

Urban Ecology: Particulate Matter Lab Activity

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

Time: 90 min
(2 class Periods- separated by 1 week)
Hands On? Yes ; Internet? NO

Standards Met: *Living Environment: Standard 4; PI 7.1, 7.2, 7.3 ; Earth Science: Standards: 7; Key Idea 1, 6; Key Idea 6*

Title: Particulate Matter Lab Activity
Grade and Subject: 11th (Urban Ecology)
Number of Days for Completion: 1
Overreaching Goals/ Outcomes: Students will learn about indoor air quality; they will make and test predictions about the indoor particulate matter concentrations in their school.
Learning Goals/Outcomes: SWBAT- make and test predictions about particulate matter in their school; use microscopes to view and analyze particulate matter; graphically depict and evaluate both predictions and results.
Materials: microscopes, pre-made particulate matter slides, markers, large graphing paper (poster size), microscope slides, glycerin, gloves, data sheets
Introduction: This is a 2 day lab activity where students will make and test predictions about particulate matter in their school.
Instruction/Direct Experience: Day 1: Students will be given a brief introduction to indoor air quality, specifically particulate matter (see file "UrbanAQintro"). They will then be given an overview of how the days activities will work. They will be split into groups and will rotate through 5 stations completing tasks and learning about urban air quality. At one of these stations, students will prepare and place a microscope slide somewhere in the school to collect particulates for 3-7days (see file "UrbanAQDay1"). Day 2 (3 days to 1 week later): Students will watch 3 short videos to learn more about the importance of indoor air quality. They will then retrieve their slides and analyze them using microscopes. They will draw descriptions of what particulates they are able to identify on each slide (dust, mites, etc) and draw conclusions about which regions of the school have better/worse indoor air quality.
Independent Activities: NA
Assessment: Students will discuss their results with the class
Connections: This lesson is a continuation of the air quality poster lesson and will be built upon in later units including urban biology.