CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
Sara Newton; Alex Wolf

Project Number
J1526

Project Title
Science Friction

Abstract

Objectives/Goals
To determine if static and sliding friction is affected by surface texture and the weight of an object.

Methods/Materials
Method
Glue three different sandpaper textures onto painted wood, leave space for painted wood texture. Drill three holes in wood block for weight placement. Attach Newton scale to 1.5N wood block. Pull the scale across the four different textures to measure the static friction and the sliding friction at a speed that is moving at a constant rate which means it stays at the same speed every time. Record the static and sliding friction onto a data table. Repeat steps 1-3 with 2.0N and 2.5N wood blocks.

Materials
Painted wood; Fine sandpaper; Medium sandpaper; Rough sandpaper; Wood block; 3 .5N weights; Two Newton scales; Glue.

Results
2.5 Newton sliding body weight had the greatest friction, 2.0 Newton body sliding body weight had the secnd greatest friction, and 1.5 Newton sliding body weight had the least amount of friction.
Rough sand paper had the greatest friction, medium sandpaper had the second greatest friction, fine sandpaper had the third greatest friction, and painted wood had the least amount of friction.

Conclusions/Discussion
We came to the conclusion that our the surface texture the object slides across and the weight of the object that is sliding across the surface affects sliding and static friction. We also discovered that there was a more drastic change between the friction on the painted wood and the fine sandpaper more than any other texture change. This could be because the fine sandpaper is a lot rougher than the painted wood and the medium sandpaper was not as rough when compared to the fine sandpaper. Thus, surface texture and weight of an object does affect static and sliding friction.

Summary Statement
It's about finding if surface texture and the weight of an object affects static and sliding friction.

Help Received
Parent helped assemble lab set up.