



Collecting Particulates



Essential Questions: *Where in your school would you expect to find the most particulates? Where would you expect to find the fewest particulates?*

Overview

Particulates are extremely small solid particles and liquid droplets suspended in the air. Particulates that naturally occur in the air we breathe include dust, soil, volcanic ash, pollen, and sea salt. The increase of particulates in the atmosphere caused by human activity is now a concern because of the health problems they can cause. Particulates that result from human activities include soil particles from plowing and overgrazing of arid land, mineral dust from mining, ash from oil and coal-burning power plants, ash and smoke from factories, emissions from vehicles (particularly those that burn diesel fuel), and ash from fireplaces and stoves that burn wood or coal.

In this activity, you will create collectors to capture particulates in the air around your school.

Materials

For the class:

- 1 electronic mass scale
- 1 projector
- 2 chalkboard erasers

For each student:

- 2 index cards
- invisible tape to cover index cards and attach to observation points
- 1 pair of rubber gloves

Safety

Follow standard safety rules and school safety rules for laboratory activities.

Procedure

1. Attach tape to each index card so the tape is facing sticky side out.
2. Use the digital balance to determine the mass of each index card covered with tape. Record this mass on your data table.
3. As a group, decide where to place your index cards. You should place half of them in places you think are likely to collect lots of particulates. You should place the other half in places you think are free from particulates. Record your locations.
4. Check your cards every two days for a week. Record your observations in your data table.
5. You will continue this experiment later in this lesson, in the activity called *Analyzing Particulates*.