



**CALIFORNIA STATE SCIENCE FAIR  
2010 PROJECT SUMMARY**

<b>Name(s)</b> <b>Katie R. Lefley</b>	<b>Project Number</b> <b>J2315</b>
<b>Project Title</b> <b>Exhausted Grass</b>	
<b>Abstract</b> <b>Objectives/Goals</b> My objective was to determine if engine exhaust had an effect on the growth rate of plants. I also wanted to determine if exhaust from a lawnmower had more of an effect on growth than cleaner exhaust from a car with emissions controls. <b>Methods/Materials</b> I used seven jars and in each jar I grew nine seeds. After I had planted the seeds and watered them with a measured amount water, I drilled a hole in the caps and screwed them on. I used a syringe to add the correct percentage of exhaust to each jar. After I had put the exhaust in the jars I sealed off the hole with hot glue. After the seeds had germinated, I measured the length of each grass leaf every day until they had reached the top of the jar. <b>Results</b> The data showed that both types of exhaust had a negative affect on the growth rate of grass. In both tests, the control grew the best. However, overall the grass growing in car exhaust only grew slightly better than the grass growing in lawnmower exhaust. <b>Conclusions/Discussion</b> The data support the hypothesis that engine exhaust affects the growth rate of plants negatively. The data also support the hypothesis that lawnmower exhaust affects the growth rate more than car exhaust, but only slightly. One possible source of error were the seeds because they all grew at slight different rates. My results were surprising because the jars with 32% exhaust gas did not affect the growth rate much more than the jars with 1% exhaust.	
<b>Summary Statement</b> The objective was to measure the effect of engine exhaust on the growth rate of plants, and to see if exhaust from a lawnmower had a greater effect than cleaner exhaust from a car with emission controls.	
<b>Help Received</b> Dad helped put exhaust in jars; Dad help with line graph	