



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

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| Name(s) Meaghan Yolles | Project Number J0125 |
| Project Title Wing It! The Effects of Airplane Wing Design on Aerodynamics | |
| Abstract Objectives/Goals My objective was to see what the effect of the degree of camber, or curvature, in each of the three wing designs I constructed, would have on the ability of the craft to become (and stay)airborne. In the terms of aerodynamics, my objective was to see which design had the greatest lift. Methods/Materials My three airplanes were constructed out of bolsa wood. To the underside of each craft I attached a small length of fishing line. At the end of the line was a small hook. I constructed a wind tunnel out of cut plexiglass. I positioned a motorized electric fan at one end of the tunnel. For testing,I would then place one of my models within the tunnel, and turn on the fan. I would then observe the ability of the wind force exerted to create lift, both with the plane by itself, and with small amounts of weight, in the form of metal bolts and washers, attached to the hooks. Results The plane with medium camber and flat lower camber had the greatest lift. Conclusions/Discussion My hypothesis was partially wrong. I had thought that a wing with a high upper camber and flat lower camber would have the greatest lift. The results of my project are important in that they can aid aeronautic engineers in designing airplane wings. | |
| Summary Statement My project is about how wing design of an aircraft effects lift. | |
| Help Received Assistance from neighbor in constructing models. | |