

Dive into Density

Introduction: Today we will be making a contraption that you can put in a water bottle and control its movement! This is called a Cartesian Diver. Let's dive right into it!

Approximate Time: 5-10 minutes

Materials:

- Transparent water bottle
- Paper clips
- Scissors
- Drinking straws
- Water
- Ruler/measuring tape



Procedure:

1. Measure and cut a 2 in section of a drinking straw. Fold the piece in half.
2. Secure both ends of the section with a paper clip, but do not seal the ends.
3. Put a different paper clip on the end of the first one so that it is dangling out. Now you have your diver!
4. Place the diver in a cup of water to make sure it floats. When you press it down, it should sink and then come back up immediately.
5. Fill the transparent water bottle up to the rim with water. Push the diver into the water and put the lid on. When you squeeze the bottle, the diver should sink down. When you release it, the diver should shoot back up.

Tips & Tricks:

- If your diver sinks but does not come back up, cut a different section of a straw that is slightly longer than 2 in.
- For fun, you can try to get the diver to stay in the middle of the bottle.
- You could also experiment with making multiple divers and see how they interact.