

Water Quality in Jamaica Bay

NPS - PEC

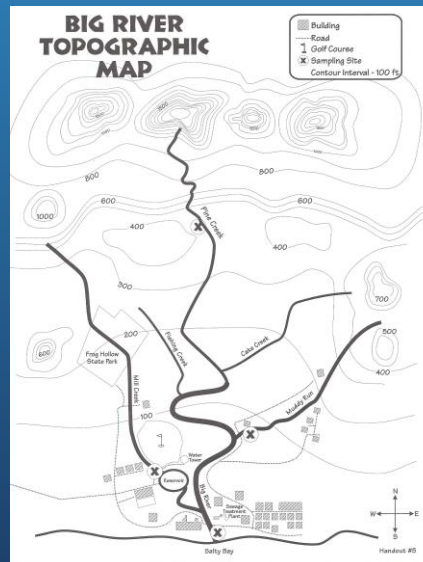
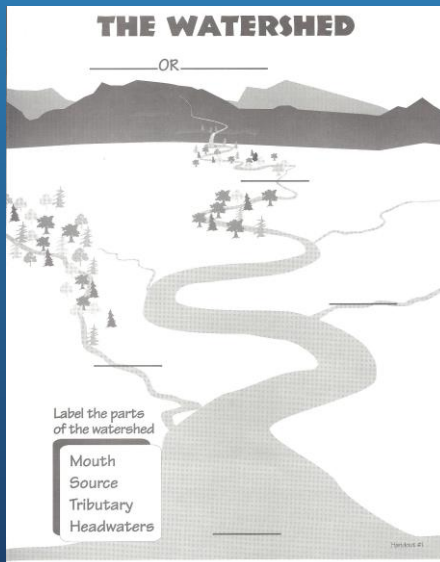
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IS 240K

Pre-Trip Lessons

- Formative Assessment -
Name as many bodies of water as you can
- Review vocabulary:
 - Ocean, river, bay, estuary, brackish, marsh
- Map activity: using a map of the NY/NJ Estuary, students will identify the fresh and salt-water sources.



- What is a watershed?
- Discuss the definition of a water shed.
- Big River Topo Map Activity
 - LaMotte/Stroud Watershed Tour Kit
- Crumpled paper watershed model
 - <http://www.omsu.edu/sites/all/FTP/files/expe%20ditionnw/4.E.1.Crumple.pdf>



Student Procedure: Crumple a Watershed

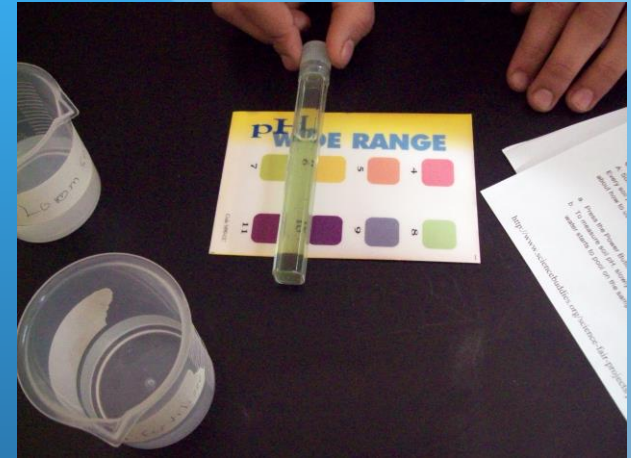
- 1 Take a sheet of paper and crumple it up into a wad.
The looser the wad, the better for this activity.



- 2 Uncrumple the paper and set it on the sheet of cardboard.
 - Tape the edges of the paper onto the cardboard base leaving at least an inch of cardboard exposed around the perimeter.

Water Quality Tests

- Divide the students into groups
 - Phosphate
 - Nitrates
 - Dissolved Oxygen
 - Turbidity
 - pH
- Jigsaw the Water Quality Indicators- Use information from the Earth Force resource page
 - <http://www.earthforce.org/ViewResource.php?AID=1>
- Students practice using the water testing equipment



Sea Plane Ramp - Floyd Bennett Field

- The class was divided into two groups/
- One group explored the area, recording observations
- Second group conducted testing.
- After tests were completed the groups switched places.





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Post Trip Activity

- Students wrote a reflection about the trip
 - What do your results indicate about the current condition of Jamaica bay?
 - What did you observe that could have an impact on the water quality in the Jamaica Bay?
 - What could you do to help maintain the water quality in Jamaica Bay?

Post Sandy Follow-up

- Experiment: What is the effect of decaying material on the dissolved oxygen level?
 - Tanacredi, J.T. & Loret, J., *Experiment Central, Understanding Scientific Principles Through Projects V1*, pgs 138-149, U●X●L, 2000
- Students set up three containers
 - Control
 - 28g of leaves
 - 57g of leaves
- Tested the DO levels over four days.



Superstorm Sandy

- Using the map of the estuary, history of Jamaica Bay from NPS Adventures Program 2006, and various articles, the students tried to understand the factors involved in the major flooding caused by Superstorm Sandy.
- Using paint trays, grass and paper models, the students tried to recreate the flood damage, testing out different types of land usage. (From New York New Jersey Harbor Estuary Program)
 - Beach
 - Urban
 - Wetlands

