

Primary science investigations

[rsc.li/3wAgXVX](https://rsc.li/3wAgXVX)

# Intriguing ice



# Intriguing ice

**We will be:**

Exploring what happens when we freeze liquids.



# Learning objectives

## Understanding

- I can describe the properties of solids, liquids and gases.
- I can explain what happens when liquids freeze.

## Enquiry skills

- I can make predictions, and then observe and record changes that occur over time.
- I can use my results to draw simple conclusions and communicate these.



# Useful vocabulary

- **Solid:** a state in which a substance has a definite volume and shape.
- **Liquid:** a state in which a substance flows and takes up the shape of its container.
- **Gas:** a state in which a substance expands to fill its container.



# Useful vocabulary

- **Freezing:** the change of state from a liquid to a solid at a temperature called the freezing point.
- **Viscous:** a liquid that flows slowly.
- **Dissolving:** the process of mixing a substance in a liquid until the substance can't be seen.
- **Solution:** a uniformly distributed mixture of a liquid with a gas or a solid.



# Which is the odd one out? Why?



water



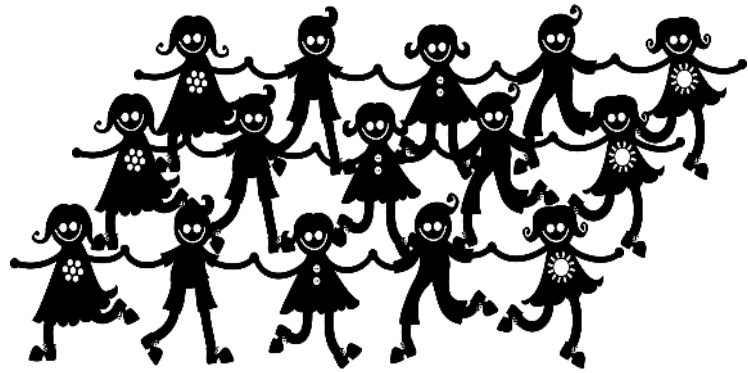
salt



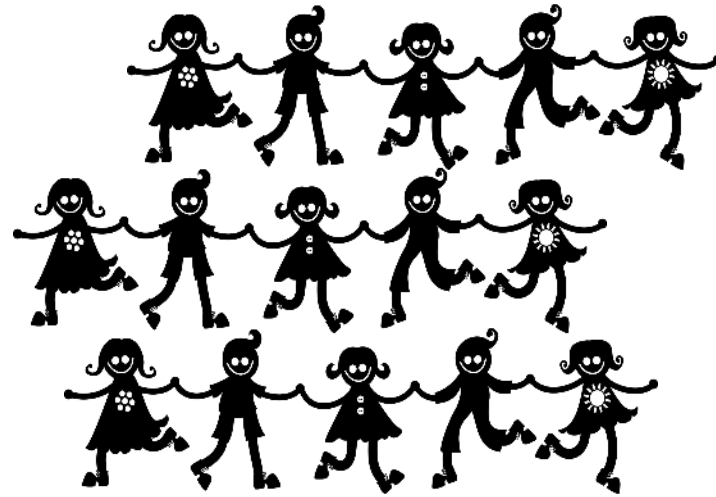
play dough



# States of matter



solid



liquid

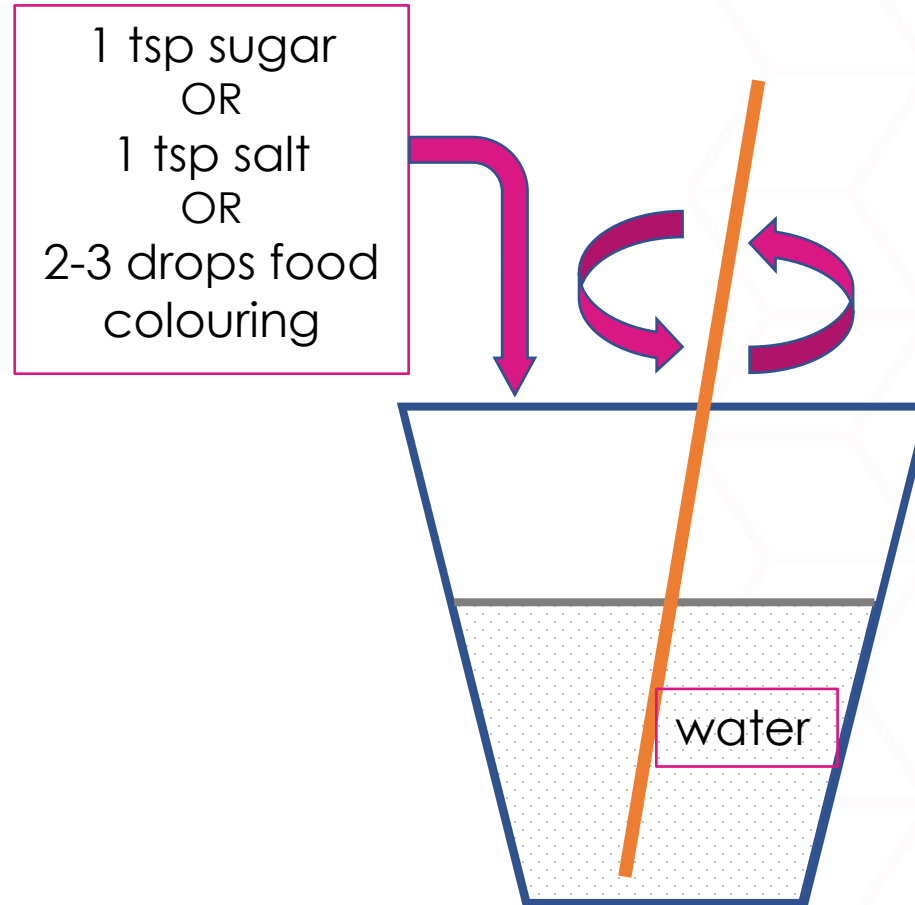


gas



# Method: making a solution

1. Add water to a beaker, leaving space at the top.
2. Add either 1 teaspoon of salt or sugar, or 2–3 drops of food colouring.
3. Stir.



How do you know the solid has dissolved?





# What happens when we freeze these liquids?



water



salt water



fizzy drink



milk



coloured water



cooking oil

- What do you think will happen?
- What did you observe?
- Can you explain your findings?



# What did you find out?

- What happens to the particles in a pure liquid (water) as it gets colder?
- What happens to the particles in a liquid mixture when it freezes?
- Have you noticed any patterns in how liquid mixtures have frozen?



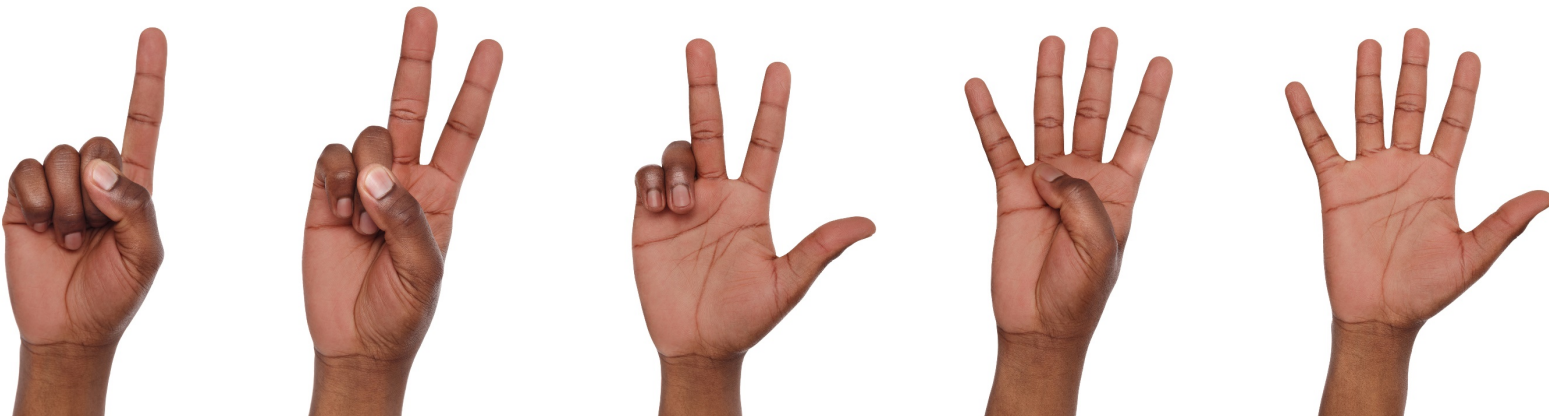
# Evaluation

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

Choose which hand shows how confident you are with our learning objectives:

- I can describe the properties of solids, liquids and gases.
- I can explain what happens when liquids freeze.
- I can make predictions, and then observe and record changes that occur over a period of time.
- I can use my results to draw simple conclusions and communicate these.

If you feel confident, 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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