FAIRFAX
SINCERITAS LABORIS

YEAR 12 CURRICULUM INFORMATION – Chemistry

What will students be learning?

Teacher	Autumn HT 1	Autumn HT 2	Spring HT 1	Spring HT 2	Summer HT 1	Summer HT 2
SKK	Atomic structure	Bonding Kinetics	Kinetics Chemical equilibria	Chemical equilibria Oxidation and reduction Group 2	Group 7 Periodicity	Equilibrium constant Kp for homogenous systems Chromatography
KMH	Amount of substance	Amount of substance Energetics	Energetics Introduction to organic chemistry Alkanes	Alkanes Halogenoalkanes	Alkenes Alcohols	Organic analysis

How will students be assessed?

1. Summary questions
2. Fact recall and application questions
3. Exam question practice
4. End of topic checkpoint

Spec ref	Topic	Assessments
3.1.1	Atomic structure	**Test 1**
3.1.2	Amount of substance	**Test 2**
3.1.3	Bonding	**Test 3**
3.1.4	Energetics	**Test 4**
3.1.5	Kinetics	**Test 5**
3.1.6	Chemical equilibria and Le Chatelier's principle and Kc	

3.1.7	Oxidation reduction and redox equations	
3.3.1	Introduction to organic chemistry	**Test 6**
3.3.2	Alkanes	
3.3.3	Halogenoalkanes	
3.2.1	Periodicity	**Test 7**
3.2.2	Group 2, the alkaline earth metals	
3.2.3	Group 7, the halogens	
3.3.4	Alkenes	**Test 8**
3.3.5	Alcohols	
3.3.6	Organic analysis	

5. 7 required practical assessments spread throughout the year (related to specific topics)

PA	PA Title	Topic
PA1	Make up a volumetric solution and carry out a simple acid-base titration	3.1.2 Amount of substance
PA2	Measurement of an enthalpy change	3.1.4 Energetics
PA3	Investigation of how rate of reaction changes with temperature	3.1.5 Kinetics
PA4	Carry out simple test tube reactions to identify cations and anions in aqueous solutions	3.2.3 Group 7, the halogens
PA5	Distillation of a product from a reaction	3.3.5 Alcohols
PA6	Test for alcohol, aldehyde, alkene and carboxylic acid	3.3.6 Organic analysis
PA12	Separation of species by thin-layer chromatography	3.1.16 Chromatography

6. End of year examination (mock)

What employability skills are being developed?

- Critical thinking and reflection of personal learning
- Team working skills in problem solving scenarios
- Data analysis and interpretation
- Practical laboratory and fine motor skills

This all leads to careers in:

Forensic toxicology, Clinical research, Pharmacology, Drug testing, Drug discovery, Carbon dating, Perfume manufacturer, Chemical engineer, Analytical chemist, Drug developer, Forensics, Toxicologist, Materials scientist, Metallurgist, Nanomaterials, Process chemist, Engineer,

	Catalytic research scientist, Medicine, Agriculture, Radiographer, Pyrotechnician, Water treatment technician, Swimming pool engineer, Plumber, Anaesthetist
Wider Curriculum Links?	• Biology (Rates of reaction) • Physics (Energy) • Business studies (Industrial companies) • Psychology (Drugs)
What useful websites are there for this topic?	MaChemGuy Seneca Chemguide AQA

What wider reading could be done for this topic?	Textbooks: AQA Chemistry A-Level (Oxford) CGP A-Level Year 1 & AS Chemistry Chemical calculations (Jim Clarke) Maths skills for Chemists (Emma Poole and Dan McGowan)
What else can students be doing independently to develop their understanding of this topic?	**Review of Prior Learning:** Using the AQA GCSE specification to RAG rate understanding of GCSE content for each topic as a basis before A-Level content is started **Personal Revision:** Revisiting, reading and practising areas of difficulty identified by RAG rating the topic checklist at the end of each topic. **Assessment folders:** RAG rated each question post-exam and work must be completed to ensure this knowledge becomes secure (videos, exam questions, step by step calculations) **Exam Question Practice**