

Name: _____

Investigation: Comparing Plant and Animal Cells

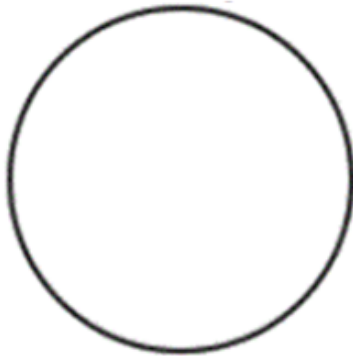
Part 1: Observing Plant Cells

- 1. Obtain a piece of onion and use forceps to peel the membrane from the underside of the onion. This will appear very thin and mostly transparent.
- 2. Place the membrane flat on the slide and use your forceps to spread it out, avoid having any folds in the membrane.
- 3. Place a drop of iodine on the membrane. (Caution: iodine will stain skin and clothes too!)
- 4. Carefully place a cover slip over the specimen.

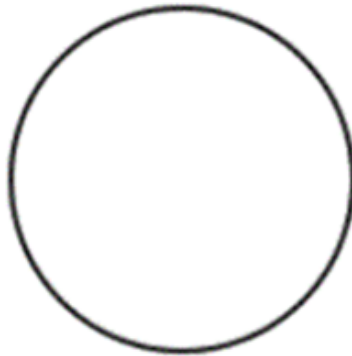


View the microscope with scanning, low and high power objectives. You may need to review the steps of using the microscope. Draw your cells as they appear in the viewing field. On the 400x image, **label the cell wall, nucleus, and cytoplasm.**

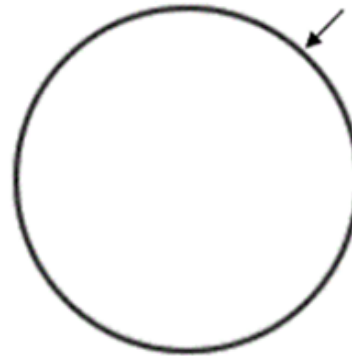
Scanning (40x)



Low Power (100x)



High Power (400x)



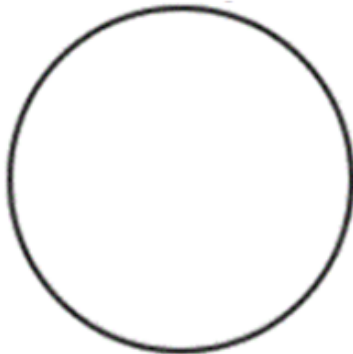
Label: Cell wall Cytoplasm Nucleus

Part 1: Observing Animal Cells

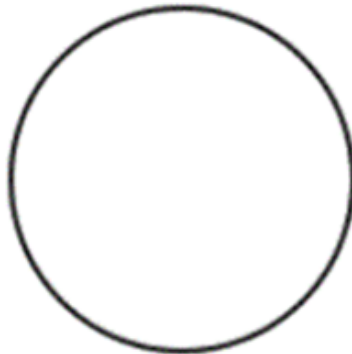
- 1. Clean the slide you created with the onion by rinsing and drying it. Throw the cover slip away.
- 2. Put a drop of methylene blue or other stain on the slide.
- 3. Gently scrape the inside of your cheek with the flat side of a toothpick and stir the end of the toothpick into the stain to create a smear.
- 4. Place a coverslip onto the slide. (Cover slips are small, thin, square plastic or glass pieces).

Draw your cells as they appear in the viewing field. On the 400x image, **label the cell wall, nucleus, and cytoplasm.**

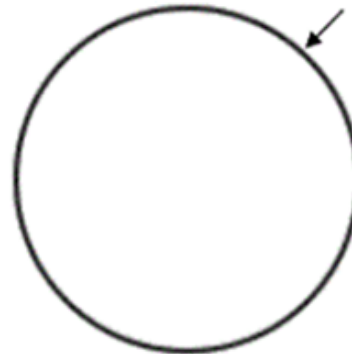
Scanning (40x)



Low Power (100x)



High Power (400x)



Label: Cell Membrane Cytoplasm Nucleus

Analysis

1. Describe two ways in which the plant and animal cells are similar based on your observations.
2. Describe two ways in which they are different based on your observations.
3. Consider that there are many organelles and structures of the cell that were not visible using the light microscope. List two organelles that might have been visible if you were using a microscope that had a greater magnification.
4. In both cases, a stain was used in the preparation of the slide. Why do you think staining is necessary?
5. Create a Venn diagram that shows how plant and animal cells are different and the same. You should include information from your notes or textbook (not just observations from this lab.)