

Water Temperature Protocol for Thermometers

Field Guide

Task

Measure the temperature of your water using an alcohol-filled thermometer.

What You Need

- [Hydrosphere Investigation Data Sheet](#)
- Alcohol-filled thermometer (with string and rubber band attached)
- Clock or watch
- Latex gloves
- Pen or pencil

In the Field

1. Fill out the top portion of your *Hydrosphere Investigation Data Sheet*.
2. Put on the gloves.
3. Slip the rubber band around your wrist so that the thermometer is not accidentally lost or dropped into the water.
4. Check the alcohol column on your thermometer to make sure there are no air bubbles trapped in the liquid. If the liquid line is separated, notify your teacher.
5. Put the bulb end of the thermometer into the sample water to a depth of 10 cm.
6. Leave the thermometer in the water for three minutes.
7. Read the temperature without removing the bulb of the thermometer from the water.
8. Let the thermometer stay in the water sample for one more minute.
9. Read the temperature again. If the temperature has not changed, go to Step 10. If the temperature has changed since the last reading, repeat Step 8 until the temperature stays the same.
10. Record the temperature on the *Hydrosphere Investigation Data Sheet*.
11. Have two other students repeat the measurement with new water samples.
12. Calculate the average of the three measurements.
13. All temperatures should be within 1.0° C of the average. If they are not, repeat the measurement.