



# **HANDS-ON EXPERIMENTS**

WIND SPEED



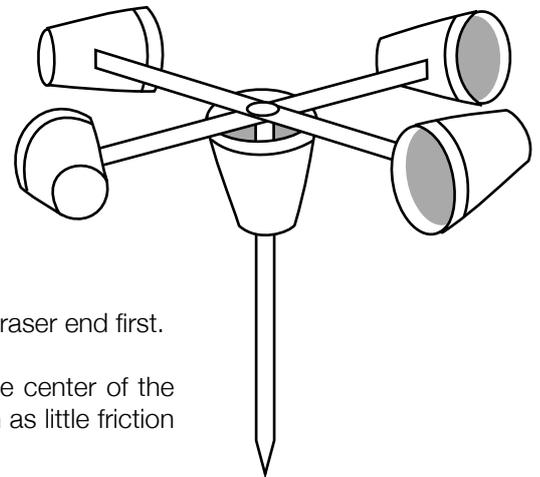
Wind speed is one of the fundamental readings that a weather station takes. Knowing how fast the wind is blowing can allow a meteorologist to predict when the next change in weather is going to happen.

Wind speed data is also hugely important to planes and boats and so meteorologists share this information with lots of different agencies.

## Procedure

*What you'll need: Five disposable cups (paper, polystyrene or plastic), pencil with eraser on the end, four drinking straws, a drawing pin.*

- Four of the cups will form the arms of your wind speed meter (anemometer), the fifth helps form the base. Make holes in the sides of four of the cups then push a drinking straw through each and secure it - sticky tape works fine here.
- Make four holes, evenly spaced, just under the rim of the fifth cup, push each of the arms through one of the holes and connect the four straws together in the middle so that they make a cross. The arms should be at right angles and need to be securely attached. Make sure the cups are all pointed in the same direction (i.e. clockwise or anti-clockwise).
- Make a small hole in the base of the fifth cup and push the pencil through it, eraser end first.
- Finally, secure the arms to the pencil by pushing the drawing pin through the center of the cross and into the eraser. Make sure that the assembly can rotate freely with as little friction as possible.
- Stand your anemometer vertically - a blob of bluetack or plasticene can be used for this.



## Investigation

- Test your anemometer indoors first by using a fan - are there any limitations to the range of wind speeds it will work in?
- You can compare relative windspeed by measuring the rotations of the weather vane. Find a method to do this accurately.
- Work out an approximate wind speed by calculating the speed of the cups as they travel in a circle. Compare this to the wind speed data available from the Met Office ([www.metoffice.gov.uk](http://www.metoffice.gov.uk)) - are your results reasonably close?

# VIDEOS FOR THIS RESOURCE AT:

INTRODUCTION:



Clickable Link:

<https://youtu.be/EdqkBcJ9tgU>

CONCLUSION:



Clickable Link:

<https://youtu.be/g1Nac43-XU8>

