

29. CONSTRUCTING A FOOD WEB I

Introduction

This activity is designed to give students a visual idea of a food web. A food web is defined as a complex interdependence within a community. These interdependencies determine the success or failure of the community in combination with the abiotic factors (weather, water, temperature, light, and soil conditions) and adequate food supply. The plants and animals in a given habitat depend on all of these factors. If one or more of them is altered, the populations have three choices: 1) change habitat, i.e. move, 2) adapt to the new conditions, or 3) die.

This activity will focus on the interdependencies developed among the plants, animals, and the Sun to create food webs. A brief description and visual example of the intended product is helpful.

Objective

The student will create a food web and identify the interdependencies within the habitat.

Materials

Large supply of magazine pictures of plants and animals (cut up *National Geographic*, *Ranger Rick*, *Audubon*, *Natural History*, *National Wildlife*, or other regional nature and wildlife magazines)

Large sheets of newsprint (36" × 24")

Markers or crayons

Pencils/pens

Reference books like encyclopedias or field guides

Student Worksheet 29

Pre-activity Preparation

To accumulate a collection of pictures of plants and animals, go through nature magazines and remove photos of wildlife. Students can do this for you as a leisure time activity. Plan for eight to ten pictures for each group of students. It is helpful to have a food web bulletin board (see *Management, Mechanics and Miscellany*) so that students can see what a food web diagram looks like. You can use the bulletin board as a teaching tool many times during this unit.

Teacher Instructions

1. Organize students into small groups of about three to five. You may use groups which already exist, have students choose their own groups, or assign groups.

2. Hand out Student Worksheet 29, a large piece of newsprint, and crayons or markers.
3. Give ten or more pictures to each group or have a large pile of pictures available. One member from each group should select pictures.
4. Students follow directions 1, 2, and 3 on their worksheets.
5. When questions arise as to what a particular animal eats, look for answers in field guides or encyclopedias.
6. Your responsibility is to check the progress of groups, but not to provide direct answers.
7. When a group believes it has an accurate food web, you should approve it. Then the students recreate the web by gluing the pictures to the newsprint, adding other parts of the community (sun, water sources, trees). If there are not enough pictures available, students may draw on the newsprint the food web they have arranged. See Sample Food Web 29.
8. After the food webs are complete and labeled (#4 on student worksheet 29), students should draw arrows which show the food supply of each member of the habitat. Be sure the web includes the materials necessary for plants to carry on photosynthesis, i.e. sun, water, soil nutrients.
9. Students should identify their community/habitat based on the type of plants and animals that live there.
10. Students answer question 8 on their worksheets. Answers should be in complete sentences.

Alternate plan: Provide one set of food web pictures on a bulletin board or poster. Students would start the activity with #2 on Student Worksheet 29 (connect plants and animals to their food supply). The rest of the directions can be accomplished either as groups or individuals. The finished product should be approximately the same.

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Food webs are a complex interdependence within a community that involves many species with the ability to eat a number of different kinds of food. If a plant or animal is not able to satisfy its needs within its habitat, it has three choices. The plant or animal may (1) move—change habitat, (2) adapt—adjust its life style to the new conditions, or (3) die.

1. You will be working in a group. Your teacher will provide your group with some pictures of plant and animals that would normally be found in the same place.
2. Organize your pictures so you can see connections between predators and prey. For example, frogs eat insects, insects eat plants. Arrange and rearrange all the pictures on a desk until you can provide each plant and animal with a food supply.
3. If the proper connection is not available in your picture pile, trade with other groups or draw in the missing part of the food web.
4. On the large piece of paper, arrange your pictures to form a food web. It should have at least five or six animals and their food supplies. Label each picture. Draw arrows showing the connection between a plant or animal and its food supply.
5. Remember to include the ingredients that allow plants to make their own food supply (sun, air . . . especially carbon dioxide, soil nutrients, and water).
6. Identify the type of habitat your group has created.
7. A food chain is a simple relationship of plants and animals within a food web. Be sure you can identify one food chain within your food web.

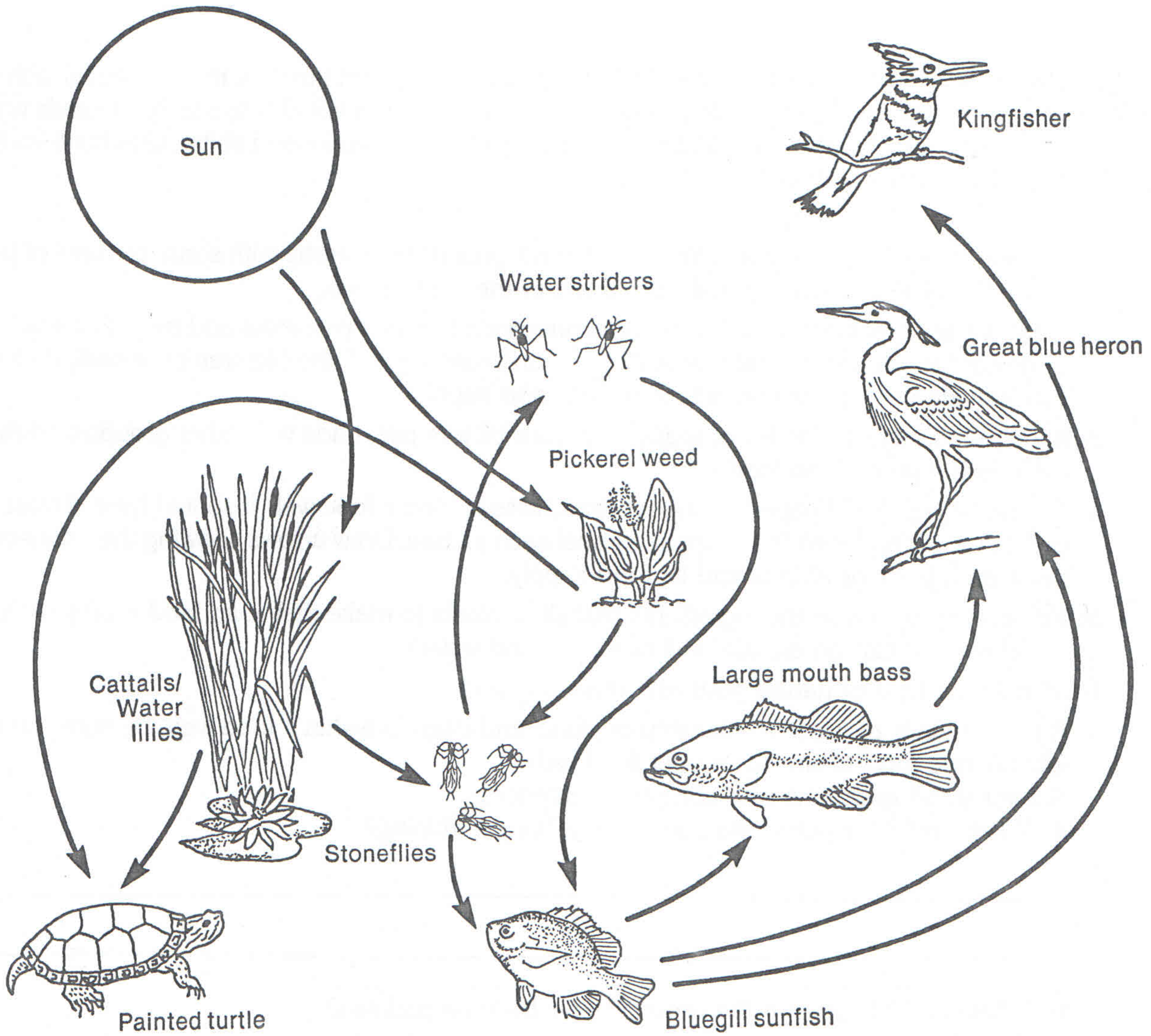
Answer these questions with complete sentences:

- a. What would happen *if* the sun were no longer shining?

- b. What would happen *if* the ground water became polluted?

- c. What would happen *if* there was no rainfall for six months?

- d. What would happen *if* there was a large increase in one of the populations?



This is a pond food web.