

Organization Name: Council for Elementary Science International

Activity Name: Paper Whirlybird

Activity Description: participants will construct a paper model of a helicopter to observe variables and motion, plus more.

1. Take 4  $\frac{1}{4}$  X 11 inch piece of paper. Hold with short side toward you.
2. Measure and cut about a 5-inch slit lengthwise down the center of the paper.
3. Mark edges at end of slit on opposite sides. Cut a 1-inch slit in from each edge at the marks.
4. Fold in the sides below the slits toward the center; they will overlap.
5. Use tape to attach the two folded sides together.
6. Fold the bottom edge up twice, 1 inch at the time. Fasten with paper clips.
7. Fold one flap toward you and the other away from you.
8. Throw whirlybird straight up in the air to make it fly downward.
9. Have fun!

Suggested Grade Level / Age Range: Grades 1-12

Science Content Covered: motion and gravity and scientific investigation

Time needed to complete the activity: 2-3 minutes

Materials Required (per student): Paper outlined whirlybirds, paper clips and scissors optional

### Activity Success Tips for Parents and Teachers:

The spinning effect is due to the action of air on the wings as it rushes past the dropping whirlybird. The longer the wings, the slower the drop because of the uplift on the greater wing area. The more paperclips, the faster the drop and spin because of the greater weight. Flipping the wings will cause it to spin in the opposite direction.

Insert Any Images / Photos / Drawings needed to help describe or explain the activity:

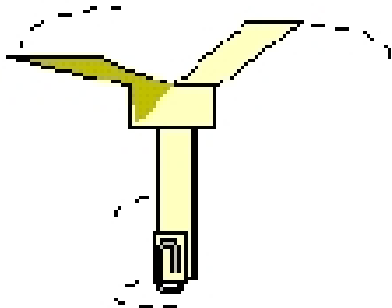


Image from <http://www.maniactive.com/paper-airplanes.jpg>  
Description from  
[http://www.ied.edu.hk/apfslt/v3\\_issue2/tytler/tytler4.htm](http://www.ied.edu.hk/apfslt/v3_issue2/tytler/tytler4.htm)

Possible follow-up, extension activities or ideas for children and parents to explore: Encourage students to conduct several trials, test several variables (height of drop, number of turns per drop, speed of drop, direction of rotation and compare results their results).

Safety comments / considerations: Always be careful of objects that are being thrown - for any eye injury. Encourage students to explore in a controlled and thoughtful fashion.

If your activity should be credited to any specific source or citation - indicate that here:

Web info for the Whirlybird Research for Langron EC - Excerpts from:  
Carmenita M.S. ; T. Howard and K. Yoshikawa  
[teacherweb.com/CA/CarmenitaMiddleSchool/King/Whirlybird.doc](http://teacherweb.com/CA/CarmenitaMiddleSchool/King/Whirlybird.doc)

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