

Lesson plan

Liquid layers



Demonstrate how liquids can float on top of one another in a density column.

Show

1. Pour golden syrup into the cup so it is about 1.5 cm deep.
2. Use a pipette to add approximately the same volume of washing up liquid to the cup, on top of the golden syrup.

3. Use a clean pipette to gently add the same volume of water to the top of the washing up liquid.

4. Use a clean pipette to gently add the same volume of vegetable oil to the top of the water.

Explain

Density is defined as how much 'stuff' is packed into a particular area. A denser object weighs more than the same amount of a less dense object. Liquids that have a higher density, such as syrup, will sink below liquids with a lower density, such as water and oil. Solid objects also range in their densities. They sink into the liquid layers, resting at different levels depending on their density.

Suggest

- What would happen if you mixed the liquids together?
- What other combinations of liquids could you try?
- What would happen if you added the liquids in a different order?

Resources

- Golden syrup, washing up liquid, water, vegetable oil and surgical spirit
- Pipettes
- Clear plastic cup
- Small objects such as a coin, dried pea or bean, grape, pen lid and a dice

5. Finally, add a layer of surgical spirit.

6. If any of the layers have mixed, give them time to settle.

7. Drop the small objects into the cup, one-by-one, and observe what happens.