

## Daphnia



**Essential Question:** Describe how the population of *Daphnia* changes over time when grown in a closed system.

### Overview

A population is defined as a group of individuals from the same species that occupy the same space. In this activity, you will be observing an aquatic population of *Daphnia*. *Daphnia* are small aquatic crustaceans that live in freshwater ponds, lakes, and slow-moving streams. Their primary food is algae (tiny water plants), but they also feed on bacteria in the water. In this investigation, you will observe a sample of *Daphnia* for several days and graph the population of *Daphnia*. You will also calculate the net population growth rate and compare your results with those of your classmates.

### Materials

For each class:

- 1 *Daphnia* culture

For each group:

- 1 magnifying glass
- graph paper
- grease pencil
- 1 clear 250-mL beaker
- 1 clear 50-mL beaker
- 1 3-mL pipette

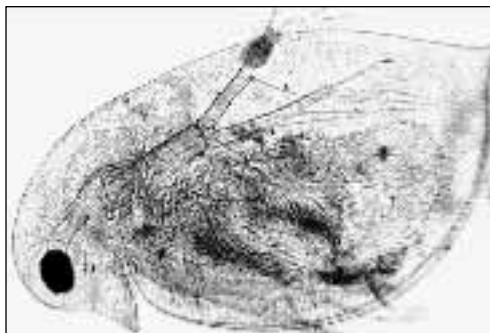


Figure 1: *Daphnia*

### Safety Concerns

Wear eye protection, clean up any spills or glassware breakage immediately.

### Procedure

1. Make a prediction. Do you think your *Daphnia* population will increase, decrease, or stay the same? Record your prediction.
2. Start your *Daphnia* culture according to your teacher's instructions.
3. Mark the water level in the *Daphnia* culture container using the grease pencil. Maintain the water level according to your teacher's instructions.
4. Observe the *Daphnia* for 10 minutes. Record your observations on a separate sheet of paper. Draw a picture of the *Daphnia* that you see.