Curriculum Content Science - Chemistry Year 10

Content - Big ideas

CC05 Ionic Bonding, CC06 Covalent Bonding & CC07 Types of Substance

Big Question: How do substances join?

Learning Outcome:

- Understand the three types of bonding; covalent, ionic and metallic.
- Understand the bonding in substances determines the properties of s substance.

CC14 Rates of Reaction & CC15 Heat Energy Changes in Chemical Reactions

Big Question: Why are some reactions fast and some reactions slow?

Learning Outcome:

- Describe using particle how temperature, concentration, pressure, catalysts and surface area change the rate of reaction. Explain how energy changes in a reaction occur defining and describing endothermic and exothermic reactions.

CC08 Acids

Big Question: What makes a substance acidic?

Learning Outcome:

- Describe how substances are acids or bases, the differences between bases and alkalis and the reactions been different substances and acids.

CC04 The Periodic Table

Big Question: Why do the different groups in the periodic table react in the way they do?

Learning Outcome:

- Understand the reactivity of the groups by describing reactivity as the ability for electrons to be lost or gained from an atom.

CC17 Earth and Atmospheric Science

Big Question: Why do we have oxygen in the atmosphere?

Learning Outcome:

- Describe the development of the atmosphere over millions of years and explain why we have oxygen and carbon dioxide in the percentages we do?

Prior learning

- Elements and Compounds
- Physical and Chemical Reactions
- Understanding of the pH scale and common acids and alkalis
- Photosynthesis & Respiration

Global/IOM/Subject Links

Global & IOM links:

- Chemical industry, power supply, recycling.

Subject:

- Acids and bases – D&T
- Rates of reaction – Maths and D&T
- Types of substance – Product design

Subject specific skills development

Subject Skills:

- Use observations of solubility, melting point, boiling point and electrical conductivity to determine the type of bonding in a molecule.
- Use different methods to determine and measure the rate of reaction.
- Use pH to explain the number of H+ ions in a substance comparing acids and alkalis.