

Floating Fruit

On SCOPE's Things that... Float episode, Julia experimented with some floating (and sinking) fruits.

Here's how you can do it at home:



What you need:

Large container

Water

Oranges

Selection of other fruits (e.g. apples, bananas, lemons, grapes, pears etc.)

What to do:

1. Fill the container with water.
2. Guess which fruits will sink in the container of water and which ones will float.
3. Drop each piece of fruit into the container.

Did you guess correctly?

4. Take the orange out of the container.
5. Remove the orange peel, keeping the flesh in one piece.
6. Guess whether the peel and flesh will sink or float in the container of water.
7. Drop the flesh and the peel into the water.

Do they sink or float?



What's happening?

Why do some things float and some things sink? Well, it's all about density, or the mass of a given volume of something. If an object is MORE dense than water then it will sink, like a kiwi fruit and grape. If something is LESS dense than water then it will float, like a lemon.

But why are some fruits more dense than others? Well it's to do with the composition of the flesh, the amount of sugars and the type of skin or peel.

You probably found that oranges float in water. But when you remove the peel, the flesh sinks to the bottom and the peel stays floating on top. This is because the orange flesh contains lots of sugars and so it is more dense than water, so it sinks. But the peel contains lots of tiny air pockets and so it is less dense than water, and floats. So why did the *whole* orange float? Well, the thick floating peel was keeping the dense flesh afloat!