

# Metals

- What is “metallic bonding”?
- Why can metals conduct electricity?
- What is produced when we react metals with water, oxygen or acids?
- How can we write balanced (ionic) formula equations for the reactions of metals?
- What is meant by...
  - ...“oxidation”?
  - ...“reduction”?
  - ...“redox reaction”?
  - ...“oxidising agent”?
  - ...“reducing agent”?
- How can we write half and full equations for redox reactions?
- What is an “ore”?
- How can we extract a metal from an ore?
- How can we calculate the percentage of a metal in an ore?
- How can we determine the direction of electron flow in electrochemical cells?
- What is a “fuel cell”?
- How can we recharge a battery?



# Properties of Plastics

- **What is meant by...**
  - ...**"polymerisation"**?
  - ...**"monomer"**?
  - ...**"polymer"**?
  - ...**"repeating unit"**?
  - ...**"addition polymerisation"**?
  - ...**"condensation polymerisation"**?
- **What types of polymerisation are involved in making polyethene (polythene) and polyesters?**
- **How can we identify addition and condensation polymers from their structures?**
- **How can we draw the full structural formula for a polymer when given the monomer (and vice versa)?**

# Fertilisers

- What are fertilisers used for?
- What elements are found in fertilisers?
- What is the “Haber Process”?
- How can we write a balanced equation for the Haber Process?
- What is the catalyst used in the Haber Process?
- How can we make nitric acid?
- How can we calculate the percentage of each element in a fertiliser?

# Nuclear Chemistry

- **What is a radioisotope?**
- **What is “radioactive decay”?**
- **What particles are involved in the three types of radioactive decay?**
- **How can we write equations to show nuclear reactions?**
- **What is meant by the “half-life” of a radioisotope?**
- **How can we calculate the half life of a radioisotope?**
- **What are radioisotopes used for?**

# Chemical Analysis

- How can we calculate quantities from a titration?
- How can we calculate quantities from a precipitation reaction?
- How can we use flame tests to identify the elements in a substance?