

Evaporation and condensation

Year 9, Lesson 3

Week commencing 19th March 2012

Title: Evaporation and condensation

Objectives

- I must be able to describe evaporation and condensation in terms of particles
- I should also be able demonstrate the cooling effect of evaporation

Starter

What are we going to learn about today?

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We've now learnt what:

- Conduction is.....
- Convection is.....

Place some hand sanitiser on your hands

- Blow on your hand – as the hand sanitiser evaporates off – what do you feel?

Evaporation

- Weak attractive forces exist between the molecules in the liquid (remember the particle model)
- The faster molecules – which have more kinetic energy, break away from the attraction of the other molecules and escape the liquid
- After they evaporate, the liquid is cooler because the average kinetic energy of the remaining molecules in the liquid has decreased

Factors affecting evaporation

- Increasing the surface area of the liquid
- Increasing the temperature of the liquid
- Creating a flow of air across the surface of the liquid

This is why we put clothes on a washing line to dry

Condensation

- When a gas turns into a
- When a gas meets a surface with a lower temperature, the particles lose their energy
- Water vapour (gas) in the air turns to water (liquid) on window pains

Measuring temperature with evaporation

Method

- Take a piece of cotton wool, some ethanol and a thermometer
- Dip the piece of cotton wool in ethanol, wrap it around the end of the thermometer and take a temperature reading
- Measure the temperature every 2 minutes
- Repeat the above steps with cotton wool dipped in water.
- Write your **results in a table** and write a conclusion about **which liquid cooled faster** and **why**.

Plenary

- Who wants to be a millionaire