

Temperature Lesson Plan

Key Understandings:

- Celsius and Fahrenheit temperature scales
- How to take accurate temperature measurements in the field
- How the temperature may vary with depth and during different seasons
- How temperature affects aquatic life
- How temperature affects solubility of various substances (metals in pipes, oxygen, etc)
- What affects the temperature in a body of water

Time needed:

We suggest taking about 2/3 of one class period for this topic.

Discussion:

Begin the discussion by asking the class what determines the temperature of a water body – work in groups of 4, 3-4 minutes to think; then make a list as a class.

As a whole class:

- Discuss effects on solubility (use hot tap water as example); mention that generally the solubility of gases (oxygen, for example) decreases with increasing temperature
- Discuss the effects of temperature on aquatic life: fish, algal blooms, decomposition rates
- Outline and demonstrate procedure for accurate T measurements

Homework:

- Read the CBL Temperature handout
- Answer the following question:
 - When you use tap water for drinking and cooking, why do you think it's better to use cold rather than hot water?

Handouts:

Vernier Software: Water Quality with CBL – Temperature

Alternatives to this test, comments and further resources:

In teaching this unit for the first time, we discovered that the main difficulty students had with temperature was understanding the °C and °F scales. Many students confused the two scales, and had difficulty interpreting what the various temperature values mean. We recommend that you review this briefly with your students.

Using the CBL Temperature Probe is a good alternative to the thermometer, as it will allow you to easily monitor temperature changes over time and immediately plot your results.

An alternative to the Vernier handout is a handout from the Massachusetts Water Resources Authority manual.

MWRA handout:

http://learnweb.harvard.edu/ent/gallery/pop4/Temperature_MWRA.pdf