Abstract

Project Title: Light Reflectivity With Respect to Shape: How to Make an Airplane Invisible

Project ID: 245

I had some knowledge of the subject because I did some physics in the 4th grade and that's what my project is. It interested me because my family is really good at physics and if I needed help they could help me.

I loved airplanes and I wanted to know what shapes help them to become "invisible".

Which 3-D geometric shapes scatter the most light?

My hypothesis is if I shine a light unto different 3-D geometric shapes square, triangle, cylinder, then I believe the triangle shape should scatter the most light. This scattering of light should make the shape "invisible" to radar. The independent variable in this project is the shape of the paper, dependent variable is the amount of reflected light, and the controlled variable it the direct light.

The light was measured in lumens. My material were black construction paper, lux meter, box, LED light, notebook, pen, and white paper. I folded the white paper into shapes. Then, I put the black paper in the box and taped it. Then, I cut a hole to put the lux meter in and then I taped the light on and then tested by turning on the light towards the shape. I turned on the light and it faced towards paper. The leading edge of the paper shape was always the same distance from the light. Then I recorded the amount of light reflected back. I did this 3 times for each shape and I also recorded the direct light facing the lux meter.

I expect the triangle to be the best shape to scatter light. I think this because a lot of the fight airplanes are triangular shapes.