

Topic:



## **Oh Boy Buoyancy**

**Primary Audience: 5-11 Year Olds**

**Description:** The participants will experiment with different materials while participating in a design challenge in which they take three similar objects and try to get them to float, hover, and sink.

**Keywords:** Buoyancy, Neutrally buoyant, Density

### **Materials:**

- 3 Film Cansisters
- Water
- Bin (or aquarium) big enough to submerge the canisters
- Weights to make film canisters sink
- Styrofoam or similar buoyant material

**Instructions:** Give the students three film canisters and other materials and explain to them they need to design instruments to take samples from the top, bottom, and middle of the water. In other words, one of their canisters has to float, one has to sink and one has to hover in the middle of the tank (this must be accomplished without tethering it either from the top or bottom). The first two should be fairly easy; the last one is tricky. The easiest way to accomplish it is to add just enough weight to get it to sink, then add buoyant material a little at a time until it floats to the middle of the water.

**What's Going On?** Depending on the density of an object (relative to the density of the water), it will either sink or float. Sometimes, objects are “neutrally buoyant”, meaning its density is equal to that of the water. This is very interesting, because even though you are adding material – in other words, you are adding to the unit as a whole – you are making the unit less dense overall.

### **Relevant Ohio Science Content Standards:**

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