

Investigating Buoyancy

The demonstration using oranges gets pupils thinking about buoyancy and density. It can be followed up with a child-led investigation to investigate the buoyancy of other fruit/vegetables.

Equipment:

Large bowl or basin or glass filled with water - it must be large enough to fit an orange in it!

2 oranges - they need to be big oranges rather than satsumas or tangerines



Instructions:

Part 1 - Demonstration

1. Peel one of the oranges - you may want to do this before you start the lesson.
2. Show both oranges and get the children to predict whether they will float or sink. Will the peeled/unpeeled orange behave the same or differently? Encourage them to come up with reasons as to why they think this might happen.
3. Drop both oranges in so that the class can see what happens

Note: The peeled orange will sink and the unpeeled one will float. This is because even though the unpeeled orange is heavier than the peeled one, the peel contains lots of air pockets which allows the orange to float. Floating isn't just dependent on how heavy something is but how dense it is. Density is how heavy something is for a given size. A good example of this is that if you filled a pillowcase full of rocks and another full of feathers then the feathers will be much lighter than the rocks because the rocks are more dense.

Equipment:

1 large bowl or basin or glass filled with water per **group**

Variety of fruit/vegetables - peeled and unpeeled

Part 2: Investigation

Different fruits and vegetables have different densities so some will float and some will sink - sometimes this is easy to guess and other times it can be quite tricky!

Children can use what they have learned from the oranges to guess whether other fruit/vegetables will float or sink.

They could record their results in a table (a Microsoft word version is provided as a separate file for printing):

Name of fruit or vegetable	Peeled (P) or unpeeled (U)	Weight	Prediction: Float or sink?	Result: Float or sink?

