



## **WORKING WITH MICROSCOPES**

- A. HISTORY, PARTS, AND USE OF A MICROSCOPE**
- B. IDENTIFY PARTS OF A CELL: PREPARED SLIDES**
- C. PREPARING A SLIDE: CHEEK AND PLANT CELLS**

### **LESSONS:**

1. History, parts, and use of microscope.
2. Using a microscope to look at unicellular and multi-cellular organisms. (prepared slides)
3. How to prepare a wet mount slide, cheek cells and plant (onion) cells.
4. View cells under low and high power objective lenses to identify the cytoplasm, cell membrane, nucleus, and cell wall if applicable.

### **OBJECTIVE:**

- A. Students will review the parts, history, and use of a microscope.
- B. Students will be able to properly set up and use a microscope using low and high power objective lenses with a prepared slide.
- C. Students will be able to properly prepare a dry and wet mount slide and view the slide using low and high power objective lenses.
- D. Students will understand that all living organisms are composed of cells that are usually visible through a microscope and that some organisms are made of a collection of similar cells.

### **MATERIALS:**

Jump Drive (How to use a Microscope Power Point and Cells Power Point)  
Student Handouts  
Small group set of microscopes  
Printer paper containing letters to cut out  
Prepared Slides (variety)

Blank slides  
Cover Slips  
Methylene Blue  
Iodine  
Tooth picks  
Teacher provided (red onion)  
Pipettes or droppers  
Scissors (teacher provided)  
Tweezers

### **STANDARDS (New Mexico State Standards)**

**Standard I:** Understand the processes of scientific investigations and use inquiry and scientific ways of observing, experimenting, predicting, and validating to think critically.

2. Use appropriate technologies (e.g., calculators, computers, balances, spring scales, microscopes) to perform scientific tests and to collect and display data.

**5-8 Benchmark I:** Use scientific methods to develop questions, design and conduct experiments using appropriate technologies, analyze and evaluate results, make predictions, and communicate finding

#### **Strand II: Content of Science**

**Standard II (Life Science):** Understand the properties, structures, and processes of living things and the interdependence of living things and their environments.

**5-8 Benchmark III:** Understand the structure of organisms and the function of cells in living systems.

1. Understand that all living organisms are composed of cells from one to many trillions, and that cells are usually only visible through a microscope.
2. Know that some organisms are made of a collection of similar cells that cooperate (e.g., algae) while other organisms are made of cells that are different in appearance and function.

### **RESOURCES:**

<http://www.stancoe.org/patterson/cms/staff/documents/themicroscope-howtouse.pdf>

Susana K. Elliot, <http://susannaelliott.efoliomn.com>

<http://blog.microscopeworld.com/2012/04/amoeba-under-microscope.html>

[www.schools.manatee.k12](http://www.schools.manatee.k12)

[www.oakdome.com](http://www.oakdome.com)

