

Calibrating the Soil Thermometer

Lab Guide

Task

Calibrate the soil thermometer.

What You Need

- Soil thermometer
- Calibration thermometer (determined to be accurate to $\pm 0.5^\circ\text{C}$ using the ice bath method described in the *Atmosphere Investigation*)
- 500-mL beaker
- Water
- Wrench that fits nut on soil thermometer
- Science Log

In the Lab

1. Pour about 250 mL of water at room temperature into a beaker.
2. Place both the calibration thermometer and the soil thermometer into the water.
3. Check that the water covers at least the lower 4 cm of both thermometers. Add more water if needed.
4. Wait 2 minutes.
5. Read the temperatures from both thermometers.
6. If the temperature difference between the thermometers is less than 2°C , stop; your soil thermometer is calibrated.
7. If the temperature difference is greater than 2°C , wait two more minutes.
8. If the temperature difference is still greater than 2°C , adjust the soil thermometer by turning the calibration nut at the base of the dial with the wrench until the soil thermometer reading matches the calibration thermometer.