



HANDS-ON EXPERIMENTS

RAIN GAUGE



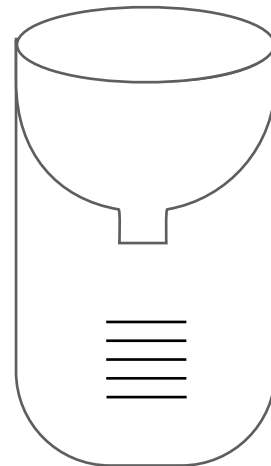
The rain gauge is used to measure rainfall over set periods of time - usually 24 hours. Rainfall isn't measured by volume, instead meteorologists measure the depth of rainfall in millimetres.

Rain gauges can be automated using a floating sensor and data logging software. This is a basic rain gauge but you can try automating it if you have time.

Procedure

What you'll need: An empty plastic bottle, ruler, scissors, sticky tape, white card.

- Cut around the bottle about two thirds of the way up.
- Take the top third, unscrew the lid and turn it upside down. Fit it back into the bottom part of the bottle and attach the two pieces together with tape.
- Make a scale in millimetres and attach it the bottom of the bottle - this needs to be waterproof!
- Make a stand to keep the bottle vertical in windy conditions. Alternatively, bury the bottle outside so that only the top 5-10cm is above the ground.
- Check the bottle at the same time everyday - take a reading and empty the bottle.



Investigation

- Would it affect the readings if the size of the top of the bottle was different to the bottom? Why?
- How do your readings compare with official data for rainfall in the same period? If they don't agree, why not?
- Can you work out what volume of water corresponds to each depth reading? In this case, you could calculate the relationship between rainfall and the mass of the water in the gauge - this way you could automatically read the rain gauge with a datalogger with a weight sensor.

VIDEOS FOR THIS RESOURCE AT:

INTRODUCTION:



Clickable Link:

<https://youtu.be/SxBeWVGikOE>

CONCLUSION:



Clickable Link:

<https://youtu.be/251K5YxbUAw>

