# CALIFORNIA STATE SCIENCE FAIR
## 2011 PROJECT SUMMARY

**Name(s)**
Tyler R.Z. Johnson

**Project Number**
**S0311**

**Project Title**
## Shaping Flight

**Abstract**

**Objectives/Goals**
My project goal was to determine if the angle of a plane's wings have a direct effect on the average speed of the plane. I believe that a plane with wings angled closer to the body will have a greater speed.

**Methods/Materials**
Three paper airplanes were made, as well as a launcher to achieve controlled takeoff rate, a timer and measuring tape were also used. One airplane was made with average wing angle, and was used as a control. The other two had an extremely obtuse angle, and an extremely acute angle. The planes were tested at a controlled indoor area, four times for accuracy.

**Results**
The plane with the acute (close to the body) wings had a consistent higher speed than the others. The obtuse plane flew farther, slower. The average plane was between the others.

**Conclusions/Discussion**
After experimentation, my hypothesis was proven correct, and my objective reached. The plane with acute wings flew the fastest of the three in every test performed. This project helped my to better understand how an airplane attains lift and thrust based on air movement around the wings.I feel I understand this topic very well, and I am glad to have this experience for later years of my life.

**Summary Statement**
My project is about the effect of wing shape on the speed of an airplane.

**Help Received**
Principle helped attain supplies and organize project; Father helped wire launcher; Sister supplied spray paint for board.