Foxford Learning Plan

YEAR 12

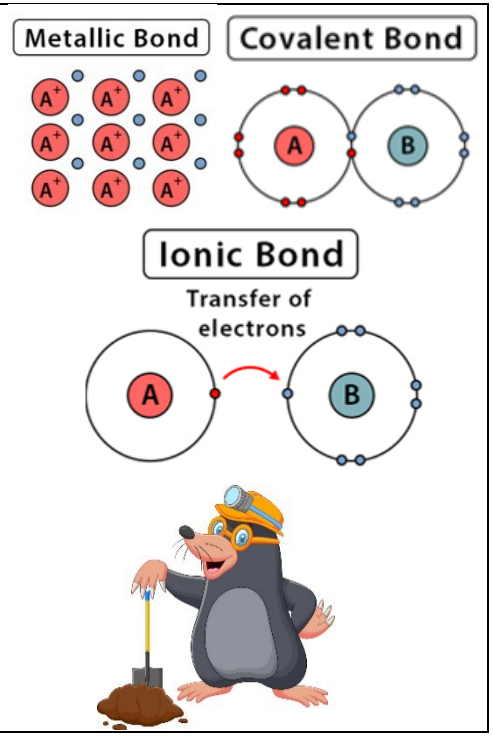
Unit 1 Chemistry

Key Vocabulary

Metallic bonding	Electrostatic attraction between positive ions and delocalised electrons
Ionic bonding	Strong electrostatic attraction between oppositely charged ions
Covalent bonding	Strong electrostatic attraction between two nuclei and the shared pair(s) of electrons between them
Electronegativity	Ability of an element to attract electrons in a covalent bond
Hydrogen bond	Attraction between an O-H, N-H or F-H bond and a lone pair of electrons
Polar bond	A covalent bond where one element is more electronegative than the other
Van der Waals	Weak force of attraction between molecules
Dipole	When a molecule has a slight positive and negative charge that hasn't cancelled out
Dipole-dipole	Where polar molecules interact, the slight positive charge on one molecule attractive the slight negative charge on another
Dative covalent (coordinate) bonding	A covalent bond where both electrons come from the same atom
Mole	The amount of substance that contains the same number of chemical entities (atoms, ions, molecules, etc.) as there are in 12 g of Carbon-12 isotope
Oxidation	Oxidation is the loss of electrons or an increase in the oxidation state
Reduction	Reduction is the gain of electrons or a decrease in the oxidation state of a chemical

Over the course of the topic, I will be able to:

Key Skills	
	Demonstrate knowledge of scientific facts, terms, definitions and scientific formulae Command words: give, label, name, state
	Demonstrate understanding of scientific concepts, procedures, processes and techniques and their application
	Analyse, interpret and evaluate scientific information to make judgements and reach conclusions
	Make connections, use and integrate different scientific concepts, procedures, processes or techniques



I will understand:

- The electronic structure of atoms to include electronic orbitals, Aufbau principle and Bohr theory
- Ionic bonding
- Covalent bonding
- Metallic bonding
- The following intermolecular forces: van der Waals, dipole-dipole and hydrogen bonding
- The following: balanced equations, relative atomic mass, atomic number and relative molecular mass, moles, molar masses and molarities
- The quantities used in chemical reactions to include mass, volume of solution, concentration, reacting quantities, and percentage yields
- The periodic table groups – s block, p block, d block and the layout of periodic table in relation to s, p, d notation, also understand electronic arrangement of elements using s, p, d notation
- The physical and chemical properties of elements