CALIFORNIA STATE SCIENCE FAIR
2004 PROJECT SUMMARY

Name(s)
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Project Number
J0609

Project Title
Does Particle Size Affect Settling Rates and Turbidity?

Abstract

Objectives/Goals
To understand and observe the effect particle size of soil samples has on the settling rates and the turbidity of water. Why are some lakes and streams clearer than others?

Methods/Materials
Twelve two-liter old soda bottles were filled with the same amount of water and labeled. Three soil samples from four different areas and soil types were collected and equal amounts of all were measured. The measured samples of soil were funneled into the two-liter soda bottles and shook up well. The bottles were left undisturbed and turbidity was described and recorded daily by observation and description. At the end of one week, layers of sediment could be observed and measured and particle size described and noted.

Results
Results of turbidity showed the soil samples which contained the most of the smallest size particles of silt had the greatest turbidity (cloudiness). Results of sediment rates showed the biggest particle size of sand to be on the bottom layer having the fastest settling rate.

Conclusions/Discussion
My conclusion is particle size does have an effect on settling rates and turbidity. The greater the amount of silt in the samples the greater the turbidity. The larger the particles size the faster the settling rate. The sand was always on the bottom and the silt was always on the top.

Summary Statement
To simulate and observe what effect particle size of soil samples has on settling rates and turbidity of water.

Help Received
My mom took the pictures of me and helped with my research.