

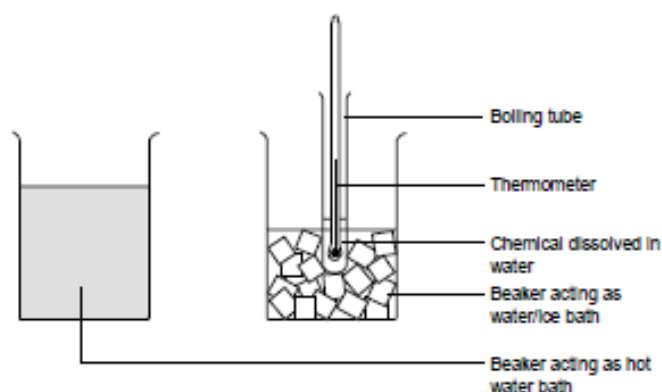
## ACTIVITY 2 - PRACTICAL METHOD

This is a method in 'Classic Chemistry Experiments' published by the Royal Society of Chemistry:

### The effect of temperature on solubility

#### Introduction

Most solid substances that are soluble in water are more soluble in hot water than in cold water. This experiment examines solubility at various temperatures.



#### What to record

Fill in the temperatures.

Volume of water/cm <sup>3</sup>	Solubility/g dm <sup>3</sup>	Crystallisation temperature /°C
4	650	
5	520	
6	433	
7	371	
8	325	
9	289	
10	260	

(The crystallisation temperature is the temperature at which crystals appear).

#### What to do

1. Set up a hot water bath and an ice bath. Put 2.6 g of ammonium chloride (**Harmful**) into the boiling tube. Add 4 cm<sup>3</sup> water.
2. Warm the boiling tube in the hot water bath until the solid dissolves.
3. Put the boiling tube in the ice bath and stir with the thermometer. Use wooden tongs to hold it if necessary.
4. Note the temperature at which crystals first appear and record it in the table.
5. Add 1 cm<sup>3</sup> water. Warm the solution again, stirring until all the crystals dissolve.
6. Then repeat the cooling and note the new temperature at which crystals appear.
7. Repeat steps 5, 6 and 7 until 10 cm<sup>3</sup> water has been used.

#### Safety

Wear eye protection.

#### Questions

1. Plot a graph showing solubility on the vertical axis and temperature on the horizontal axis.