



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

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| Name(s) George R. Caratan | Project Number 31379 |
| Project Title A Nose for Altitude | |
| Objectives/Goals My project was to determine if the shape of a model rocket's nose cone would affect the rocket's apogee when keeping the rocket's thrust and weight constant, each time it was launched. Abstract Methods/Materials Five different shaped nose cones were constructed from balsa wood. Each nose cone had a different weight but had the same smooth painted finish. One model rocket was constructed with a cargo bay that contained the altimeter and space for adding or subtracting ballast. The rocket was equipped with a C6-7 motor so it had the same amount of thrust and it was ballasted so it had the same weight each time it was launched. I launched the rocket with the same nose cone three times and recorded the apogee after each flight. I repeated this procedure for each of the five different shaped nose cones. Results The rocket, when equipped with the Long nose cone reached the highest apogee, while the same rocket equipped with the Cylinder nose cone reached the lowest apogee. Conclusions/Discussion My conclusion is that the shape of the nose cone does have an affect on the model rocket's apogee because of the different amount of aerodynamic drag created by the diffent shaped nose cones. The more pointed shape created the least amount of aerodynamic drag causing the rocket to reach the highest apogee. | |
| Summary Statement My project demonstrates that the shape of a model rocket's nose cone will affect its apogee. | |
| Help Received none | |