



how to measure rainfall using a rain gauge

Find a place outside for the rain gauge where there will be no run-off of rainwater from trees, roofs or signs. There is a minimum distance official rain gauges must be from obstructions such as these. If a nearby tree is five metres tall, the rain gauge must be at least twice the distance (10 metres) away.

Your rain gauge can be set up in three ways, but make sure it is safe from theft and damage (such as being trodden on).

- ◆ To make a freestanding rain gauge, place the cylinder inside the black holder so the spike points up. This gives a flat base.
- ◆ To fix the rain gauge to an object such as the top of a fence, secure the black holder to the vertical surface before inserting the cylinder.
- ◆ To put the gauge at ground level, reverse the black holder so the spike points down (main picture) and stick it into the ground.
- ◆ At 9am each day, record the rainfall, referring to the scale (in millimetres) on the cylinder. Then empty the cylinder. If you catch hail or snow, wait for it to melt before taking a reading.



do's and don'ts

- ✓ Make sure the rain gauge is in a safe location.
- ✓ Make sure you take readings with the rainwater at eye level (small picture) to avoid errors of parallax.

how does it work?

A rain gauge measures rainfall (in millimetres) over a set period, usually 24 hours. Official rain gauges have a housing to protect the measuring cylinder inside. The top of the housing has a larger surface area than the top of the measuring cylinder and catches more rain than the cylinder would. The extra rainwater collected makes it easier to read the measuring cylinder and improves accuracy. A simple mathematical formula is used to correct the rainfall total to allow for the extra rainwater collected.





precipitation

rain

Rain droplets vary in size from 0.5 millimetres to more than 5mm in diameter. Rain normally falls from nimbostratus or altostratus clouds (see the attached cloud chart).

drizzle

Drizzle droplets are smaller than 0.5mm and generally fall from stratus clouds or fog.

showers

Showers are precipitation that varies in intensity, generally falling from cumulonimbus or large cumulus clouds.

snow

Snow forms when water vapour turns to ice without first condensing into a liquid. Snow flakes are

composed of microscopic water crystals that cluster together in groups of 50 or more. When the temperature is low enough (say, minus 40 degrees), snow can fall from clear blue skies.

hail

Hail is formed when water droplets freeze in high, very cold clouds.

Hailstones grow bigger as they are coated with successive layers of ice. This can occur when they are pushed up and down through the atmosphere by strong updraughts and downdraughts. Hailstones can also get bigger when they bang into each other and stick, forming conglomerate hailstones.

Hailstones are usually only as big as a pea, but cricket ball-size hailstones have been known to fall in Australia, such as during the Sydney hailstorm of 14 April, 1999.

