



**CALIFORNIA STATE SCIENCE FAIR  
2008 PROJECT SUMMARY**

<b>Name(s)</b> <b>Madison J. Russell</b>	<b>Project Number</b>  28187
<b>Project Title</b> <b>Determining How Liquid Pollutants Travel through Different Soils</b>	
<b>Objectives/Goals</b> My project was to determine how quickly different pollutants would travel through different soils <b>Abstract</b> <b>Methods/Materials</b> I Collected Clay Loam, Sand, and backyard Soil (a mixture of clay and sand). I then compacted the soils into 45inch rain gutters. 3 for each soil. These were then placed at a 20 degree angle. I placed a measuring cup at the low end of the 20 degree slope. I then poured two cups of pollutants into the soils. The pollutants I used were: paint, motor oil, and Dawn Dish Soap. I poured a different pollutant into each soil type. 3 rain gutters for clay - 1 for motor oil, 1 for paint, and 1 for Soapy water. Repeat for each soil type. I then recorded the daily amount of liquid that passed through the soil into a measuring cup. Repeat experiment five times. Record and compare results. <b>Results</b> I found that pollutants traveled through the sand at a faster rate than the other soils. By the 4th day 1/4 cup of motor oil was collected. by the 5th day 1 cup of soap was collected. Clay Loam proved to be more dense than the other soils. Only the oil motor oil traveled through the clay loam. 1/32 of 1 cup traveled through the clay loam. The paint didn't even seep into the soil at all. The soap seeped through, but no travel. Backyard soil 1/8 of a cup of motor oil was collected after 6 days 1/4 of a cup of soap was collected after the 3rd day. none after that. <b>Conclusions/Discussion</b> My hypothesis stated that the oil would seep through the clay loam slower than paint or soap and that the soap would seep through the sand faster than the other pollutants. I was correct with the pollutant soap. The soap seeped through the soil and sand, but not the clay loam. I was incorrect with the pollutant motor oil. Motor oil was actually the only one that seeped through the clay loam. But of course it was a very small amount that seeped through. In my project I was able to prove that not all pollutants are going to travel through soils at the same speed. The types of soils and the types of pollutants are important factors in how they will travel into different depths for cleanup.	
<b>Summary Statement</b> I determined how different pollutants traveled through different soils.	
<b>Help Received</b> Parent help with collecting materials and putting board together.	