

 **Activity 4.1.2 Examining Cell Structure****Purpose**

Cellular structures differ between animals and plants. While structures function similarly in animal and plant cells, they may look different. In plant cells, the protective layer of the cell is rigid giving the plant structure. Animals have bones or an exoskeleton to give them structure; therefore, the protective layer is a soft membrane. The cell wall in plants functions similarly as the cell membrane in animals but looks distinctively different. Can you detect the difference between a plant cell wall and an animal cell membrane?

Microscopes are important tools in the animal science industry. Reviewing proper care and use of the microscope will assist you during other activities, projects, and problems in this course. Can you demonstrate proper care and use of a microscope while determining differences in cells?

Materials**Per group of four students:**

- Onion slice
- Prepared animal cell slide
- Methylene blue dye
- Lens paper

Per student:

- Pencil
- *Agriscience Notebook*

Per pair of students:

- Compound microscope
- 2 slides
- 2 cover slips
- Dropper
- Water
- Forceps
- Razor blade
- Toothpick

Procedure

You will prepare slides for viewing under a microscope in this activity. Take turns preparing slides with a partner. You and your partner will share lab resources within a group of four students.

Part One – Making a Wet Mount Slide

Start by practicing making a wet mount slide. The objective is to make a clear slide free of air bubbles that can distort the image under magnification.

1. Your teacher will review microscope care and use.
2. Obtain materials from your teacher.
3. Clean the slide with the lens paper. Prevent fingerprints by holding the edge or corners of the slide.
4. Use forceps to peel a very thin layer of skin from the onion. The skin should be thin enough to see through.
5. Use a clean slide and place one drop of water in the center of the slide.
6. Using forceps carefully place the small slice of onion skin on the water drop. Try to avoid air bubbles.
7. Add another drop of water on top of the onion skin.
8. Add the coverslip at a 45° angle to avoid air bubbles. Blot dry any water on the underside of the slide.

Name: _____

Activity 4.1.2 Student Worksheet

Table 1. Observations

Plant Cell

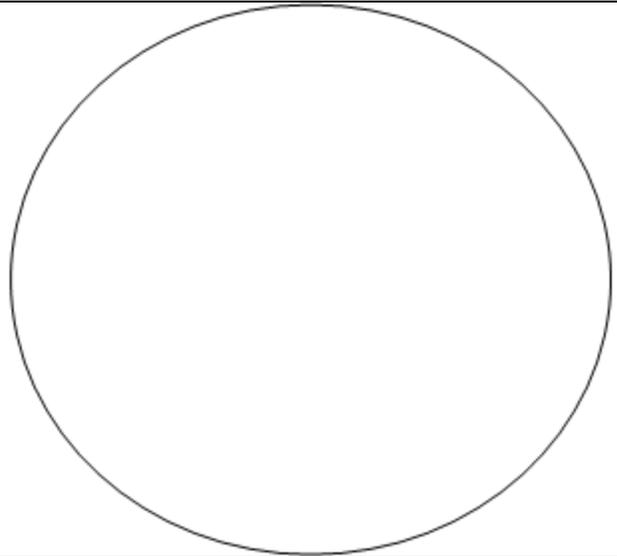
Circle which power was used.

Low-power

High-power

On your drawing of the plant cell, label as many parts of the cell as possible including the following.

- Cell wall
- Cytoplasm
- Nucleus
- Nucleoli
- Vacuole



Animal Cell – Cheek

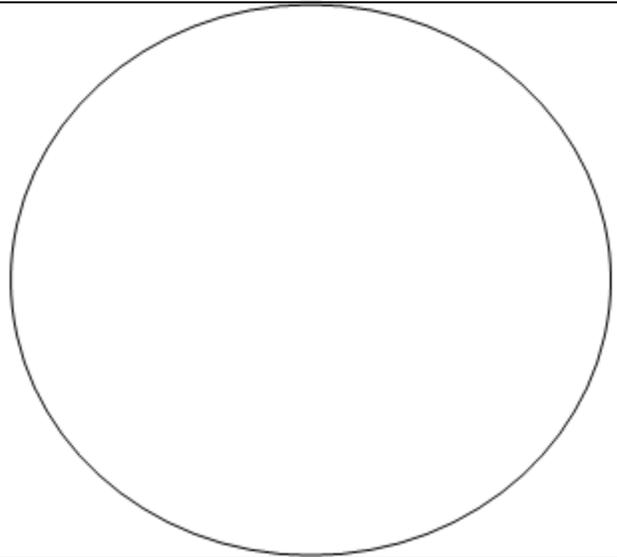
Circle which power was used.

Low-power

High-power

On your drawing of the animal cell prepared from your cheek slide, label as many parts of the cell as possible including the following.

- Cell membrane
- Nucleus



Animal Cell – Prepared Slide

Label each organelle that you can identify with the microscope.

