Butterfly Symmetry

Materials: round coffee filters, food coloring, cotton swabs (optional), paper plates, plastic cup, water, spring-type clothespin, pipe cleaner, marker or wiggly eyes and glue (optional)

Background Information: Look closely at a butterfly's wings and you'll see that each is made up of thousands of overlapping, iridescent scales — a shining example of symmetry in nature. A butterfly has bilateral symmetry. The line of symmetry is the imaginary line that divides something into two exactly equal and opposite parts. These two parts mirror each other; you can fold the figure in half and the two parts match exactly.

STEM Career Connection: A Lepidopterist studies butterflies and moths.


NOTE: Hands and clothing may get stained from food coloring. Work carefully and be sure to protect your clothes and work space from staining.

Challenge:

1. Gather materials.
2. Fold the coffee filter in half and then in half again.
3. Place the folded filter on a paper plate. Use food coloring to dab designs on the folded filter, using different colors and shapes (such as rings, dots, or lines). Make patterns from a real butterfly or make up your own.
4. When you are finished making your designs, dip the folded tip of the filter in the cup of water. Observe what happens as water moves up the filter.
5. After a few minutes remove the filter from the water, open it up, and spread it on a clean paper plate to dry. Notice what happens to the filter as it dries. In what ways is your filter symmetrical?
6. When the filter is dry, pinch the filter together in the middle, then slide it into the clothespin and spread out the wings.
7. Insert small pieces of pipe cleaner into the front of the clothespin for the antennae. Draw on eyes or glue on wiggly eyes.

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Moore Road Farm • 8407 Moore Road • Indianapolis, IN 46278