Biology Core Activity

Standard # 3520-02Students will understand the	Topic:
classification and function of cells.	Cells
Objective # 3520-0201Investigate the structure and function	
of cells.	3520-02
ILOs: Make observations. Develop and use categories to	
classify observations. Construct diagrams to describe and	
summarize data. Share results.	

Description of Activity

Activity Title: What Can You Find in a Cell?

Activity Overview: Students will prepare slides of different cell types for examination. Students will sketch the cell structures observed through a microscope. Students will describe, in their own terms, the differences and similarities between the cells they prepared. Students will use this information to categorize the cells they study.

Duration: Fifty minutes.

Background Information

Specimen tissues used for wet mount slide preparation should be very thin. Teachers should review procedures for making a wet-mount slide and for proper use and care of a microscope.

Teaching and Learning Strategies

Teachers should allow students to explore and describe the differences between plant and animal cells without propr instruction on the names and shapes of cell structures. Students should use their own terminology to describe what they see. Introduction of scientific terminology will come after the inquiry investigation. Students should share the results of their investigation with the class. This could be used as a springboard into a class discussion on the function of organelles.

Development of Laboratory Skills and Tools

Prerequisite instruction and preparation should include practice in the proper use of a microscope and preparation of a wet-mount slide.

Invitation to Learn

Problem: You will prepare at least two animal cells and two plant cells to identify characteristics that will allow you to categorize cells. Your job is to sketch and identify the differences and similarities between plant and animal cells. Identify characteristics that will allow you to categorize cells.

Safe Operation Procedures: Students will need to exercise care when using razor blades to scrape cells.

Materials, Facilities and Resources:

microscope	water	stains (toluidine blue and iodine)
razor blade	slides and cover slips	
pipette	sources of cells	

Cell sources might include things such as: onion, *Elodea*, potato, red bell pepper, green bell pepper, wandering jew leaf, beef liver, chicken muscle, human cheek, or any other interesting plant or animal cells. You may even choose to use prepared slides.

Access to electrical outlets for microscopes and a sink are necessary for this lab.

Toluidine blue and iodine stains can be obtained from scientific supply companies such as Carolina Biological Supply, Sargeant-Welch, Flinn, or Frey.

Summary of Learning

- 1.Summarize the differences and similarities between a typical plant cell and a typical animal cell.
- 2.Do animal cells stained with iodine react differently than plant cells stained with iodine. Why might that be?
- 3. Were the cells from the plants primarily...

A.Square

B.Circular

C.Rectangular

D.Octagonal

4. Were the cells from the animals primarily...

A.Square

B.Circular

C.Rectangular

D.Octagonal