

# Biology

## Core Activity

**Standard # 3520-03** Students will analyze how genetic information is passed from one cell to another.

**Objective # 3520-0301** Students will compare and contrast types of cellular reproduction.

**ILOs:** Use basic process skills involving making and categorizing observations. Manifest scientific attitudes and interests by showing curiosity and seeking evidence before drawing conclusions. Demonstrate awareness of the social and historical aspects of science regarding the importance of technological advances in science and the importance of science in building the quality of daily human life.

**Topic:**  
Heredity

3520-03

### Description of Activity

*Activity Title:* Mitosis

*Activity Duration:* The students will spend approximately one 45 minute period using microscopes and prepared slides of cells in various stages of division.

*Materials:* Make sure that students have access to at least the following materials: light microscopes, colored pencils, prepared slides of onion root tips (l.s.), lens paper, reference materials.

### Background Information

Students should have a working knowledge of cell structure and microscope usage.

### Teaching and Learning Strategies

Don't tell the students too much - Ensure the inquiry experience. (i.e., you might cover any labeling on the slides and avoid exact descriptions of what students "should" be looking for.)

Have reference material on mitosis and cell division readily available for student use.

### Invitation to Learn

*Problem:* State that there are some differences in the cells on the microscope slide. Explore... (Invite students to explore the cells and record their observations.)

*Safe Operating Procedures:* Be careful with sharps such as glass slides.

## **Summary of Learning**

### *Assessment of Learning*

1. What did you recognize as differences between the cells?
2. Group the cells you described in question one into distinct groups and draw a representative cell from each group. Tell why you made each group.
3. Where did the cells look different?
  - A. Nearer the rounded tip.
  - B. In the middle.
  - C. Nearest the wider end.
  - D. All looked the same.
4. Based on what you understand about cells, what were the colored string-like structures found in some of the cells?
  - A. Mitochondria
  - B. Cell membranes
  - C. Chromosomes
  - D. Chloroplasts