

Urban Ecology: NYC Water—Is this a Healthy Body of Water?

Brooklyn College City as a Lab GK-12 Program
Academy of Urban Planning

Time: 3.5 hours (includes travel time)
Hands On? Yes; Internet? No

Standards Met: *Living Environment: Standard 1; PI 1.4, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3 Standard 1; PI 1.4, 2.1, 2.2, 2.3, 2.4, 3.1, 3.2, 3.3; Standard 4; PI 1.1, 6.1, 6.3, 7.1, 7.2; Earth Science: Standard 1; Key Ideas 1, 2, 3 : Standard 2; Key idea 1 Standard 1; Key Ideas 1, 2, 3 : Standard 2; Key idea 1 Standard 4: PI 1.2*

Title: Is this a Healthy Water Body?
Grade and Subject: 11th (Urban Ecology)
Number of Days for Completion: 2-3 (three different testing locations)
Overreaching Goals/ Outcomes: Students will collect data on field trips to compare water quality across the New York City area.
Learning Goals/Outcomes: SWBAT- Make connections between classroom learning ie. aquarium water quality tests, and field observations and tests of three different water bodies in the NYC Watershed.
Materials: Urban Ecology Field Data Sheet, thermometers, secchi disk, hydrometer, coliform bacteria test kit, pH test kit, dissolved oxygen test kit, nitrate test kit, phosphorous test kit, plankton net, petri dishes, large magnifying glass, marine field guide, wildlife field guide, cloud field guide
Introduction: This is a 2-3 day field-based activity to collect data and samples from water bodies. This lesson will create connections for students between in-class aquarium work and the surrounding estuary ecosystem of New York City.
Instruction/Direct Experience: <ul style="list-style-type: none">- Travel to the field site, Newtown Creek, Jamaica Bay, Atlantic Ocean- Break up into 5 groups and setup equipment for each testing station- Explain the safety precautions, wear gloves, don't touch face, etc.- Spend 10 minutes in each group conducting appropriate tests, sample collection (each group is operated by an adult)- Rotate groups 5 times until everyone has visited all of the testing stations- Come back together to go over findings as 1 group. Wrap up
Independent Activities: N/A
Assessment: - Students must turn in Field Data Sheet with questions answered: <ol style="list-style-type: none">1. Are the species found indicating a healthy or unhealthy water body?2. Did you observe more or less wildlife than you expected to see here? Why?3. How do you think weather conditions affect water quality?4. Reviewing your results from all 5 stations would you say that this water body is healthy? Why/why not?
Connections: This lesson is a synthesis of each component in the Water Quality unit. This lesson allows students to draw connections between their estuarine aquarium in the classroom and the estuarine environment of New York City. Kinesthetic learning takes place at the field locations as the students take in their surroundings and study each water body. Experiences like viewing the immensity of the ocean, the oil slicks on the water, or the jellyfish they catch in the plankton net will hopefully create a tie to the City's watershed and transfer the sense of ownership they feel for the classroom aquarium to their city's estuary system.