

# Butterfly Symmetry

## Summary

Students explore lines of symmetry, patterns in nature, and life cycles as they study butterflies.

## Time Frame

4 class periods of 45 minutes each

## Group Size

Large Groups

## Life Skills

Communication

## Materials

- The Butterfly Alphabet by Kjell Sandved
- Internet access
- posterboard
- butterfly pattern master
- markers
- scissors
- tape
- pennies

## Background for Teachers

Teach your class the concept of symmetry. If possible do some activities to explore this concept using mirrors, etc.

## Intended Learning Outcomes

Use reference sources to obtain information. Know basic science facts. Prepare reports.

## Instructional Procedures

Have the students gather in an area for a story. Talk about patterns that occur in nature. Read The Butterfly Alphabet. As the students look at the large wing photos that show the alphabet, also encourage them to look closely at the small pictures of the butterflies to see the symmetry. Using a T.V display, or with students at individual computers, go to the Butterfly Collections Page and look at the adult monarch closeup. It shows an excellent example of butterfly symmetry. Go to the Symmetry Page. There is an activity for making your own 'Balancing Butterfly'. Click on the link 'Butterfly Pattern' to get a pattern you can print and use as a blackline master. Go back to the Symmetry Page. Follow the step by step instructions, with great photo illustrations, that tell you how to make your Balancing Butterfly. Encourage the students to use symmetry as they design their butterfly wings.

After students have had a chance to balance their butterflies, display them where others can see their great examples of symmetry.

To teach students about the life cycle of butterflies and moths, continue with the next steps. The following web sites illustrate the life cycle of the butterfly:

- The Butterfly and Moth Life Cycle and

## Metamorphosis

After observing the stages of the life cycle of the butterfly, instruct students to create their own illustrations of the butterfly life cycle and label each stage of development.

Ask students to compare the life cycle of a butterfly with the life cycle of an animal with which they are familiar; a dog, cat, horse, frog, bird, etc... How are butterfly life cycles similar to the life cycles of other animals? How are they different?

To go on a virtual field trip to monarch sanctuaries in Mexico, visit Mariposa Monarca. This is a fun way to learn about the story of the monarch butterfly.

## Extensions

Observe and collect data on butterflies in your area. Encourage students to record data such as how what species of butterflies they observe, how many of each species, where the butterflies are observed, what they eat, etc....

## Assessment Plan

Evaluate the students' illustrations of butterfly life cycles for accuracy. Give the students an example of another insect that undergoes complete metamorphosis and ask them to describe the stages.

## Authors

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