



## Density

### HOW TO CREATE YOUR ELEMENTS

#### STORAGE

The material needed for this box can fit in a shoe box.

#### CRAFT THE ELEMENTS

##### A. Floating egg

1. Fill a cup with water.
2. Drop the egg in the cup and observe what happens.
3. Take the egg out.
4. Add salt to the water and mix until it dissolves.
5. Drop the egg in again.
6. Depending on the amount of salt that they use, the students might have to repeat steps 3,4 and 5 until the egg floats.

##### B. Stackable water

1. Give each student a cup and have them measure and pour 60ml of water into it. They can use a measuring cup or a syringe for this step.



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2. Add food colouring to each cup; no two students in the same group should have the same-coloured water.
3. Leave the first cup as it is. Add 1 tablespoon of sugar to the second one, 2 tablespoons to the third, and 3 spoons of sugar to the last one. Mix until the sugar dissolves.

**Notice:** It can be difficult to dissolve 3 spoons of sugar in 60ml of water. If you are doing so, we advise you to use hot water (and then cool it down so the temperature doesn't affect the experiment), or you can just have the students work in groups of 3.

4. Take an empty cup (a see through one) and pour in the coloured water with most sugar in it. Pour the water by tilting the cup, having them touch one another, and the water gently sliding down the edge of the cups.
5. Repeat the process in order, by how much sugar there is in the cup until the water with no sugar is poured in.
6. If everything was done correctly, you now have a cup with differently coloured water stacked on top of one another.



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## POTENTIAL ISSUES

In the Stackable water experiment, the students need to be really careful. They pour the water slowly and let it slide on the edge of the cup, not free fall. If this is not done correctly, the water will mix, and the experiment will fail.

You can turn this issue into a learning experience by analysing what happened and why the experiment failed for some groups.

## ALTERNATIVES

### A. Egg alternative

If you want to avoid using an egg because it is fragile and you fear it is broken, you can use a potato instead.

### B. Other liquids

To make the second experiment simpler, instead of sugar water you can use different types of liquids, e.g. water, oil, rubbing alcohol. The result will be the same, and there is no chance of it being done incorrectly, as those liquids will not mix if you just pour them into one another. However, keep in mind that by experimenting this way, the students are skipping other parts of the process.



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