Primary science investigations
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Lava lamp

why & how? PRIMARY SCIENCE TEACHING TRUST

ROYAL SOCIETY OF CHEMISTRY

Lava lamp

We will be:

Investigating how much gas (fizz) there is in a fizzy drink.

Learning objectives

Understanding

- I know that materials can be solids, liquids or gases.
- I understand that gases have mass.

Enquiry skills:

- I can take accurate measurements.
- I can use my maths skills in science.

Useful vocabulary

- **Solid:** a material that has a fixed volume and holds its shape. For example: ice, wood and chocolate (at room temperature).
- **Liquid:** a material with a fixed volume that can flow and that takes the shape of its container.
  For example: water, juice and lava.
- **Gas:** a material that spreads out in all directions, filling its container. Gases can be compressed (squashed).
  For example: oxygen, carbon dioxide and nitrogen.
- **Mass:** the amount of matter, or 'stuff', that makes up an object. Mass is measured in grams and kilograms.
- **Carbon dioxide:** a material that is a gas at room temperature and is added to drinks to make them fizz.

Method

1. Find the total mass of your bottle of fizzy drink using a digital scale.
2. Pour out your drink into a measuring jug and measure the mass of the bottle.
3. Next, you need to find out the masses of the gas and liquid separately. You'll need to try to get as much of the gas as possible out of the liquid without spilling any – can you think of a way to do this?

4. When you think all the gas has gone (when the drink is flat), measure the mass of the liquid – can you think of a way to find the mass of the liquid but not the jug?
5. Finally, use your maths skills to work out how much of the original mass was solid (the bottle), how much was liquid and how much was gas.

What did you find out?

How much fizz is in a fizzy drink?

Compare your findings with the class.

- Do all of the drinks have the same amount of gas in them?
- Were any of the results surprising?

Evaluation

How do you feel about our **learning objectives** today?

- I know that materials can be solids, liquids or gases.
- I understand that gases have mass.
- I can take accurate measurements.
- I can use my maths skills in science.

If you feel confident that you can, show your teacher 5 fingers, or show 1 if you feel that you need to chat through the lesson again.

Acknowledgements

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