

# BUILD A BROOKLANDS GLIDER

The connections between the forces of flight allow an aircraft to soar – you can't have one force without the others! In this activity, you will master the forces of flight to design a go-further paper glider which optimises lift and lessens drag to fly further and better!

 30 minutes

Skills unlocked: Resilient, Self-motivated, Creative



## Kit list

Coloured piece of  
A4 paper

Paper straws

Blu tack

Wooden skewers or  
thin dowels

Scissors

Sellotape

Optional: Device with  
internet access

## Instructions

- 1 Cut the paper according to the diagram (see next page). The large piece will be the wing, and one of the small pieces will be the tail.
- 2 Fold and tape down the long edge of the wing to strengthen it, slotting in a skewer or two. Repeat for the tail, leaving space either side to fold the edges up. Use the diagram to help you.
- 3 Reinforce the wing by taping on shorter pieces of skewer that go from the leading edge (front) to the trailing edge (back) to create struts.
- 4 Use your scissors to halve one straw. Snip into the opening of that straw, inserting another full-length straw and taping where they join.
- 5 Tape the wing and tail at opposite ends, leaving some straw sticking out in front of the wing. Add a ball of blu tack on the tip of this straw. If your aircraft is unbalanced, experiment adding blu tack to the front or back to control the pitch motion.

## Watch out

- Check your test area before you fly your aircraft – make sure there is plenty of space clear of people and things that could be knocked over.
- Be careful when using scissors to trim skewers or wooden skewers/dowels – it can leave rough edges.

## Next steps

Visit the Brooklands Museum website to learn about the development of early aircraft at Brooklands:  
[www.brooklandsmuseum.com](http://www.brooklandsmuseum.com) ✨

Engineers know you can get better results by modifying your original design. Think about how you could adjust your aircraft to send it further. You can tell Brooklands Museum how far your plane flew at: [@brooklandsmuseum](https://www.instagram.com/brooklandsmuseum) ✨ or [@brooklandsmuseum](https://www.tiktok.com/@brooklandsmuseum) ✨

## At home

Find out how gliders and passenger airliners use the Bernoulli principle to fly! Discover more here: [bsa.sc/YouTube-How-do-planes-fly](https://bsa.sc/YouTube-How-do-planes-fly) ✨

## Career options

- Aircraft designers work with all aspects of engineering and design. You can work on an aeroplane's appearance, the systems that run it, or the engines that give it thrust, as well as many other areas. Aircraft designers often use computer aided design (CAD) to help them.

