

GLOBE Weather Station Installation Guide

Site Selection

When choosing a site please consider:

- **Accessibility:** measurements need to be taken frequently, so students need to be able to get to the site and return in a short amount of time.
- **Open area:** stay away from trees, buildings, and other structures (at least two times away from buildings as they are tall, if possible).
- **Surface:** set up your weather station on grass. Black-top or bare soil will artificially increase the soil temperature measurements.
- **Slope:** avoid steep slopes.

There will be compromise between a perfect site and the logistical constraints of school grounds (snow removal, mowing, etc). This is okay!

Instrument Shelter

The weather station should be mounted on a wall or post. A 4x4 post works well; it should be cut at a 45° angle at the top if the rain gauge and instrument shelter are to be mounted on the same post (see Rain Gauge section).

IMPORTANT- The instrument shelter needs to face **away from the equator** (this means NORTH in the northern hemisphere, or SOUTH in the southern hemisphere). This keeps sunlight from artificially increasing temperatures when the shelter is opened.

The instrument shelter should be mounted so that the temperature sensor (inside the instrument shelter) will be about 59 inches (1.5m) above the ground. You may need a sturdy stool for younger students to stand on to accurately read the thermometer and rain gauge.

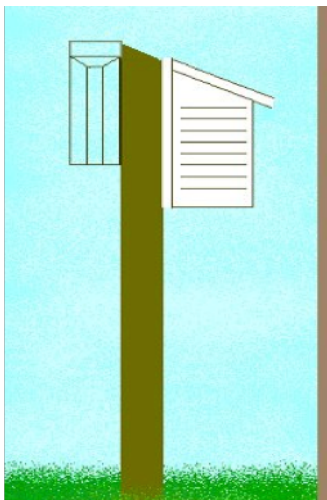
Security

Some schools have reported vandalism at GLOBE weather stations. Each school must determine what security measures work best for them. Including a laminated sign describing the project, and/or sending information home in a school newsletter can allow the whole community to appreciate and keep watch on it. GLOBE advises keeping the instrument shelter locked when you are not out taking measurements.

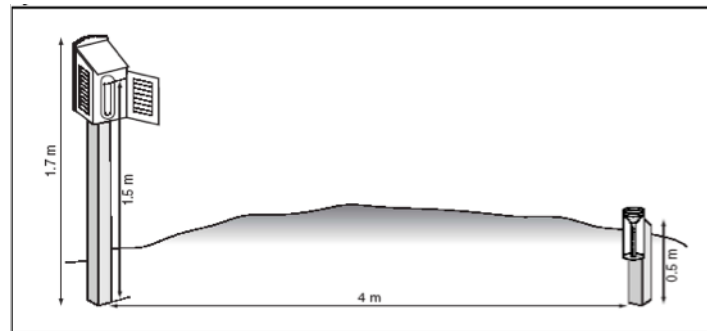
Rain Gauge

The instrument shelter and rain gauge can be mounted on the same post or on separate posts. Either way, the top of the rain gauge should be about 4 inches (10cm) higher than the top of the post to avoid splash-in of rain from the post top. It should be mounted so that the 45° angle slopes away from the gauge. See images below for correct placement.

Ensure that your rain gauge is level by putting a carpenter's level across the top of the funnel of the gauge in two directions (perpendicular to each other).



OR



Instrument Placement Inside Shelter

The digital multi-day min/max thermometer has two probes. One should hang in the air inside the shelter (at ~59 inches above the ground), not touching the walls. The other probe should be threaded through the hole in the bottom of the instrument shelter and buried about 4 inches in the ground on the equatorial side of the post (SOUTH in the northern hemisphere, NORTH in the southern hemisphere). Some schools choose to protect the wire with a thin PVC pipe attached to the post. The read-out unit may be mounted on the back wall of the shelter.

The relative humidity sensor should not be left in the shelter but brought inside and out for each measurement. This will prevent moisture from building up in the sensor.

The inner tube of the rain gauge can crack in freezing temperatures. Bring inside if temperatures are supposed to drop below freezing. If you live in an area with snowy winters, the whole rain gauge should come inside once it starts snowing.