



Children's Museum of Houston

Pre/Post Classroom Activities

Life Cycle of a Butterfly

Rationale

EcoStation is an active, outdoor/indoor environmental exhibit where visitors engage in ecological studies and explore environmental issues by visiting a native plant garden, a woodland area, the bayou table, the pond and a research pavilion. Through these and several other exhibit areas, visitors can participate in diverse hands-on activities such as stream bed creation, insect collecting, tree rubbings, footprint identification, and more!

TEKS Objectives (Science)

K.7D, 1.7D: Observe and record stages in the life cycle of organisms in their natural environment.

K.1, 1.1: Demonstrate safe practices during classroom and field investigations.

K.2, 1.2: The student develops abilities necessary to do scientific inquiry in the field and the classroom.

Background

In this lesson plan, children will be able to observe, identify, and describe complete metamorphosis of butterflies. The development followed by most insects is called metamorphosis. There are two types: incomplete and complete. Complete metamorphosis takes place in four stages—egg, larva, pupa, and adult. It is the most complex form of development among insects and is found in insects such as bees, flies, and butterflies.

Vocabulary

Complete metamorphosis

Egg

Larva

Pupa

Adult

Materials (per group of students)

- Life Cycle Wheel handout
- Butterfly Life Cycle wheel directions sheet
- Books from resources list
- Paper plates
- Dried beans
- Shaped Pasta (spiral, shell, bowtie)
- Glue sticks
- Colored pencils, crayons or markers

Procedure

1. Start the lesson by reading aloud the book *Clara Caterpillar* by Pamela Duncan Edwards and Henry Cole to your students.
2. Discuss with students what they learned about the life cycle of a butterfly and discuss what a complete metamorphosis is and the insects that go through it in their life cycles.
3. Use the materials, the life cycle wheel handout, and the Butterfly Life Cycle wheel directions sheet to create a life cycle wheel of a butterfly.
4. For example, the beans can be used to represent the egg stage, the pasta for the chrysalis, and so on.
5. Check for understanding by having the students share their life cycle with a friend and explain the sequence of the metamorphosis.

Questions to ask

- What is complete metamorphosis?
- Which types of insects go through complete metamorphosis?
- How are the life cycles of butterflies and other insects similar? Different?

Extensions

Have your students create puppets for each of the stages of various complete metamorphosis insect life cycles and take turns role playing its life cycle.

Explore other metamorphosis cycles with a ladybug or other insect.

By ordering butterfly and grasshopper eggs from an online dealer, students will be able to observe the life cycle of butterflies and grasshopper and keep a journal of their observations.

Resources

- [Clara Caterpillar](#) by Pamela Duncan Edwards and Henry Cole..An excellent story for young readers about a Caterpillar named Clara who undergoes metamorphosis.
- [Waiting for Wings](#) by Lois Ehlert. With a simple, rhyming text and glorious color-drenched collage, Lois Ehlert provides clear answers to these and other questions as she follows the life cycle of four common butterflies.
- Other Life Cycle Series, How Living Things Grow Series, and Bugs! Bugs! Bugs! Series Books

Websites

- BrainPop: www.brainpop.com/science/ecologyandbehavior/metamorphosis/. In this movie about metamorphosis, Tim and Moby explain which creatures go through different kinds of metamorphoses, plus the difference between complete and incomplete metamorphosis.
- Insect Zoo: Life Cycles www.ent.iastate.edu/zoo/lessonplans/lifecycles.html. A detailed description for teaching about how mealworms undergo metamorphosis.

- Utah Education Network: Insect Metamorphosis
http://www.uen.org/utahlink/activities/view_activity.cgi?activity_id=2024. Gives an explanation of the difference between complete and incomplete metamorphosis.
- Insect Metamorphosis <http://www.amonline.net.au/insects/insects/metamorphosis.htm>. Provides teachers with in depth explanation of insect metamorphosis- complete and incomplete.

What are the stages of a butterfly's life cycle?



Materials:

- *Clara Caterpillar* by Pamela Duncan Edwards and Henry Cole
- Life Cycle Wheel handout
- Dried beans
- Shaped Pasta (spiral, shell, bowtie)
- Glue
- Markers/colored pencils/crayons
- Scissors
- Paper plates

Procedure

1. Read *Clara Caterpillar* by Pamela Duncan Edwards and Henry Cole.
2. Discuss how Clara Caterpillar changes throughout the story, and create a Life Cycle Wheel.
3. Cut out the Life Cycle Wheel and glue it to the center of the paper plate.
4. Glue the bean on the first section of the wheel for the "egg".
5. Glue a piece of spiral pasta on the second section of the wheel for the "caterpillar" stage.
6. Glue a piece of shell pasta on the third section of the wheel for the "chrysalis" stage.
7. Glue a piece of bowtie pasta on the fourth section of the wheel for the "butterfly".
8. Use the markers to decorate the pasta.

Questions to ask

1. What other insects go through a similar life cycle?
2. What other living things go through a big change like a caterpillar to a butterfly?

The Butterfly Lifecycle

