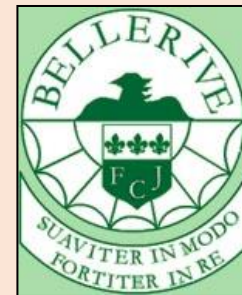


Lesson 1 –



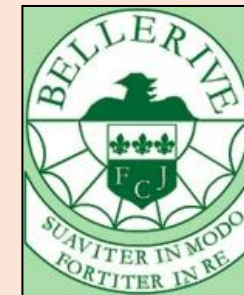
Key points to learn:

- **Elements** are made of one type of atom. **Compounds** are made from two or more different elements chemically combined together
- A **pure substance** is made of only one thing (element or compound) and cannot be easily separated into anything simpler
- Mixtures can be easily separated
- Mixtures can be made by dissolving a **solute** (solid) into a **solvent** (liquid) to make a mixture called a **solution**
- Solids that dissolve are **soluble** and solids that do not dissolve are **insoluble**

Lesson 2 –

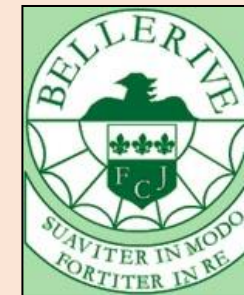
Key points to learn:

- At higher temperatures more solid (solute) will dissolve in a liquid (solvent) showing that **solubility** increases with temperature
- When no more solute will dissolve in a solvent a **saturated** solution is produced



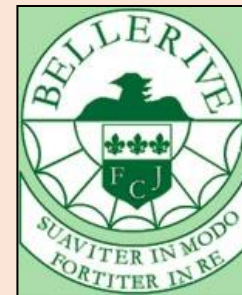
Lesson 3 –

Key points to learn:



- Insoluble solids can be separated from liquids by **filtration**
- Soluble solids can be separated from liquids by **evaporation**
- Rock salt can be separated into rock and salt by **grinding** up the rock salt, **dissolving** the salt in water, separating the rock by **filtering** and **evaporating** off the water to leave salt

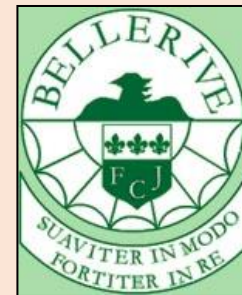
Lesson 4 –



Key points to learn:

- Inks are mixtures of dyes that can be separated by **chromatography**
- Chromatography uses a solvent (liquid) soaking through chromatography paper to separate the dyes. This is because the dyes move at different speeds
- The pattern of dyes left behind on the chromatography paper is called a **chromatogram**

Lesson 5 –

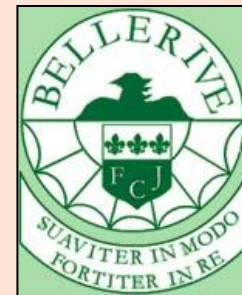


Key points to learn:

- **Simple distillation** is a method of separating a soluble solid from a liquid. The liquid is heated, **evaporates** into a gas and is cooled and **condensed** back into a liquid, leaving the solid behind
- **Fractional distillation** is a method of separating a mixture of liquids. Different liquids have **different boiling points**. The mixture of liquids are heated and **evaporate**, the liquid with the highest boiling point **condenses** in the **fractionating column**

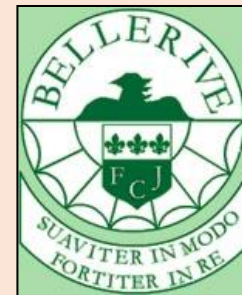
Lesson 6 –

Key points to learn:



- **Acids and alkalis** can be **harmful or corrosive**
- Acids and alkalis are found in common substances
- Acids are sour and alkalis are soapy
- **Indicators** are chemicals that change colour in acid and alkali.
Litmus turns blue in alkali and red in acid

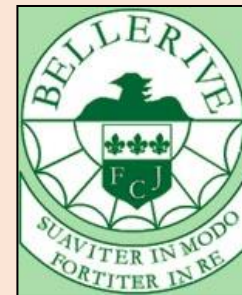
Lesson 7 –



Key points to learn:

- **pH** indicates the strength of an acid or alkali
- Substances with a pH **below 7** are **acid**. The lower the pH number the stronger the acid
- Substances with a pH **above 7** are **alkali**. The higher the pH number the stronger the alkali
- Substances with a pH of **7** are **neutral**. They are neither acid nor alkali
- Universal indicator has a range of colours and can be used to show the pH of acids, alkalis and neutral substances

Lesson 8 –



Key points to learn:

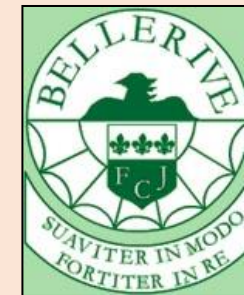
- **Acids** and **alkalis** react to form a **neutral** solution
- **Neutralisation** reactions are useful in everyday life e.g. bee stings are acidic and can be treated with an alkali and wasp and jellyfish stings are alkali and can be treated with acids
- The **general equation** for a neutralisation reaction is:



Lesson 9—

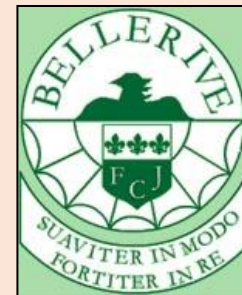
Key points to learn:

- Plan an investigation into which indigestion remedy is the best
- Conduct the investigation, draw a conclusion and evaluate their results



Lesson 10 –

Key points to learn:



- **Salts** are made by **neutralisation** reactions
- Different salts are made by reacting different acids and alkalis
- **Hydrochloric** acid makes **chloride** salts, **sulphuric** acid makes **sulphate** salts and **nitric** acid makes **nitrate** salts
- Salt crystals are made by **neutralising** an acid with an alkali and then **evaporating** off the water

Lesson 11: Acids and alkalis Badger assessment



Key points to learn:

- **All key points from previous lessons apply**

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WS pages 2-6