FAIRFAX
SINCERITAS LABORIS

YEAR 13 CURRICULUM INFORMATION – Chemistry

What will students be learning?

Teacher	Autumn HT 1	Autumn HT 2	Spring HT 1	Spring HT 2	Summer HT 1
SKK	Rate equations	Rate equations Electrode potentials and electrochemical cells	Electrode potentials and electrochemical cells Acids and bases	Acids and bases	Acids and bases
JMC	Thermodynamics	Optical isomerism Aldehydes and ketones Carboxylic acids and their derivatives	Carboxylic acids and their derivatives Aromatic chemistry	Amines Organic synthesis	Organic synthesis Amino acids, proteins and DNA
ATH	Transition metals	Reactions of ions in aqueous solutions Properties of Period 3	Nuclear magnetic resonance spectroscopy	Polymers	Revision

How will students be assessed?

1. Summary questions
2. Fact recall and application questions
3. Exam question practice
4. Intervention book weekly
5. Exam packs
6. Multiple choice quizes

7. End of topic checkpoints

Spec ref	Topic	
3.1.8	Thermodynamics	**Test 5**
3.1.9	Rate equations	**Test 1**
3.1.10	Equilibrium constant Kp for homogeneous systems	
3.1.11	Electrode potentials and electrochemical cells	**Test 4**
3.1.12	Acids and Bases	
3.2.4	Properties of Period 3 elements and their oxides	**Test 6**
3.2.5	Transition metals	
3.2.6	Reactions of ions in aqueous	
3.3.7	Optical isomerism	**Test 2**
3.3.8	Aldehydes and ketones	
3.3.9	Carboxylic acids and derivatives	
3.3.10	Aromatic chemistry	
3.3.11	Amines	**Test 3**
3.3.12	Polymers	
3.3.13	Amino acids, proteins and DNA	
3.3.14	Organic synthesis	**Test 7**
3.3.15	Nuclear magnetic resonance spectroscopy	
3.3.16	Chromatography	

8. 5 required practical assessments spread throughout the year (related to specific topics)

PA	PA Title	Topics
PA7	Measuring the rate of a reaction by an initial rate method and by a continuous monitoring method	3.1.9 Rate equations
PA8	Measuring the EMF of an electrochemical cell	3.1.11 Electrode potentials and electrochemical cells
PA9	Investigate how pH changes when a weak acid reacts with a strong base and when a strong acid reacts with a weak base	3.1.12 Acids and bases
PA10	Preparation of a pure organic solid and test its purity a pure organic liquid	3.3.9 Carboxylic acids and their derivatives

	<table><tr><td>**PA11**</td><td>Carry out simple test-tube reactions to identify transition metal ions in aqueous solution</td><td>3.2.6 Reactions of ions in aqueous solutions</td></tr></table> 9. Mock examinations (January)
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: Chemical engineer, Catalytic research scientist, Electrochemical engineer, Product development, Fuel technician, Laboratory technician, Medical researcher, Doctor, Nurse, Brewer, Pool maintenance, Environmentalist, Biochemist
Wider Curriculum Links?	• Biology (Rates of reaction, Amino acids, proteins and DNA, Chromatography) • Physics (Energy and cells) • Business studies (Industrial companies) • Psychology (Drugs and Alcohols) • PE (Amino acids, proteins and DNA) • DT (Materials)
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 2 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**