

Introduction to Water Quality Testing and Standards -- Lesson Plan

Key Understandings:

- Understand the importance of water quality testing
- Understand how and where the water quality is monitored by the Massachusetts Water Resources Authority (MWRA)
- Understand what the Massachusetts water quality standards are and who sets them

Time needed:

1 lesson

Discussion:

- Discuss what the students found out from the homework on the cryptosporidium outbreak; the discussion should progress toward examining what the MWRA does in Boston to ensure quality water.
- Examine the MWRA water supply system diagram on the Web (projector). Ask what kind of things the MWRA tests for.
- After the main water quality parameters are named, discuss how the safety standards are set – would they be the same for drinking & swimming, or different? How different?
- Discuss Charles River with the class – where would it be cleanest / safest? Bring up a map of the Charles (<http://www.crwa.org/map.htm>) ; make predictions in groups. Then examine a diagram which shows the overall 1999 Charles River data for wet weather conditions (http://www.crwa.org/annualreport99/wetfecal3_pg2_.htm)
- Look at the standards on the web (<http://www.mwra.com/water/html/pipetest.htm>), give handout of standards, explain units and HW.

Homework:

On the MWRA website, look up your town's drinking water values for 1999, and compare to the standards. Fill in the table and answer questions on the handout.

Handouts:

Handout on Water Quality Standards

<http://learnweb.harvard.edu/ent/gallery/pop4/WQStandardsHandout.pdf>

Alternatives, Comments and further resources:

The Charles River Watershed Association maintains an excellent, highly visual website that has watershed maps with parts of the river color coded for different water quality conditions.

If you do not teach in the Boston area, you should contact your local water management authority for your Consumer Water Report – all major cities have websites for this.

Projecting the computer screen on the board proved very effective for us in this lesson. However, it is also possible to do this lesson in computer lab and allow the students to navigate.

Finally, if you cannot get good web access with your class, you can always use printouts of the data from these websites.

Charles River map: <http://www.crwa.org/map.htm>

Charles River Test Results: http://www.crwa.org/annualreport99/wetfecal3_pg2_.htm

CRWA Water Standards Info: <http://www.crwa.org/data/monthly/interpret.htm>

MWRA Drinking Water Test Results by Town:

http://www.crwa.org/annualreport99/wetfecal3_pg2_.htm