

Biology Lab Investigation #3: Cell Theory

What are Observable Features of Samples of Materials Taken From Living Things?

Introduction: Biologists study living things. As such, biologists have a set of characteristics that describe living (biotic) material. Since both living and non-living materials are made of smaller parts, scientists may use microscopes to observe some of these smaller parts.

Your Task: Use a microscope to examine a variety of items. You will develop a set of observable features that can be used to describe living material.

The guiding question of this investigation is: ***What are observable features of samples of materials taken from living things?***

Materials: You may use any of the following materials during your investigation.

- Compound light microscope
- Prepared slides with a sample of eight different materials
- Lens paper and isopropanol to wipe eye pieces
- Set of several colored pencils or markers
- Metric ruler, thin and transparent for possible measurements

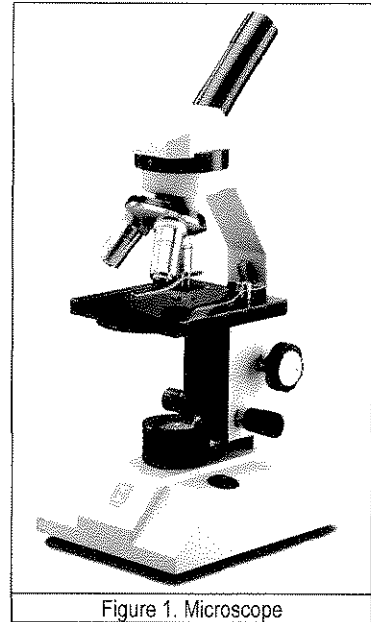


Figure 1. Microscope

Safety Precautions: Review and follow all normal safety precautions for the use of microscopes.

Getting Started: You and your group will use a microscope to make observations of a variety of materials. First, carefully inspect your microscope and work area for appropriate safety concerns. After examining (including drawing what you see and recording the level of magnification) and re-examining several of the materials under the microscope, you will need to note several similarities and differences among them. After completing your observations, consider if and how the different materials can be grouped or classified.

As you work through this activity, think about how scientists develop a scientific theory. Also, think about the social and cultural influences on science.