

What is the Dew Point?

Learn about humidity

The dew point is the temperature at which, with a given amount of water vapour in the air ('humidity'), water vapour will condense to form cloud droplets, if particles are present for the droplets to form on (see 'clouds in a fizzy drink' experiment).

Equipment

- ◇ An empty, clean tin can (e.g. baked bean tin) with the lid removed leaving no sharp edges.
- ◇ A thermometer
- ◇ Some crushed ice



Method

- 1 Put the thermometer in the can and half fill it with tap water.
- 2 Cool the water slowly by adding a little ice at a time and waiting for the temperature to fall. Stir and wait for the ice to melt before adding more ice. When you first see condensation forming on the outside of the can, read the thermometer. If your thermometer reaches 0°C and no condensation has formed, add salt and ice to get the water to cool below freezing. The temperature at which condensation first forms is the dew point of the air.
How much cooler is the dew point than the air temperature outside?

So how does this relate to atmosphere?

The air temperature falls by about 6°C for every 1000m you go up in the atmosphere. You can use your dew point to calculate how high up you would expect clouds to form.

If you have also tried the 'DIY hygrometer' experiment, you can use the converter at <http://www.srh.noaa.gov/elp/wxcalc/wetbulb.shtml> to check your dew point temperature.



Where can I find more information?

How clouds form

<http://metlink.org/weather-climate-resources-teachers/key-stages-weather-climate/key-stage-4-weather/ks4-clouds.html>

<http://www.metlink.org/weather-climate-resources-teachers/key-stages-weather-climate/a-level-weather/asa2-clouds.html>

An article from Physics Review

http://www.metlink.org/pdf/teachers/physics_review_clouds.pdf

An article from Catalyst

http://www.metlink.org/pdf/articles/catalyst_cloudseeding.pdf

Or why not have a go at making a cloud in a bottle at www.rmets.org/experiments

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