

# Butterfly Symmetry

Grades: K-3



**Illinois Extension**

UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

## Objectives

Students explore butterflies to learn about the symmetry of the wings and then create a butterfly.

## Background

1. *What is symmetry?* When two parts of a whole are identical. You can draw a line (line of symmetry) down the middle and each side of the line looks the same! A heart is a great example of symmetry. What are other symmetrical shapes? Symmetry is found all over in nature. What animals and plants are symmetrical?

## Books:

- *Looking at Nature: What is Symmetry in Nature?* By Bobbie Kalman
- *Seeing Symmetry* by Loreen Leedy

## Videos:

- Butterfly Wings <https://www.youtube.com/watch?v=n0ZsuAVucMs>
- Butterfly Camouflage & Mimicry <https://www.youtube.com/watch?v=MzllT2PlbaM>

## Activity 1: Painted Butterfly Symmetry

### Materials:

- Pictures of butterflies (1 handout per student)
- Butterfly cutouts on cardstock
- Paint
- Paintbrushes
- Newspaper

1. Pass out the pictures of the butterflies to students, or pairs of students, and ask students to study the pictures and come up with 2 things they notice about the butterflies.
2. As a group, talk about the different things they notice about the butterflies. Are designs on all their wings the same? Are both wings identical? Explain that symmetry is when things are identical on both sides. If you would fold something in half it is exactly the same on both sides.
3. Ask the group to list other things in nature that are symmetrical (leaves, insects, humans-faces, and bodies)
4. Students now create their own butterflies using the butterfly cutout and paint. Students paint a design one side/wing of the butterfly, making sure to apply a thick layer of paint.
5. Have the students fold the butterfly in half (the unpainted side onto the painted side), and gently press the entire paper down. This step can be done over newspaper in case paint leaks out the side.
6. Gently open up the paper cutout and see the beautifully symmetrical butterfly! Students can share their designs with their classmates and even give their new butterfly a name. Lay flat for several hours to dry completely.

## Activity 2: Butterfly Building Block Symmetry

### Materials:

- Butterfly symmetry handout
  - Colored building blocks
1. Give each pair of students a handout and a bag of building blocks. (Blocks can also be sorted into two groups with identical pieces for younger groups.) Ask students to make a design on the left side of the butterfly. Once all students have completed, ask them to create the exact design on the right side of the butterfly, creating a symmetrical design.
  2. Have students share their design with the class, explaining why they chose a certain pattern, color, or design.

## Activity 3: Paper Butterflies

### Materials:

- Construction paper
  - Scissors
  - Pipe cleaners
  - Glue
  - Markers
1. Students will be creating symmetrical butterflies using construction paper. First, demonstrate folding the paper in half, drawing the outline of the butterfly (A pattern/template can also be provided.), and cutting out the outline. When they open the construction paper the outline will be symmetrical.
  2. Glue the pipe cleaner down the center (line of symmetry) to resemble the body of the butterfly. Create antennae from a second pipe cleaner (cut in  $\frac{1}{4}$ ) and glue it to the top of the butterfly.
  3. Students may create designs on the wings by either drawing or cutting shapes from colored paper, keeping in mind each side of the wings should be identical though.
  4. For younger students, teachers can provide various shapes for students to select and glue on the identical spot on the opposite wing.
  5. Have students show the class their butterflies, explaining what makes them symmetrical.

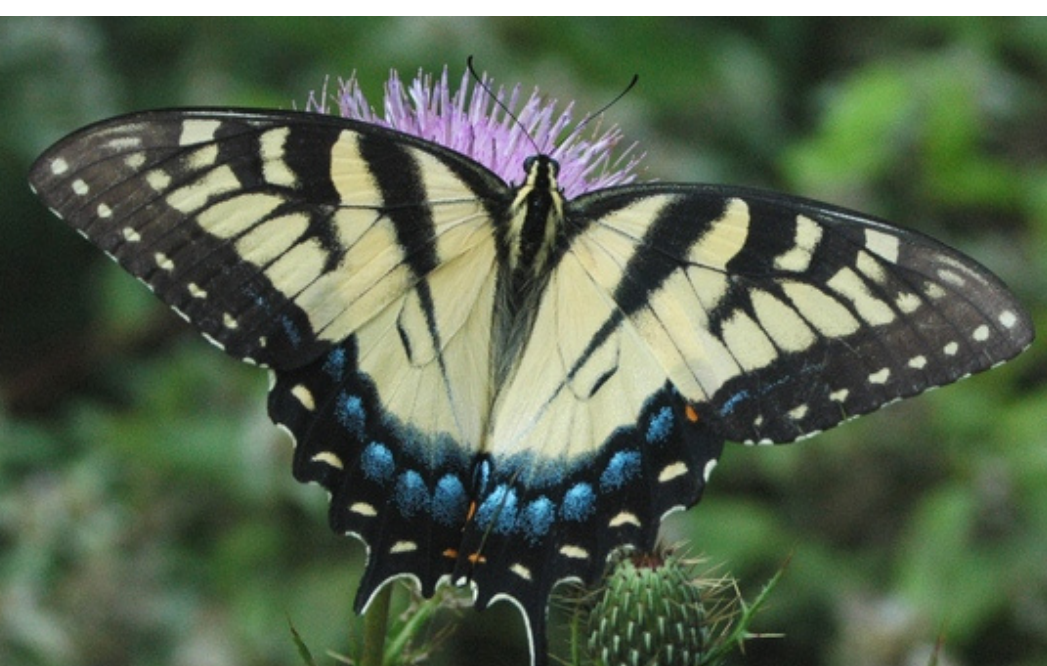
### Teacher Resources

- [www.enchantedlearning.com/monarchbutterfly](http://www.enchantedlearning.com/monarchbutterfly)
- [www.flightofthebutterflies.com](http://www.flightofthebutterflies.com)
- <https://monarchjointventure.org/>
- *Lifecycles of Butterflies* by Judy Burris
- *Butterflies of Illinois* by Michael Jeffords, Susan Post, James R. Wiker

### Evaluation

**High Five a Friend-** everyone stands up, finds a buddy to high five. That's the person they share a fact they learned from today's lesson. They can repeat the High Five and fact sharing with several buddies.  
(K-2)





## **Eastern tiger swallowtail**

*Gerald Holmes, Strawberry Center, Cal Poly San Luis Obispo, Bugwood.org*



## **red admiral**

*Kevin D. Arvin, Bugwood.org*



## **Monarch**

*William M. Ciesla, Forest Health Management International, Bugwood.org*



## **Common buckeye**

*Jerry A. Payne, USDA Agricultural Research Service, Bugwood.org*

