

Habitat for Monarchs

By visiting a butterfly garden in a state park or natural area, students will observe and investigate the plants that monarchs need to survive for each phase of their life cycle. Students will develop an understanding of the concept of habitat by researching and observing native plants needed by the monarch. They will then draw plants in a monarch habitat to be included on a mural. Cameras can also be used to take pictures of butterflies in action.

Background

A habitat is a place where individuals of a particular species live or spend time. An individual's habitat has food and shelter that it needs to survive. Butterflies are beneficial insects. As pollinators, they are crucial to food production. Many flowers must have pollen from a different blossom to produce fruit and seeds (cross pollination). A butterfly picks up pollen from one plant when it drinks nectar. The pollen is spread from the feet, body and wings of butterflies.

Milkweed (asclepias) is crucial to the monarch's habitat as it is the only plant on which they lay eggs. It is their host plant. Caterpillars acquire toxins from the milkweed, and the toxins protect them from predators, even as adults. Females usually lay only one egg per leaf to help the survival rate, as hatching caterpillars will eat un-hatched eggs. Adults feed on nectar from large, fragrant flowers. The sunflower family of plants, known as the Asteraceae, is the adult monarch's favorite source. They also like other yellow, pink, orange and purple nectar-producing flowers.

Procedure

1. Using the illustration below, discuss what a monarch needs to survive during different life stages: egg, larva, pupa and adult. List the items on a board and discuss the concept of "habitat" with your students. Focus on host plants (food for larvae) and nectar sources (food for adults). What happens when host plants disappear from the habitat?
2. Ask about the meaning of a "native species" in Virginia. Native is considered what was here when the first permanent European settlement occurred in 1607, in Jamestown, Virginia. Explain the benefits of native plants because, once established, they thrive in our climate. They have evolved to withstand summertime droughts and hurricanes. Using books and other resources, including the Internet, have students research native plants that are good nectar sources found in their region of Virginia. Make a list of those plants and have each student make a drawing of a plant that is a good nectar source for butterflies. Have students draw the whole plant, not just the flower. Use field guides, seed catalogs, books on butterfly gardening or actual plants as guides. Encourage students to draw several plants, each large enough to be cut out. Have students label them by copying names from the class list.
3. Have each student make a full-page drawing of native milkweed found in their region. Use field guides or the actual plant as a guide for the drawings. These drawings should also be cut out and labeled.
4. To create the monarch habitat, attach student drawings to the bulletin board or on a large piece of paper for a wall mural.
5. Students may add drawings of

Grade Levels: K-5

Objectives

- Observing that an organism's habitat contains the things it needs to survive
- Observing the parts of a flower and butterfly and how pollen is transferred
- Researching native plants and learning about the benefits of native plants by using reference materials
- Recording the many kinds of plants and animals in habitats

Key Concepts

An organism's habitat contains the things it needs to survive. There are many kinds of plants and animals in habitats. Students will learn the anatomy of plants and butterflies.

Skills

Observation. Recording observations. Drawing. Cooperative work.

Materials

Plant field guides or other books with pictures of nectar sources and milkweed. Large drawing paper. Crayons or colored pencils. Space on bulletin board or wall mural.

Where

Any state park or natural area that has an area for pollinators.

When

Late spring or early fall.

Time Required

1 hour in the classroom and 45 minutes for the field investigation.

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caterpillars, butterflies, other insects, birds and other animals that might live in the same habitat.

6. Have the students examine the attached pictures of the parts of a butterfly and parts of a flower. Explain that a butterfly can sense with their feet the sweetness of nectar in a plant.
7. Contact a state park or natural area and make arrangements to take the class outside to a butterfly garden. Have students look for the plants and insects they identified for their monarch habitat. Students (teachers for lower grades) can record findings and review what was learned.

Some Nectar Sources for Pollinators in Virginia

Spring

Blackberries/dewberries *Rubus spp.*
Blueberries *Vaccinium spp.*
Dandelion *Taraxacum officinale*
Redbud *Cercis Canadensis*
Red clover *Trifolium patense*
Wild plums/wild cherries *Prunus spp.*

Summer

Common milkweed *Asclepias syriaca*
Orange milkweed *Asclepias tuberosa*
Swamp milkweed *Asclepias incarnat-*
Bergamots *Monarda spp.*
Coneflowers *Echinacea spp.*
Dogbanes *Apocynum spp.*
Pickerelweed *Pontederia cordata*
Sumacs *Rhus spp.*
Thistles *Cirsium spp.*
Vervains *Verbena spp.*

Fall

Asters *Aster spp.*
Blazing-stars *Liatris spp.*
Goldenrods *Solidago spp.*
Ironweeds *Vernonia spp.*
Joe-pye weeds *Eupatorium spp.*
Pickerelweed *Pontederia cordata*

Extension

Students can visit nearby butterfly gardens during the year to note changes in the habitat for each season. Plants will die down in the winter but emerge in the spring and bring forth flowers during summer and fall. Pictures can be drawn or cameras used to illustrate the changing habitat.

Credits

<http://www.flightofthebutterflies.com/in-the-classroom/>

The World Book Encyclopedia 1977, U.S.A. by Field Enterprises Educational Corporation

Butterflies Through Binoculars (The East), 1999 by Jeffrey Glassberg

Resources

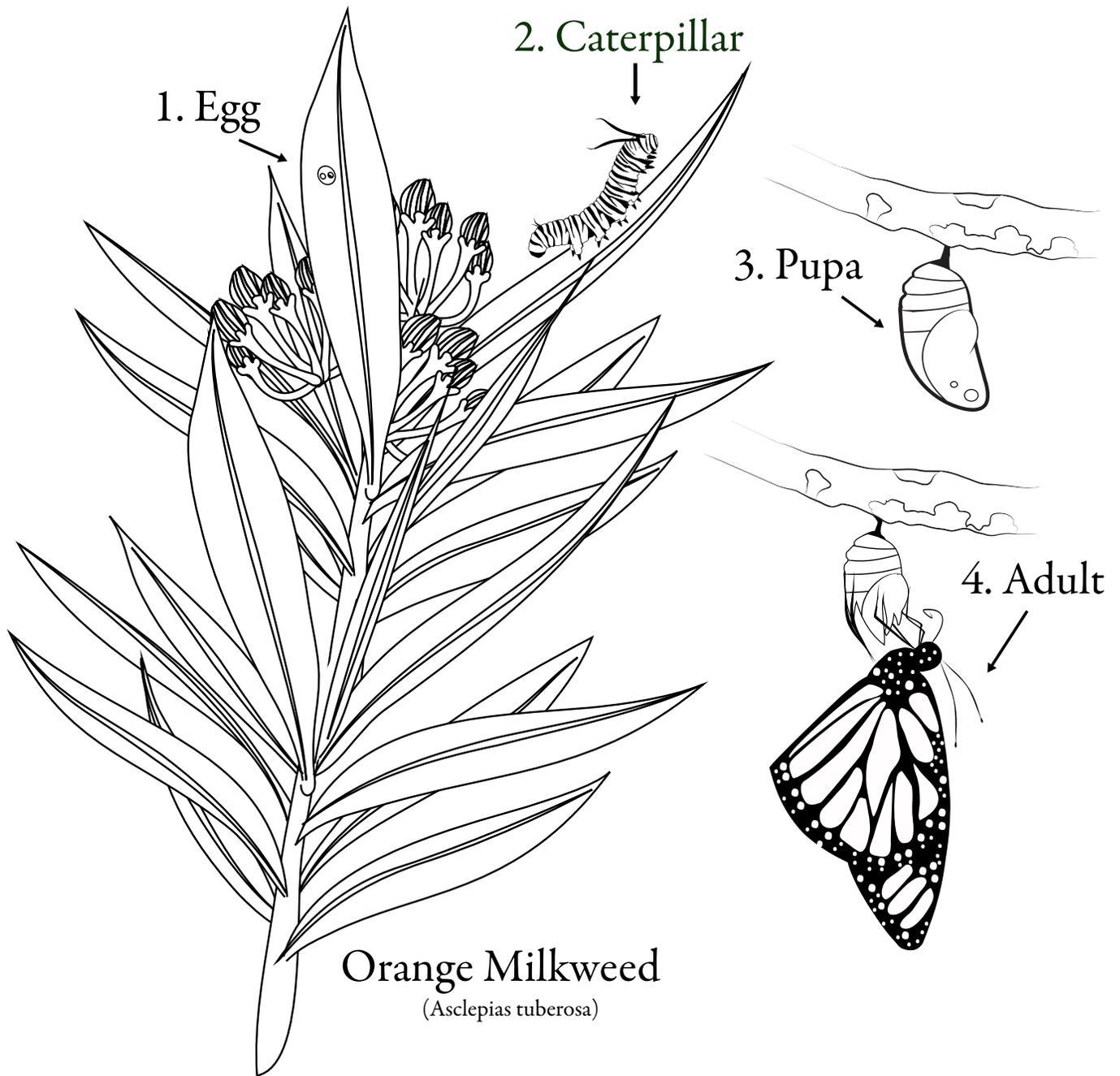
<http://www.dcr.virginia.gov/monarch.html>

http://www.dcr.virginia.gov/natural_heritage/nativeplants.shtml

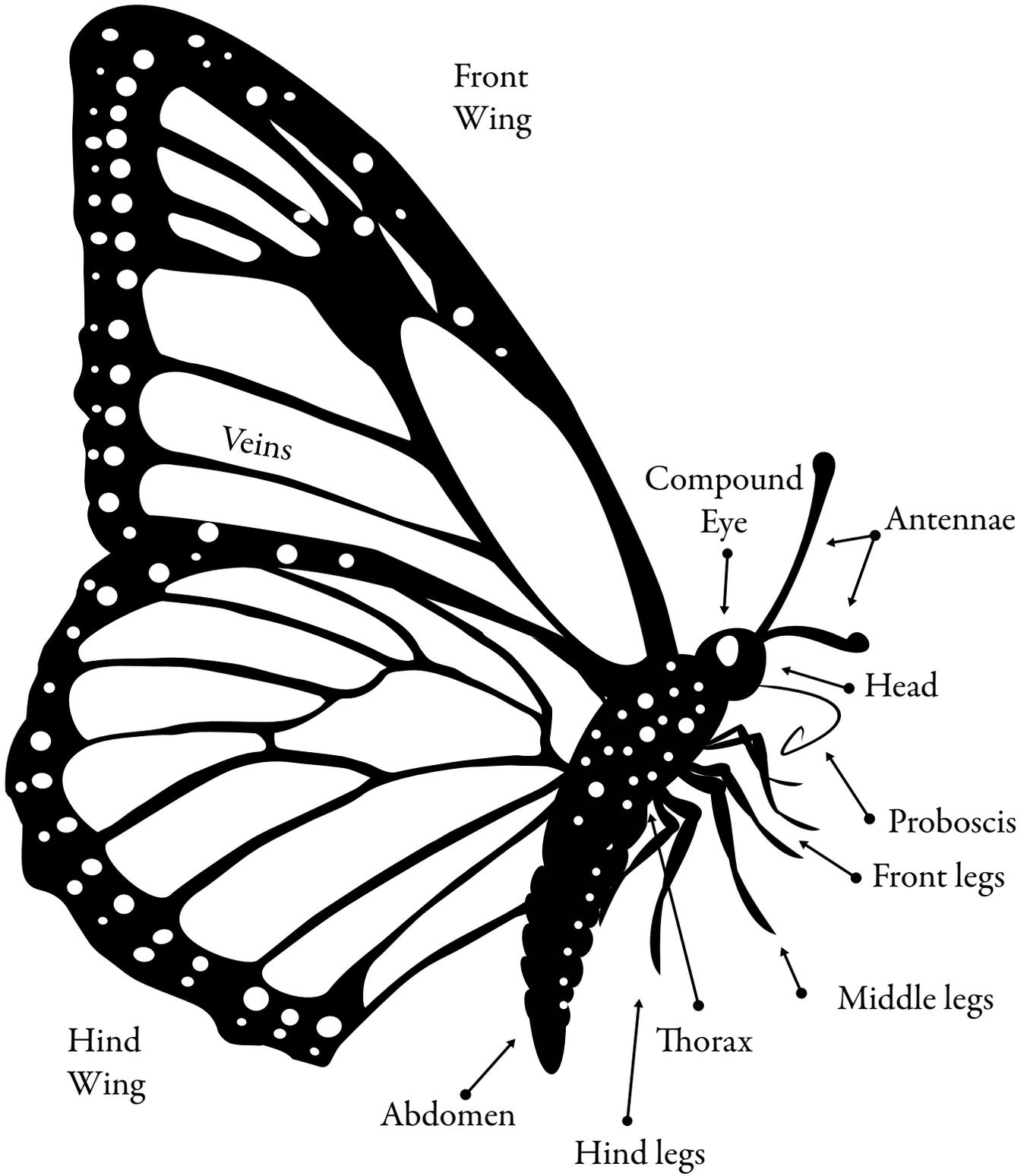
<http://basrelief.org/Pages/notes.html>

Flora of Virginia, 2012, By Alan S. Weakley, J. Christopher Ludwig, and John F. Townsend

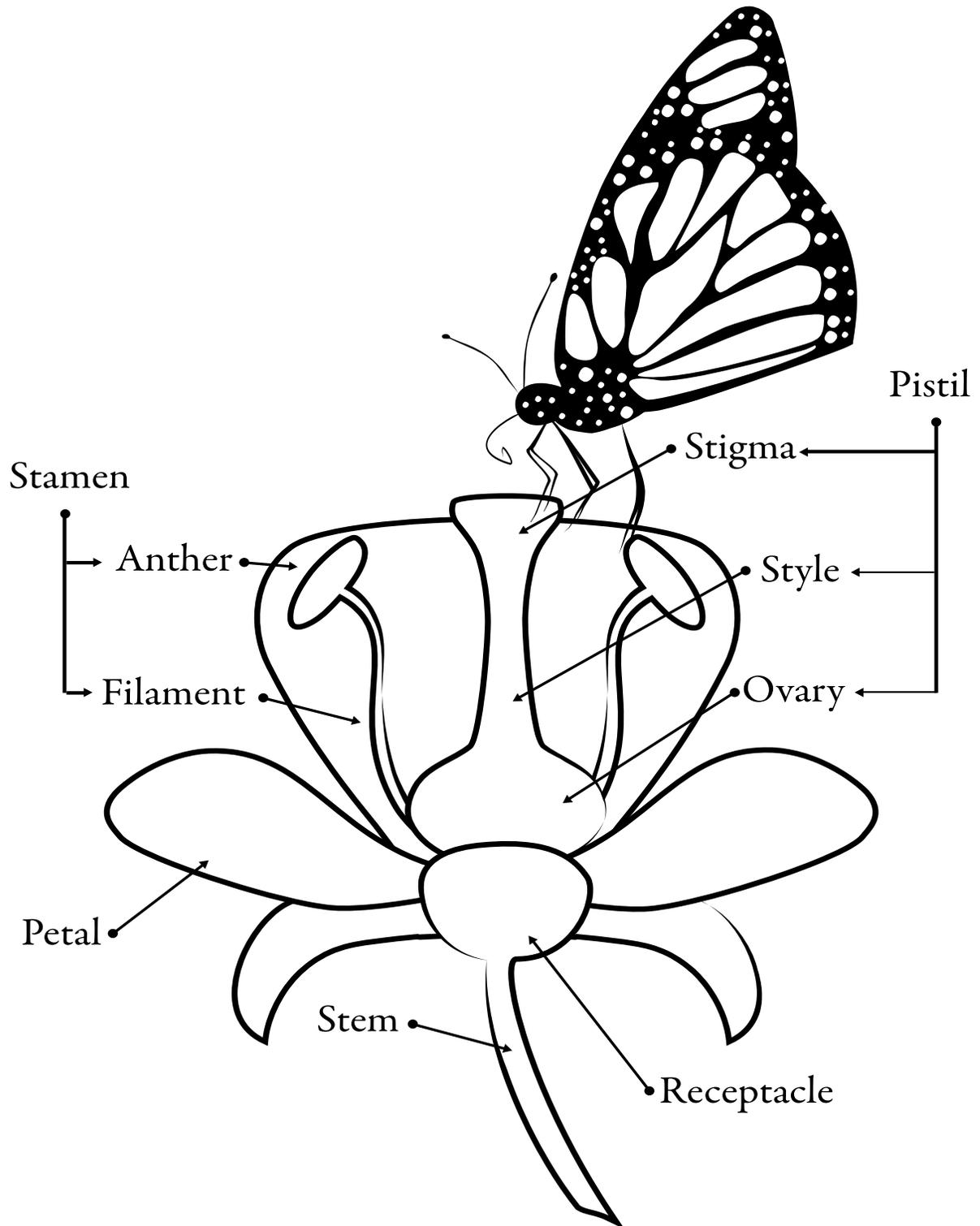
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Four-stage life cycle



Parts of a butterfly



Parts of a flower