

**STAGE 2 Chemistry Term 1, 2016**

Week/ Lesson	Topic/key idea	Activity	Resource	Homework
	Experimental Skills			
<u>Week 1</u> Wed DL 110 min	Experimental Skills	Intro Go through subject outline Assumed knowledge Lab safety Experimental skills Break – Chicken Pics game Experiment skills (up to errors)	Subject outline Assumed knowledge Lab safety Experimental skills essentials booklet	Read through assumed knowledge Finish experimental skills worksheets
Thurs SL 50 mins		Recap experimental skills definitions and any questions about homework Significant figures pg 309, 310 Practice worksheet Questions on Daymap/email 29-38		Questions on Daymap/email 29-38
	1 Elemental & Environmental Chemistry (6 weeks)	1.1 The Periodic Table		
<u>Week 2</u> SL	1.1 the periodic table K11 Electron configurations	Sig figs, practise worksheet Recap yr 11 assumed knowledge via PPT Electron configurations	yr 11 assumed knowledge (summary sheets) x2	Sig figs, practise worksheet Revise for quiz next lesson
DL DL	K11 Electron config K12 s, p, d, f blocks	Experimental skills quiz, go through answers	Experimental skills quiz	Finish examples of each group in PT, Stage 2 formative questions worksheet
SL	K13 Position of elements in the periodic table	formative questions worksheet – answers		
<u>Week 3</u> SL	Position of elements in the periodic table K14 electronegativities Acidic/basic nature of elements		Stg2ChemFormativeExercises(1.1)PeriodicTableTrendsOxides16	

Week/ Lesson	Topic/key idea	Activity	Resource	Homework
DL DL	Acidic/basic nature of elements – finish notes Prac	Acidic nature of oxides prac	Prac sheet Formative exercises questions	
SL	Bonding			
<u>Week 4</u> SL	AWAY Revision, questions		Practise test 1	
DL DL	Bonding Shapes of molecules Revision	Molecular modelling prac		
SL	Revision			
	1 Elemental & Environmental Chemistry	1.2 Cycles in nature 1.3 Greenhouse Effect 1.4 Acid Rain 1.5 Photochemical smog	Summary booklet	
<u>Week 5</u> SL	Formative test			Formative Test
DL DL	1.2 Cycles in nature	Powerpoint presentation Aquatic plant in bromophenol blue indicator to show plant respiration demo	<b><i>Environmental Chem Summary booklet with past exam questions</i></b>	
SL	1.2 Cycles in nature 1.3 Greenhouse Effect	Finish cycles in nature, start greenhouse effect	SASTA revision questions 1.2 Formative exercises 1.2	
<u>Week 6</u> SL	1.3 Greenhouse Effect	Finish greenhouse effect, questions	SASTA revision questions 1.3 Formative exercises 1.3	
DL DL	1.4 Acid rain	Recap Greenhouse effect, go through solutions of worksheet pH calculations	SASTA revision questions 1.4 Formative exercises 1.4	
SL	1.4 Acid rain		SASTA revision questions 1.4 Formative exercises 1.4	
<u>Week 7</u> SL	ADELAIDE CUP			
DL DL	SPORTS DAY			

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SL	1.5 Photochemical smog	Extended response info and examples	SASTA revision questions 1.5 Formative exercises 1.5	Finish class questions. Past exam revision questions
	<b>2 Analytical Techniques (5 weeks)</b>	<b>2.1 Volumetric analysis</b>		
<u>Week 8</u> SL	Revision	Extended response info and examples		
DL DL	SAT Topic 1 2.1 Volumetric Analysis	<b>2.2 Volumetric Analysis Summary booklet with past exam questions</b>		Summative Test
SL	2.1 Volumetric Analysis			
<u>Week 9</u> SL	EASTER MONDAY			
DL DL	2.1 Volumetric Analysis Formative Prac: Preparing a standard solution			
SL	Formative Prac: Titration			
<u>Week 10</u> SL	Formative Prac: Titration			
DL DL	2.1 Volumetric Analysis		2.1 formative questions 1-3	Finish formative questions
SL	2.1 Volumetric Analysis <i>After school titration practise</i>			
<u>Week 11</u> SL	Prac prep			
DL DL	Summative Prac: Titration			Draft of summative prac
SL				

Holidays:      **Finish draft (submit week 1 T2)**      **2.1 exam questions**      **Chromatography questions**

Term 2

Week/ Lesson	Topic/key idea	Activity	Resource	Homework
<u>Week 1</u> SL	Back titration calculation – past exam qu 2.2 Chromatography	1 worked example, students to complete 1  Role play of chromatography	<b>2.2 Chromatography Summary booklet with past exam questions</b>	
DL DL	2.2 Chromatography – formative prac smarties			
SL	2.2 Chromatography		<b>2.3 Atomic Spectroscopy Summary booklet with past exam questions</b>	Draft of prac report due
<u>Week 2</u> SL	2.3 Atomic Spectroscopy			Give back draft of prac report
DL DL	2.3 Atomic Spectroscopy/revision	Go through past exam Qu of 2.1, 2.2, 2.3		
SL	Topic 3 using and controlling reactions	Starter – santos Recall: Chemical change evidence, examples. Endo/exo reactions, examples.		Prac report due
<u>Week 3</u> SL	3.1 Measuring energy changes Enthalpy Molar enthalpy of combustion Molar enthalpy of solution Molar enthalpy of neutralisation Calorimetry		<b>3.1-3.4 Using and Controlling Reactions booklet with past exam questions</b>	
DL DL	Topic 2 test Calculating heat energy absorbed/released		<b>Topic 2 summative test</b>	Summative test topic 2
SL	Calorimetry practical		Calorimeters Thermometers Chemicals	

Week/ Lesson	Topic/key idea	Activity	Resource	Homework
<u>Week 4</u> SL	3.2 Fuels			
DL DL	Issues question (15 mins) Past exam questions 3.1-3.2			
SL	3.3 Electrochemistry			
<u>Week 5</u> SL	Revision of redox			Issues topic/question due
DL DL	Source analysis (20 mins) 3.3 Electrochemistry			
SL	3.4 Rate of reaction			
<u>Week 6</u> SL	3.4 Rate of reaction			
DL DL	Formative test Mark issues/go through marks Draft of issues			Source analysis due
SL	Issues	Go through formative test		Draft due
<u>Week 7</u> SL	PUBLIC HOLIDAY			
DL DL	REVISION/Issues			
SL	REVISION	Go through formative 3.1-3.4 test and Topic 1 test		Hand up issues
<u>Week 8</u> SL	3.5 Equilibrium	Equilibrium water tank demo	<a href="https://www.youtube.com/watch?v=-I5zWz_TMbM">https://www.youtube.com/watch?v=-I5zWz_TMbM</a> 5 mins UCR booklet 2 3.5 equilibrium formative questions	
DL DL	SEMESTER 1 EXAM			

Week/ Lesson	Topic/key idea	Activity	Resource	Homework
SL	3.5 Equilibrium	<p>Ferric chloride, ammonium thiocyanate demo</p> <p>Mix together in a large conical flask a little iron(III) chloride solution and potassium thiocyanate solution and dilute with distilled water</p> $\text{Fe}^{3+}(\text{aq}) + \text{SCN}^{-}(\text{aq}) \rightarrow [\text{FeSCN}]^{2+}(\text{aq})$ <p>yellow      colourless      blood red</p> <ul style="list-style-type: none"> <li>• Add some potassium thiocyanate to the flask.</li> <li>• Ask students about their observations.</li> </ul>	<p><a href="https://www.youtube.com/watch?v=ZOYyCTvLa9E">https://www.youtube.com/watch?v=ZOYyCTvLa9E</a></p> <p>(for you tube of demo and explanation)</p> <p>Demonstrate the consequence of adding a reactant to a system in equilibrium.</p>	
<u>Week 9</u> SL	3.6 Chemical industry			
DL DL	Summative design prac - play			
SL	3.6 Chemical industry			
<u>Week 10</u> SL	3.7 Metal production			
DL DL	Summative design prac			
SL	3.7 Metal production			

**Holidays: Seminar (3 hours)**

**Exam answers**

**Topic 3 revision 3.1-3.4**

**Marking design prac/prac write up workshop**

Term 3

Week/ Lesson	Topic/key idea	Activity	Resource	Homework
	Topic 4 Organic and Bio Chem 6 weeks			
<u>Week 1</u> SL	1.6 Water treatment – Removal of suspended matter from water, chlorination of water		Water treatment SASTA Qu	
DL DL	1.6 Water treatment – Using hypochlorites 4 Organic and biological chem – intro and start 4.1 Systematic nomenclature	Students have 3 mins to summarise a section given in partners, 3 mins with help of notes. Present sections to students who were away last lesson: Removal of suspended matter from water, chlorination of water  Chem wars – Nomenclature bingo, Rapidoh equipment and Pictionary on organic chem/		Design Prac Due
SL	4.1 Systematic nomenclature		4.1 Nomenclature - Formative exercises & SATSA Qu	
<u>Week 2</u> SL	4.1 Systematic nomenclature 4.2 Physical properties	Systematic Nomenclature Summary		
DL DL	Topic 3 test 4.2 Physical properties		4.2 Physical properties - Formative exercises & SATSA Qu	4.2 Physical properties - Formative exercises
SL	4.3 Alcohols – primary, secondary, tertiary.	PRAC/DEMO Alcohol prac – ethanol, propan-1-ol, propan-2-ol, t-butyl alcohol, vinegar, acidified dichromate	4.3 Alcohols- Formative exercises Alcohols-oxidation prac	4.3 Alcohols- Formative exercises Q2-3
<u>Week 3</u> SL	4.3 Alcohols – ethanol production 4.4 Aldehydes and ketones		4.3 Alcohols- Formative exercises Q1 & SATSA Qu	
DL DL	4.4 Aldehydes and ketones 4.5 Carboxylic acids 4.6 Amines	<i>PRAC Acetaldehyde – oxidation of primary alcohol by distillation and Tollen's test</i>  Draw concept map of alcohols, aldehydes, ketones, carboxylic acids including all preparation, tests and reactions	4.4 Aldehydes and ketones- Formative exercises & SATSA Qu	
SL	4.5 Carboxylic acids 4.7 Esters			

Week/ Lesson	Topic/key idea	Activity	Resource	Homework
<u>Week 4</u> SL	4.6 Amines			
DL DL	4.7 Esters	PRAC Acetaldehyde – oxidation of primary alcohol by distillation and Tollen’s test		
SL	4.8 Amides			
<u>Week 5</u> SL	4.8 Amides			
DL DL		Ester prep – different groups do different flavours?	Formative test given back, students to correct and mark together later	
SL	4.9 Proteins	Distillation of ester (not finished from previous lesson)		
<u>Week 6</u> SL	4.9 Proteins – up to peptides	Tollen’s test silver mirror prac		
DL DL		Summative ester prac		
SL	4.9 Proteins			
	<b>Topic 5 Materials 3 weeks</b>			
<u>Week 7</u> SL	4.10 Triglycerides			Ester draft due
DL DL	4.11 Carbohydrates Revision			
SL	Materials– 5. 1 polymers		Materials summary booklet	Summative ester prac due
<u>Week 8</u> SL	SCHOOL CLOSURE DAY			
DL DL	Topic 4 test			
SL	Materials– 5. 1 polymers			



Week/ Lesson	Topic/key idea	Activity	Resource	Homework
<u>Week 9</u> SL	Materials– 5.2 Silicates			
DL DL	Materials– 5.2 Silicates Materials – 5.3 Cleaning agents			
SL	Materials – 5.3 Cleaning agents			
<u>Week 10</u> SL	Materials – 5.3 Cleaning agents Revision		Practise test	
DL DL	Formative topic 5 test Mark in class			
SL	Revision seminar/class party			

### **October Term 3 Holiday Stage 2 Chemistry Workshop Agenda**

**Thursday 13<sup>th</sup> October, 2016**

Activity	Content
<u>Exam workshop 1:</u> Feedback from holiday revision schedule, set SWOTVAC timetable. Exam strategies and dissection of exam booklet	Talk through booklet 1 of 2015 exam
Trial exam – 60 minutes	Student complete booklet 2 of 2015 exam under test conditions
Mrs. K's goodies and afternoon tea break	Cookies, cake and tea
<u>Exam workshop 2:</u> Mark exam booklet	Feedback on student performance
<u>Exam workshop 3:</u> Time to work on booklet 3 of 2015 exam  <i>Optional: Students may request specific content revision, please email me before workshop.</i>	Students practise completing past exam questions and opportunity for individual help

**TERM 4 REVISION**

Week	DAY	CONTENT Topic: Key idea	LESSON ACTIVITY (each lesson format similar)	Resources	Homework (ongoing after every lesson)
<b>1</b>	Mon 17/10	1.1 The Periodic Table 1.2 Cycles in Nature 1.3 The Greenhouse Effect	Summary of content: key ideas Complete relevant exam questions in past exam	2014 Exam: 3 booklets 2014 Exam Solutions	→ Any formative/revision/ past exam questions on subtopics covered (available on daymap) → Notes on key ideas → Answer questions on topic 4-5 in past exam, highlight areas to work on
	Wed 19/10	1.4 Acid Rain 1.5 Photochemical Smog 1.6 Water Treatment	Extended response in 14 exam – nitrogen Extended response photochemical smog Exam QU 2, 3, 5, 6		
	Wed1 9/10	2.1 Volumetric Analysis 2.2 Chromatography 2.3 Atomic Spectroscopy	Extended response AAS in SASTA study guide Exam QU 2, 3, 11c		
	Thurs 20/10	3.1 Measuring Energy Changes 3.2 Fuels 3.3 Electrochemistry 3.4 Rate of Reaction	Exam QU 4, 7, 9, 12		
<b>2</b>	Mon 24/10	3.5 Chemical Equilibrium 3.6 Chemical Industry 3.7 Metal Production	Summary of content: key ideas Complete relevant exam questions in past exam <i>*Go through topic 3 test solutions</i>	2013 Exam: 3 booklets 2013 Exam Solutions	→ Any formative/revision/ past exam questions on subtopics covered (available on daymap) → Notes on key ideas → Answer questions on topic 1-2 in past exam, highlight areas to work on
	Wed 26/20	4.1 Systematic Nomenclature 4.2 Physical Properties 4.3 Alcohols 4.4 Aldehydes and Ketones 4.5 Carboxylic Acids			
	Wed2 26/20	4.6 Amines 4.7 Esters 4.8 Amides 4.9 Proteins 4.10 Triglycerides 4.11 Carbohydrates	<i>*Go through topic 4 test solutions</i>		
	Thurs 27/10	5.1 Polymers 5.2 Silicates 5.3 Cleaning agents		2012 Exam: 3 booklets 2012 Exam Solutions	2012 exam to complete during SWOTVAC

