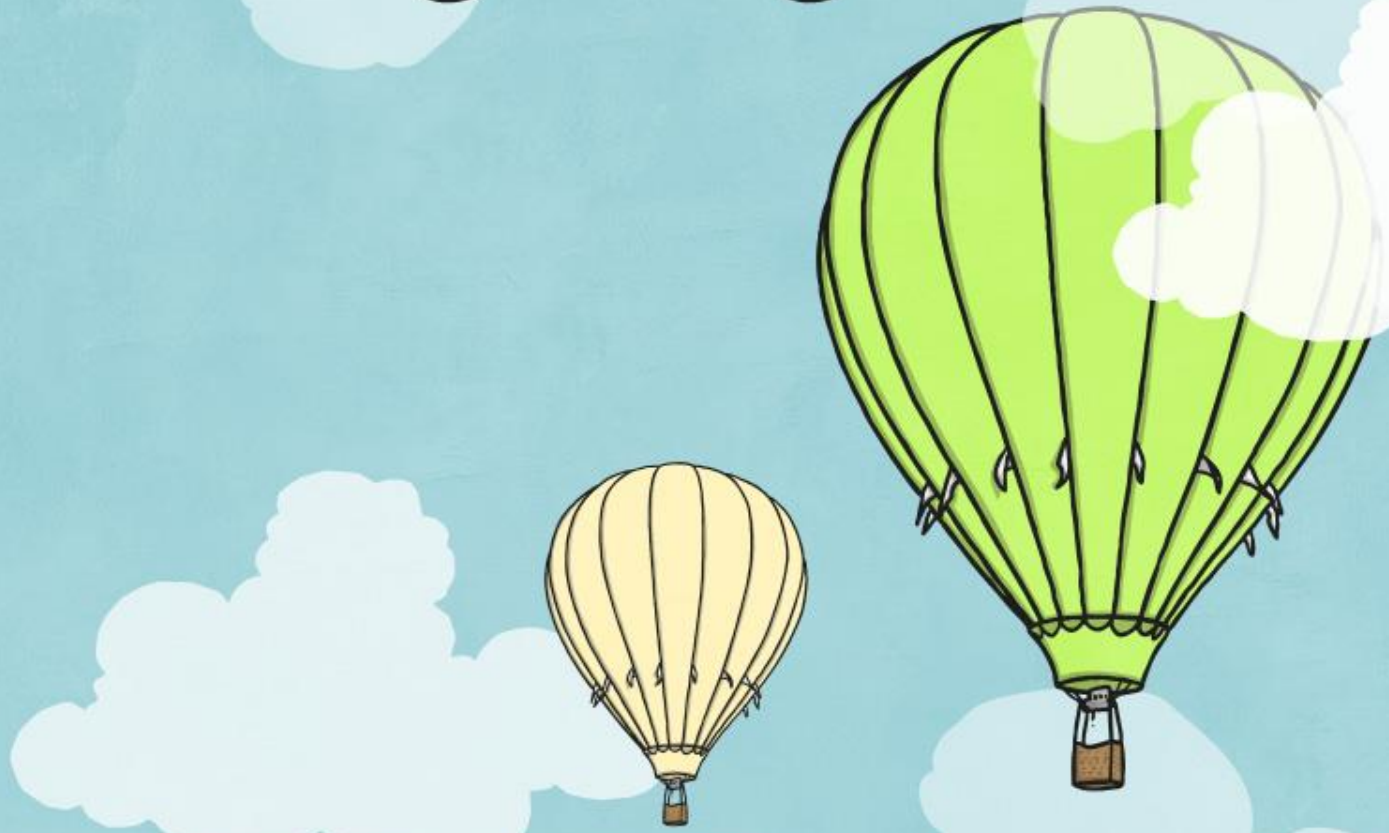
Investigating Gases



Identifying States of Matter

Here you will see a bottle of fizzy drink.

Which observations can you make about the materials that make up the bottle of fizzy drink?

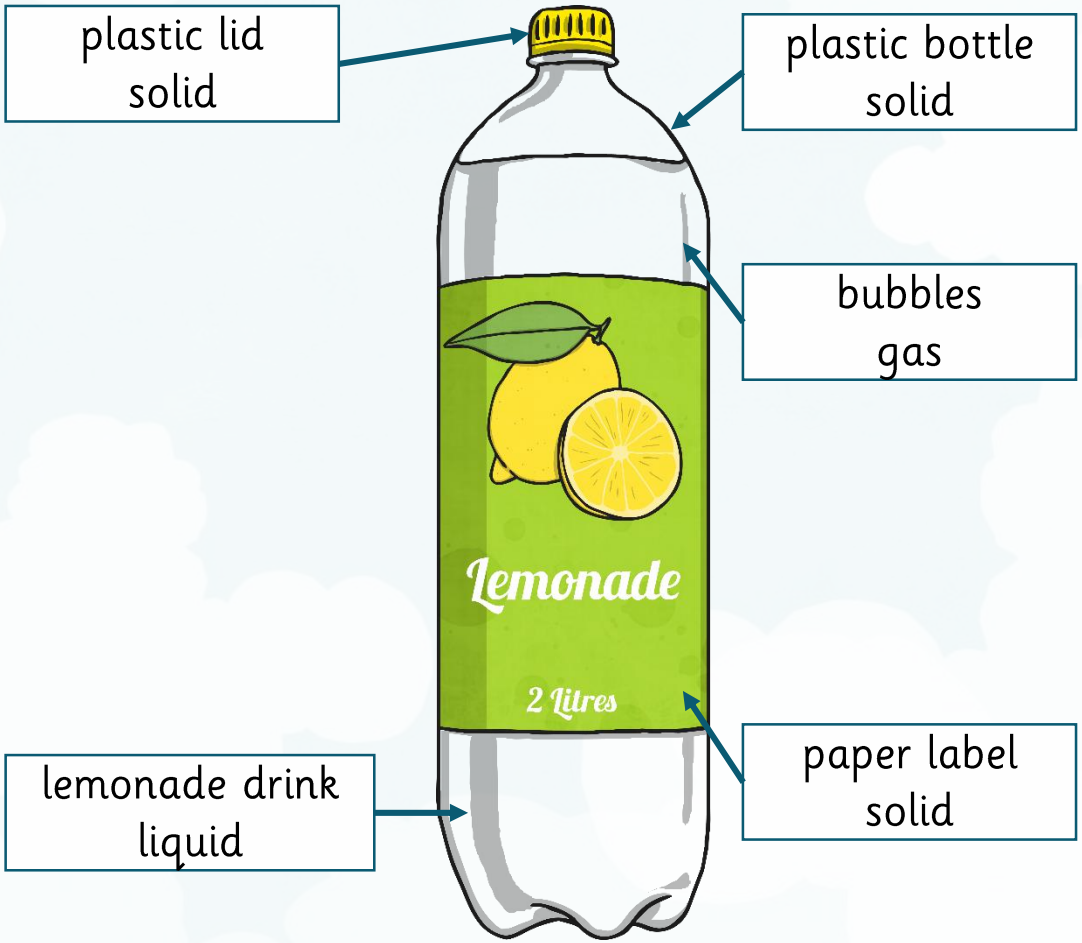


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Identifying States of Matter



These are called States of Matter.

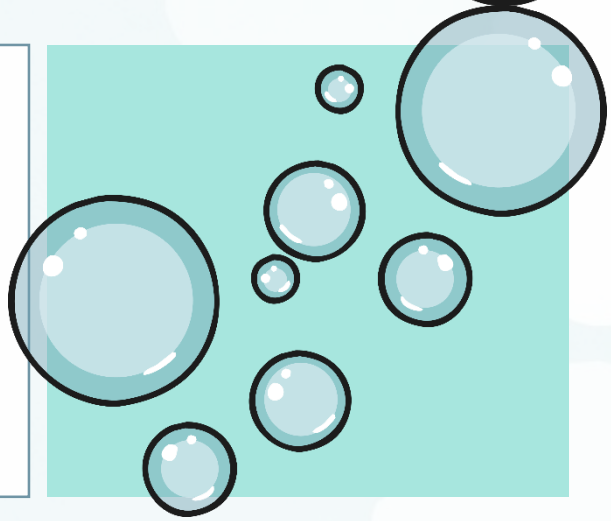


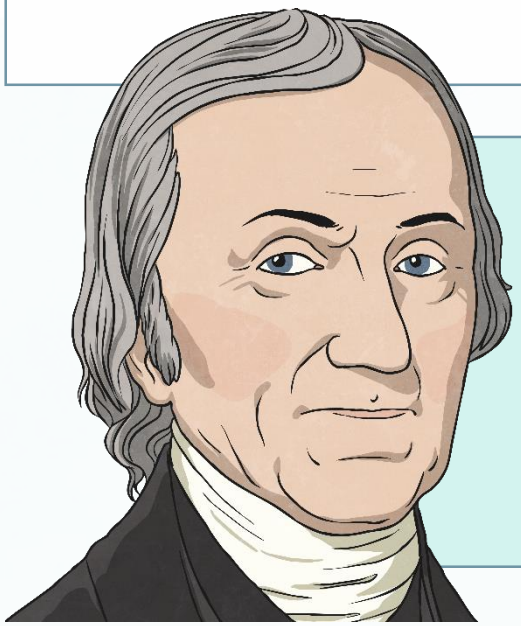
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Bubbles of Gas



- What are the bubbles in fizzy drinks made of?
- Why are there bubbles in fizzy drinks?
- How are fizzy drinks made?





Click on the bubbles by each question and read the short fact files to find the answers to these questions!

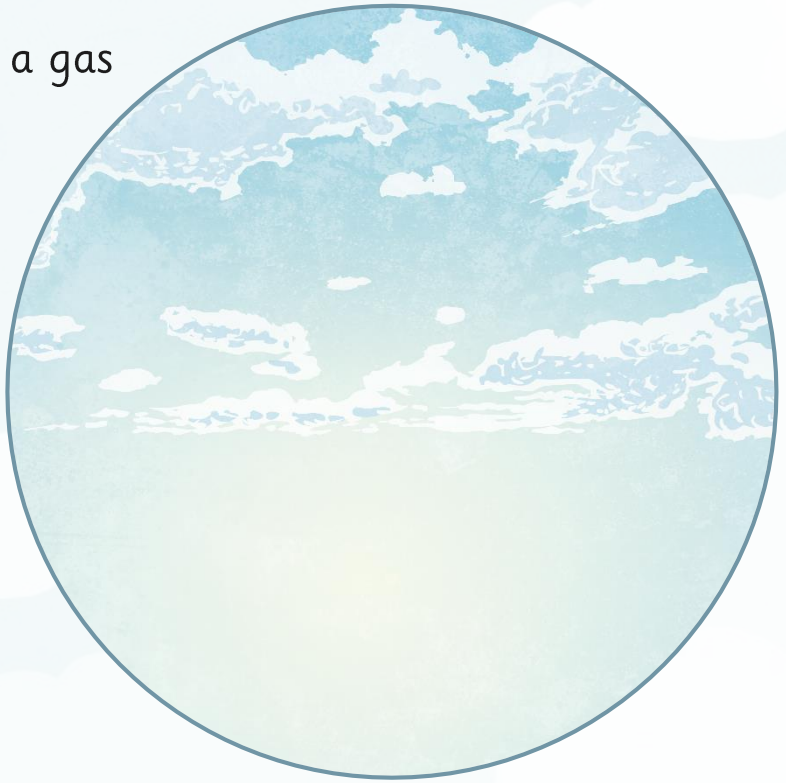
Next

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What Are the Bubbles in Fizzy Drinks Made Of?

Bubbles in fizzy drinks are made from a gas called **carbon dioxide**.

Carbon dioxide is a gas that is all around us. It makes up only about 0.04% of the Earth's atmosphere.



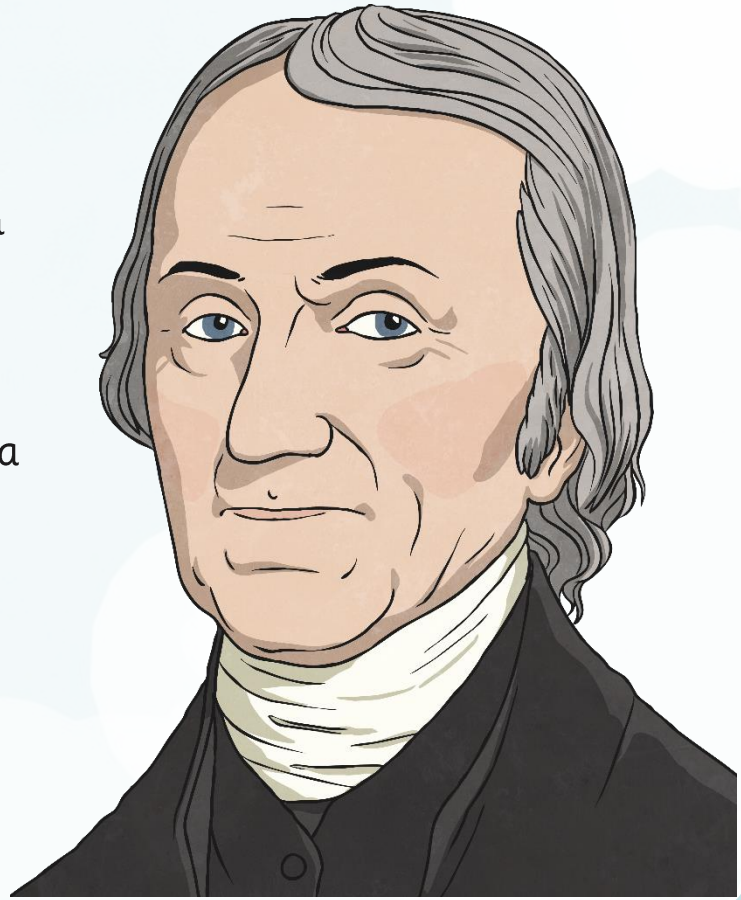
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Who Invented the First Fizzy Drink?

In 1767, a clergyman and scientist called Joseph Priestly accidentally invented the first fizzy drink. He found a way to dissolve gas in water, making the first soda water, or carbonated water.

When he drank the fizzy water, he described a "peculiar satisfaction".



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How Are Fizzy Drinks Made?

Fizzy drinks are made by adding carbon dioxide to liquid under huge pressure. The carbon dioxide dissolves in the liquid and settles in the space above the liquid in the bottle or can.

When the container is opened, the pressure decreases and the gas escapes quickly, making a hissing sound. The bubbles appear as the carbon dioxide turns into gas.



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Bubbles of Gas

Carbon dioxide can be very useful.

Some fire extinguishers use carbon dioxide to cool flames and to stop oxygen getting to the fire.

Carbon dioxide freezes at -78°C, and it becomes a solid called dry ice. It is used to transport food that needs to be kept cool and fresh, such as on aeroplanes and trains.

And as you have read, carbon dioxide is dissolved in water to create fizzy drinks.



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Do Gases Weigh Anything?

These children are talking about the weight of gas. Who do you agree with?



Gases are lighter than air, so they do not weigh anything.



Gas has no weight because it is invisible.



A gas does have weight because it is a material.

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Do Gases Weigh Anything?

Whole Class

Watch this film to see some children thinking about this question by wondering about whether the bubbles of gas in a fizzy drink affect its weight.





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Do Gases Weigh Anything?



This is Maya. She weighed a glass of fizzy lemonade. It weighed 173.1g. Gently, she swirled the glass around to make the liquid flat, in other words, to remove the carbon dioxide. She weighed the glass again and this time it weighed 172.6g. The drink was **lighter** after the gas had been removed.

This shows that the gas in the fizzy drink, carbon dioxide, does have a weight.

Do Gases Weigh Anything?

Answer: The glass of fizzy lemonade was heavier than the flat drink because it contained carbon dioxide. Some gases are lighter than air and some are heavier. Carbon dioxide is heavier than air.



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True or False?



Look at the statements and decide whether they are true or false.

Carbon dioxide is a gas at room temperature.	Gases keep their shape.	Carbon dioxide is useful.
The bubbles in fizzy drinks are bubbles of gas.	Gases that are lighter than air weigh nothing.	You can find the weight of gases.

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True or False?



How did you do?

True.	False.	True.
True.	False.	True.

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Design a Poster

- Can you use all the information that you have learned about gas, to educate other children?
- Include lots of key vocabulary and pictures to show the key information, include statements, diagrams etc.
- Make it colourful and vibrant.

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Aim



- I can investigate gases and explain their properties.

Success Criteria

- I can identify solids, liquids and gases.
- I can explain some uses of gases.
- I can investigate the weight of a gas.

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