The Effect of Wing Shape and Angle of Attack on Lift Force

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In my testing, I want to determine whether the angle of attack or wing shape affects lift more. I want to find this out because I find it fascinating how the smallest of details can produce lift. I believe that the wing using Bernoulli's principle will have a greater lift than the 45° angle wing and the wings at 15° will create more lift than they would at 0°. After construction of the wind tunnel and other supplies were finished all we had to do was test. Testing involved inserting the correct wing, turning on the fan and using the force sensor. Using the force sensor, I was able to blow air through the tunnel and collect how much lift was produced with each wing. In the end, the Bernoulli at 15° did achieve the most lift and the 45° angle wing at 0° did the worst. Also both wings at 15° did better than the same wing at 0°. This tells me that Bernoulli's principle explains exactly how and why more lift was created here. Yet I would like to point out that the 45° angle wing at 15° produced more lift than the Bernoulli wing at 0°. This tells me that even though the Bernoulli wing shape helped create slightly more lift than the 45° angle wing at 0°, the angle of attack still contributed the most in achieving the most lift.

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