

The effect of temperature on solubility

Topic

Materials, solubility.

Timing

60 min.

Description

Students heat water with a solute until it dissolves. The solution is then cooled until crystallisation occurs. More water is added. The solution is again heated until the crystals dissolve. The new temperature when crystals appear is recorded.

Apparatus and equipment (per group)

- Boiling tubes
- 250 cm³ Beaker to act as ice bath.
- 250 cm³ Beaker to act as a hot water bath.
- Stirring thermometer (-10–110 °C)
- 10 cm³ Measuring cylinder or graduated pipette.
- Wooden tongs to hold hot boiling tube.

Chemicals (per group)

- Ammonium chloride (**Harmful if swallowed, eye irritant**)
- Ice (crushed or small pieces).

Teaching tips

This is a good opportunity to introduce the use of quantitative chemical apparatus to younger students.

Background theory

Students should know that solids are generally more soluble in hot water than in cold water.

Safety

Wear eye protection.

Credits

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