

## Underneath the Microscope

<b>Subject Area</b>	Cells and Heredity
<b>Age or Grade</b>	8 <sup>th</sup>
<b>Estimated Length</b>	50 minutes (one class period)
<b>Prerequisite knowledge/skills</b>	Students have completed the reading and problems on the cell introduction chapter, including the section on different types of microscopes.
<b>Description of New Content</b>	This activity is to enhance the skills necessary to operate a microscope.
<b>Goals</b>	Students should be comfortable with the vocabulary associated with microscopes and they should know how to place slides and focus them properly.
<b>Materials Needed</b>	Fixed slides of various plant and animal cells, any available compound light microscope
<b>Procedure</b>	<p><b>Opener-</b> Ask various open ended questions concerning microscopes: What are the different types? How do they work? How do they allow us to view the specimen?, etc. (5 minutes)</p> <p><b>Engagement-</b> Distribute Electron microscope image handout (see references). Have students try to identify the objects shown underneath an electron microscope. (Students can work individually at first, and then consult surrounding classmates). Review handout as a group. Ask students to share their ideas and then reveal the answers. (10 minutes)</p> <p><b>Development-</b> Have compound light microscopes set up around the room at stations with slides containing animal and plant cells. In their notebooks students should: 1) Draw what they see, 2) Label cell type (plant,</p>

	<p>animal), 3) Identify any visible organelles.</p> <p><b>Closure-</b> Discuss as a class how the cells they observed were similar and different, in addition to the organelles visible under the microscope.</p>
<b>Extensions</b>	If materials are available, have students create slides of their own cheek cells using sterile swabs and clean slides.
<b>References</b>	See electron microscope worksheet on the Homepage. (Answers: spider web, fly head, computer chip, needle and thread, popped popcorn, human hair, snowflake)