Aquatic Organisms

1. Make copies of Student Resource 1.1, Vocabulary, and distribute to students. Discuss the definitions with students as the terms come up throughout the section.

2. Make a copy of Student Resource 1.2, The Organisms Are Coming! and tape it to the wall at the front of the classroom. Use the sign to begin a discussion of aquatic organisms. Make sure students understand that aquatic organisms live in water. Have them brainstorm a list of animals and plants that might be found in an aquarium. List their ideas on the board. Ask students to draw some of the organisms.
What Will Happen to the Water?

10 minutes for initial observations; 10 minutes for follow-up measurements 3 days later

Objectives
• Students measure water depth in aquariums.
• Students predict the effect of sunlight on evaporation of water.

Materials
For each group
1 aquarium with
*water
1 *metric ruler
*Not provided in kit

In Advance
Number eight aquariums consecutively, one for each group of students. Fill each aquarium three-fourths full of water. Also fill the remaining four aquariums with water to use as a resource of aged water and to store animals and plants when they arrive.

1. Distribute the Student Resource.
Make copies of Student Resource 1.3, Aquarium Log, and distribute to students.

2. Separate the aquariums.
Put half of the aquariums in a sunny place and half in a shaded place.

3. Students measure the depth of the water.
Assign each group a numbered aquarium. Have each student measure the depth of the water in his or her group’s aquarium. If the aquarium is in the sun, they should next measure water depth in an aquarium in the shade, and vice versa. Have students record their measurements on the Aquarium Log Resource page.

4. Students predict what will happen to the water.
Tell students that they will measure the depth of the water again in three days. Ask them to predict what will happen to the water in each of the two aquariums. (Some water in both aquariums will evaporate.)

Section 1 Observing Daphnia

1. Distribute the Student Resource.
Make copies of Student Resource 1.3, Aquarium Log, and distribute to students.

2. Separate the aquariums.
Put half of the aquariums in a sunny place and half in a shaded place.

3. Students measure the depth of the water.
Assign each group a numbered aquarium. Have each student measure the depth of the water in his or her group’s aquarium. If the aquarium is in the sun, they should next measure water depth in an aquarium in the shade, and vice versa. Have students record their measurements on the Aquarium Log Resource page.

4. Students predict what will happen to the water.
Tell students that they will measure the depth of the water again in three days. Ask them to predict what will happen to the water in each of the two aquariums. (Some water in both aquariums will evaporate.)
The aquarium in the sun will lose more water than the aquarium in the shade. Have students record their predictions on the Resource Page.

5. Students measure water depth again.
Three days later, have students again measure the water depth in the same two aquariums. Have them review their predictions to see if they were correct.

6. Discuss nonliving factors in ecosystems.
Ask: What nonliving factor made one aquarium lose more water than the other aquarium? (sunlight or heat)
Have students brainstorm a list of other nonliving factors that may affect ecosystems, such as soil and air.

Assessment
Point out that water evaporates from aquatic ecosystems such as lakes, rivers, and oceans every day. Ask: Why doesn’t all the water in these ecosystems eventually disappear? (Rain and other forms of precipitation “refill” the ecosystems.)

Share with Your Students

How to Use a Magnifier and a Dropper

In Advance
For each pair of students and for yourself, fill a large cup half full with water.

1. Give each pair of students a cup with water, a dropper, and two magnifiers.

2. Have students practice using a magnifier. Show them how to move it toward and away from an object to focus the image. Have students look at their shirts with each lens. Ask: Which lens magnifies the most? (the smallest lens)

3. Next, show students how to use a dropper: First squeeze the air out of the bulb, put the end of the dropper in the water, then release the bulb to suck up water. Let students practice using the droppers.

Safety
Caution students never to touch an object with the magnifier because the lens will scratch.