

Paper pilots



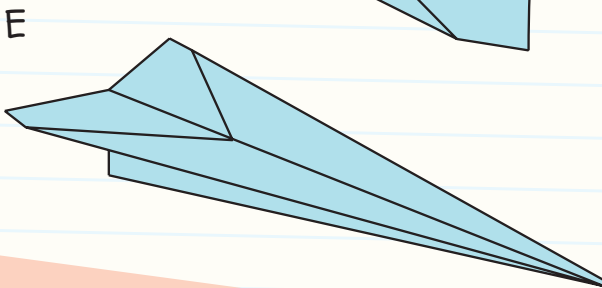
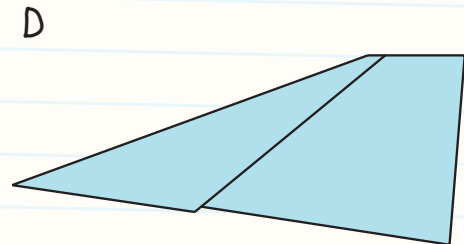
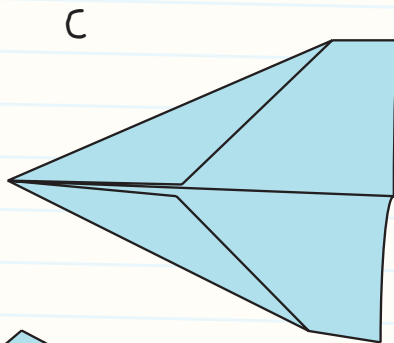
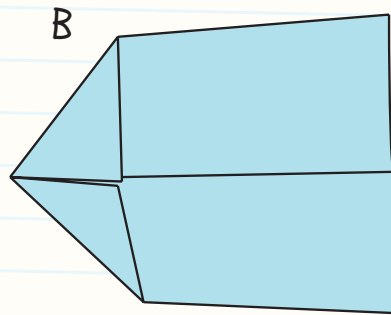
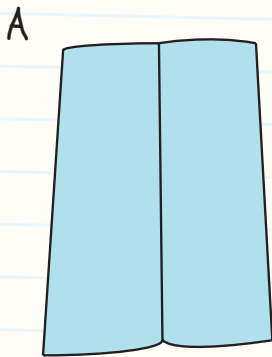
Magnificent machines



20 mins



Jump straight in



Aim of activity

Flying aeroplanes is a balancing act. Who can design the best paper plane and get the longest flight time?

What you'll get out of it

- Create an effective paper aeroplane.
- Discover how weight affects aeroplane flight.

What you'll need

- A large sheet of paper
- Masking tape
- A pen

For each pair:

- A sheet of A4 paper
- 5 paper clips



Before you start

- Write out the flight tips on a large sheet of paper and display them.
- Mark out a start line with masking tape on one side of your space.

Aeroplanes fly all over the world. Some carry more than 800 people, while others fly over 1,500 miles in an hour, further than London to Italy! Planes use their weighted design, strong engines and air flow to stay high in the sky.

What to do

1 Start by getting into pairs to make your paper plane. Take a piece of A4 paper and turn it so the short edge is at the top. Fold it in half, long side to long side, then unfold it and turn it over, like in picture A.

2 Now, fold the top corners into the centre, as in picture B. Then fold the edges in again, as in picture C.

3 Next, fold your paper in half so it looks like picture D. Then fold the edge in on each side, as in picture E.

4 Now you're ready to test your aeroplanes! In your pairs, choose a pilot. All pilots line up on the start line. Ready set, launch! How did your planes fly? Mark the results on the floor.

5 Collect five paper clips. By adding weight to different parts of your plane it will fly differently. Try adding paper clips to different areas of your plane and test it each time. Look at the flight tips to help. You can add multiple paper clips to different areas to create a unique combination.

Flight tips

- Weight under the nose will move the centre of gravity forward.
- Weight under the tail will pull the plane nose up during flight.
- Weight on the wings will make the plane heavier.

Top tip

Try attaching other things, like coins, for a bigger impact.

6 It's time for the ultimate competition. Whose plane will fly furthest? Swap pilots, then line up at the start line and throw your planes one at a time. Mark the results on the floor.

7 Now, pilots line up in order of how far your plane went. The pilot whose plane went the furthest earns one point, the second pilot earns two points, and so on.

8 Next, swap pilots in your pair, and throw your planes again. Did the winning order stay the same? Add your new score to your old score. The pair with the lowest total wins!

9 Which plane went the furthest? Where were its paper clips? How else could you make your planes fly further?

Take it further

Design your own paper plane using everything you've discovered.