

Backyard Butterflies Teaching Guide

Lesson 6 THE BUTTERFLY OR ADULT

Objective:

1. Learn the needs of the butterfly to survive.
2. Build a hanging butterfly cage to observe its movements.

Materials:

Student Handouts:

Drawings of a butterfly

"Butterfly Anatomy and Life Cycle"

"Making a Butterfly Net"

1 piece of nylon netting or organdy, 2 feet by 3 feet

1 coat hanger

1 broomstick or- 3/4 inch dowel, 4 feet long

"Building a Butterfly Cage to Hang"

Hanger or large embroidery hoop

Cardboard round (e.g., from pizza) for base of cage

String or rope. Toothpicks, Paper clips, Bridal veil netting

When Releasing a Butterfly from page 85 of "The Family Butterfly Book" (see resources)

Evaluation:

See the results of the activities to ascertain how much was learned in these projects

Lesson 6
THE BUTTERFLY OR ADULT

DO	SAY
<p><i>Distribute Lesson 6</i></p> <p><i>Drawing of a butterfly</i> <i>"Butterfly Anatomy and Life Cycle"</i></p>	<p><i>All butterflies have two pairs of wings more or less densely covered with scales. Butterfly scales come in many shapes and sizes, covering the wings and other body parts. Scales give butterflies their coloration, help insulate their bodies and improve the aerodynamics efficiency of the wings. When butterflies emerge from the pupa, they immediately hang their crumpled moist wings downward to expand and dry. It usually takes several hours until adults are ready to fly. The primary job of the adult stage is to reproduce -- to mate and lay the eggs that will become the next generation. Adults in summer generations live from two to five weeks.</i></p> <p><i>Take the quiz "Butterfly Anatomy and Life Cycle" to see how much information on butterflies you have retained.</i></p> <p><i>No growth occurs in the adult stage, but butterflies need to obtain nourishment to maintain their body and fuel it for flight. Nectar from flowers, which is about 20% sugar, provides most of their adult food. Most butterflies are not picky about the source of their nectar, visiting many different flowers. Butterflies use vision to find flowers, but once they land on a potential food source, they use taste receptors on their feet to find the nectar. To catch a butterfly to observe it more closely, you can build a net.</i></p>

Distribute Student Handout - "Making a Butterfly Net"

1 piece of nylon netting or organdy 2'X 3'

1 coat hanger

1 broomstick or 3/4" dowel, 4' long

Distribute Student Handout:

"Building a Butterfly Cage to Hang" Hanger or large embroidery hoop Cardboard round for base of cage string or rope, toothpicks, paper clips, bridal veil netting

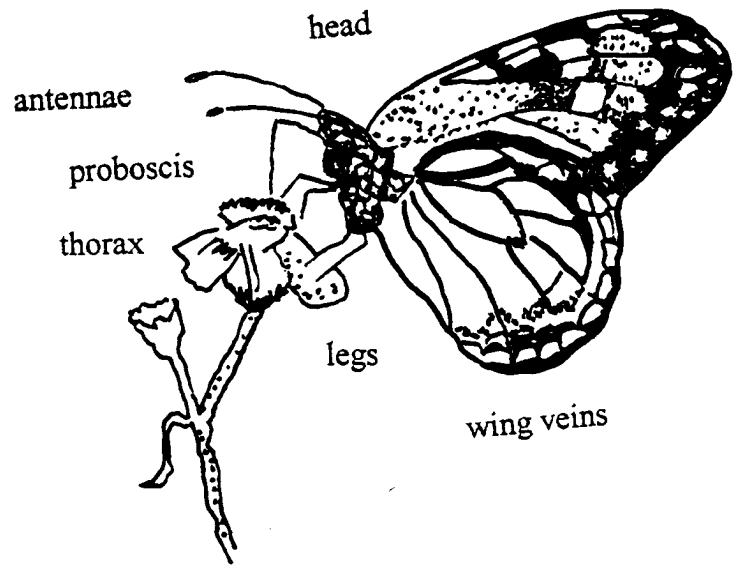
When in flight, butterflies are wary and difficult to catch. It's best to locate them feeding on flowers or while they are on the roosts late in the day or early in the morning.

Approach butterflies slowly (from behind if possible) as sudden movement will startle them into flight. Sweep the net forward quickly and flip the end of the net bag over net handle after you catch a butterfly to prevent them from flying back out of the net. You want the butterfly in the deep end of the net. With one hand holding the handle, use the other hand to collapse the end of the net. There should be enough space at the deep end to prevent damaging the butterfly. Gently flatten the net base so the wings of the butterfly are closed over its back and place your thumb and forefinger over the leading edge of the wings (from outside of net). Next, with the thumb and forefinger of your other hand, reach into the net and firmly grasp the back of all four wings. Carefully remove the butterfly.

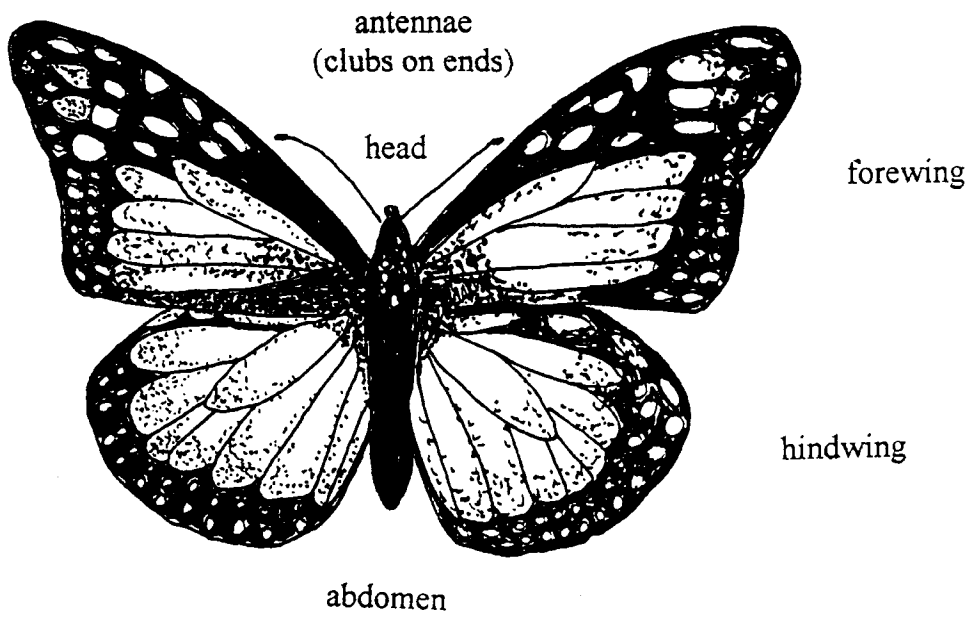
In order to observe the movement of a butterfly, you need to build a butterfly cage. This cage has the advantage of being able to collapse into a manageable size for storage while you don't have butterflies in your classroom. You can make it any dimensions. Many modify this design to make a sturdy, long-lasting cage by using a plywood round instead of cardboard, and building a support structure to hold the cage.

Read and discuss with Student "When Releasing a Butterfly" from page 85 of The Family Butterfly Book. (see resources)

Carefully remove the butterfly. If you wish to store your butterfly or to transport or hold for later examination, you can use a paper triangle or envelope. If you need to store the butterfly for more than a few hours or up to 2 days, place the envelope in a plastic box or zip lock bag in a refrigerator. It will be fine! Be sure to keep captured butterflies out of the sun.



Nectaring monarch, with abdomen hidden between hindwings.



WHEN RELEASING A BUTTERFLY

There are many species of butterflies residing in every state. Enjoy and become acquainted with the ones that live in your area before you attempt to raise others. If they are not in your area now, it's because what they need to survive is not present. With the signing of the Plant Protection Act, there is now a \$50,000 fine for illegally transporting a butterfly across a state line.

- *Do experience the excitement of raising butterflies.*
- *Do release your butterflies back into your garden.*
- *Do release them outside at the proper time of year.*
- *Do use only healthy and active butterflies.*
- *Do use butterflies from your home state.*
- *Do encourage others to nurture and release butterflies.*
- *Do not import live butterflies from other countries.*
- *Do not ship live butterflies out of your home state unless you have secured permits from the United States Department of Agriculture.*
- *Do not purchase live butterflies from breeders who do not have the proper permits.*
- *Do not release butterflies into an area where they would not naturally be found.*
- *Do not release butterflies at a time of year when they would not normally be flying.*
- *Do not collect butterflies from state or federal parks.*

BUTTERFLY ANATOMY AND LIFE CYCLE

Fill in the blanks below using words from the word bank.

Word Bank

Metamorphosis

insects

eyes

leaf

six

flying

adult

butterfly

caterpillar

egg

chest

skin

Butterflies are beautiful, flying _____ that have large scaly wings. Like all insects, they have _____ jointed legs, 3 body parts, a pair of antennae, compound _____, and an exoskeleton. The three body parts are the head, thorax (the _____), and abdomen (the tail end).

The butterfly's body is covered by tiny sensory hairs. The four wings and the six legs of the butterfly are attached to the thorax. The thorax contains the muscles that make the legs and wings move.

Butterflies and moths undergo complete _____ in which they go through four different life stages.

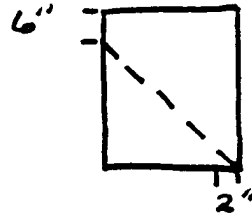
- Egg – A _____ starts its life as an egg, often laid on a _____.
- Larva - The larva (_____) hatches from an _____ and eats leaves almost constantly. The caterpillar molts (loses its old _____) many times as it grows. The caterpillar will increase up to several thousand times in size before pupating.
- Pupa - It turns into a pupa (chrysalis); this is a resting stage.
- Adult - A beautiful, _____ adult emerges. This _____ will continue the cycle.

MAKING A BUTTERFLY NET

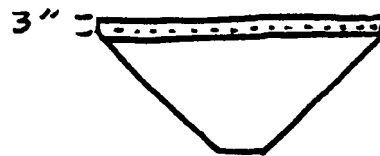
Step 1. Fold netting in half.



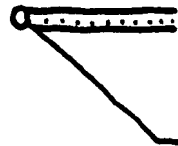
Step 2. Cut folded netting.



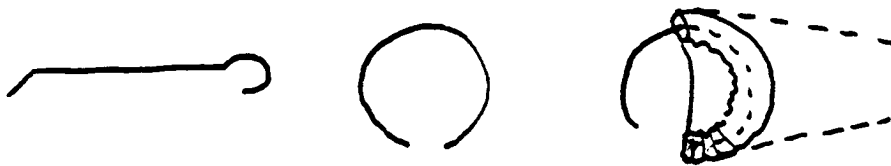
Step 3. Unfold and 3 inch hem at top.



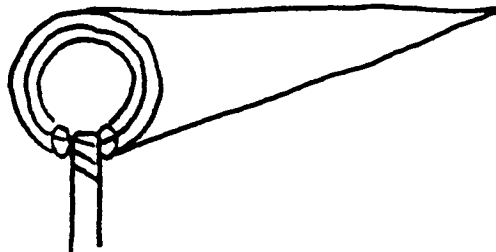
Step 4. Fold again and sew together.



Step 5. Straighten a coat hanger, bend in a circle and thread through hem.



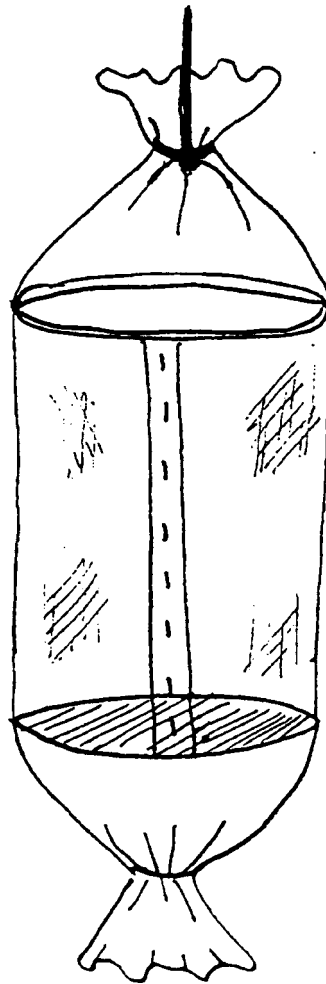
Step 6. Bend ends to fit handle.



Step 7. Tape wire to handle.

BUILDING A BUTTERFLY CAGE TO HANG

- *If using a hanger, bend into a circle.*
- *Cut a rectangle of netting large enough to go around the cardboard and the hanger, with several inches of overlap.*
- *Close the netting around the cardboard and tie off the bottom end.*
- *Attach the hanger or embroidery hoop to the netting with paperclips.*
- *Tie off the top of the cage with rope.*
- *Finish by using toothpicks to connect the overlapping flaps.*
- *Hang from ceiling or other sturdy support inside the class room.*



Note: Kid tent (with screening) may be used for large, in-class butterfly cages.