

MODULE VI
ON YOUR OWN



This module includes several challenging activities for self-directed members who want to go further. There are activities on animal adaptations, food chains and other arthropods.

AQUATIC INSECTS

Some aquatic insects have special methods of breathing. This activity will help you learn more about the way aquatic beetles have adapted to obtain air from their watery environment.

NEEDED:

Collecting net
Large glass jars

WHAT TO DO:

- 1- Collect as many different aquatic beetles as you can from a lake, river or pond. (Be careful, many aquatic insects bite.)
- 2- Put them in a large jar with pond water.
- 3- Observe how they get air.
- 4- Make a field notebook based on your observations. Draw sketches to illustrate what you see.
- 5- Take the insects back to their home and release them.

GOING FURTHER:

Find insect larvae that live in the water. Try to discover how they breathe. Record your observations in your notebook and make simple drawings to illustrate what you see.

RESOURCES:

Field Guide to the Insects of America (North of Mexico) by Donald Borror and Richard E. White. A Peterson Field Guide, Houghton Mifflin Co., Boston.

The Life of Inland Waters by J. G. Needham and J. T. Lloyd. Comstock Press, New York.

HOW INSECTS FIT IN

All living things depend on each other for survival. In this activity, you will study food chains that include insects.

NEEDED:

Depends on you (see below)

WHAT TO DO:

- 1- Observe an insect. Learn what it eats. (Eating is a way of transferring the energy needed for survival.) Is this kind of insect eaten by other living things?
- 2- Develop a food chain that shows movement of energy from the sun, through various living things including your insect. Possible ways to make the food chain visible include: drawing a diagram or making a painting, or constructing a three-dimensional food chain such as a mobile or a collage.
- 3- Don't forget that:
 - Parts of this food chain can actually be observed.
 - You may need to guess how other links are made.
 - You will want to include representatives of each of the following:
 - Producers -- plants
 - Consumers -- herbivores (eat plants); carnivores (eat meat); omnivores (eat both)
 - Decomposers -- bacteria, earthworms, fungi, etc.

RESOURCES:

How Insects Live by Walter H. Wellhouse. Macmillan, New York.

Insects in Their World by Su Zan N. Swain. Garden City, New York.

The Strange Lives of Familiar Insects by Edwin Way Teale. Dodd, Mead and Co., New York.

INVESTIGATING OTHER ARTHROPODS

Arthropods are animals that have a segmented body, an exoskeleton and jointed appendages. (Arthropod means "jointed feet.") This activity involves studying arthropods which are in a different class than insects -- look for clues to tell you some likes and dislikes of these animals.

NEEDED:

Small pan or box
 Plastic wrap to cover box, rubberband to secure
 Sow or pill bugs (could also use crayfish or millipedes)
 Soil
 Dark cover for box
 Light source

WHAT TO DO:

- 1- Collect the sow bugs. Look under logs and in damp places. Discover which arthropod class they belong to. Keep a notebook to record what you collected, where you found them and your observations as you continue this activity.
- 2- Cover the bottom of the box with a thin layer of soil.
 - Place half the sow bugs on each side of the box.
 - Cover the box with plastic wrap. Poke a few air holes in the top and secure with a rubberband.
 - Darken half of the box with a cover.
 - Shine a light on the uncovered half.
- 3- What happens to the sow bugs? Do they seek light or dark? Can you make some guesses why? Can you tell how these animals breathe?
- 4- Learn what the sow bugs eat.
 - In separate small dishes, put small amounts of raw meat, table scraps, raw vegetables and dead leaves.
 - Check regularly to see what the favorite foods seem to be.
- 5- After observing shelter and food habits of these animals, what conclusions can you draw about their life style? Write a short report on your conclusions.
- 6- Release the sow bugs near where you collected them.

