# Silent Sounds

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The question is, which material will be the least accurate with the sonar measurements, and will density correspond with accuracy in these experiments? When measuring the distance by one eight of a meter away from the sonar device.Whenever the materials were moved they were moved by one eight of a meter every time. The steel plate is used as the standard for the other objects. The metal plate is set up one eight away from the sonar device to see how faraway the sonar device thinks it is. It is tested at a 90 degree angle and it is tested three times and the same thing was done when it is at a 45 degree angle.The averages are collected and are split into a 45 and 90 degree average. The same steps are repeated with the egg carton, foam mat, and the sound proof insulation. The material are moved back until the distance of one meter is reached, then the objects are graphed and put into there own sections,90 degree averages, 45 degree averages, and the actual distance to compare the materials to see if they are accurate or not. The hypothesis is half correct the insulation is the least accurate, but the foam was less accurate than I originally thought. The egg carton was the most accurate material I tested with. The densities did play a part, the amount of density shows the order of the results I got. 1. Sound proof insulation: 0.77 2. Foam mat: 0.100 3. Egg carton: 0.215

**Awards Won:**