Swanmore Science

Chemistry: Separates Revision List

Topic	Area	Spec point	Content	Know it? ☐☐
PAPER 1				
Atomic Structure and the Periodic Table	Atomic Structure	4.1.1.1	Atoms, elements and compounds	
		4.1.1.2	Mixtures	
		4.1.1.3	The development of the model of the atom	
		4.1.1.4	Relative electrical charges of subatomic particles	
		4.1.1.5	Size and mass of atoms	
		4.1.1.6	Relative atomic mass	
		4.1.1.7	Electronic structure	
	The Periodic Table	4.1.2.1	The Periodic Table	
		4.1.2.2	Development of the Periodic Table	
		4.1.2.3	Metals and non-metals	
		4.1.2.4	Group 0	
		4.1.2.5	Group 1	
		4.1.2.6	Group 7	
	Properties of Transition Metals	4.1.3.1	***Comparison with Group 1 elements***	
		4.1.3.2	***Typical properties***	
Bonding, Structure and the Properties of Matter	Chemical Bonds: Ionic, Covalent and Metallic	4.2.1.1	Chemical bonds	
		4.2.1.2	Ionic bonding	
		4.2.1.3	Ionic compounds	
		4.2.1.4	Covalent bonding	
		4.2.1.5	Metallic bonding	
	How Bonding and Structure are Related to the Properties of Substances	4.2.2.1	The three states of matter	
		4.2.2.2	State symbols	
		4.2.2.3	Properties of ionic compounds	
		4.2.2.4	Properties of small molecules	
		4.2.2.5	Polymers	
		4.2.2.6	Giant covalent structures	
		4.2.2.7	Properties of metals and alloys	
		4.2.2.8	Metals as conductors	
	Structure and Bonding of Carbon	4.2.3.1	Diamond	
		4.2.3.2	Graphite	
		4.2.3.3	Graphene and fullerenes	
	Bulk and Surface Properties of Matter including Nanoparticles	4.2.4.1	***Sizes of particles and their properties***	
		4.2.4.2	***Uses of nanoparticles***	
		4.3.1.1	Conservation of mass and balanced chemical equations	

Quantitative Chemistry	Conservation of Mass and Chemical Equations	4.3.1.2	Relative formula mass	
		4.3.1.3	Mass changes when a reactant or product is a gas	
		4.3.1.4	Chemical measurements	
	Amount of Substance	4.3.2.1	Moles	
		4.3.2.2	Amounts of substances in equations	
		4.3.2.3	Using moles to balance equations	
		4.3.2.4	Limiting reactants	
		4.3.2.5	Concentration of solutions	
	Yield and Atom Economy	4.3.3.1	***Percentage yield***	
		4.3.3.2	***Atom economy***	
	Using Concentrations	4.3.4.0	***Using concentrations of solutions in mol/dm^3***	
	Volumes of Gases	4.3.5.0	***Use of amount of substance in relation to volumes of gases***	
Chemical Changes	Reactivity of Metals	4.4.1.1	Metal oxides	
		4.4.1.2	The reactivity series	
		4.4.1.3	Extraction of metals and reduction	
		4.4.1.4	Oxidation and reduction in terms of electrons	
	Reactions of Acids	4.4.2.1	Reactions of acids with metals	
		4.4.2.2	Neutralisation of acids and salt production	
		4.4.2.3	Soluble salts	
		4.4.2.4	The pH scale and neutralisation	
		4.4.2.5	***Titrations***	
		4.4.2.6	Strong and weak acids	
	Electrolysis	4.4.3.1	The process of electrolysis	
		4.4.3.2	Electrolysis of molten ionic compounds	
		4.4.3.3	Using electrolysis to extract metals	
		4.4.3.4	Electrolysis of aqueous solutions	
		4.4.3.5	Representation of reactions at electrodes as half equations	
Energy Changes	Exothermic and Endothermic Reactions	4.5.1.1	Energy transfer during exothermic and endothermic reactions	
		4.5.1.2	Reaction profiles	
		4.5.1.3	The energy change of reactions	
	Chemical Cells and Fuel Cells	4.5.2.1	***Cells and batteries***	
		4.5.2.2	***Fuel cells***	
REQUIRED PRACTICALS				
Chemical Changes		4.4.2.3	**RP 1 - Making Salts**	
Chemical Changes / Quantitative		4.4.2.5	**RP 2 - Titrations**	
Chemical Changes		4.4.3.4	**RP 3 - Electrolysis**	
Energy Changes		4.5.1.1	**RP 4 - Temperature Changes**	

The chapter headings given below refer to our recommended revision guides. These can be purchased through the Finance Office. More information can be found on our website: https://swanmore-school.co.uk/equipment/