

## Teacher input

Share the PowerPoint 'Up, up and away!' available to download in the resources pack. This explains how drag or air resistance is a form of friction that slows down objects moving through the air. Ask the children if they have ever made a paper aeroplane? Initiate a discussion about the best paper aeroplane, making a list of all the attributes it would need.

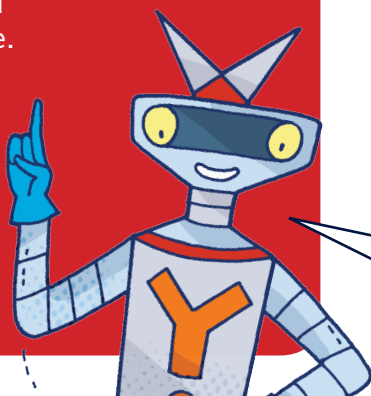
Share with the class the instructions for making straw planes. Make one with them. Templates are available in the resources pack.

## Resources

- PowerPoint
- Group planning sheet
- Straw planes template
- Paper straws

## Activity

Explain that the planes could be different – you could have a smaller loop at the front or change the length of the straw. The children should work in small groups of 3 or 4, using a planning sheet to decide which variable they will change and how they will test it. Encourage all children to take 5 readings for each plane they test. They should devise their own table. Once their tests are completed, they should spend 10 minutes preparing to share their results with the class.



## Curriculum for Excellence link

- By investigating how friction, including air resistance, affects motion, I can suggest ways to improve efficiency in moving objects.

SCN 2-07a

## Learning objective

- I can carry out an investigation about air resistance.

## Differentiation

Lower ability children should be given guidance when taking measurements and recording their results.

More able mathematicians should be challenged to work out the mean result once they have recorded their results. Although mean is not in the year 5 maths curriculum, it is used in science. Teachers should support pupils with calculations. They should add all five distances together and then divide the total number by 5. This is the mean distance flown.

## Plenary

Each group should present their findings to the class. Their presentations should include:

- The variable they changed and how they kept it a fair test.
- Their results and any problems they had.
- Their conclusion, including the scientific reason why one straw plane flew the furthest.

Remember if a group decides to change the length of the straw they must keep the shapes exactly the same.

## ISSUE 36 Cross curricular links

Reading: Sensational Scientists The Wright Brothers, pages 28-29; How stuff works – drones, pages 22-23; news in depth – would you fly in a plane without a pilot? Pages 6-7. Maths: Measurement (meters and centimeters) and calculating mean.

