Hallo-copter

Materials:

- Hallo-copter pattern
- Scissors
- Tape and/or paperclip

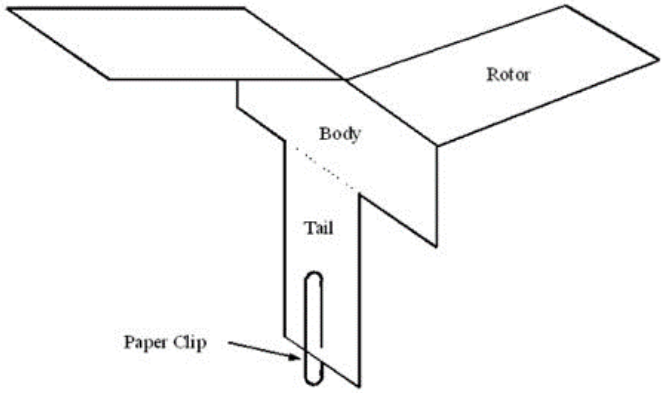
Activity overview:

Throw your Hallo-copter by holding the tape on the bottom fold and throwing it into the air

How to build your own:

Hallo-copter

1. Cut out the pattern.
2. Cut on the solid lines.
3. Fold on the dotted lines.
4. Fold wing 'A' toward you. Crease at the dotted line.
5. Fold wing 'B' away from you. Again, crease at the dotted line.
6. Fold 'C' and 'D' over so that they overlap.
7. Now, fold the bottom up to the dotted line.
8. Put some tape on the bottom fold to act as a weight or add a paperclip to hold the folds together and adds weight.
9. Throw it like a baseball!



The Science:

The Hallo-coper is also known as a paper helicopter. When you Hallo-copter is flying there are two forces acting on it. The first is gravity, which pulls the Hallo-copter toward the ground. The second is air resistance, which pushes up on the Hallo-copter as it falls.

When the Hallo-copter falls, air pushes up against the blades, bending them up just a little. When air pushes upward on the slanted blade, some of that thrust becomes a sideways, or horizontal, push. The faster the Hallo-copter falls, the more air resistance that pushes on the Hallo-copter.

Why doesn't the copter simply move sideways through the air? That's because there are two blades, each getting the same push, but in opposite directions. The two opposing thrusts work together to cause the Hallo-copter to spin.

Igor Sikorsky designed the first successful helicopter in the late 1930s. His inspiration came Leonardo da Vinci's drawings of an aircraft with a spinning wing.

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1. How does the push of the air make your helicopter fly?
2. Do the blades spin clockwise or counterclockwise? Can you change the direction of spin?
3. What would happen if you painted the wings different colors? How would your copter look in flight?