

Pre-Lab, Skills, and Standards Alignments

DIVERSITY OF LIFE

Examine the five kingdoms of life through a microscope! Students will use compound light microscopes to view animal, plant, fungi, protist, and bacterial cells in this introductory exploration of biodiversity and classification.

Lab Length: 1–2 hours

Suggested Pre-Lab Teaching

- Compound microscope anatomy and use
- Characteristics of life
- Plant and animal cell structures

Lab Skills

- Operate a compound light microscope.
- Record microscope observations.
- Prepare a wet-mount slide.

Conceptual Knowledge/Skills

- Compare and contrast cell types.
- Describe characteristics that make each Kingdom unique.

New York State Science Learning Standards/NGSS

Science and Engineering Practices	Disciplinary Core Ideas	Cross Cutting Concepts
<p><u>Planning and Carrying Out Investigations</u> Conduct an investigation to produce data to serve as the basis for evidence that meet the goals of an investigation.</p>	<p><u>LS1.A: Structure and Function</u> All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular). (MS-LS1-1)</p>	<p><u>Scale, Proportion, and Quantity</u> Phenomena that can be observed at one scale may not be observable at another scale.</p> <p><u>Patterns</u> Similarities and differences in patterns can be used to sort and classify organisms.</p> <p><u>Structure and Function</u> Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the shapes, composition, and relationships among its parts; therefore, complex natural and designed structures/systems can be analyzed to determine how they function.</p>