

Y10 Chemistry progression (9-1 AQA syllabus and Kerboodle)

Key:

Separates only content

Assessment: Y10 teaching specialist team to organise. All classes to do the same assessment.

Required practical: See Y10 folder for guidance and practical sheets - To be written up in a 'skinny yellow exercise book' Name, class, and Required practicals on the front.

Have students divide it into thirds - Biology required practicals - page 1 in first third; Chemistry required practicals - page 1 in second third; Physics required practicals - page 1 in final third of lab book.

Absent students **MUST** copy up and record results. Other students perhaps take photographs? (Very good onion cell photos taken through the eyepiece lens of the microscope with 9sc1 last year)

Lesson Seps	Lesson Trilogy	Spec and Topic	Homework/ Assessment	Timecheck/ Assessment responsibility
Topic 1: Atoms and bonds - (Most covered in Y9 - Revisit Feb '17)				
Chapter C1 atomic structure LDU is responsible for updating				
		C1.1 Atoms		
		C1.2 Chemical equations		
		C1.3 Separating mixtures	Homework	Self/ peer
		C1.4 Fractional distillation and paper chromatography		
		C1.5 History of the atom		
		C1.6 Structure of the atom	Homework	Self/ peer
		C1.7 Ions, atoms and isotopes		
		C1.8 Electronic structures		
		End of topic common assessment		PENS teacher assessment
		Assessment review and next steps	Targeted moving forward homework	Student NS response
Chapter C2 the periodic table (Most covered in Y9 - Revisit Feb '17) LDU is responsible for updating				
		C2.1 Development of the periodic table		
		C2.2 Electronic structures and the periodic table		
		C2.3 group 1 - The alkali metals	Homework	Self/ peer

		C2.4 group 7 - The halogens		
		C2.5 Explaining trends		
		<i>C2.6 The transition elements</i>	<i>Homework</i>	<i>Self/ peer</i>
		End of topic common assessment		PENS teacher assessment
		Assessment review and next steps	Targeted moving forward homework	Student NS response

Chapter C3 Structure and bonding
- Proposed Y10 condensed start (7 lessons for trilogy; 8/9 lessons for seps)
KH is responsible for writing lessons

01	01	C3.1 states of matter		
02	02	C3.2 atoms into ions		
03	03	C3.3 ionic bonding	Homework	Self/ peer
04	04	C3.4 Giant ionic structures		
05	05	C3.5 Covalent bonding		
06	06	C3.6 Structure of simple molecules	Homework	Self/ peer
07	07	C3.7 Giant covalent structures		
08	08	C3.8 Fullerenes and graphene		
09	09	C3.9 Bonding in metals	Homework	Self/ peer
10	10	C3.10 Giant metallic structures		
<i>11</i>		<i>C3.11 Nanoparticles</i>		
<i>12</i>		<i>C3.12 Applications of nanoparticles</i>	<i>Homework</i>	<i>Self/ peer</i>
13	11	End of topic common assessment		PENS teacher assessment
14	12	Assessment review and next steps	Targeted moving forward homework	Student NS response

Topic 4 Chemical calculations
JLS is responsible for writing lessons

15	13	C4.1 Relative masses and moles		
16	14	C4.2 Equations and calculations		
17	15	C4.3 From masses to balanced equations	Homework	Self/ peer

18		<i>C4.4 The yield of a chemical reaction</i>		
19		<i>C4.5 Atom economy</i>		
20	16	C4.6 Expressing concentrations	Homework	Self/ peer
21		<i>C4.7 Titrations</i>		
22		Required practical 2		
23		<i>C4.8 Titration calculations</i>		
24		<i>C4.9 Volumes of gases</i>	<i>Homework</i>	<i>Self/ peer</i>
25	17	End of topic common assessment		PENS teacher assessment
26	18	Assessment review and next steps	Targeted moving forward homework	Student NS response

2 Chemical reactions and energy changes

C5 Chemical changes

KH is responsible for writing lessons

27	19	C5.1 The reactivity series		
28	20	C5.2 Displacement reactions		
29	21	C5.3 Extracting metals	Homework	Self/ peer
30	22	C5.4 Salts from metals		
31	23	C5.5 Salts from insoluble bases		
32	24	C5.6 Making more salts	Homework	Self/ peer
33	25	Required practical 1		
34	26	C5.7 neutralisation and the pH scale		
35	27	C5.8 strong and weak acids		
36	28	End of topic common assessment		PENS teacher assessment
37	29	Assessment review and next steps	Targeted moving forward homework	Student NS response

C6 Electrolysis

KH is responsible for writing lessons

38	30	C6.1 Introduction to electrolysis		
39	31	C6.2 Changes at the electrodes		
40	32	C6.3 The extraction of aluminium	Homework	Self/ peer
41	33	C6.4 Electrolysis of aqueous Solutions		
42	34	Required practical 3		
43	35	End of topic common assessment		PENS teacher assessment
44	36	Assessment review and next steps	Targeted moving forward homework	Student NS response

C7 Energy changes
JLS is responsible for writing lessons

46	37	C7.1 Exothermic and endothermic reactions		
47	38	Required practical 4		
48	39	C7.2 Using energy transfers from reactions		
49	40	C7.3 Reaction profiles	Homework	Self/ peer
50	41	C7.4 Bond energy calculations		
51		<i>C7.5 Chemical cells and batteries</i>		
52		<i>C7.6 Fuel Cells</i>	<i>Homework</i>	<i>Self/ peer</i>
53	42	End of topic common assessment		PENS teacher assessment
54	43	Assessment review and next steps	Targeted moving forward homework	Student NS response

3 Rates, equilibrium and organic chemistry

C8 Rates and equilibrium
KH responsible for writing lessons

55	44	C8.1 Rate of reaction		
56	45	C8.2 Collision theory and surface area		
57	46	C8.3 The effect of temperature	Homework	Self/ peer
58	47	C8.4 The effect of concentration and pressure		

59	48	Required practical 5		
60	49	C8.5 The effect of catalysts		
61	50	C8.6 Reversible reactions	Homework	Self/ peer
62	51	C8.7 Energy and reversible reactions		
63	52	C8.8 Dynamic equilibrium		
64	53	C8.9 Altering conditions	Homework	Self/ peer
65	54	End of topic common assessment		PENS teacher assessment
66	55	Assessment review and next steps	Targeted moving forward homework	Student NS response
C9 Crude oil and fuels KH is responsible for writing lessons				
67	56	C9.1 Hydrocarbons		
68	57	C9.2 Fractional distillation of oil		
69	58	C9.3 Burning hydrocarbon fuels	Homework	Self/ peer
70	59	C9.4 Cracking hydrocarbons		
71	60	End of topic common assessment		PENS teacher assessment
72	61	Assessment review and next steps	Targeted moving forward homework	Student NS response
C10 Organic reactions JLS is responsible for writing lessons				
<i>73</i>		<i>C10.1 Reactions of the alkenes</i>		
<i>74</i>		<i>C10.2 Structure of alcohols carboxylic acids and esters</i>		
<i>75</i>		<i>C10.3 Reactions and uses of alcohols</i>	<i>Homework</i>	<i>Self/ peer</i>
<i>76</i>		<i>C10.4 Carboxylic acids and esters</i>		
77		End of topic common assessment		PENS teacher assessment
78		Assessment review and next steps	Targeted moving forward homework	Student NS response

C11 Polymers JLS is responsible for writing lessons				
79		<i>C11.1 Addition polymerisation</i>		
80		<i>C11.2 Condensation polymerisation</i>		
81		<i>C11.3 Natural polymers</i>	<i>Homework</i>	<i>Self/ peer</i>
82		<i>C11.4 DNA</i>		
83		End of topic common assessment		PENS teacher assessment
84		Assessment review and next steps	Targeted moving forward homework	Student NS response
Topic C12 Chemical analysis JLS is responsible for writing lessons				
85	62	C12.1 Substances and mixtures		
86	63	12.2 Analysing chromatograms		
87	64	Required practical 6 - Calculating Rf values		
88	65	C12.3 Testing for gases	Homework	Self/ peer
89		<i>C12.4 Testing for positive ions</i>		
90		<i>C12.5 Testing for negative ions</i>		
91		Required practical 7 -		
92		<i>C12.6 Instrumental analysis</i>	<i>Homework</i>	<i>Self/ peer</i>
93	66	End of topic common assessment		PENS teacher assessment
94	67	Assessment review and next steps	Targeted moving forward homework	Student NS response
Topic C13 The Earth's atmosphere KH is responsible for writing lessons				
95	68	C13.1 History of our atmosphere		
96	69	C13.2 Our evolving atmosphere		
97	70	C13.3 Greenhouse gases	Homework	Self/ peer
98	71	C13.4 Global climate change		

99	72	C13.5 Atmospheric pollution		
100	73	End of topic common assessment		PENS teacher assessment
101	74	Assessment review and next steps	Targeted moving forward homework	Student NS response
Topic C14 The Earth's resources KH is responsible for writing lessons				
102	75	C14.1 Finite and renewable resources		
103	76	C14.2 Water safe to drink		
104	77	Required practical 8		
105	78	C14.3 Treating wastewater	Homework	Self/ peer
106	79	C14 Points for extracting metals from ores		
107	80	C14.5 Life cycle assessments		
108	81	C14.6 Reduce reuse and recycle	Homework	Self/ peer
109	82	End of topic common assessment		PENS teacher assessment
110	83	Assessment review and next steps	Targeted moving forward homework	Student NS response
Topic C15 Using our resources JLS is responsible for writing lessons				
111		<i>C15.1 Rusting</i>		
112		<i>C15.2 Useful alloys</i>		
113		<i>C15.3 The properties of polymers</i>	<i>Homework</i>	<i>Self/ peer</i>
114		<i>C15.4 Glass ceramics and composites</i>		
115		<i>C15.5 Making ammonia the Haber process</i>		
116		<i>C15.6 The economics of the Haber process</i>	<i>Homework</i>	<i>Self/ peer</i>
117		<i>C15.7 Making fertilisers in the lab</i>		
118		<i>C15.8 Making fertilisers in industry</i>		
119		Prep; C15 checkpoint; Next steps	Homework and assessment	