



Curiosity Guide #205

Flowing Air

Accompanies Curious Crew, Season 2, Episode 5 (#205)

Air Glider

Investigation #9

Description

Make and fly a lightweight glider! Find out how updrafts work!

Materials

- Glider template, at end of this document
- Phone book or tracing paper for glider
- Scissors
- Tape
- Large sheet of cardboard or foam board, or political yard sign, at least two feet square, to create updraft

Procedure #1: Making the glider

- 1) Print out a copy of the glider template.
- 2) Cut one of the templates out.
- 3) Place the template on top of a sheet of paper from a phone book or thin tracing paper.
- 4) Tape the two ends of the template onto the paper. Do all cutting and folding with the template and glider paper taped together.
- 5) Cut out the outline of the glider. Be sure to cut around the tape on the two short ends to maintain the tape bond between the template and the glider paper. You will remove the template at the very end of this procedure.

- 6) On one long side, bend and fold the glider, still attached to the template, along the dotted lines so that it angles down. This will be the leading edge.
- 7) On the opposite long side, bend and fold the glider along the dotted line. Crease it upward. This will be the trailing edge.
- 8) Bend the short ends of the glider 90° upward.
- 9) Finally, snip off the remaining tape, trim the short ends, and remove the template from the glider.

Procedure #2: Flying the glider

- 1) Hold the upward trailing edge of the glider in one hand. Hold the cardboard in the other hand, so that it is nearly vertical. Tip or angle the cardboard just slightly back at the top.
- 2) Hold the glider at forehead height. The board should be at shoulder height and just behind the glider.
- 3) Gently push the glider forward and down.
- 4) The glider will begin to rotate.
- 5) Immediately walk behind the glider. It will rotate and fly across the room.
- 6) If the glider begins to fall, walk faster.

My Results

Explanation

The movement of the cardboard causes an updraft that lifts the glider into the air. Walking faster causes a great updraft, which increases the lift. By turning your direction, the glider will also turn. If the glider turns by itself, compare it to the template and adjust the creasing as necessary to make the glider fly straighter.

Something else to think about: Have you ever seen someone hang-glide? The pilot launches the hang glider by running down a slope to pick up speed. That fast moving air going over the wing causes the wing to lift. As the pilot falls toward the ground, more air moves over the wing and lifts the pilot higher. Sometimes the pilot will catch a column of warm air or updraft from the slope of the ground and lift the hang glider, just like the cardboard did for your little air glider. Amazing!

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Air Glider Template

