

Microscopic Life

Summary

Student will observe and describe cellular structures and functions of pond microorganisms. They will identify cell parts and determine how the organisms carry out the functions of life such as extracting energy from food, removing waste, and producing their own food. They will design an experiment to investigate growth and reproduction.

Time Frame

2 class periods of 60 minutes each

Group Size

Small Groups

Materials

- [student sheet](#)
(attached)
- pond water mixture (can be made from water (pond or puddle water is best but not essential) and a handful of hay or grass. It needs to sit in a warm room for about 5 days to have maximum growth)
- microscopes
- coverslips
- droppers or pipettes
- various chemicals
- heat source
- cold source

Instructional Procedures

Day 1

Prepare the pond water mixture several days in advance. Copy the student sheets if desired.

Read the introduction and procedures with students.

Allow time for students to work with the microscopes.

If you have a flex camera or video camera that fits over the top of a microscope, project a slide on the screen while students work. Allow students to share a good slide they make.

Ask student groups to develop their hypothesis for their experiment and write it on the board. Go over the hypothesis and make sure there is not overlap and that they are testable.

If there is time, allow students to make the changes to their pond that they are going to investigate.

Day 2

Allow students to make the changes to the pond if they have not already. They can make another observation immediately.

If the ponds are already altered, an observation is all that is needed.

Day 3-5 (or whatever number seems needed)

Final Day

Ask students to make a final observation and answer the analysis questions.

Each student group should report on their results.

Assessment Plan

Scoring Guide:

1. Students prepare slides and follow directions for microscope use.....4
2. Student drawings are reasonably accurate.....4
3. Questions are answered correctly.....4

Bibliography

Lesson Design by Jordan School District Teachers and Staff.

Authors

[Utah LessonPlans](#)