

Teaching plan: one teacher

This is a plan for teaching AS and A-level Chemistry (one teacher) from September 2015.

Year 1

Specification ref	Topic	Content	Practical	No. of weeks
3.1.1	Atomic structure	Physical (P)		1.5
3.1.2	Amount of substance	P	1 Make up a volumetric solution and carry out a simple acid-base titration	4.5
3.1.3	Bonding	P		3.2
3.3.1	Introduction to organic chemistry	Organic (O)		2.0
3.3.2	Alkanes	O		1.4
3.3.3	Halogenoalkanes	O		2.0
3.3.4	Alkenes	O		1.9
3.1.7	Oxidation reduction and redox equations	P		1.0
3.2.2	Group 2, the alkaline earth metals	Inorganic (I)		1.0
3.2.3	Group 7(17), the halogens	I	4 Carry out simple test-tube reactions to identify cations and anions in aqueous solution	1.5
3.1.4	Energetics	P	2 Measurement of an enthalpy change	3.5
3.1.5	Kinetics	P	3 Investigation of how the rate of a reaction changes with temperature	1.5
3.1.6	Chemical equilibria and Le Chatelier's principle and K_c	P		2.0
3.3.5	Alcohols	O	5 Distillation of a product from a reaction	2.0
3.3.6	Organic analysis	O	6 Tests for alcohol, aldehyde, alkene and carboxylic acid	1.5
3.2.1	Periodicity	I		0.5
				Total: 31.0

Year 2

Specification ref	Topic	Content	Practical	No. of weeks
3.1.8	Thermodynamics	P		3.0
3.1.9	Rate equations	P	7 Measuring the rate of a reaction by an initial rate method by a continuous monitoring method	2.5
3.3.7	Optical isomerism	O		0.4
3.3.8	Aldehydes and ketones	O		0.7
3.3.9	Carboxylic acids and derivatives	O	10 Preparation of a pure organic solid and test its purity a pure organic liquid	3.5
3.1.10	Equilibrium constant K_p for homogeneous systems	P		1.0
3.1.12	Acids and Bases	P	9 Investigate how pH changes when a weak acid reacts with a strong base and when a strong acid reacts with a weak base	3.0
3.3.10	Aromatic chemistry	O		1.2
3.3.11	Amines	O		0.9
3.3.12	Polymers	O		0.7
3.3.13	Amino acids, proteins and DNA	O		1.5
3.1.11	Electrode potentials and electrochemical cells	P	8 Measuring the EMF of an electrochemical cell	2.5
3.2.5	Transition metals	I		5.5
3.2.6	Reactions of ions in aqueous Solution	I	11 Carry out simple test-tube reactions to identify transition metal ions in aqueous solution	1.3
3.2.4	Properties of Period 3 elements and their oxides	I		0.7
3.3.15	Nuclear magnetic resonance spectroscopy	O		2.0
3.3.16	Chromatography	O	12 Separation of species by thin-layer chromatography	0.6
3.3.14	Organic synthesis	O		1.0
				Total: 32.0