

Primary science investigations

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# Freaky hand



# Freaky hand

**We will be:**

Investigating an irreversible change.



# Learning objectives

## Understanding

- I can describe the difference between a reversible and an irreversible change.
- I understand that chemical reactions produce new materials.
- I know that when you mix vinegar and bicarbonate of soda, one of the things you make is a gas, carbon dioxide.
- I understand that gases expand to take the shape of their container.

## Enquiry skills

- I can use results to make predictions to set up other comparative and fair tests.



# Useful vocabulary

- **Reversible change:** a change where no new materials are created and the original material can be recovered.  
Can you think of some examples?



- **Irreversible change:** a chemical change where new materials are formed.  
Can you think of any examples?



# Useful vocabulary

- **Expand:** to move apart or get bigger.
- **Gas:** a 'state of matter' where particles have high energy and large spaces between them. A gas takes the shape of the container it is in and will flow.



- **Variable:** something that is observed or measured in a science experiment.  
Can you think of any examples?



# Method

1. Place vinegar in the jar.
2. Place bicarbonate of soda into the fingers of the gloves.
3. Carefully place the bottom of the glove over the jar.
4. Tip the powder from the glove into the jar.



# Discussing our experiment

- What do you predict would happen if you used a thicker glove?
- How do we know that this is an irreversible reaction?
- How did you know that a gas was produced?
- What might happen if you dilute the vinegar or change the amount of bicarbonate of soda?
- Can you think of any other chemical reactions that produce carbon dioxide?
- Can you see any change to the liquid?



# Evaluation

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

- I understand that chemical reactions produce new materials.
- I know that when you mix vinegar and bicarbonate of soda, one of the things you make is a gas, carbon dioxide.
- I know that most chemical reactions are irreversible.
- I understand that gases expand to take the shape of their container.

Can you explain the difference between an irreversible and a reversible change and give examples?

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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