
ACTIVITY

35

HABITAT DETECTIVES

A GROUP PROJECT IN LIBRARY RESEARCH AND COMMUNICATION

SCIENCE SKILLS:

- library research
- communication

CONCEPTS:

- Scientists frequently work together not only in the lab or field, but on written communications.

MATH AND MECHANICAL SKILLS PRACTICED:

- graphing
- drawing

SAMPLE OBJECTIVES:

- Students will be able to work together to research, write and present a project on an aquatic habitat.

INTRODUCTION:

This is a group project which combines library research skills with verbal and visual communication. It also requires practicing the organizational and leadership skills required for working in groups. Divide the class into groups of three or four students. You may choose the students with their personal abilities in mind or you may wish to make them work in new groups by having them draw their group number. Each group has one aquatic habitat to research. These are some possible habitats:

- small to medium size lake
- estuary (river where it flows into the sea)
- ocean where the water is deep
- rocky coast of ocean
- sandy beach
- freshwater swamp
- freshwater marsh
- salt marsh
- kelp forest
- salt lake
- coral reef
- pond
- stream
- river

Each group will communicate the results of its library research to the rest of the class by making a large poster or bulletin board which includes both pictures and written information. Pick a standard size on which they must work based on space available in your room. You might have them work on posterboard or the folding cardboard designed for science fair projects. They

may work at home, but the actual application of their work to the allocated space may have to happen during class time because it should be a group project. The primary objective for the poster or bulletin board is to teach their classmates about their habitat. All the materials should be made by the children's own hands.

Rules for the project are:

- it can be understood completely in less than 10 minutes;
- it is designed to be read by fellow students;
- it is organized to effectively communicate concepts in order of importance;
- it has pictures, written information and at least one graph; maps, charts, and tables are also acceptable;
- it covers the characteristics of the habitat as a whole as well as the typical plants and animals found in it;
- everything on it has been made by the students; no magazine cut-outs, although photographs they have taken themselves are allowed.

Additionally, each group will write a question for the class which can be completed in less than 5 minutes and evaluates general understanding of the habitat.

MATERIALS:

- posterboard
- colored pens or crayons
- construction paper
- tissue paper
- scissors
- glue

RESULTS:

When the assignments are completed, have the students present their work and let the other students read the posters. Have them take the quiz as evaluation. Discuss in a general way what was best about each project in terms of communication. In addition to communicating factual information to their colleagues, the students will enjoy sharing their work with their parents at the Aquatic Science Symposium, Activity 36.

CONCLUSIONS:

In these experiments you have looked at two ways animals respond to water which is low in oxygen. One way is to increase the rate at which water moves over the gills. If you have ever watched a crab or shrimp in a small container, you may have noticed increased movement of the water across its gills. This reflects increased ventilation, just as the fish increased movement of water by "swallowing" faster.

A second tactic is to move to an area of the water that has a higher oxygen concentration. Both responses use energy. Animals that can migrate within an environment are relatively lucky. Can your students name some animals that cannot move to an area with higher oxygen? Any aquatic animal that is sessile, that grows attached to a surface, cannot move. Oysters, barnacles,

mussels, worms that live in tubes...these are just a few. If they cannot move, they may die during periods of unusually low dissolved oxygen.

USING YOUR CLASSROOM AQUARIUM:

These fish can go in your aquarium. You can use fish from the aquarium with no ill effects if you use goldfish.

EXTENSIONS:

1. Can you identify a local problem caused by low oxygen? Have your students research this question by writing or calling one or more local organizations responsible for water quality. Try county government or a local conservation organization. You may already be aware of such a problem. Once a problem is identified, have your students try to find out when it occurred, the magnitude of the problem, the possible causes and any responses that were made. Common problems are related to cooling of power plants and the releasing of water with a high oxygen demand from sewage plants during warm weather. The point is to follow the process of the discovery of a problem and the responses to it.

