

## Turbidity Lesson Plan

### Key Understandings:

- What it is and what it measures (lots of potential confusion here)
- Understand why it's an important measure of water quality
- Understand what the various values of turbidity mean in terms of water body health
- Understand what things affect turbidity
- Understand what effects high turbidity has on the water system
- Understand how to measure it using the Massachusetts Water Resources Authority (MWRA) kit / JTU units

### Time needed:

We suggest taking 1 full lesson to discuss and do a practice lab on this topic.

### Discussion:

Group question for 3 minutes: What is turbidity and what does it measure? Discuss group answers as a class.

- Again, in groups: (3 min to think, 3 to discuss as a class):  
Groups 1&2: What things will affect turbidity?  
Groups 3&4: What effects will high turbidity have on water system & health?
- Discuss briefly what various values of turbidity mean in terms of water body health:
  - too low may mean high acidity / low DO / lack of life
  - too high may mean lots of organic matter / low DO
- Demo/ explain turbidity test

### Lab:

- Perform the turbidity test on water from a local water body, using distilled water as a standard. Discuss the accuracy of the test with the class.

### Homework:

- Read the MWRA Turbidity handout
- Discuss how the turbidity of the upper Charles River (or a river in your neighborhood) might vary through the year and give reasons for your predictions

### Handouts:

*MWRA Water Quality Manual: Turbidity*

[http://learnweb.harvard.edu/ent/gallery/pop4/Turbidity\\_MWRA.pdf](http://learnweb.harvard.edu/ent/gallery/pop4/Turbidity_MWRA.pdf)

**Alternatives to this test, comments and further resources:**

We chose the MWRA test because it is simple, cheap, and presents the students with a very clear conception of what Turbidity is. It is not, however, an accurate or an entirely objective test; JTU measurements cannot be used to compare your local water to other parts of the US (there is a nice table of turbidity by river in the Vernier CBL Manual). The alternative test involves a CBL-based Turbidity sensor, is more accurate, and gives results in NTU, which is a more standard turbidity unit.