

Investigate! – Evaporation

Learning outcomes

Science 3

2d to understand about reversible changes, ie evaporation

3d how to recover dissolved solids by evaporating the liquid from the solution

Materials needed

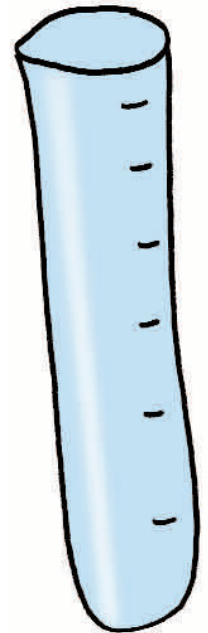
Old china plates

Felt tips or crayons

Face mask for teacher

Containers eg. test tubes

Liquids to test – nail polish remover (to be handled only by the teacher for health and safety reasons), water, water and bath salt solution



Aim

To investigate the process of evaporation, considering whether the process is affected by outside factors and what, if anything, is left behind when the liquid has evaporated.

Questions

What will we see as these liquids evaporate?

How long will this process take?

What if we put them in the sunlight?

How can you record the progress of the evaporation?

Where will the liquid go? Does it disappear?

Vocabulary

Evaporation, molecules, solution

Investigation

Start by asking the children to make a prediction about each material and what they will see as it evaporates. Use the table below to record ideas.

Materials	What will you see as material evaporates?	What will be left when evaporation is complete?	What order will the materials evaporate in? (1st, 2nd, 3rd)

The children carry out the investigation by following these steps. The teacher will handle the nail polish remover and have 2 plates for the whole class to see/use for their investigation.

1. Measure out equal amounts of each liquid into 6 test tubes.
2. Label 6 paper plates, 2 for each liquid.
3. Pour the liquids onto the correct plates. Teacher uses a face mask to avoid breathing in fumes.
4. Draw around the outside of the pool of liquid with a felt tip.
5. Put 3 plates on the window sill or, if you have access, outside. Put the other 3 plates in a cupboard or dark corner of the classroom.
6. Answer the question as to which set of liquids will evaporate faster and why.
7. At regular intervals go back and check the plates to see what has happened.
8. Each time draw round the new pool of liquid on the plates in a different colour pen.
(It will shrink)
9. Record what they see happening, what is left behind, which set of materials evaporates faster and why.

This is a fair test if all the variables are the same except for the location of the materials.

Conclusion

Refer back to the aim of the investigation:

Was the process of evaporation affected by the location of the plates?

What does sunlight give?

Was anything left behind after evaporation?

What is it?

To extend the conclusion ask the children to explain what has happened to the evaporated liquid. Where has it gone? (Changed into a temporary gas and is now suspended in the air.) Could they think of a further investigation they could devise to prove their theory? (Boiling water under a clear container 'roof' to show the liquid gas turning back into water droplets again – condensation)