

Lab: Create a Cartesian Diver

Purpose: To observe gravity overcoming buoyancy due to density!

Materials:

- 2 liter pop bottle
- beaker
- medicine dropper
- water

Procedure:

1. Fill the pop bottle with water.
2. Fill the medicine dropper with water so that it just barely floats when placed in a beaker full of water.
3. Place the medicine dropper in the full pop bottle.
4. Screw the cap of the pop bottle on tight.
5. Squeeze and experiment with the Cartesian diver.

Observations:

1. Diagram the Cartesian Diver and label the bottle, medicine dropper, and water level in the medicine dropper when the bottle is squeezed and when it is released.
2. Jot down what happens when pressure is applied to the bottle as well as any other important things that you see.

Analysis Questions:

1. What causes the diver to sink and float? Observe it carefully.
2. Considering the unit that we are studying right now, explain how the diver can be neutrally buoyant (floating in the middle of the bottle).