

MICROSCOPE LAB: BACTERIA

STUDENT LEARNING OBJECTIVES

1. Students will be able to identify different shapes and types of bacteria using the microscope.

MATERIALS

Harmful vs. Helpful Bacteria (PowerPoint)
Microscope Lab: Bacteria Worksheet
4 Micro-Slide Viewers
4 Sets of Micro-Slides
Bacteria Cards (3 Shapes of Bacteria, Diphtheria, Typhoid Fever, Food-Poisoning Bacteria, Blood-Poisoning Bacteria, Cheese Bacteria, Vinegar Bacteria)

PROCEDURES

Agenda

- Discuss extra credit opportunities
- Microscope Lab

Discuss Extra Credit: (5 min):

For extra credit, students are encouraged to find an article related to viruses, bacteria, or both and discuss how the information in that article relates to everyday life. Students are given complete freedom to decide how much they want to write. If a student wants to write a short paragraph they will receive a few points, if they want to write a full page they will receive more points, and if they want to write a page and present orally, they will receive lots of points.

Microscope Lab: (40 min)

Lab Setup

Ten stations will be setup on the counters around the room. Four stations will have Micro-Slide viewers with three of them showing the “3 Shapes of Bacteria” slide and the fourth showing the “Blood-Poisoning Bacteria” slide. Five stations will have laminated bacteria cards on display representing the remaining bacteria slides. There are duplicates of each bacteria card, but one must be taped to the counter. The tenth station will have a high-powered microscope setup with a bacteria smear. This station serves only to show students “real” bacteria.

Hook (5-10 min)

Through the Power-point presentation, students are introduced to a few differences between harmful and helpful bacteria. The PPT shows students what harmful and helpful bacteria look like, and what people look like that are infected by helpful or harmful bacteria.

Body (30 min)

Students are given instructions on how to use the Bacteria cards and Micro-Slide viewers. Students will use their worksheet to sketch bacterial cells and answer questions. In order to complete the worksheet, students will have to observe seven photos of bacterial cells, two of which are only observable through the Micro-Slide viewer. The worksheet will be handed in at the end of class and graded for completeness. Participation points will be awarded based on the students' effort in making sketches and answering questions. If students finish early, they should start working on the Bacteria worksheet.

Wrap-up: (2 min): Students will turn in the assignment.

ASSESSMENT

Using the worksheet provided, students will identify, sketch, and answer questions about seven different types of bacteria.

REFERENCES

BIOLOGY: The Dynamics of Life
Glencoe Science, Florida SSS Edition