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AS and A LEVEL
Mapping Guide

CHEMISTRY B

H033/H433
For first teaching in 2015

Mapping the new specification to the legacy specification

Version 1

www.ocr.org.uk/chemistry

INTRODUCTION

This document compares the content of the A Level Chemistry B (Salters) for first assessment in 2017 (H433) with the content of the legacy specification. We hope that this can assist with your planning of schemes of work, and allow you to easily recognise the areas of your current schemes of work that can be carried forward.

This document can also be used to plan for the new AS Level Chemistry B (Salters) for first assessment in 2016 (H033). The content of the new AS Level is a subset of the new A Level content, as indicated below.

The legacy and new specifications at a glance

The following table provides an overview of the structures of the legacy and new specifications.

NEW STORYLINES		LEGACY STORYLINES	
AS and A level	Elements of life	AS	Elements of life
AS and A level	Developing fuels	AS	Developing fuels
AS and A level	Elements from the sea	AS	Elements from the sea
AS and A level	The ozone story	AS	The atmosphere
AS and A level	What's in a medicine	AS	Polymer revolution
A level	The chemical industry	A2	What's in a medicine
A level	Polymers and life	A2	The materials revolution
A level	Oceans	A2	The thread of life
A level	Developing metals	A2	The steel story
A level	Colour by design	A2	Agriculture and industry
		A2	Colour by design
		A2	The oceans
		A2	Medicines by design

SUMMARY OF CHANGES

The content from the following legacy storylines has been largely moved across (barring a learning outcome here or there), sometimes under a different name. There is some reordering of content in the second year storylines.

- Elements of life
- Developing fuels
- Elements from the sea
- The atmosphere
- The steel story
- Colour by design
- The oceans

Elements from the sea (ES) has largely transferred directly across, though intermolecular bonding is now included in The ozone story. ES is now very much an inorganic storyline, focusing on redox and equilibrium.

What's in a medicine has largely transferred directly across and is now positioned at the end of the first year, as well as being included in the AS content. Some organic groups have moved to Polymers and life; oxidation of aldehydes and nucleophilic accition of CN^- to carbonyls is now in Colour by design.

Agriculture and industry has mostly transferred to The chemical industry, though K_c is now introduced in ES and is included in the AS content.

Polymer revolution: alkenes, polymerisation and isomerism to Developing fuels; hydrogen bonding to The ozone story; remainder (organic & analytical) to What's in a medicine.

The materials revolution: green chemistry and preparation of organic solids to What's in a medicine; the rest of the organic content to Polymers and life, which means condensation polymerisation will now be taught in the context of biomolecules; properties of polymers has been deleted.

The thread of life: rates to The chemical industry; biochemistry to Polymers and life.

Medicines by design: molecular recognition and analytical techniques to Polymers and life; rest to Colour by design.

Content changes have occurred due to:

1. DfE core content criteria
2. centre feedback
3. mathematical requirements
4. overlap with other specifications

Current content which is not in the new specification:

- Recall of many applications and contexts
- Radioactivity
- How the mass spectrometer works (to focus on interpretation of spectra)
- Petroleum refining and octane rating
- Uses of all halogens except chlorine
- Properties of CFCs
- CO_2 control
- Properties of polymers

Content added to the new specification:

- Charge density of ions (EL)
- Salts – preparation and insolubility (EL)
- Effect of lone pairs on shapes (EL)
- Ideal gas equation (DF)
- Chemistry of hydrogen halides (ES)
- Boltzmann distribution (OZ)
- K_c calculations using equilibrium concentrations (CI)
- Arrhenius equation (CI)
- ^{13}C NMR (PL)
- Solubility product (O)

Module 1: Practical Skills

NEW SPECIFICATION					LEGACY SPECIFICATION
1.1 Practical skills assessed in a written examination	1.1.1 Planning		1.1.1	(a)–(c)	These are practical skills which were previously assessed in the controlled assessment tasks. You would find many of these skills covered in F333 and F336.
	1.1.2 Implementing		1.1.2	(a)–(c)	
	1.1.3 Analysis		1.1.3	(a)–(d)	
	1.1.4 Evaluation		1.1.4	(a)–(e)	
1.2 Practical skills assessed in the practical endorsement	1.2.1 Practical skills	Independent thinking	1.2.1	(a)	
		Use and application of scientific methods and practices	1.2.1	(b)–(g)	
		Research and referencing	1.2.1	(h)–(i)	
		Instruments and equipment	1.2.1	(j)	
	1.2.2 Use of apparatus and techniques		1.2.2	(a)	

For more information you should consult the Practical Skills Handbook available at
http://www.ocr.org.uk/qualifications/as-a-level-gce-chemistry-b-salters-h033-h433-from-2015/

2d Storylines

Elements of life (EL)

NEW SPECIFICATION			LEGACY SPECIFICATION		
Formulae, equations and amount of substance	EL	(a)–(d)	Formulae, equations and amount of substance	EL	(a)–(c)
				ES	(a)–(b)
Atomic structure	EL	(e)–(h)	Atomic structure	EL	(e), (g), (i), (j), (l)
				ES	(c)–(d)
Bonding and structure	EL	(i)–(l)	Bonding and structure	EL	(m)–(o)
				ES	(h)
Inorganic chemistry and the periodic table	EL	(m)–(q)	Inorganic chemistry and the Periodic Table	EL	(p)–(r)
				ES	(k)–(l)
	EL	(r)–(s)	**NEW**		
Equilibria (acid–base)	EL	(t)	**NEW**		
	EL	(u)	Inorganic chemistry and the Periodic Table	EL	(r)
Energy and matter	EL	(v)–(w)	Atomic structure	EL	(f)
			Modern analytical techniques	A	(s)
Modern analytical techniques	EL	(x)	Modern analytical techniques	EL	(u)

Developing fuels (DF)

NEW SPECIFICATION			LEGACY SPECIFICATION		
Formulae, equations and amount of substance	DF	(a) + **ideal gas equation**	Formulae, equations and amount of substance	DF	(a)
Bonding and structure	DF	(b)	**NEW**		
	DF	(c)	Isomerism	DF	(s)
Energetics	DF	(d)–(g)	Energetics	DF	(b)–(f)
Kinetics	DF	(h)–(j)	Kinetics	DF	(i)–(k)
Inorganic chemistry and the periodic table	DF	(k)	Inorganic chemistry and the Periodic Table	DF	(l)
Organic functional groups	DF	(l)–(m)	Organic functional groups	DF	(n)–(p)
				PR	(d)
Organic reactions	DF	(n)–(o)	Organic reactions	DF	(q)
				PR	(j)
Polymers	DF	(p)	Organic reactions	PR	(i)
Organic mechanisms	DF	(q)	Organic reactions	PR	(l)
Isomerism	DF	(r)–(t)	Isomerism	DF	(r), (t)
			Isomerism	PR	(m)
Sustainability	DF	(u)	Applications	DF	(x)

Elements from the sea (ES)

NEW SPECIFICATION			LEGACY SPECIFICATION		
Formulae, equations and amount of substance	ES	(a)	Inorganic chemistry and the Periodic Table	ES	(n)
Redox	ES	(b)–(g)	Redox	ES	(i)–(j)
				AI	(k)
			Inorganic chemistry and the Periodic Table	ES	(o)
Inorganic chemistry and the periodic table	ES	(h)–(k), (n)	Inorganic chemistry and the Periodic Table	ES	(m), (o)–(r)
	ES	(l)–(m)	**NEW**		
Equilibria	ES	(o)–(q)	Equilibria	A	(g)–(h)
				AI	(i)–(j)

The ozone story (OZ)

NEW SPECIFICATION			LEGACY SPECIFICATION		
Bonding and structure	OZ	(a)–(d)	Bonding and structure	ES	(f)–(g)
				PR	(a)–(b)
Kinetics	OZ	(e)–(h)	Kinetics	A	(b)–(f)
Inorganic chemistry and the periodic table	OZ	(i)	Inorganic chemistry and the Periodic Table	A	(j)
Organic functional groups	OZ	(j)	Organic functional groups	ES	(s)–(t)
Organic reactions	OZ	(k)	Organic reactions	ES	(w)
Reaction mechanisms	OZ	(l)–(q)	Reaction mechanisms	ES	(x)–(z)
			Reaction mechanisms	A	(k), (m)–(n)
Sustainability	OZ	(r)	Modern analytical techniques	A	(q)
Energy and matter	OZ	(s)–(u)	Modern analytical techniques	A	(s)–(u)

What's in a medicine? (WM)

NEW SPECIFICATION			LEGACY SPECIFICATION		
Organic functional groups	WM	(a)–(b)	Organic functional groups	PR	(e)–(f)
Organic reactions	WM	(c)–(f)	Organic reactions	PR	(g), (k)
				WM	(g), (h), (p)
				MR	(k)
		(g)	Inorganic chemistry and the Periodic Table	AI	(n)
Reaction mechanisms	WM	(h)	Organic reactions	PR	(h)
Modern analytical techniques	WM	(i)–(j)	Modern analytical techniques	PR	(p)–(q)
				WM	(q)–(r)

The chemical industry (CI)

NEW SPECIFICATION			LEGACY SPECIFICATION		
Kinetics	CI	(a)–(c), (e)	Kinetics	TL	(a)–(f)
		(d)	**NEW**		
Equilibrium	CI	(f)–(h)	Equilibrium	AI	(g)–(h), (j)
Inorganic chemistry and the periodic table	CI	(i)–(j)	Redox	AI	(k)
			Inorganic chemistry and the Periodic Table	AI	(l)
Sustainability	CI	(k)	Inorganic chemistry and the Periodic Table	AI	(n)–(o)

Polymers and life (PL)

NEW SPECIFICATION			LEGACY SPECIFICATION		
Structure and bonding	PL	(a)–(d) **+ RNA**	Organic functional groups	TL	(g)–(i)
			Organic reactions	TL	(k), (n)–(o)
		(e)	Structure and bonding	MD	(a)
Kinetics	PL	(f)	Kinetics	TL	(f)
		(g)	Organic reactions	TL	(l)–(m)
Equilibria (acid–base)	PL	(h)	Organic reactions	WM	(f)
		(i)	Organic reactions	TL	(j)
		(j)	Organic reactions	MR	(j),(l)
Organic functional groups	PL	(k)–(l)	Organic functional groups	MR	(e)–(f)
Organic reactions	PL	(m)–(n)	Organic reactions	MR	(i)–(j)
Polymers	PL	(o)–(p)	Organic reactions	MR	(g)–(h)
Isomerism	PL	(q)	Isomerism	TL	(q)
Modern analytical techniques	PL	(r)–(t)	Modern analytical techniques	WM	(q)
				MD	(j)–(k)

Oceans (O)

NEW SPECIFICATION			LEGACY SPECIFICATION		
Energetics	O	(a), (b), (d)–(g)	Energetics	DF	(g)–(h)
				O	(b)–(f)
		(c), (h)	**NEW**		
Equilibria (acid–base)	O	(i)–(m)	Equilibria	WM	(a)
				O	(j)–(n)
Energy and matter	O	(n)	Modern analytical techniques	A	(v)

Developing metals (DM)

NEW SPECIFICATION			LEGACY SPECIFICATION		
Formulae, equations and amount of substance	DM	(a)	Redox	SS	(f)
Bonding and structure	DM	(b)	Bonding and structure	SS	(d)
Redox	DM	(c)–(f)	Redox	SS	(e), (g)–(j)
Inorganic chemistry and the periodic table	DM	(g)–(m)	Inorganic chemistry and the Periodic Table	SS	(o)–(u)
			Modern analytical techniques	CD	(i)
Energy and matter	DM	(n)	Inorganic chemistry and the Periodic Table	SS	(v)

Colour by design (CD)

NEW SPECIFICATION			LEGACY SPECIFICATION		
Bonding and structure	CD	(a)–(b)	Bonding and structure	CD	(b)–(c)
Organic functional groups	CD	(c)–(f)	Organic functional groups	CD	(d)–(f)
				MD	(c)
Organic reactions	CD	(g)–(j)	Organic reactions	WM	(i)
				PR	(k)
				CD	(g)–(h)
				MD	(d)
Reaction mechanisms	CD	(k)–(l)	Reaction mechanisms	WM	(k)
			Organic reactions	MD	(e), (g)
Energy and matter	CD	(m)	Modern analytical techniques	CD	(j)
Modern analytical techniques	CD	(n)		CD	(k)

The small print

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