



The Functions of a Butterfly's Body Parts Throughout its Life Cycle

Focus Overview

Students who have been previously exposed to a butterfly's life cycle will have the opportunity to learn about the body parts of the butterfly in each of the four stages of its life cycle.

Learning Objectives

The student will be able to:

- Label the stages of the butterfly cycle
- Put the stages of the butterfly cycle in correct order
- Give approximate length of time spent in each stage of the life cycle
- Describe one body part and its function in each of the 4 stages of the life cycle.

Louisiana Grade-Level Expectations

Life Sciences

Characteristics of Organisms

41. Describe how parts of animals' bodies are related to their functions and survival (e.g., wings/flying, webbed feet/swimming) (LS-E-A3)

Background Knowledge

Students should have some prior exposure to the butterfly's lifecycle.

Materials

Each child will need one of the following

- Paper plate
- Orzo pasta (represents egg stage)
- Shell pasta (represents pupa stage)
- Penne pasta (represents larvae stage)
- Bow Tie pasta (represents adult stage)
- Markers
- Glue
- Magnifying glass

Only one item needed per class

- The book *A Butterfly's Life* by Melissa Blackwell Burke
- A 3 dimensional model of the life cycle

Grade Level

4

Duration:

1-1.5 hours (up to two class periods)

Setting:

The entire lesson can be completed in the garden weather permitting. Otherwise complete the book and paper plate activity indoors and go to the garden when it is nice.

Vocabulary:

Complete
Metamorphosis, Pupa, Larvae, Chrysalis, spinneret, hind claspers, jaws, scales, proboscis

Procedure

1. Spark student interest and prior knowledge by reading *A Butterfly's Life* by Melissa Blackwell Burke to the class.
2. Place the 3 dimensional models of the butterfly life cycle randomly onto a table. Ask students to gather around. Can students arrange them into the proper order?
3. Pose questions about each stage that highlight the body parts and functions of the butterfly as it goes through complete metamorphosis.
 - What is special about the shell of the butterfly's egg?
 - As the egg matures does its color change before the caterpillar hatches?
 - The caterpillar has a body that is divided into segments. What is the special function of each segment? (Hint: we have lungs to help us do this).
 - The caterpillar is able to spin silk or sticky thread behind its _____? This helps what occur?
 - Which way does a caterpillar hang when he/ she is in its chrysalis?
 - How does the caterpillar breathe when it is in the pupa stage?
 - How many times did the caterpillar molt prior to the pupa stage?
 - The adult butterfly has three main body parts head thorax and abdomen. How does having three segments rather than just one help it move?
 - What are the purposes or functions of the butterfly's wings?
4. On a separate table/ bench have the paper plates, pasta shapes, glue and markers spread out.
5. Ask students:
 - What is the name of each stage?
 - What order do the stages go in? (It is important here to establish that it is a cycle, and therefore a circle. Use arrows to illustrate. Have students repeat the stages in the cycle as you say and point to each stage.)
6. Have students divide their paper plates into four equal "pie pieces" by drawing lines.
7. Have the students place one pasta piece in each of the sections of paper plate in the order of the butterfly lifecycle. Walk around to check that students have this correct.
8. Ask students if someone looking at their plate would know what order (i.e. clockwise or counter clock wise?) the lifecycle of the butterfly goes in. Suggest that students draw arrows on the rim of their plates to indicate the correct order. Have students label each stage.
9. Have students glue the pasta pieces to their plates.
10. Students should label each section with one body part and function in each stage on the plate.
11. Take students out to the garden. Using hand lenses have them search for real examples of each stage! As they find eggs, larvae, pupa and adult butterflies examine them closely with the hand lenses see if you can spot some of the body parts of the butterfly!