



Practical investigation - Evaporation

Learn how we can use evaporation to separate water. See how understanding evaporation is important to monitor and manage our water sources and supply.

Need some lesson ideas? Our [High school](#) webpage has syllabus linked lesson plans to support this experiment.

What is evaporation? Where does it happen?

The sun heats all water on Earth, like oceans, lakes, rivers or even your swimming pool. The liquid water turns to a gas called water vapour. This process is called evaporation. Water vapour rises into the air and when it cools it forms liquid water again. This is called condensation and is what makes clouds. This happens naturally as part of the water cycle.

One thing that both nature and scientist can do to separate a mixture is by using evaporation. Evaporation removes the water and leaves behind what the water had in it. It's important for our scientist to see what was in the water. We can test what's left to check water quality and make sure that its meeting strict quality standards. Today, we'll explore what heating a salt solution can do.

Did you know?

Evaporation and condensation recycles water around the Earth in the [Natural water cycle](#). It's been doing this for billions of years!



What you'll need

Safety first! Adult supervision required. Follow all safety instructions as directed on product packaging.

- 50mL of tap water
- 12g of table salt
- small cup or container
- small cooking pan or pot
- teaspoon
- hotplate or stove
- heatproof gloves (for handling hot materials)
- food colouring (optional)



Example of materials for your experiment

Activity

1. Gather the materials for evaporation activity as pictured.
2. Use the teaspoon to add 2 scoops (12g) of table salt into to 50mL of water in the small cup.
3. Stir water until the salt has dissolved to make a salt solution.
4. Pour the salt solution into a cooking pan. Carefully heat the solution until white powder becomes visible around the edges of the pan.
5. Turn down the heat to avoid any spitting. Turn off the stove when there is only a small amount of salt solution left.

6. Let the cooking pan cool, leave it until the remaining water has evaporated.



Step 2



Step 4



Step 6

Results

Record your observations in the table below and draw diagram(s) of your observations. Think about:

- What states were the salt and water at different time points. Solid? Liquid? Gas?
- What did they look like? Did the colour or texture change?

Time	Observations of the salt solution
Before the experiment	
During the experiment	
After the experiment	

Extension Activities

- Add a few drops of food colouring when making the salt solution and compare the results.
- What other solutions or mixtures can you make and evaporate?

Did you know?

We have a factsheet on making mixtures that replicate different water sources. See our [High school](#) webpage for more information.

Discussion

- What happened when the salt was added to the water?
- Why did the salt solution decrease in volume as it was heated?
- Why was the salt left in the cooking pan but not the water?

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