

Paper Helicopters



This is a practical hands-on session in which students will develop scientific knowledge using paper helicopters to demonstrate the science of forces and motion. By changing one variable at a time, students develop a knowledge of fair testing.

Suitable for Ages 5-8

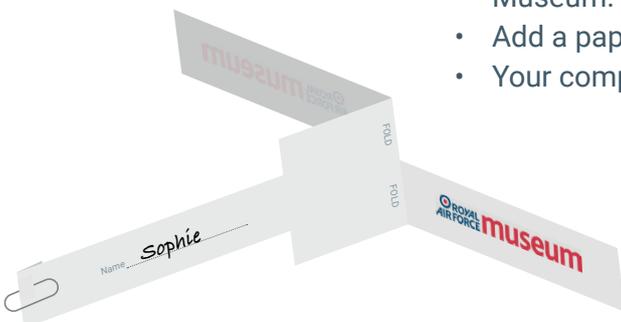
Curriculum links Working Scientifically & Science of Forces & Motion

Resources

- Printed helicopter template
- Scissors
- Paperclips

Instructions

- Print out the templates on the last page.
- Cut out each separate helicopter – you have three.
- Cut along the lines that have the scissor icon ✂.
- Fold along the lines that say FOLD.
- Your helicopter blades are the two parts that say Royal Air Force Museum. Fold them in opposite directions.
- Add a paperclip at the bottom to act as a weight.
- Your completed helicopter should look like the photograph above.



Consider the following questions when doing this activity with young people.

Why is the helicopter spinning?

- The spinning is caused by the force of air acting on each of the helicopter's blades. The air presses on each of the blades with an equal force but in the opposite direction and the helicopter spins around.

What happens if you add another paperclip to the bottom of your spinner?

- More paperclips means more weight! The heavier your helicopter is, the faster it will drop to the floor and as the forces of air act on it, it will spin even quicker!

What happens if you change the direction that the blades are folded in?

- When you change the direction of the blades, you change the direction that the helicopter spins in!

What happens if you cut the blades shorter?

- By cutting the blades shorter, the helicopter should fall to the floor quicker. This is because the blades are smaller and have a smaller surface area – therefore the air resistance does not affect them as much as it does on the helicopter on the one with longer blades.

Keep testing your helicopters and see if they float down the same each time.

Remember, it is only a fair test if:

- Your helicopters are printed on the same paper (if you use different paper for each helicopter, it may be slightly thinner or thicker)
- Your helicopters are the same size
- You throw your helicopter from the same height each time

When you have finished your paper helicopter experiment, don't forget to take some photographs and tag us on social media.



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