

Caterpillars to Butterflies

AUTHOR:

Original lesson developed by Elaine Wilson, available at the Columbia Education Center Web Site: <http://www.col-ed.org/>. Modified by Michigan Water Stewardship Program.

LESSON OVERVIEW:

This science lesson allows students to observe the development of a caterpillar into a butterfly.

Michigan Grade Level Content Expectations (GLCEs):

- Demonstrate the importance of sunlight and warmth in plant growth (E.ES.01.12).
- Identify the needs of animals (L.OL.01.13).
- Describe the life cycle of animals including the following stages: egg, young, adult, egg, larva, pupa, adult (L.OL.01.21).
- Identify characteristics (for example: body coverings, beak shape, number of legs, body parts) that are passed on from parents to parents (L.HE.01.11).
- Classify young animals based on characteristics that are passed on from parents, e.g. dogs/puppies, cats/kitten, cows/calves, chicken/chicks (L.HE.01.12).
- Share ideas about science through purposeful conversation (S.IA.01.12).
- Communicate and present findings of observations (S.IA.01.13).
- Develop strategies for information gathering (ask an expert, use a book, make observations, conduct simple investigations, and watch a video (S.IA.01.14).
- Make purposeful observation of the natural world using the appropriate senses (S.IP.01.11).
- Generate questions based on observations (S.IP.01.12).
- Construct simple charts from data and observations (S.IP.01.16).
- Demonstrate scientific concepts through various illustrations, performances, models exhibits, and activities (S.RS.01.11).
- Recognize that science investigations are done more than one time (S.RS.01.12).

OBJECTIVES:

Students will be able to:

1. Develop language.
2. Learn sequencing skills.
3. learn graphing and other math skills.
4. Experience art in a different light.
5. Learn about balance in nature, using the life cycle of the butterfly as an example.
6. Compare and contrast butterflies and moths.

GRADE: 1

SUBJECTS: Science

DURATION: several days

GLCEs: E.SE.01.12, L.OL.01.13, L.OL.01.21, L.HE.01.11, L.HE.01.12, S.IA.01.12, S.IA.01.13, S.IA.01.14, S.IP.11, S.IP.01.12, S.IP.01.16, S.RS.01.11, S.RS.01.12.

MATERIALS:

- Butterfly kit (see Resources)
- Various arts and crafts supplies: crayons, scissors, construction paper, etc.
- See book list
- See video list

BACKGROUND INFORMATION:

The activity involves language, science, math, and art - it is a cross-curriculum project. This unit encompasses four learning modalities: language, visual, auditory, and fine motor.

VOCABULARY:

Butterfly, monarch, reed admiral, tiger swallowtail, common sulfur, painted lady, caterpillar, segments, transparent, egg, pupa, larva, chrysalis, cocoon, egg, young, adult, characteristics, parents, air, water, food, body coverings, insects, moth.

PROCEDURES:**Warm-Up (Anticipatory Set):**

Activity:

Order a butterfly kit. The kit contained caterpillars in a small plastic cup with food, a garden box to view the butterflies, and the rest of the supplies needed. The next time you do this lesson, you will just need to order a replacement larva kit of caterpillars and food.

To help count down the days in May, create a calendar using different shaped and colored caterpillars for each day. Follow a pattern according to color. Select books to read to the students.

Compare different kinds of butterflies: monarch, red admiral, tiger swallowtail, common sulfur, and painted lady. Encourage students to draw and color pictures of other butterflies.

Do a graphing lesson on a favorite butterfly. Learn the difference between butterflies and moths. Estimate the number of days from the caterpillar to chrysalis stage. Estimate the number of days from the chrysalis to butterfly stage. Learn and label the six parts of a butterfly.

Do a sequencing lesson on the life cycle of a butterfly beginning with eggs on a leaf, caterpillar stage, pupa or chrysalis stage to adult butterfly.

Observe the growth of the caterpillar in the cup. Take digital pictures to track progress every day or couple of days. As the caterpillar gets bigger, it is easier to see the segments of the caterpillar. Make a paper caterpillar, including the 12 segments plus the head and tail. Make a construction paper caterpillar which opens up to be a butterfly. After making these, learn the following poem:

Caterpillar, by Lillian Vabada

Fuzzy, wuzzy, creepy crawly

Caterpillar funny

You will be a butterfly

When the days are sunny.

Wiggling, flinging, dancing, springing

Butterfly so yellow,

You were once a caterpillar,

Wriggly, wiggly, fellow.

You can also learn the following poem:

The Caterpillar, by Christina G. Rossetti:

Brown and furry
Caterpillar in a hurry,
Take your walk
To the shady leaf, or stalk,
Or what not,
Which may be the chosen spot.
No toad spy you,
Hovering bird of prey pass by you;
Spin and die,
To live again a butterfly.
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From *Sing-Song: A Nursery Rhyme Book*, 1893

Make caterpillar books. They can be made in the shape of a caterpillar. Students can use their knowledge to write a story of what happens to a caterpillar from the caterpillar's point of view.

As the chrysalis starts to turn black and transparent, predict which chrysalis will become a butterfly first. Have students observe the chrysalis and butterflies and help feed the butterflies with sugar water. Add real flowers in the flower garden box.

Wrap-Up (Closure):

Reflect back to the beginning of the lesson. Talk about what the caterpillars looked like and what they developed into. Discuss the changes, and how this happens every year, year after year. As a class, sing a special goodbye song together to the butterflies. Release the butterflies to their natural habitat.

ASSESSMENT OPTION:

Review each stage of the butterfly lifecycle to be sure students understand that each stage is important in order for the egg to turn into a butterfly. What would happen if the butterfly does not complete each phase of metamorphosis? For example, what happens if the pupa stage is not completed?

EXTENSIONS:

Discuss other living organisms that have a lifecycle similar to a butterfly, such as frogs and dragonflies. Talk about the changes, and how they are similar to those of the butterfly.

Discuss how the butterflies' growth and changes are similar to and different from their own growth and development. Have students look for pictures taken at different ages, and draw pictures of how they have changed over time.

RESOURCES:

The [Butterfly Kit](#) can be ordered from a company such as Insect Lore Products, Inc., P.O. Box 1535, Shafer, CA 93263); (800) LIVE-BUG.

[Video List:](#)

[Geo Kids: Tadpoles, Dragonflies, and the Caterpillar's Big Change](#) (National Geographic Society). For information or to order, call (800) 368-2728.

[Book list:](#)

[The Life Cycle of the Painted Lady Butterfly](#), by Barbara Murray.

The Very Hungry Caterpillar, by Eric Carle.

A Moth is Born, by Rand McNally Publishers.

Now I Know...A Butterfly, by Troll.

Amazing World of Butterflies and Moths, by Louis Sabin and Jean Helmer.

Mysteries and Marvels of Insect Life, by Dr. Jennifer Owen.

The Life Cycle of the Butterfly, by Paula Hogan.

Butterfly Story by Anca Hariton (Dutton, 1995).

Life of the Butterfly by Heiderose and Andreas Fischer-Nagel (Carolrhoda, 1995).

The Butterfly Alphabet Book by Brian Cassle and Jerry Pallotta, illustrated by Mark Astrella (Charlesbridge, 1995).

The Moon of the Monarch Butterflies by Jean Craighead George (HarperCollins, 1993).

Butterflies Abound! A Whole Language Resource Guide for K-4 by Seddon Beaty (Addison-Wesley, 1993).