Long Term Plan: Chemistry Year 7



Half term	Unit title	Key knowledge/ Content to learn and retain	Essential skills to acquire (subject & generic)	Link to subject ethos and driver (rename)	Anticipated misconcepti ons	Links to previous KS	Links to future KS	Opportunity for stretch for high prior attainers	SMSC & British Values	Cultural Capital	Career Link
One	Atoms, Elements and Compounds	Elements, Mixtures and Compounds The periodic table Use of simple laboratory glassware Separating mixtures Chemical and physical changes Introduction to chemical reactions as re-arrangeme nt of atoms	Safe use of simple laboratory glassware Recording accurate data Presenting data in tabular and graphical form (HT Only - Balancing Chemical Equations)		Knowledge of subatomic particles is not required but staff should be careful not to imply atoms are indivisible Students may believe that there are atoms of everything, rather than just the 118 known elements	Students will have studied the concept of solubility and separation of mixtures in Year 5	This unit lays the foundation for all chemistry that will be studied at Archbishop Sentamu Academy; as the concept of atoms, how they bond, and the way they rearrange during a chemical reaction is fundamental to chemistry	Separation of complex mixtures that contain three or more components Using a line of best fit to estimate values Balancing equations		General knowledge of the periodic table as a fundamental concept of how the world works Understanding of the scientific method	As the central science, chemistry opens doors to a wide range of STEM field careers

Тwo	Atoms.	Elements.	Safe use of	Knowledge of	Students will	This unit lays	Separation of		General	As the central
	Elements and	Mixtures and	simple	subatomic	have studied	the	complex		knowledge of	science,
	Compounds	Compounds	laboratory	particles is	the concept of	foundation for	mixtures that		the periodic	chemistry
	Compounds	Compounds	glassware	not required	solubility and	all chemistry	contain three		table as a	opens doors
		The periodic	Supplied	but staff	separation of	that will be	or more		fundamental	to a wide
		table	Recording	should be	mixtures in	studied at	components		concept of	range of
			accurate data	careful not to	Year 5	Archbishop			how the	STEM field
		Use of simple		imply atoms		Sentamu	Using a line of		world works	careers
		laboratory	Presenting	are indivisible		Academy; as	best fit to			
		glassware	data in tabular			the concept of	estimate		Understanding	
			and graphical	Students may		atoms, how	values		of the	
		Separating	form	believe that		they bond,			scientific	
		mixtures		there are		and the way	Balancing		method	
			(HT Only -	atoms of		they rearrange	equations			
		Chemical and	Balancing	everything,		during a				
		physical	Chemical	rather than		chemical				
		changes	Equations)	just the 118		reaction is				
				known		fundamental				
		Introduction		elements		to chemistry				
		to chemical								
		reactions as								
		re-arrangeme								
		nt of atoms								
Three	Atoms and	Different	Writing word	Students often	This unit	Continuing	Using a line of		Understanding	As the central
	Reactions	types of	and symbol	confuse	builds directly	the theme	best fit to		of the	science,
		chemical	equations	oxidation,	on from the	from the last	estimate		scientific	chemistry
		reactions		burning and	previous unit	unit, the	values		method	opens doors
		including:	(HT Only)	thermal	of study;	concepts				to a wide
		combustion,	Balancing	decompositio	exploring	mastered here	Balancing		The uses of	range of
		oxidation,	chemical	n; so care	chemical	are	equations		many different	STEM field
		displacement	equations	must be taken	reactions in	fundamental			chemical	careers
		and thermal		to	more depth.	to chemistry	Considering		reactions in	
		decompositio	Recording	differentiate		and will be	the crossover		everyday life	
		n	accurate data	these.		re-visited and	between			
						built upon in	oxidation and			
		Introduction	Presenting and	Some		all future units	combustion			
		to the	interpreting	students may						
	1	1	data in tabular		1	1	1	1		1

		reactivity Chemical reactions as the rearrangemen t of atoms	and graphical form.	chemical reactions create new atoms - they don't, but rather rearrange atoms						
Four	Atoms and Reactions	Different types of chemical reactions including: combustion, oxidation, displacement and thermal decompositio n Introduction to the concept of reactivity Chemical reactions as the rearrangemen t of atoms	Writing word and symbol equations (HT Only) Balancing chemical equations Recording accurate data Presenting and interpreting data in tabular and graphical form.	Students often confuse oxidation, burning and thermal decompositio n; so care must be taken to differentiate these. Some students may believe that chemical reactions create new atoms - they don't, but rather rearrange atoms	This unit builds directly on from the previous unit of study; exploring chemical reactions in more depth.	Continuing the theme from the last unit, the concepts mastered here are fundamental to chemistry and will be re-visited and built upon in all future units	Using a line of best fit to estimate values Balancing equations Considering the crossover between oxidation and combustion		Understanding of the scientific method The uses of many different chemical reactions in everyday life	As the central science, chemistry opens doors to a wide range of STEM field careers
Five	The Earth and Atmosphere	The structure of the Earth. Different types of rock, including their	Drawing and labeling scientific diagrams Interpreting	Some students may label the mantle as liquid, but this is inaccurate.	This will be the first time that students have studied the Earth and Resources.	In key stage four, as part of the GCSE chemistry and GCSE trilogy science	Higher priority trainers can be challenged to identify possible	The importance of recycling. The use of renewable	How global warming and climate change affects the world at large,	Conservationi st Climate scientist

		composition	data presented	Many students		courses,	solutions to	resources.	including	Environmental
		and formation	in tabular and graphical form	define renewable and	At key stage two, students	students will study units on	climate change and	Human impact	disadvantaged communities	activist
		The	o of the second	nonrenewable	have studied	the Earth and	global	on the	worldwide.	Geography
		composition	Using data to	as "Can be	the Earth as a	how the	warming	environment,		
		of the	compare and	used again"	planet and its	atmosphere	taking into	including	How different	Geologist
		atmosphere,	evaluate	and "Can't be	position in the	has changed	account both	global	communities	-
		including		used again".	solar system;	over time;	human impact	warming and	and	Meteorologist
		human impact	Extended	However, this	and they have	including the	on the	climate	organisations	
		on the	Writing	is not correct.	also studied	human impact	environment	change and	across Britain	This unit
		atmosphere		Rather, they	materials and	on the	and economic	the	and the world	would also
			Reading and	need to be	simple	atmosphere.	and social	consequences	are tackling	need the
		The Carbon	following	defined in	material		consequences	thereof.	climate	foundations
		Cycle	flowchart	terms of being	properties	Students will	of		change.	we could
			diagrams	finite and		also study	interventions.			develop into
		Renewable		infinite.		renewable and				A career
		and				nonrenewable				working for
		nonrenewable				resources and				agencies such
		resources,				extend this				as the
		including				knowledge to				environment
		study of				include				agency
		recycling				life-cycle assessments.				
						and at triple				
						deeper study				
						of ceramics,				
						polymers, and				
						composite.				
Six	The Earth and	The structure	Drawing and	Some	This will be	In key stage	Higher	The	How global	Conservationi
	Atmosphere	of the Earth.	labeling	students may	the first time	four, as part	priority	importance of	warming and	st
			scientific	label the	that students	of the GCSE	trainers can	recycling.	climate	
		Different	diagrams	mantle as	have studied	chemistry and	be challenged		change affects	Climate
		types of rock,		liquid, but this	the Earth and	GCSE trilogy	to identify	The use of	the world at	scientist
		including their	Interpreting	is inaccurate.	Resources.	science	possible	renewable	large,	
		composition	data presented	Many students		courses,	solutions to	resources.	including	Environmental
		and formation	in tabular and	define	At key stage	students will	climate		disadvantaged	activist
			graphical form	renewable and	two, students	study units on	change and	Human impact	communities	
		The		nonrenewable	have studied	the Earth and	global	on the	worldwide.	Geography

composition of the atmosphere, including human impact on the atmosphere The Carbon Cycle Renewable and nonrenewable resources, including study of recycling	Using data to compare and evaluate Extended Writing Reading and following flowchart diagrams	as "Can be used again" and "Can't be used again". However, this is not correct. Rather, they need to be defined in terms of being finite and infinite.	the Earth as a planet and its position in the solar system; and they have also studied materials and simple material properties	how the atmosphere has changed over time; including the human impact on the atmosphere. Students will also study renewable and nonrenewable resources and extend this knowledge to include life-cycle assessments, and at triple deeper study of ceramics, polymers, and	warming taking into account both human impact on the environment and economic and social consequences of interventions.	environment, including global warming and climate change and the consequences thereof.	How different communities and organisations across Britain and the world are tackling climate change.	Geologist Meteorologist This unit would also need the foundations we could develop into A career working for agencies such as the environment agency
				polymers, and composite.				