

Create and Measure the Flight Path of a Paper Aeroplane

Design and test your own paper aeroplane! As you experiment with different designs, you'll explore the engineering and physics behind flight, including lift, drag, and thrust.

Did you know the paper aeroplane distance world record is an incredible 322 feet, set by Wang Chenghao in 2026? Now it's your turn to see how far your design can fly!

There are many different ways to design your paper aeroplane. You can model your aeroplane after commercial airliners, or after your favourite bird. Trial and error is a great method to find your preferred design. We have added instructions for a simple plane to get you started.

TIME TO GET STARTED!

What you will need:

- Paper – Standard A4 paper is good
- Ruler
- Art Supplies – Add your artistic touches.
- Tape – This is an optional step to tape together the folds of your plane design to create greater structural integrity.
- Tape Measure

Instructions:

1. Fold an A4 sheet of paper in half lengthways, then open it back up. The centre crease will guide you.
2. Fold the two top corners into the centre line to make a point.
3. Fold the angled edges into the centre line once more to make the nose sharper.
4. Fold the paper back along the original centre crease, with the pointed nose on the outside.
5. Fold one side down to create a wing, then turn the plane over and repeat on the other side. Try to make both wings the same size.
6. Hold your plane gently underneath and give it a smooth, gentle throw. Experiment with different throws to see how far it can fly!

How does it work?

A successful paper aeroplane relies on the same forces as a real aircraft. Lift helps keep it in the air, while thrust (your throw) moves it forward and drag slows it down. The shape of the wings and nose also affects how far and how smoothly it flies.

As you test your plane, try making small changes to improve its stability and distance. Most importantly, have fun designing, flying, measuring, and improving your paper aeroplane!

Reflect:

- Which changes improved the flight?
- Were there any changes that made the plane fly a shorter distance?
- What would you try next to improve your design?

Extra for Experts!

Once you have designed your paper plane, it's time to test how far it!

1. Throw your plane from the same starting point each time.
2. Measure the distance it flies using a tape measure.
3. Record the distance in a table.
4. Make one change to your plane, such as adjusting a fold, changing the wing shape, or using a different type of paper.
5. Test it again.
6. Repeat this process for each design change.
7. When you have finished testing, use your results to create a graph. A bar graph is a great way to compare how far each plane flew.