Name(s)

Alayna G. Evans

Project Number

J1208

Project Title

Which Local Cities or Communities Have the Greatest Number of Airborne Particles?

Abstract

Objectives/Goals
The objective of my project was to determine which local city or community (Oakdale, Stockton, Lathrop, Valley Springs, San Andreas, or Arnold) had the greatest amount of air particle pollution.

Methods/Materials
Six local cities were selected to test for air particle pollution. Using index cards with petroleum jelly to collect samples, data was collected in the same locations on two different trial dates. After the two ten-hour trials, the cards were analyzed and particle matter was counted using a jeweler's loupe and microscope.

Results
The amount of airborne particles varied from city to city. My hypothesis was that Stockton would have the greatest number of airborne particles because of its large urban industries and population. My hypothesis was correct with an average of 180 particles during both trials for Stockton. The data was collected by averaging the particle matter on the surface area of each test card. Results showed the following averages of PM: Stockton (180), Lathrop (120), San Andreas (105), Arnold (90), Oakdale (75), and Valley Springs (75). Particle matter included hair, pollen, soil, dust, bugs, and soot.

Conclusions/Discussion
My conclusion is that the larger, urban cities (Lathrop and Stockton) had the most particle matter. I found that the amount of particle matter was linked to the surrounding environments, elevation, local activities, and population. Analyzing the particle cards under magnification made me realize how many microscopic polluntants we are breathing in on a daily basis that are invisible to the human eye.

Summary Statement

My project compares the amount of airborne particles in six local cities or communities.

Help Received

My mother helped me type the report; relatives helped by hanging cards on their property