



**CALIFORNIA STATE SCIENCE FAIR  
2009 PROJECT SUMMARY**

<b>Name(s)</b> <b>Laurel A. Ezell</b>	<b>Project Number</b> <b>J0109</b>
<b>Project Title</b> <b>Hovercrafts: Winds of Movement</b>	
<b>Objectives/Goals</b> The goal was to construct a hovercraft from everyday materials. The craft was to hover 10 or more seconds, traverse at least two meters, and show measurable friction reduction.	
<b>Abstract</b> <b>Methods/Materials</b> I obtained a motor with a propeller and circular plastic cage. A circle of Styrofoam was cut to be the same size. Three smaller circles of different sizes were stacked in pyramid form, connecting the Styrofoam to the cage and providing space for airflow. A large Ziploc bag with a hole cut in the top layer was fitted over the Styrofoam and the propeller cage. A wire tie was threaded through the bottom bag layer, Styrofoam, and fan cage to connect them all together. The top layer of the Ziploc bag was secured to the fan cage. Some small airflow holes were poked in the bottom of the bag but later enlarged using scissors. Lastly a snap connector, switch, and a battery holder were soldered in place to finish it off.	
<b>Results</b> After many experiments I finally found the right materials to make my hovercraft work. I also met all my design criteria. My hovercraft was able to hover 10 seconds with ease. I was hoping it would hover across the floor two meters but it was able to hover five meters when pushed. When I measured difference of friction I taped a thin elastic string to the hovercraft and measured how many centimeters the elastic stretched before the hovercraft moved. With the hovercraft turned off the elastic stretched 24 centimeters and with the hovercraft on it only stretched 6 centimeters before it moved.	
<b>Conclusions/Discussion</b> My results proved I was able to construct a hovercraft from everyday materials that would hover more than 10 seconds, demonstrate greatly reduced friction and travel more than 2 meters when pushed.	
<b>Summary Statement</b> My project was about trying to build a successful hovercraft out of everyday materials.	
<b>Help Received</b> Dad helped with ideas for the materials and helped look for hovercraft design examples.	