

A STEM in the Park

Take Home Activity

STEM

in the **PARK**™

Science, Technology, Engineering, and Mathematics



Butterflies!

A butterfly is a type of insect. Some insects, such as butterflies have wings while other insects, such as ants do not have wings. But all insects have three body parts and six legs. The life cycle of butterflies is called complete metamorphosis. This is a Greek word that means transformation or change in shape. Complete metamorphosis has four basic steps.

1. Adult female butterfly lays eggs.
2. Butterfly eggs hatch forming larvae (caterpillars).
3. As the caterpillars grow, they molt, which means they shed their outer skin. After the last molt, a harden shell forms around the caterpillar. This stage of development is called the pupae and the covering is called a chrysalis.
4. Inside the chrysalis, the caterpillar actually breaks up and the material recombines forming an adult butterfly.

Egg → Larva → Pupae → Adult butterfly

At Home: Make a Penny Butterfly Balancer

This easy to make butterfly balances on its head and seems to defy the laws of gravity. This craft demonstrates the center of gravity of an object.

Materials:

- Butterfly template (see back)
- Cardstock or poster board
- Glue
- 2 pennies

Continued on back

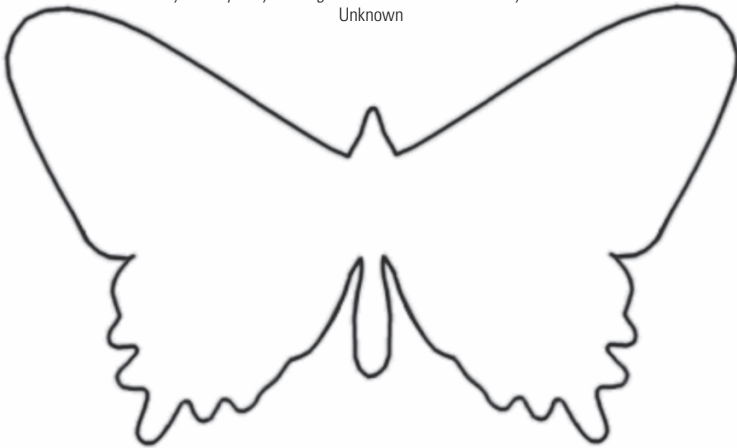
Try it out:

1. Cut out the butterfly template on cardstock/cardboard.
2. On the back of the butterfly, glue or tape the coins to the cardboard at the top of each wing. (The coins must be the same size and weight. Make sure you stick them in the same place on both wings.)
3. Turn the butterfly over and color/decorate.
4. Try balancing your butterfly on the tip of your finger. You'll have to experiment with where to place it so that it's balanced. Have fun exploring and balancing around the house on you and other objects.

What's happening?

The secret to this balancing act is the weights (pennies) that are taped under the butterfly's wings. Similar to how a tightrope walker carries a long pole, putting the pennies at the edges of the butterfly wings makes it more stable. Your finger must be under the butterfly's centre of mass so that it can balance on your finger.

*You can chase a butterfly all over the field and never catch it.
But if you sit quietly in the grass it will come and sit on your shoulder.*
Unknown



Adapted from: Science World at Tellus World of Science <http://www.scienceworld.ca/>

A VERY SPECIAL THANK YOU TO CAROLINA BIOLOGICAL FOR DONATING ALL OF THE BUTTERFLY MATERIALS FOR STEM IN THE PARK. PLEASE VISIT <http://www.carolina.com> FOR MORE INFORMATION ABOUT LIVE BUTTERFLY MATERIALS AND RESOURCES.

CAROLINA
World-Class Support for Science in Schools

*This activity is brought to you by BGSU School of Teaching and Learning:
AYA Program*