of each cell picture and complete the chart below:

Unknown Slide/Picture	Plant or Animal Cell?	Observations and Evidence (why do you think that? Do you notice an organelle or something about the shape and structure of the cell that makes you think it is a plant or animal cell?)
1		
2		
3		
4		