

Rates of Reaction

- How can we control the rate of a chemical reaction?
- Why does changing concentration, temperature, pressure and adding change the rate of a chemical reaction?
- What is a catalyst?
- How can we calculate the average rate of a chemical reaction from a table of data?
- How can we calculate the average rate of a chemical reaction from a graph?

Atomic Structure and Bonding

- **What is an atom?**
- **What are protons, neutrons and electrons? What are their masses, charges and where are they found?**
- **How can we find out the numbers of protons, neutrons and electrons an atom has?**
- **How can we show the numbers of protons, neutrons and electrons in an atom?**
- **What are isotopes?**
- **How many outer electrons do the most stable atoms have?**



Atomic Structure and Bonding

- **Why do atoms form bonds?**
- **What is a covalent bond?**
- **What is an ionic bond?**
- **What holds the particles together in ionic and covalent bonds?**
- **What types of elements are involved in ionic and covalent bonds?**
- **What is meant by...**
 - **“Ionic Lattice”?**
 - **“Covalent Network”?**
 - **“Covalent Molecule”?**
- **What are the properties of ionic and covalent compounds (melting and boiling points and electrical conductivity)?**
- **What are the common shapes for covalent molecules?**



Formulae and reaction quantities

- **How can we write a chemical formula...**
 - From a chemical name with a prefix?
 - From a chemical with no prefixes?
 - From a chemical name with a roman numeral?
 - For a substance containing a group (complex) ion?
- **How can we write an ionic chemical formula?**
- **How can we write balanced chemical equations?**
- **What is meant by “gram formula mass”?**
- **How can we find the gram formula mass for an element or compound?**
- **How can we calculate moles from masses and masses from moles?**
- **What is “concentration”?**
- **How can we calculate concentrations?**

Acids and Bases

- **What is pH?**
- **What is a base?**
- **What is an acid?**
- **What is an alkali?**
- **Which ions are responsible for acids and bases?**
- **What is a salt?**
- **How can we name salts?**
- **Which oxides, hydroxides and carbonates are acids and bases?**
- **What is “neutralisation”?**
- **Why is water neutral?**
- **What happens to when we dilute an acid or an alkali to...**
 - ...the concentrations of H^+ and OH^- ions?
 - ...the pH?
 - ...the electrical conductivity?



Neutralisation Reactions

- What is formed when metals, metal oxides, metal hydroxides and metal carbonates react with acids?
- How can we carry out a titration experiment?
- How can we calculate unknown concentrations/volumes from a titration experiment?