EzyChemistry – AQA Course outline

L = Video Lecture A = Assessment EX = Experiment

Section 1 – Atomic Structure

Code	Title	Activity
Module 1 - Atoms and the Periodic Table		
1.1.1	Atoms, Elements and Compounds	L
1.1.2	Mixtures	L
1.1a	Elements, Compounds and Mixtures	A
1.2.1	Atomic Structure	L
1.2.2	Mass number, Atomic Number and Isotopes	L
1.2.3	The Development of the Model of the Atom	L
1.2a	The Atom	A
1.3	Relative Atomic Mass	L
1.3a	Relative Atomic Mass	A
1.4.1	History of the Periodic Table	L
1.4.2	The Periodic Table	L
1.4.3	Electronic Structure and the Periodic table	L
1.4a	The Periodic Table	A
Module 2 - Groups of the Periodic Table		
2.1.1	Group 0	L
2.1.2	Group 1	L
2.1.3	Group 7	L
2.1a	Groups 0, 1 and 7	A
2.2	Properties of the Transition Metals	L
2.2a	Properties of the Transition Metals	A

Section 2 – Bonding and Structures

Module 1 - Bonding, Structure and Properties		
1.1	States of Matter	L
1.1a	States of Matter	A
1.2.1	Ionic Bonding	L
1.2.2	Ionic Compounds	L
1.2a	Ionic Bonding and Compounds	A
1.3.1	Covalent Bonding	L
1.3.2	Covalent Substances	L
1.3a	Covalent Bonding and Substances	A
1.4	Metallic Bonding and Structures	L
1.4a	Metallic Bonding and Structures	A
1.5	Forms of Carbon	L
1.5a	Forms of Carbon	A
1.6.1	Nanoparticles	L
1.6.2	Uses of Nanoparticles	L
1.6a	Nanoparticles	A

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Section 3 – Quantitative Chemistry

Module 1 - Chemical Equations

1.1.1	Balanced Chemical Equations	L
1.1.2	Relative Formula Mass	L
1.1a	Equations and Formula Masses	A
1.2.1	Mass Changes	L
1.2.2	Chemical Measurements	L
1.2a	Mass Changes and Chemical Measurements	A
1.3.1	Moles	L
1.3.2	Masses of Reactants and Products	L
1.3.3	Using Moles to Balance Equations	L
1.3a	Moles	A
1.4	Concentration of Solutions	L
1.4a	Concentration of Solutions	A

Module 2 - Chemical Calculations

2.1	Yields	L
2.1a	Yields	A
2.2	Calculating Theoretical Yields	L
2.2a	Calculating Theoretical Yields	A
2.3	Atom Economy	L
2.3a	Atom Economy	A
2.4	Reaction Pathways	L
2.4a	Reaction Pathways	A
2.5	Concentration in mol/dm^3	L
2.5a	Concentration in mol/dm^3	A
2.6	Volumes of Gases	L
2.6a	Volumes of Gases	A

Section 4 – Chemical Changes

Module 1 - Reactivity of metals

1.1	Reactions of Metals	L
1.1a	Reactions of Metals	A
1.2.1	Reactivity	L
1.2.2	Displacement Reactions	L
1.2a	The Reactivity Series	A
1.2b	The Reactivity Series	A
1.3	Extraction of Metals	L
1.3a	Extraction of Metals	A
1.4	Balancing Equations	L
1.4a	Balancing Equations	A
1.5	Oxidation and Reduction	L
1.5a	Oxidation and Reduction	A

Module 2 - Reactions of acids

2.1	Acids and Metals	L
2.1a	Acids and Metals	A

2.2	Neutralisation and Salt Production	L
2.2a	Neutralisation and Salt Production	A
2.3	Salt Production	Ex
2.3a	Salt Production	A
2.3b	Salt Production	A
2.4	The pH Scale and Neutralisation	L
2.4a	The pH Scale and Neutralisation	A
2.5	Titrations	Ex
2.5a	Titrations	A
2.5b	Titrations	A
2.6.1	Concentration and Molar Concentration	L
2.6.2	Titration Calculations	L
2.6a	Titration Calculations	A
2.7	Strong and Weak Acids	L
2.7a	Strong and Weak Acids	A

Module 3 - Electrolysis

3.1	Electrolysis of Molten Ionic Compounds	L
3.1a	Electrolysis of Molten Ionic Compounds	A
3.2	Electrolysis of Aqueous Solutions	L
3.2a	Electrolysis of Aqueous Solutions	A
3.3	Electrolysis of Aqueous Solutions (Experiment)	EX
3.3a	Electrolysis of Aqueous Solutions (Experiment)	A
3.3b	Electrolysis of Aqueous Solutions (Experiment)	A
3.4	Half Equations	L
3.4a	Half Equations	A

Section 5 – Physical Chemistry

Module 1 - Energy Changes

1.1	Exothermic and Endothermic reactions	EX
1.1a	Exothermic and Endothermic Reactions	A
1.1b	Exothermic and Endothermic Reactions	A
1.2	Reaction Profiles	L
1.2a	Reaction Profiles	A
1.3	Calculating Energy Changes	L
1.3a	Calculating Energy Changes	A
1.4.1	Cells and Batteries	L
1.4.2	Fuel cells	L
1.4a	Cells	A

Module 2 - Rates of reaction

2.1	Rates of Reaction	L
2.1a	Rates of Reaction	A
2.2	Calculating Rates of Reaction	L
2.2a	Calculating Rates of Reaction	A
2.3.1	Investigating Rates of Reaction (Collecting Gas)	EX
2.3.2	Investigating Rates of Reaction (Formation of a Precipitate)	EX
2.3a	Investigating Rates of Reaction	A
2.3b	Investigating Rates of Reaction	A

2.4.1	Collision Theory and Activation Energy	L
2.4.2	Factors Affecting Rates of Reaction	L
2.4.3	Catalysts	L
2.4a	Factors Affecting Rates of Reaction	A

Module 3 - Reversible reactions

3.1	Reversible Reactions and Dynamic Equilibria	L
3.1a	Reversible Reactions and Dynamic Equilibria	A
3.2	Factors Affecting Dynamic Equilibria	L
3.2a	Factors Affecting Dynamic Equilibria	A

Section 6 – Organic Chemistry

Module 1 - Organic Compounds

1.1.1	Hydrocarbons	L
1.1.2	Alkanes	L
1.1.3	Crude Oil	L
1.1.4	Cracking	L
1.1a	Crude Oil and Hydrocarbons	A
1.2.1	Alkenes	L
1.2.2	Reactions of Alkenes	L
1.2.3	Alcohols	L
1.2.4	Carboxylic Acids	L
1.2a	Alkenes, Alcohols and Carboxylic Acids	A

Module 2 - Polymers

2.1	Addition Polymerisation	L
2.1a	Addition Polymerisation	A
2.2.1	Condensation Polymerisation	L
2.2.2	Amino Acids	L
2.2a	Condensation Polymerisation and Amino acids	A
2.3	Natural Polymers	L
2.3a	Natural Polymers	A
2.4.1	Uses of Polymers	L
2.4.2	Problems with Polymers	L
2.4a	Uses of Polymers	A

Section 7 – Chemical Analysis

Module 1 - Pure Substances and Mixtures

1.1.1	Pure Substances and Mixtures	L
1.1.2	Formulations	L
1.1a	Pure Substances and Formulations	A
1.2	Chromatography	EX
1.2a	Chromatography	A
1.2b	Chromatography	A

Module 2 - Chemical Tests

2.1	Testing for Gases	L
2.1a	Testing for Gases	A
2.2	Chemical Tests for Ions	EX
2.2a	Chemical Tests for Ions	A
2.2b	Chemical Tests for Ions	A
2.3.1	Instrumental Methods	L
2.3.2	Flame Emission Spectroscopy	L
2.3a	Instrumental Methods and Spectroscopy	A

Section 8 – Atmospheric Chemistry

Module 1 - Atmospheric Chemistry

1.1.1	History of the Atmosphere	L
1.1.2	The Greenhouse Effect	L
1.1.3	Global Climate Change	L
1.1a	The Atmosphere	A
1.2	Atmospheric Pollution	L
1.2a	Atmospheric Pollution	A

Section 9 – Using Resources

Module 1 - Using the Earth's Resources

1.1	Sustainability	L
1.1a	Sustainability	A
1.2	Potable Water and Waste Water Treatment	L
1.2a	Potable Water and Waste Water Treatment	A
1.3	Potable Water	EX
1.3a	Potable Water	A
1.4	Biological Methods of Extracting Metals	L
1.4a	Biological Methods of Extracting Metals	A
1.5	Recycling and Life Cycle Assessments	L
1.5a	Recycling and Life Cycle Assessments	A

Module 2 - Using materials

2.1	Corrosion	L
2.1a	Corrosion	A
2.2	Alloys	L
2.2a	Alloys	A
2.3.1	Ceramics, Polymers and Composites	L
2.3.2	Comparing Materials	L
2.3a	Ceramics, Polymers and Composites	A

Module 3 - The Haber process and NPK fertilisers

3.1	The Haber Process	L
3.1a	The Haber Process	A
3.2	NPK Fertilisers	L
3.2a	NPK Fertilisers	A