# Chapter 23 Project

## Peeping at Protists

### Project Goal + Timeline

In this project, we will be reviewing your knowledge of protists by using a microscope to observe protists and their behaviors. You'll try to apply your knowledge of protists to classify the organisms you find. This project should be completed within a group of two students in a two-hour time frame.

### Directions

#### Part 1: Check Out Some Protists

You'll use a microscope to observe and identify protists from a sample of water. First, prepare a wet mount using a drop of pond water. To prepare a wet mount, use a pipette to drop a small sample of the water on a glass microscope slide, then gently place the coverslip on top of the water. Use a paper towel to wipe up any excess. Check your wet mount for any bubbles. A large bubble will obstruct your view of any microorganisms. If you do see a large bubble, try making the mount again with a smaller drop of water.

Place your wet mount in the microscope stage. Use the 10X objective to search for any living, moving organisms. Once you've found one, proceed to the 40X objective and focus on the organisms. Try to dim the light or use minimal light when viewing these small organisms. The excess heat created by the light bulb may injure these tiny creatures.

Record your observations in Table 1. Draw each of the organisms and note any specialized structural features. Describe the movement of the organism. Try to discern if you see ciliates (protozoans with fine hairs) or flagellates (protozoans with a whiplike tail). Attempt to identify each organism using the information from Chapter 23.

| | Organism 1 | Organism 2 | Organism 3 |
|---|---|---|---|
| **Drawing** | | | |
| **Special Structures** | | | |
| **Movement Pattern** | | | |
| **Ciliate or Flagellate** | | | |
| **Potential Identification** | | | |

### Part 2: Review Questions

1. Why are protists difficult to classify?
2. Consider the identifications you made of the protists you observed. What supergroup does each of your protists belong to? What are some of the key characteristics of each of these supergroups?
3. Name and describe three structures protists may use for movement. How are these structures similar? How are they different?
4. The endosymbiotic theory helps explain the origin of the first eukaryotic cells (protists). What does this theory propose? What evidence is there in support of this theory?
5. What functions do the two kinds of nuclei within *Paramecium* perform?
6. Describe how the parasite *Plasmodium* causes disease in humans.

## Project Materials

- Pen or pencil
- Pond water
- Microscope slides
- Coverslips
- Light microscope
- Project table and questions

## Student Checklist

- ☐ Locate three potential protists in a pondwater sample
- ☐ Complete Table 1 with drawings, observations, and classification
- ☐ Complete the review questions