



**CALIFORNIA STATE SCIENCE FAIR  
2003 PROJECT SUMMARY**

<b>Name(s)</b> Mallory A. Farrar	<b>Project Number</b> <b>J0608</b>
<b>Project Title</b> <b>Discovering the Porosity and Permeability of Different Types of Rocks and Minerals</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> The purpose of my science fair experiment was to test the porosity and permeability of different types of rocks and minerals.</p> <p><b>Methods/Materials</b> The materials that I used were: -materials to be tested (clay, soil, gravel, sand, and chalk) -wooden stand (I built it myself.) -Two measuring cups ( a 250 ml measure and a 500 ml measure) -Coffee filters -Turkey baster (to add water with) -timer -paper and pencil to record data with</p> <p>These are the steps that I took in doing my experiment: 1. Let all of the materials sit out in the sun. (grind up clay and chalk) 2. Attach the coffee filters to the stand. 3. Measure 250 ml of rock/mineral. 4. Pour rock/mineral into coffee filter. 6. Slowly pour water onto material in coffee filter using a turkey baster. 7. Let materials sit for 30 minutes with 250 ml measuring cup collecting water that drains. 8. Come back after 30 minutes and record the data of the experiment. *****REPEAT WITH EACH MATERIAL AT LEAST TWO TIMES*****</p> <p><b>Results</b> When I did the experiment with the clay and chalk, they were too heavy for the coffee filters. Because of this, I had to buy a metal screen coffee filter. After a half hour, the clay started getting clumpy and hard. When it was fully dry, it was all one lumpy, hard piece. The same thing happened with the chalk. The results turned out to be as I expected. As I predicted, the clay and chalk retained the most water. I was also correct that the gravel would retain the least amount of water. In order from most water retained, to least water retained, is clay, chalk, soil, sand, gravel.</p> <p><b>Conclusions/Discussion</b> From my experiment, I have concluded that my results are very logical. The gravel retained the least</p>	
<b>Summary Statement</b> My project is all about how much water is retained and released from different types of rocks and minerals.	
<b>Help Received</b> Father helped in using screwdriver to build stand; Father also helped with trial experiment to make sure it worked; Father and mother both took pictures.	