

Microscopes!

Supplies:

- 1 hand lens for each group of students
- 1 dissecting microscope or magiscope for each group of students
- 1 compound microscope for each group of students
- 2-3 plastic well slides for each group of students
- Cork
- Razor blade and container for disposal such as a Petri dish
- Dropper bottle of water
- Plant parts such as celery for stems, carrots for roots, any type of leaf, and complete flowers (with both male and female parts)
- 1 student worksheet per student

Directions and tips:

- Students are introduced to the different types of microscopes or magnifiers they will be using. If accessible to your age group, talk about the different levels of magnification possible with each type of magnifier.
- Simple multiplication can be practiced by talking about the fact that the ocular lenses magnify things 10x so that you must multiply the power of the objective times the power of the ocular to get the full magnification.
- Make a very thin slice of cork and place in a well slide with water. Have students examine with a hand lens, then dissecting microscope or compound microscope.
- Most students younger than the 4th grade should not use a compound microscope. Use either a dissecting microscope or magiscope with children in the 3rd grade or below.
- Students can then choose to look at stem, root, leaf, or flower next. Use a razor blade to cut a very thin slice of stem or root (and possibly leaf) and mount your slice in water in a well slide.
- With older students, an experiment can be done to explore the vascular system of the plant. A stem of celery can be placed in food coloring overnight. Thin slices will reveal the location of the vascular tissue. Stems of celery with leaves work better for this.
- Focus on the differences that can be observed with different levels of magnification.