

Water Plant Art

Adapted from: "Water Plant Art" in Project WILD Aquatic. Council for Environmental Education, 1992.

Grade Level: basic

Duration: one 20 to 45 minute class period

Setting: classroom

Summary: Students will explore and identify aquatic plant life and create an artwork using plants.

Objectives: Students will identify a variety of aquatic plants. This will heighten students' awareness and appreciation of aquatic plant life.

Related Module Resources:

- "Plant Treatments" Activity
- "This Plant Key is All Wet" Activity

Vocabulary: macrophytes, biodiversity, detritus

Materials (Included in Module):

- books, guides to common aquatic plants

Additional Materials (NOT Included in Module):

- aquatic plants
- shallow pan filled with fresh water
- heavy, porous white paper
- wax paper
- white paper (printer paper)
- waterproof marking pen
- several large, heavy books or plant press (if available)
- art supplies

ACADEMIC STANDARDS (ENVIRONMENT AND ECOLOGY)

7th Grade

4.1.7.C Explain the effects of water on the life of organisms in a watershed.

- Identify organisms that have aquatic stages of life and describe those stages

4.1.7.D Explain and describe characteristics of a wetland.

- Identify specific characteristics of wetland plants and soils
- Recognize the common types of plants and animals

4.7.7.A Describe diversity of plants and animals in ecosystems.

- Select an ecosystem and describe different plants and animals that live there

10th Grade

4.1.10.C Describe the physical characteristics of a stream and determine the types of organisms found in aquatic environments.

- Identify terrestrial and aquatic organisms that live in a watershed

BACKGROUND:

Aquatic plants are known as **macrophytes**. The word macrophytes means "large plants." Presence of macrophytes is an easy way to determine where and how macroinvertebrates live. Plants grow where their needs for light, current speed, water clarity, depth, and soil type are best met. There are many varieties of macrophytes, and they are most often categorized by their location in the pond or stream. There are four basic categories, open or deep water zone, submergent zone, floating-leaved zone, and the emergent zone. The plants you will most likely collect will be from the shallower zones, the emergent, floating-leaved, and possibly the submergent zone. Some common plants of the emergent zone include mosses, ferns, and more specifically horsetail, sedge, and arrowhead. In the floating leaved zone is where you will find plants like pondweed, water lilies, and cattails. The submergent zone does not contain a great variety of plants because it only obtains a limited amount of sunlight and current flow. The plants that do live there include elodea, muskgrass, coontail, and mermaid weed, more affectionately known as "seaweeds." Stress to the students that a combination of these plants is vital to the ecosystem, much like a variety of macroinvertebrates. The greater **biodiversity**, the healthier the waterway.

Detritus is anything that was once living (organic matter) that can be found in a waterway. Plant detritus can include leaves, plant parts, twigs, branches, nuts, bark, grasses, straw, etc.

OVERVIEW: Students will gain knowledge of the basic types of aquatic plants by doing a hands-on activity. They will learn to identify some aquatic plants. They will use the actual plants to construct a permanent collage of greens.

PROCEDURE:

1. Prior to collection of plants, be sure it is safe and legal to do so. Establish who owns the property and secure permission for collection. Be aware of threatened and/or endangered plants and follow this rule of thumb: *If you only see one, leave it alone. If you only see two, leave them there too.* That is, if there are only a few of any plant type, do not collect them. Only take plants that come from communities large enough to sustain the loss of an individual or two. To collect plants, wade carefully into the pond or stream and pull plants from the ground. You may need to use scissors to chop down sturdier plants. To collect floating plants, such as duckweed, use a D-frame net to skim the surface and pull in sample. You may want to bring in some detritus too (dead leaves, twigs, pine needles, etc.). Put samples in plastic bags to keep moist. Be sure to return any attached bugs back to the water where they came from.
2. Once in the classroom, show the students pictures of different kinds of aquatic life. Pass around some samples so that they can become familiar with the plants.
3. Place the seaweed, grasses, and/or algae in a pan filled with water. Identify the plants present before using them for art. Ask the students to guess which zone they think each plant came from and why. (For example, lily pads probably came from the floating-leaved zone, because they have large leaves that float atop the surface attached to rooted stems below.)
4. Lift plants from water and place on heavy, white porous paper and arrange into a desired design. Plants may be cut, torn or mutilated in any other way to be used for the artwork. Maybe ask the students to create a design resembling some aspect of aquatic life. This can be done as a class or in groups. You may allow students to use paint or other art supplies to add color.
5. When complete, cover artwork with wax paper.
6. Place the art work- the wax paper *and* the white paper- between several sheets of other pieces of white paper (copier or printer paper).
7. Move this piece to a flat surface and pile on the heavy books or use a plant press (if available).

8. Drying time may take between a few days to several weeks, depending on the level of humidity present.

DISCUSSION:

Ask the students to talk about what they learned. Discuss the importance of having a variety of plants in any environment. Give examples of ways these plants are important.

EVALUATION:

- Name or draw two plants that grow in bodies or water near your home. Add animals to your pictures to show how these plants can help animals that live in water.
- Create an identification key for a variety of aquatic plants that are found in your area.
- Describe the role of aquatic plants in relation to animals.

EXTENSIONS AND MODIFICATIONS:

- If possible, take students to a place where they can gather their own samples using the same rules for not damaging animals, plants, or the habitat.
- The plant prints can be used for many purposes. The wax paper can be removed as the plant is adhered to the paper. Try hanging them up in the classroom and using them as teaching devices.
- Press other types of vegetation besides aquatic plants.
- Create an identification key for a variety of aquatic plants that are found in your area.
- Find out more about the habitat in which an aquatic plant grows. What is it like? What animals live there? What plant and animal adaptations are evident?

NOTES (TEACHERS, PLEASE WRITE ANY SUGGESTIONS YOU HAVE FOR TEACHERS USING THIS ACTIVITY IN THE FUTURE):

Activity Version: January 2002

IDEAS FOR WATER PLANT ART

“Apple Tree”

“Aquatic Bird”

“Aquatic Sunrise”

“Creek Connections”