



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

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Project Title Floating on Air	
Abstract Objectives/Goals To test the kinetic and static friction of a home-built hovercraft on five different surfaces. Methods/Materials We built a hovercraft using plywood, plastic, pipe fittings, and a vacuum cleaner motor. Then we used a Vernier LabPro force meter to measure the static and kinetic friction of the hovercraft on the different surfaces. We tested each surface five times. Then we calculated the coefficients of static and kinetic friction for the hovercraft on each of the surfaces. Results We found that the 4 mil plastic had the lowest static friction coefficient; the highest was a waxed wood floor. For the kinetic friction coefficient the waxed wood floor was lowest and carpet was highest. Conclusions/Discussion We were surprised with some of our results. We expected the waxed wood floor to have the lowest friction; it turned out to have a high static friction coefficient and a low kinetic friction coefficient. We expected carpet to have the highest friction; it turned out to have the second highest static friction coefficient and the highest kinetic friction coefficient. If we were to continue this project next year we would like to see what effect two motors would have on the performance of the hovercraft.	
Summary Statement We made a hovercraft and tested its coefficient of static and kinetic friction of five different floor surfaces.	
Help Received Ms. McCorkell, our teacher, helped us with the idea, with troubleshooting the hovercraft, and with editing. She also taught us how to use a LabPro force meter and to calculate static and kinetic coefficients of friction.	