



Knowledge Summary

Year 8 Term 4 2023/24

Science

Chemistry Module
Metals and Acids



Essential Questions/Knowledge

- What are the features of chemical reactions?
- Give examples of chemical reactions and physical changes.
- What are common properties of acids and alkalis?
- What do the key words 'concentrated' and 'dilute' mean?
- What are examples of strong and weak acids?
- What is the pH range for acidic solutions?
- Describe a method for making a neutral solution from an acid and an alkali.
- How are neutralisation reactions are used?

How students will be assessed on their knowledge

- Daily retrieval
- In-class tasks
- Extended writing questions
- End of unit assessments

Questions/Knowledge to deepen understanding

- Justify the use of specific metals and non-metals for different applications.
- Compare chemical reactions to physical changes.
- Deduce whether an observed or described change is a physical change or a chemical reaction.
- Compare the different particles found in acids and alkalis.
- Explain what 'concentrated' and 'dilute' mean, in terms of the numbers of particles present.
- Offer suitable safety precautions when given a hazard symbol, and give a reason for the suggestion.
- Compare the use of a variety of indicators and a pH probe to measure acidity and alkalinity.
- Deduce the hazards of different acids and alkalis using data about their pH.
- Evaluate the accuracy of the pH values chosen through the experimental observations.
- Explain the difference between acid strength and acid concentration. Deduce the hazards of different acids using data about their concentration and pH.
- Evaluate models for strong and weak acids, and suggest improvements.

Key Concepts

- Chemical Reactions
- Acids and Alkalis
- Indicators and pH
- Acid Strength
- Neutralisation
- Making Salts

Tier 2 and 3 vocabulary linked to the unit

- Chemical Reactions
- Physical Changes
- Acids
- Alkalis
- Corrosive
- Irritant
- Concentrated
- Dilute
- Neutralisation