Matter
Separating mixtures

Devise ways to separate mixtures, based on their properties.

1 Know

Ideas

K1 A pure substance consists of only one type of element or compound, and has a fixed melting and boiling point. Mixtures may be separated due to differences in their physical properties.

K2 The method chosen to separate a mixture depends on which physical properties of the individual substances are different.

Skill

K3 Use techniques to separate mixtures.

Facts

K4 Air, fruit juice, sea water and milk are mixtures.

K5 Liquids have different boiling points.

Key words

K6 **Solvent:** A substance, normally a liquid, that dissolves another substance.

K7 **Solute:** A substance that can dissolve in a liquid.

K8 **Dissolve:** When a solute mixes completely with a solvent.

K9 **Solution:** Mixture formed when a solvent dissolves a solute.

2 Apply

A1 Explain how substances dissolve using the particle model.

A2 Use the solubility curve of a solute to explain observations about solutions.

A3 Use evidence from chromatography to identify unknown substances in mixtures.

A4 Choose the most suitable technique to separate out a mixture of substances.

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A9

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K10	**Soluble:** (insoluble) Property of a substance that will (will not) dissolve in a liquid.
K11	**Solubility:** Maximum mass of solute that dissolves in a certain volume of solvent.
K12	**Pure substance:** Single type of material with nothing mixed in.
K13	**Mixture:** Two or more pure substances mixed together, whose properties are different to the individual substances.
K14	**Filtration:** Separating substances using a filter to produce a filtrate (solution) and residue.
K15	**Distillation:** Separating substances by boiling and condensing liquids.
K16	**Evaporation:** A way to separate a solid dissolved in a liquid by the liquid turning into a gas.
K17	**Chromatography:** Used to separate different coloured substances.

3 Extend

E1	Analyse and interpret solubility curves.
E2	Suggest a combination of methods to separate a complex mixture and justify the choices.
E3	Evaluate the evidence for identifying an unknown substance using separating techniques.
E4	
E5	