

Paper Airplanes

Best for Ages

3+

Workspace

Flat indoor surface

Is electricity required?

No

Description

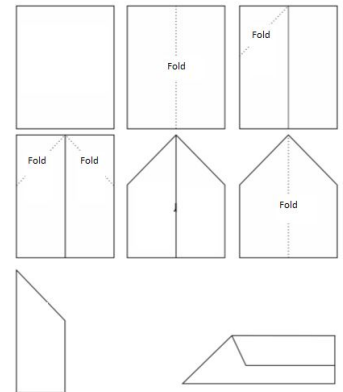
This activity involves making and flying different types of paper airplanes.

Materials

- **Paper:** copy paper, cardstock, construction paper
- **Tape**
- **Small objects:** pennies, washers, paper clips

What to Do

1. Use paper to make an airplane. Here are directions for a simple one to get you started but additional designs are available online.
 - a. Take a piece of paper and fold it in half lengthwise and crease the fold.
 - b. Unfold the paper, and lay it vertical. Take the upper two corners and fold them into the middle, where the crease is. The top of the paper should now have a point
 - c. Fold in half along the crease again. Then, fold the edges down to make the wings
2. Throw your airplane to test out how the paper airplane flies.
3. Add small weights to the airplane to see how it changes how far it flies.
4. Use different sizes, shapes, and weights of paper to see how it affects the flight path of the paper airplane.
5. Try making an airplane using other materials such aluminum foil or foam sheets.



Concepts Explored

- Forces: drag, gravity, thrust, lift

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Troubleshooting Tips

- Paper airplanes may not fly as desired. Try different materials or designs until you get the desired results.
- Smaller children may need help folding their paper, but give them time and encouragement to let them try on their own. Try showing each step alongside your child using your own sheet of paper.



How can we make the airplane go farther?

How does added weight affect the airplane?

What would happen if we use a different design?

What is Happening?

- When you throw the plane, you are creating a forward push called **thrust**.
- While the plane is flying, air moving over and under the wings creates an upward **lift** force.
- Air pressing back against the plane and slowing it down creates a force called **drag**.
- The weight of a plane pulls the plane down because the force of **gravity**.
- A long flight occurs when these four forces are balanced. When an airplane is flying straight and level at a constant speed, the lift it produces balances its weight, and the thrust it produces balances its drag.

Taking it Forward

- If you like this activity, you'll also like [Bernoulli Obstacle Course](#)
- Learning more about this activity at local library):
 - The Big Book of Airplanes by DK
 - The Flying Book: Everything You've Ever Wondered About Flying on Airplanes by David Blatner
 - Planes Fly! by George Ella Lyon and Mick Wiggins