

**Grade 6: Physical Sciences (Chemistry/Physics)  
Life/Sciences (Biology)**

pH Readings and Salinity Readings of  
Water from 3 Locations within the Neponset River Watershed

Introduce the three different water environments within the Neponset River Watershed and biodiversity of the environments.

Introduce where each source is located, beginning and end and how they are connected. Identify tide for Location B.

Location A: Atlantic Ocean (Boston Harbor)

Location B: Neponset River

Location C: Mother Brook

Introduce pH of water in relation to other materials that were previously tested in the classroom.

Introduce Range of Tolerance.

**Lesson:**

- Students will be given 3 different water samples in beakers which are unidentified to them but labeled as A, B and C.
- They will be asked to take pH measurements of all three. Instructions on pH meter usage will be given.
- Then they will be asked to predict (hypothesize) which water is from the Ocean, the River or the Brook based on the readings they are taking.
- Results of each group's pH readings will be written on the board.
- Then they will be asked why they believe their predictions to be correct.
- Then the students will get to further build their hypothesis by taking salinity readings of all three samples. Results will be written on the board.
- Actual results will be discussed.
- An introduction to turbidity of water will be given with a demonstration of turbidity tube.

**Standards:****Grade 6 Science – Common Core Strand – Common Core Goal**

- 2.1.6 Apply the fundamental principles of life sciences, physical sciences and the science of technology, to analyze problems and relate them to human concerns and life experiences.
- 2.1.7 Investigate and demonstrate methods of scientific inquiry and experimentation.

**Grade 6-8: Life/Sciences (Biology)**

- 17. Identify ways in which ecosystems have changed throughout geologic history in response to physical conditions, interactions among organisms, and the actions of humans.

**Grade 6-8: Physical Sciences (Chemistry/Physics)**

Give basic examples of elements and compounds.

**Skills Used:**

Critical Thinking Skills: Experimenting, Hypothesizing, Evaluating, Testing, Comparing and Contrasting, Data Analysis, Decision-Making.

**Vocabulary:**

Acid, Base, pH, Buffer, Turbidity, Range, Corrosion

Note: The sixth grade students are keeping Neponset River Watershed Journals and have various assignments that they are responsible for entering into the journals.

The results of today's pH readings will also be entered into the journals. Since these are simply snapshot pH readings, other readings during the year and compared.

Name: \_\_\_\_\_ Block: \_\_\_\_\_ Date: \_\_\_\_\_

### Testing Three Different Water Sources

#### WATER SOURCES:

Neponset River  
Atlantic Ocean (Boston Harbor)  
Mother Brook (Dedham)

**STEP 1:** Using the pH meter test each of the three samples you are given. Each one is labeled A, B or C but you need to determine which water came from the River, the Ocean or the Brook.

#### STEP 2:

Insert your pH readings below.

Samples	pH Reading
Sample A	
Sample B	
Sample C	

#### STEP 3:

Now hypothesize:

Where did your samples come from?

Samples	Ocean, Brook or River	Why do you think that the water came from this source?
Sample A		
Sample B		
Sample C		

#### STEP 4:

Now take salinity readings as a class. Insert readings below.

Insert the salinity readings below.

Samples	Salinity Reading (ppt)
Sample A	
Sample B	
Sample C	

Now what do you think, do you want to change your original answers in Step 3, Which Ones? Why? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_