

**Project FOCUS  
Best Lessons  
FIFTH GRADE**

**Title of Lesson:** Observing Plant and Animal Cells Under Microscopes

**Theme:** Life Science

**Unit Number:** 1      **Unit Title:** Cells and Microorganisms

**Performance Standard(s) Covered (enter codes):**

S5CS1. Students will be aware of the importance of curiosity, honesty, openness, and skepticism in science and will exhibit these traits in their own efforts to understand how the world works.

S5CS3. Students will use tools and instruments for observing, measuring, and manipulating objects in scientific activities.

S5L3. Students will diagram and label parts of various cells (plant, animal, single-celled, multi-celled).

**Enduring Standards (objectives of activity):**

**Habits of Mind**

- Asks questions
- Uses numbers to quantify
- Works in a group
- Uses tools to measure and view
- Looks at how parts of things are needed
- Describes and compares using physical attributes
- Observes using senses
- Draws and describes observations

**Content (key terms and topics covered):**

Animal Cells, Plant Cells, Microscopes, Eukaryotes

**Learning Activity (Description in Steps)**

**Abstract (limit 100 characters):** Students will observe plant and animal cells under microscope and sketch what they see.

**Details:** Students were first introduced to the different types of cells (animal and plant). By discussing the images seen in their textbooks and comparing and contrasting each. The students were then split up into small groups to observe plant and animal cells.

The plant cells were prepared by taking thin peels off of an onion skin and stained with an iodine solution. Animal cells were prepared earlier by swabbing the inside of a cheek and spreading the cells on a slide to be stained with methylene blue.

Each of the microscopes were focused on the cell samples beforehand so the students could more easily accomplish the lesson. Each student was asked to sketch their observations in a Science journal, then label a worksheet with both cell types on it for homework. It was important to ask questions during the students observations to ascertain whether they understood that the plant cells have a more rigid and repeating structure, while animal cell shapes vary.

**Materials Needed (Type and Quantity):**

- Light Microscopes (4-8 depending on group sizes)
- Microscope slides (equal to the number of microscopes)
- Slip covers for microscope slides
- Onion
- Iodine or methylene blue stain
- Q-tips to obtain cheek cells
- Print out of animal and plant cells for labelling

**Notes and Tips (suggested changes, alternative methods, cautions):**

The students were excited to use microscopes, yet they liked to change the focus often, so much of the time was spent refocusing the scope on the slides. Mandatory laboratory cautions should be taken when dealing with the staining solutions.

**Sources/References:**

- 1) Harcourt Science Publishers "Science Grade 5" 2)
- 2)
- 3)