

Date: Monday, June 2, 2014

Question: How does a submarine sink and rise?

Experiment: Cartesian Diver

Materials:

- 2-liter empty soda bottle
- Big test tube

Describe what I'm doing:

- Filled soda bottle almost to the top.
- Put water in the test tube but left a little air pocket
- Turn the test tube upsidedown with thumb underneath and placed it in the soda bottle
- Filled the soda bottle with water to the very top so no air bubbles were inside
- Put a lid on the soda bottle
- Squeezed the soda bottle

Answer to Question: The tube goes up and down.

The tube goes down when I squeeze the soda bottle because the tube has more water in it because there is pressure on it, and the only way the water can get there if it goes up the tube. When the water goes up the tube, the tube sinks just like a submarine.

The tube goes up when I stop squeezing because there is a lower pressure and the water can come out of the tube. When the water comes out of the tube, there is more air than water and so the tube rises.



Figure 1: Squeezing made the tube sink because of high pressure.



Figure 2: No Squeezing made the tube rise because of low pressure.