

PAPER HELICOPTERS

Duration: 1-5 Minutes

Institution: Science Museum of Minnesota

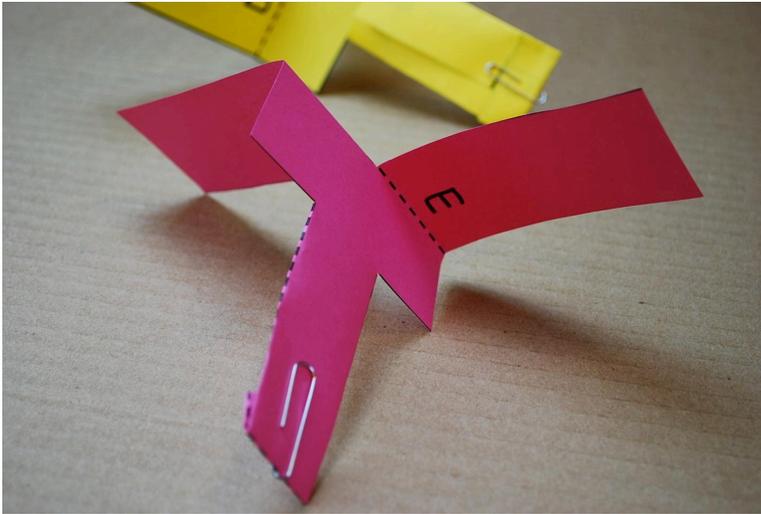
Skill level/Age Level: K-Grey

Group size: 1-5 participants

INTRODUCTION

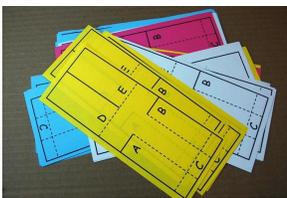
Create a simple paper toy “helicopter” that spins as it falls.

This deceptively simple activity that lets you explore complex behavior of air and pressure. With a piece of paper, scissors and a few folds you can explore aerodynamics.



This activity is great for very young kids to do paper folding and cutting. Using a copied template learners quickly can cut and fold their helicopter. Its great for experimenting with the scientific process by observing the phenomena, analyzing the behavior, and then measuring speed, distance and timing

MATERIALS AND TOOLS



Essential Materials:

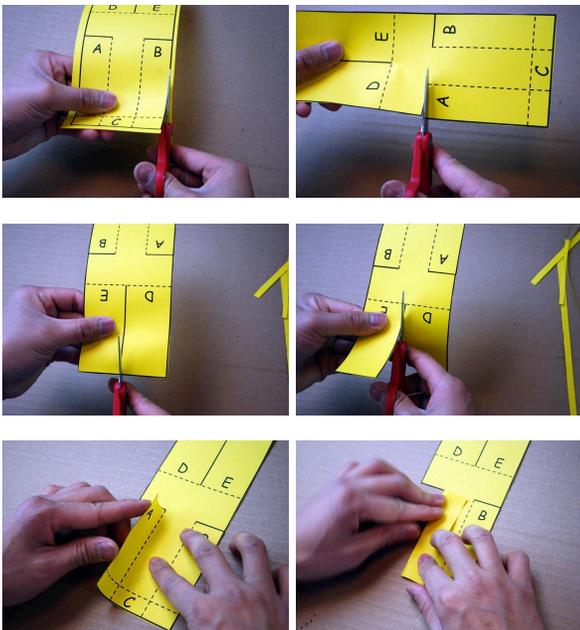
- Printed templates (in many bright colors) ready to cut out.
- Scissors. Child safety scissors work great.
- Paperclips for weight (can be optional or required)

*Optional Materials:*

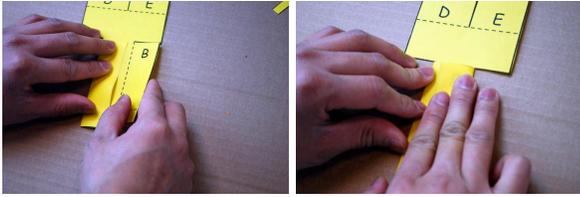
- Powered fans give you the ability to lift the helicopter up into the air

**HOW TO OR STEP-BY-STEP**

1. In the template cut all solid lines. Dashed lines are for folds



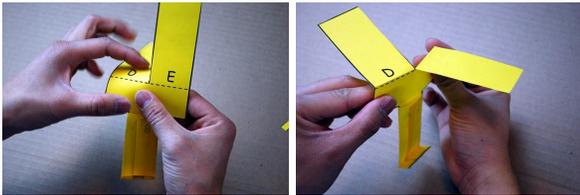
2. Once you've finished all of the cuts, start with "A" then "B" (and on) making the folds.



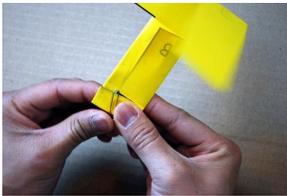
3. It doesn't matter if you for "A" and "B" inward or outward or opposite of each other.



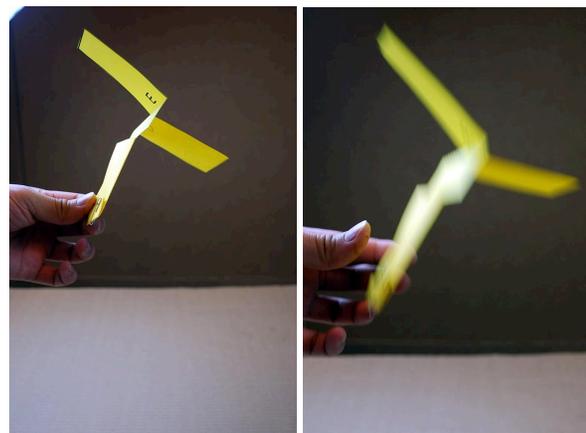
4. "C" is folded up to hold "A" and "B" together. These folds will make this area heavier than the blade area when it falls.



5. Fold the helicopter blades "D" and "E" opposite of each other



6. Finally add the paper clip for additional weight to the helicopter and try it out!



FACILITATION TIPS

One of the most interesting and fruitful questions to share with the learner is “why does it spin?”

This question provides the opportunities to experiment with the shape and construction of the helicopter. It's great for focusing on the embodied knowledge the learners have—ask them the question and as they think about it prompt them to describe the motion with their body—their hands and arms—and as they make motions point out how well they can describe what is going on—and that sometimes we know before we know the words.

MORE INFORMATION

ORIGAMI Paper Helicopter

Great video instructions on how to make a helicopter from a single strip of paper—origami style

<https://www.youtube.com/watch?v=Jg96vdhUC34>

Helicóptero fácil de papel

Origami tutorial and video instruction on how to make a traditional paper helicopter. SUBTÍTULOS EN ESPAÑOL

<https://www.youtube.com/watch?v=zw83sMoBiME>

The Paper Helicopter Experiment

The paper helicopter experiment lab provides an efficient and fun way of learning material relevant to the course. By completing the project you will become familiar with the fundamental concepts of experimental planning and gain knowledge of the theory behind two-level fractional factorial designs.

<https://www.paperhelicopterexperiment.com/>

KEYWORDS

- Origami mathematics
- Algorithm
- Geometry
- Folding