

SINK OR FLOAT?

What you need:

- A big clear tub or bowl
- Water
- Items from around the house
- An orange or clementine



What you do:

1. Fill your tub or bowl up with water.
2. Find objects from around the house.
3. Start by guessing which objects will sink or float, and then test out your hypotheses.
4. Now for the orange. Guess whether it will sink or float. Now try it out. It floats, right?
5. Now peel your orange and guess whether it will sink or float. Try it out. What happened?

What is happening:

From Cool Science Experiments HQ:

“An orange with a peel is heavier than an orange without a peel. So why does the orange with the peel (the heavier one) float and the orange with the peel (the lighter one) sink? The secret to this experiment is density! **Density** is a measure of the mass per unit volume of a substance. Water has a density of 1 g/mL (g/cm³). Objects will float in water if their density is less than 1 g/mL. Objects will sink in water if their density is greater than 1 g/mL.

The orange with the peel floats because the peel is porous and filled with tiny air pockets. These pockets of air help increase the **buoyancy** of the orange. This increase in buoyancy helps the orange become less dense than the water, so the orange will float in the water. Think of the pockets of air in the orange peel are like tiny floatation devices for the orange. On the other hand, when you remove the peel from the orange, you are in fact making it lighter, but you are also removing those tiny air pocket floatation devices. Therefore, the orange without the peel is denser than water and it sinks.

<https://coolscienceexperimentshq.com/why-does-the-heavier-orange-float/>