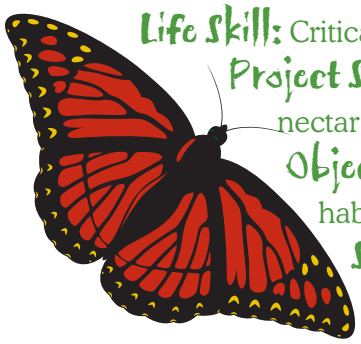
AGE LEVEL 13-15

Butterfly Buffet



Life Skill: Critical thinking

Project Skills: Identifying butterfly species and their nectar sources

Objective: Observe wild butterflies and their feeding habits, record findings, and make recommendations

Success Indicator: Participants keep detailed records of observations and recommend which plants would be most beneficial to local butterflies

Provisions Needed

- Binoculars
- Butterfly field guide (see Suggested Reading)
- Flower field guide (see Suggested Reading)
- Notebook
- Pencil

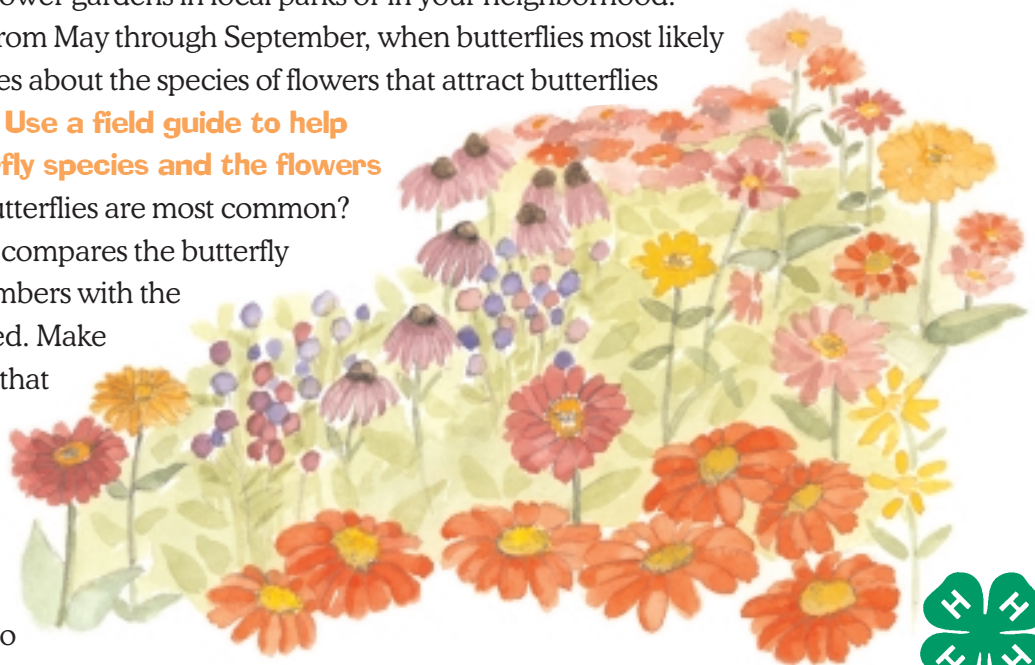
Trailhead

Most people enjoy having butterflies visit their flower gardens. These insects are colorful, active during the day, and interesting to watch. Many gardeners find satisfaction in cultivating plants to attract butterflies. **Why do butterflies come to flowers?** What do they do while they are there? The diet of most butterflies consists of nectar. When a butterfly lands on a suitable flower, it unfurls a drinking tube, the proboscis [pronounced pro-BOS-cis], that probes the flower to find nectar. But why do butterflies come to some flowers and ignore others?

Trailblazing

pro-BOS-cis

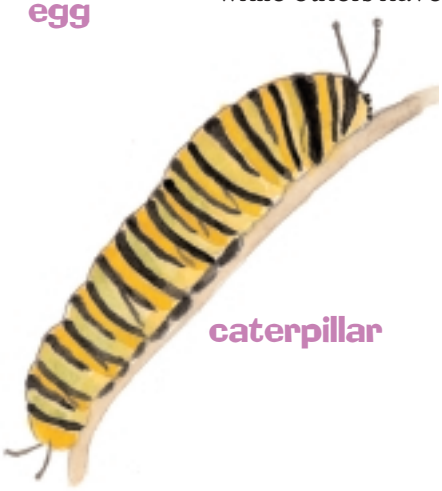
Visit several flower gardens in local parks or in your neighborhood. Choose sunny days from May through September, when butterflies most likely are active. Make notes about the species of flowers that attract butterflies and those that don't. **Use a field guide to help identify the butterfly species and the flowers they visit.** Which butterflies are most common? Develop a table that compares the butterfly species and their numbers with the types of flowers visited. Make notes on the flowers that butterflies avoided. Your goal: If you were to advise a local gardener about plantings that would be attractive to butterflies throughout the growing season, what would you recommend?



Southern Region 4-H Wildlife Curriculum Committee

lifecycle of a monarch butterfly

egg



caterpillar

chrysalis

Things to consider

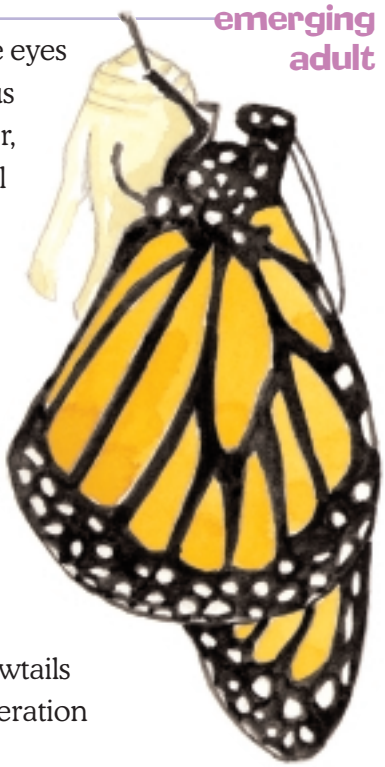
- Most butterflies avoid shady spots.
- Butterflies won't start flying until the day warms up, usually after 9 a.m.
- Some butterflies don't drink nectar; instead, they may drink from oozing sap, rotten fruit, or even dung. Can you think of any research opportunities here?
- Some butterfly species are single-brooded (only one generation per year), while others have two or more broods during a season. Most adult butterflies fly for only one to two weeks, so there may be periods when butterflies are more abundant.
- At least one butterfly species, the cabbage butterfly (introduced from Europe), is considered a pest in the garden.

Suggested Reading

- Evans, Howard Ensign. *Life on a Little-Known Planet*. New York: The Lyons Press. 1993.
- Glassberg, Jeffery. *Butterflies through Binoculars, The East*. New York: Oxford University Press. 1999.
- Pyle, Robert Michael. *The Audubon Society Handbook for Butterfly Watchers*. New York: Charles Scribner's Sons. 1984.
- Stokes, Donald. *A Guide to Observing Insect Lives*. Boston: Little, Brown & Co. 1983.

FieldGuide

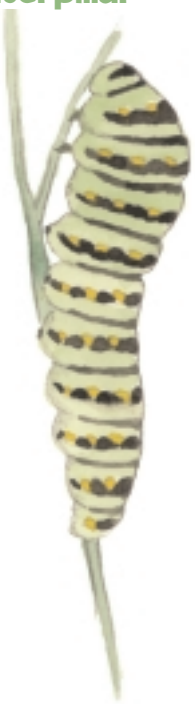
- Like many insects, butterflies have **compound eyes** (many simple eyes grouped together into two larger eyes) that have keen color receptors but focus poorly. They also have scent receptors on their antennae. When seeking nectar, butterflies cue in on the color and scent of a flower, then explore their potential meal with taste receptors on the pads of their feet.



emerging adult

- Butterflies with longer **drinking tubes** feed on flowers with deep tubular flowers; those with shorter ones visit shallow flowers.
- Butterflies visit plants for reasons other than drinking **nectar**. The larvae (caterpillars) of most North American butterflies feed on the leaves, flowers, or fruit of plants. Most butterflies are host-specific—that is, their caterpillars can feed on only one or a few species of plants; this dependency limits the range of some species. Many gardeners invite butterflies to lay their eggs by planting food or host plants for caterpillars alongside nectar sources.
- Each species of butterfly has its own life history. The last generation of swallowtails in a season will spend the winter as a **pupa or chrysalis**, while the last generation of monarch butterflies will emerge as adults then migrate to Mexico.

swallowtail caterpillar



The Extra Mile

Certain butterfly species can be raised easily from egg to adult.* The black swallowtail butterfly is **abundant** across the Southeast and will lay eggs readily on potted plantings of parsley, dill, or fennel. Try leaving these plants in a sunny garden location, and check them every couple of days from spring to fall for hatchling caterpillars. The tiny hatchlings are black with a white saddle mark across their backs; they look like bird droppings. Once you find caterpillars, place the plant in an aquarium and cover with a screened top. Place the aquarium under a shaded porch. Make sure there is sufficient food, and every couple of days empty the aquarium of all **frass** (caterpillar droppings) to reduce the chance of disease among the caterpillars. Keep notes: When does the caterpillar shed its skin? How many times does it shed its skin? Does it change color? When does it pupate? How long before it emerges as a butterfly? You might compare the rate of successful emergence between caterpillars in a protected enclosure and those left out in the open.

We discourage releasing butterflies hatched from pupa purchased through catalogs. Such releases increase the chance of spreading* ***exotic diseases* *through wild butterfly populations and introduce non-native species or genetically different individuals into your local wild butterfly population.*

Field Notes

share

- Which types of flowers are most attractive to butterflies? What are some common traits among these flowers that might attract butterflies?
- What butterfly behavior, other than "nectaring," did you observe in the garden? What do you think these behaviors meant?

process

- How might you prolong your butterfly season?
- Do you think you would find more butterflies in a wild meadow, deep woods, or a suburban garden? Why?
- How do you think pesticide use in a garden setting would affect butterflies?
- Why might butterflies choose to lay their eggs on native plants rather than on ornamentals?

generalize

- How have you made observations and analyzed data before?

apply

- In what other ways could you apply the critical thinking skills you learned from observing butterflies and their food sources?

NC STATE UNIVERSITY A&T STATE UNIVERSITY COOPERATIVE EXTENSION
Helping People Put Knowledge to Work

Published by North Carolina Cooperative Extension Service

Appreciation is expressed to U.S. Fish & Wildlife Service and RREA for their support of this project.

Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Employment and program opportunities are offered to all people regardless of race, color, national origin, sex, age, or disability. North Carolina State University, North Carolina A&T State University, U.S. Department of Agriculture, and local governments cooperating.
11/01-JL 4H-M-14-60W E02-39001