



**CALIFORNIA STATE SCIENCE FAIR  
2005 PROJECT SUMMARY**

<b>Name(s)</b> <b>Tera M. Hoover</b>	<b>Project Number</b> <b>J0621</b>
<b>Project Title</b> <b>Water's Powerful Force Erodes Rock</b>	
<b>Objectives/Goals</b> The goal was to determine if and how fast water erodes different types of rock. The rocks chosen were granite, asphalt, Monterey Formation and sandstone.	
<b>Abstract</b> <b>Methods/Materials</b> A paint tray was placed inside of a large clear rubbermaid tub. The study rock was placed at the high side of the tray. A water pump was positioned in the rubbermaid tub and clear rubber tubing was connected to the pump so that water could flow down on top of the rock in the paint tray. The total flow was one gallon per minute.  Each rock was weighed on a Pitney-Bowes scale. The pump was plugged in and primed. The water flowed over the rock for 24 hours. After 24 hours, the rock was removed and the water was poured from the paint tray through a coffee filter to collect the remnants. The rock and filter were set aside to dry. This exact procedure was repeated for each rock type. A second experiment was conducted, repeating the same procedures explained above, for four days at the same flow rate. Each coffee filter and rock were weighed after they dried.	
<b>Results</b> After the 24 hour experiment was complete, the granite, asphalt and Monterey Formation each had a very small amount of remnants in the bottom of the filters. The sandstone was the fastest to erode in less than 30 minutes. After the four day experiment, the coffee filters were examined. The same or fewer particles were in the coffee filters than for the 24 hour experiment. The coffee filters were weighed on a digital food scale which was not sensitive enough. Each of the filters weighed 0.05 ounces, the same as an empty coffee filter. The rocks were weighed again after the experiments. The asphalt weighed 0.5 ounces less than the original weight after 5 days of water flowing over it. The granite weighed the same amount. The sandstone had completely eroded away. It weighed 1.6 ounces less than the original rock weight. A different piece of Monterey Formation was used for the 4 day test and it did not get weighed prior to the experiment, therefore there is no data for that rock.	
<b>Conclusions/Discussion</b> The sandstone eroded faster than the other three rock types. It completely eroded within the first 30 minutes of being exposed to water. The Monterey Formation did erode but the design of this study was not able to accurately measure how much of the rock eroded. The asphalt was less than the original weight by 1.6 ounces. The granite did not erode at all.	
<b>Summary Statement</b> The force of water erodes different types of rock at different rates.	
<b>Help Received</b> My mother helped me design this project and helped me with the report and my father helped me to set it up.	