Cone drop

This activity relates to air resistance. The AC75 'Britannia' has less frontal area (like the tighter cone used in the challenge) meaning that there's less to push through the water making it go faster.

Due to air resistance, air particles are hitting the frontal of the cone as the cone is travelling down from the dropped height. You end up reducing the area quite significantly which reduces air resistance making the cone travel faster.

In this experiment you can calculate metres per second by using the formula Speed = Distance ÷ Time

Once you've tried this, why not calculate the Area of the circles for each cone using the formula Area = π r2
(π = 3.1459)

To really expand your knowledge (and once you've worked out the area of the circles) have a go at working out the surface area of the cones using Pythagoras.

The surface area of the cone equals the area of the circle, plus the area of the cone. The formula is Surface Area = πr2 + πrl

Things you will need:

- Print the 'cone template' for free from: stemcrew.org/resources/forces-lesson-4-forces-and-motion/
- Scissors
- Masking tape
- Stop watch
- Tape measure (to measure distance dropping cone down from)

Health & Safety - if under 18 please make sure you have adult supervision.