



# AQA COMBINED SCIENCE CHECKLISTS

## 8464 TRILOGY

# Chemistry Paper 1

*"Student's today; Scientists for life"*

# Combined Chemistry Paper 1

## Atomic structure and the periodic table

	Content	RAG	Revision guide pages		
			COMB F	COMB H	Triple
5.1.1.1	Atoms, elements and compounds		97-99	96-99	12-15
5.1.1.2	Mixtures		100-3	100-2	16-18
5.1.1.3	Scientific models of the atom		104	103	19
5.1.1.4	Relative electrical charges of subatomic particles		96	96	12
5.1.1.5	Size and mass of atoms		96	96	12
5.1.1.7	Electronic structure		105	104	20
5.1.1.6	Relative atomic mass		97	97	13
5.1.2.1	The periodic table		107	106	22-23
5.1.2.2	Development of the periodic table		106	105	21
5.1.2.3	Metals and non-metals		108	107	23
5.1.2.4	Group 0		111	110	26
5.1.2.5	Group 1		109	108	24
5.1.2.6	Group 7		110	109	25

## Bonding, structure and the properties of matter

5.2.1.1	Chemical bonds		113	112	28
5.2.1.2	Ionic bonding		113-4	112-3	29
5.2.1.3	Ionic compounds		115	114	30
5.2.1.4	Covalent bonding		116	115	31
5.2.1.5	Metallic bonding		120	119	35
5.2.2.1	The 3 states of matter		121	120	36-37
5.2.2.2	State symbols		121	121	36
5.2.2.3	Properties of ionic compounds		115	114	30
5.2.2.4	Properties of small molecules		117	116	32
5.2.2.5	Polymers		118	117	33
5.2.2.6	Giant covalent structures		118	117	33
5.2.2.7	Properties of metals and alloys		120	119	35
5.2.2.8	Metals as conductors		120	119	35
5.2.3.1	Diamond		119	118	34
5.2.3.2	Graphite		119	118	34
5.2.3.3	Graphene fullerenes		119	118	34

## Quantitative chemistry

	Content	RAG	Revision guide pages		
			COMB F	COMB H	Triple
5.3.1.1	Conservation of mass and balanced equations		124	125	43
5.3.1.2	Relative formula mass		123	123	41
5.3.1.3	Mass changes when a reactant or product is a gas		125	125	43
5.3.1.4	Chemical measurements		126	128	47
5.3.2.1	<b>Moles HT</b>			124	42
5.3.2.2	<b>Amounts of substances in equations HT</b>			126	42-44
5.3.2.3	<b>Using moles to balance equations HT</b>			126	44
5.3.2.4	<b>Limiting reactants HT</b>			127	45
5.3.2.5	Concentration of solutions			128	47

## Chemical changes

5.4.1.1	Metal oxides		129	133	56
5.4.1.2	The reactivity series		130-1	132	55
4.4.1.3	Extraction of metals and reduction		130	133	56
5.4.1.4	<b>Oxidation and reduction in terms of electrons HT</b>			134	57
5.4.2.1	Reaction of acids with metals		131	131	54
5.4.2.2	Neutralisation of acids and salt production		128	129	51/54
5.4.2.3	Soluble salts		133	131	54
RP 8	<b>★Required practical – making salts</b>		129	131	54
5.4.2.4	The pH scale and neutralisation		128	129	52
5.4.2.5	<b>Strong and weak acids HT</b>			130	53
5.4.3.1	The process of electrolysis		132	135	58
5.4.3.2	Electrolysis of molten ionic compounds		132	135	58
5.4.3.3	Using electrolysis to extract metals		132	135	58
5.4.3.4	Electrolysis of aqueous solutions		133	136	59
RP 9	<b>★Required practical – electrolysis</b>		133	135	59
5.4.3.5	<b>Represent reactions at electrodes as half equations HT</b>			135-6	58-59






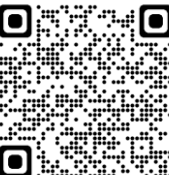
## Energy Changes








5.5.1.1	Energy transfer in exothermic & endothermic reactions		134	138	61
RP 10	<b>★Required practical – temperature changes</b>		135	139	62
5.5.1.2	Reaction profiles		136	139	62

5.5.1.3	The energy change of chemical reactions HT			140	63
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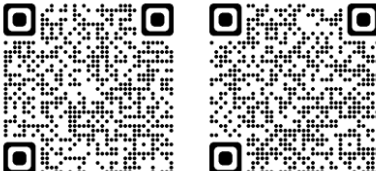

## Combined Chemistry Paper 1








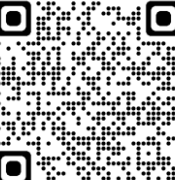
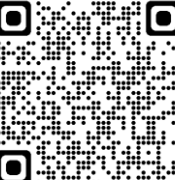




### Atomic structure and the periodic table




Content		RAG	QR Code
5.1.1.1	Atoms, elements and compounds		 (All pages)
5.1.1.2	Mixtures		 (All pages)
5.1.1.3	Scientific models of the atom		
5.1.1.4	Relative electrical charges of subatomic particles		
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5.1.2.4	Group 0		
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5.1.2.6	Group 7		

## Bonding, structure, and the properties of matter






5.2.1.1	Chemical bonds		
5.2.1.2	Ionic bonding		
5.2.1.3	Ionic compounds		

5.2.1.4	Covalent bonding		   
5.2.1.5	Metallic bonding		
5.2.2.1	The 3 states of matter		 (All pages)
5.2.2.2	State symbols		
5.2.2.3	Properties of ionic compounds		
5.2.2.4	Properties of small molecules		
5.2.2.5	Polymers		
5.2.2.6	Giant covalent structures		
5.2.2.7	Properties of metals and alloys		 
5.2.2.8	Metals as conductors		










5.2.3.1	Diamond			
5.2.3.2	Graphite			
5.2.3.3	Graphene fullerenes			

## Quantitative chemistry


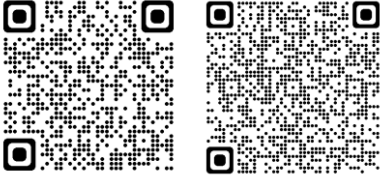







5.3.1.1	Conservation of mass and balanced equations			
5.3.1.2	Relative formula mass			
5.3.1.3	Mass changes when a reactant or product is a gas			
5.3.1.4	Chemical measurements			
5.3.2.5	Concentration of solutions			
5.3.2.1	<b>Moles HT</b>			


5.3.2.2	<b>Amounts of substances in equations HT</b>		  
5.3.2.3	<b>Using moles to balance equations HT</b>		
5.3.2.4	<b>Limiting reactants HT</b>		

## Chemical changes


5.4.1.1	<b>Metal oxides</b>		
5.4.1.2	<b>The reactivity series</b>		 
4.4.1.3	<b>Extraction of metals and reduction</b>		
5.4.1.4	<b>Oxidation and reduction in terms of electrons HT</b>		 
5.4.2.1	<b>Reaction of acids with metals</b>		
5.4.2.2	<b>Neutralisation of acids and salt production</b>		 





5.4.2.3	Soluble salts			
RP 8	★ Required practical – making salts			
5.4.2.4	The pH scale and neutralisation			
5.4.2.5	Strong and weak acids HT			
5.4.3.1	The process of electrolysis			
5.4.3.2	Electrolysis of molten ionic compounds			
5.4.3.3	Using electrolysis to extract metals			
5.4.3.4	Electrolysis of aqueous solutions			
RP 9	★ Required practical – electrolysis			



5.4.3.5	<b>Represent reactions at electrodes as half equations</b> HT		
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## Energy Changes

5.5.1.1	Energy transfer in exothermic & endothermic reactions		
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RP 10	<b>★ Required practical – temperature changes</b>		 
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5.5.1.2	Reaction profiles		
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5.5.1.3	<b>The energy change of chemical reactions</b> HT		 
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# AQA COMBINED SCIENCE CHECKLISTS

## 8464 TRILOGY














### Chemistry Paper 2












# Combined Chemistry Paper 2








	Content	RAG	Revision guide pages		
			COMB F	COMB H	TRIPLE
<b>The rate and extent of chemical change</b>					
5.6.1.1	Calculating rates of reaction		142-3	144-6	69-71
5.6.1.2	Factors which affect the rate of chemical reactions		138-9	142-3	68-9
5.6.1.3	Collision theory		138	142	67
RP 11	★ Required practical – rate of reaction		140-1	144-5	69-70
5.6.1.4	Catalysts		139	143	68
5.6.2.1	Reversible reactions		144	147	72
5.6.2.2	Energy changes and reversible reactions		144	147	72
5.6.2.3	Equilibrium		144	147	72
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5.6.2.5	<b>The effect of changing concentration HT</b>			148	73
5.6.2.6	<b>The effect of temperature on equilibrium HT</b>			148	73
5.6.2.7	<b>The effect of pressure changes on equilibrium HT</b>			148	73
<b>Organic chemistry</b>					
5.7.1.1	Crude oil, hydrocarbons and alkanes		146-7	150	75
5.7.1.2	Fractional distillation and petrochemicals		148	151	76
5.7.1.3	Properties of hydrocarbons		147-8	151-2	77
5.7.1.4	Cracking and alkenes		149	152	78
<b>Chemical analysis</b>					
5.8.1.1	Pure substances		150	153	86
5.8.1.2	Formulations		150	153	86
5.8.1.3	Chromatography		151	154	87
RP 12	★ Required practical - chromatography		152	154	87
5.8.2.1	Test for hydrogen		153	155	88
5.8.2.2	Test for oxygen		153	155	88
5.8.2.3	Test for carbon dioxide		153	155	88
5.8.2.4	Test for chlorine		153	155	88

	Content	RAG	Revision guide pages		
			COMB F	COMB H	TRIPLE
<b>Chemistry of the atmosphere</b>					
5.9.1.1	The proportions of different gases in the atmosphere		155	157	91
5.9.1.2	The earth's early atmosphere		155	157	91
5.9.1.3	How oxygen increased		155	157	91
5.9.1.4	How carbon dioxide decreased		155	157	91
5.9.2.1	Greenhouse gases		156	158	92
5.9.2.2	How human activities contribute to an increase in greenhouse gases in the atmosphere		156	158	94
5.9.2.3	Global climate change		156	158	92
5.9.2.4	The carbon footprint and its reduction		157	159	93
5.9.3.1	Atmospheric pollutants from fuels		158	160	94
5.9.3.2	Properties and effects of atmospheric pollutants		158	160	94
<b>Using resources</b>					
5.10.1.1	Using the Earth's resources and sustainable development		159	161	99
5.10.1.2	Potable water		163-4	164	102
5.10.1.3	Waste water treatment		165	165	103
RP 13	★ Required practical – water purification		164	164	102
5.10.1.4	<b>Alternative methods of metal extraction HT</b>			162	100
5.10.2.1	Life cycle assessment		161-2	163	101
5.10.2.2	Ways of reducing the use of resources		160	162	100




# Combined Chemistry Paper 2

	Content	RAG	QR Code
<b>The rate and extent of chemical change</b>			
5.6.1.1	Calculating rates of reaction		
5.6.1.2	Factors which affect the rate of chemical reactions		  
5.6.1.3	Collision theory		
RP 11	★ Required practical – rate of reaction		   
5.6.1.4	Catalysts		
5.6.2.1	Reversible reactions		
5.6.2.2	Energy changes and reversible reactions		
5.6.2.3	Equilibrium		













5.6.2.4	The effect of changing conditions on equilibrium HT		
5.6.2.5	The effect of changing concentration HT		
5.6.2.6	The effect of temperature on equilibrium HT		
5.6.2.7	The effect of pressure changes on equilibrium HT		
<b>Organic chemistry</b>			
5.7.1.1	Crude oil, hydrocarbons and alkanes		 
5.7.1.2	Fractional distillation and petrochemicals		
5.7.1.3	Properties of hydrocarbons		
5.7.1.4	Cracking and alkenes		
<b>Chemical analysis</b>			
5.8.1.1	Pure substances		
5.8.1.2	Formulations		






5.8.1.3	Chromatography		
RP 12	★ Required practical - chromatography		 
5.8.2.1	Test for hydrogen		
5.8.2.2	Test for oxygen		
5.8.2.3	Test for carbon dioxide		
5.8.2.4	Test for chlorine		

### Chemistry of the atmosphere

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5.9.3.2	Properties and effects of atmospheric pollutants		
<b>Using resources</b>			
5.10.1.1	Using the Earth's resources and sustainable development		 
5.10.1.2	Potable water		 

5.10.1.3	Waste water treatment		
RP 13	★ Required practical – water purification		  (Youtube 3.15 – 5.09)
5.10.1.4	<b>Alternative methods of metal extraction HT</b>		
5.10.2.1	Life cycle assessment		
5.10.2.2	Ways of reducing the use of resources		