MAKE YOUR OWN BAROMETER

Predict the weather by measuring pressure changes with your own barometer!

YOU WILL NEED

- An empty and clean food tin can or glass jar
- A party balloon
- An elastic band
- A needle
- PVA glue
- A drinking straw
- A4 paper

⚠ This activity must be done under the **supervision of an adult** to ensure safety when handling sharp objects. Also, the barometer will work best in a place where the temperature remains relatively constant, as temperature changes can affect readings.

WHAT YOU DO

Step 1

Cut the neck off of a balloon and discard it. Stretch the remaining balloon over the tin can or glass jar and use the elastic band to hold it in place. Ensure that: the surface of the balloon stretching across the mouth of the can is flat; and that the elastic band creates a tight seal with no air leakage.

Step 2

Use a blob of PVA glue to attach one end of the straw to the centre of the balloon stretched across the tin. Use a little more glue to attach the needle to the other end of the straw so that the straw extends out to a needlepoint.

Step 3

Place your barometer next to a wall and stick the A4 paper to the wall behind the barometer using some Blu-Tack, with the needlepoint of the barometer almost touching the paper.

Step 4

Mark a dot or line on the paper where the needle is currently pointing, and write 'High' about an inch above the line (to indicate high pressure) and 'Low' about an inch below the line (to indicate low pressure).

Step 5

Check the position of the needle regularly and mark changes on the paper. Add notes next to the line you draw so you can remember what the weather was like at the time.

THE SCIENCE BEHIND IT

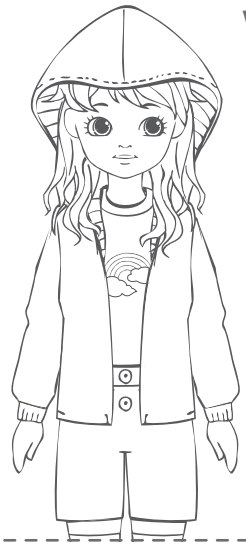
You will notice that when the needle moves upwards with high pressure, the weather outside should be nice and sunny.

But when the needle drops downwards with low pressure, it should be looking cloudy and rain will probably be on the way. This is because atmospheric pressure is a good indicator of weather.

Low pressure in a certain area of a country means that the air has warmed up, becoming less dense because the molecules gain enough energy to move further apart from each other. When the air expands to become less dense it rises upwards, and so there are not as many air molecules pressing down on the ground (meaning that there is low pressure on the ground).

As the air rises it cools back down again, and water vapour in the air begins to condense and form raindrops. Condensation is where the molecules move close together again because they are cold, and so have less energy and cannot move very far away from each other. So when your barometer shows low pressure it could mean rain is on the way, so make sure you have an umbrella handy!

On the other hand, when the air is cold the molecules start to sink towards the ground. This means that there are more molecules pressing on the ground and so there is high pressure. High pressure showing on your barometer means that the water molecules in the air are not rising and forming clouds, which means that it could be time to find your sunglasses!



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