



DIY ACTIVITY

MAKE A PAPER GLIDER INSPIRED BY BIRD STRUCTURES

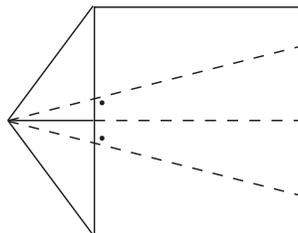
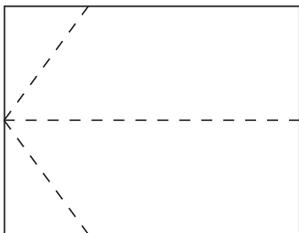
GRADES 3-5

OBJECTIVES

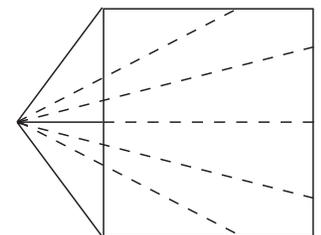
- Use the engineering design process to make a structure and redesign it based on test results.
- Use biomimicry to experiment with structures that accomplish similar functions for birds.

PROCEDURE

1. Cut the sharp point off of one skewer.
2. Choose a wing shape to mimic, based upon the shape of a bird's wing. To make a wing modeled after an albatross, like Zoe does in the video, follow the folding instructions below.
3. Fold the construction paper in half lengthwise. Then fold two of the corners toward the center fold. Use the coin to press along the folds and create a strong crease. Finally, fold the wings back over the folded corners to create the glider shape.



4. Have an adult help you poke a hole at the edge of the fold under the wing (see video). Then insert the wooden skewer through the hole to create support for the wings. Tape the skewer to the wing.
5. Send your glider on a test flight.
6. Try modifying the structure of your glider to more closely mimic a bird. Replace the skewer with straws which are lighter and hollow, like bird bones. Also, you might try changing the shape of the wings to make them even narrower.



7. Try another test flight.
8. Try adding a tail. Birds use their tails to help them control their flight. Cut a triangular piece of construction paper, insert it into the back of the fold and tape in place.
9. Test the glider again.
10. Try other modifications based on different bird structures.

WHAT IS GOING ON HERE?

Using the structures of living things to help inspire engineering designs is called biomimicry. Birds and other living things have structures that serve a specific function. When humans need to solve similar problems they can turn to animals and plants for answers.

FURTHER EXPLORATION

The point of this DIY Activity is to experiment with different bird structures and see what works and what doesn't. Research the structure of different bird's bodies and wings, and try designing and testing gliders in different shapes. Keep notes about what worked and what didn't. You are using biomimicry to design and redesign—just like an engineer!

 Skewers and scissors are sharp. Have an adult poke a hole through the construction paper with the scissors.

