YEAR 11 CURRICULUM INFORMATION – Chemistry		
	Spring 1	Spring 2
What will students be learning?	**Separate Science - C14 - The Earth's resources** Students will learn about the difference between finite and renewable resources. It is important that students understand that renewable resources are not an infinite supply, but are replaceable at a rate similar to the rate they are used up, whereas finite resources are used up faster than they can be replenished. Students understanding of finite and renewable resources should be applied to the need to reuse and recycle, and they should be able to describe and evaluate ways of reducing the use of finite resources, and carry out life cycle assessments on products. Students will then look at specific resources that we use, including water and metals (in particular copper). Students should be able to describe the different ways that water is treated, both to create potable water and to remove waste products so it is safe to release into the environment. Students have already met metal-ore extraction and electrolysis, and higher-tier students should have applied that knowledge to the extraction of copper, as well as understanding alternative biological methods used to extract copper. **Combined Science students** – will start revision of weaker areas	**Separate Science – C15 - Using our resources** Students will develop their understanding of rusting from KS3 to understand how both water and air are required for iron to corrode. They should be able to explain how the two methods for preventing rusting – barrier methods and sacrificial methods – disrupt the oxidation of iron and prevent corrosion. Students will also study a series of different material types – alloys, polymers, ceramics, glass, and composites. Students have previously met alloys and polymers in *Chapter C3* and *Chapter C11* respectively and students should have built upon this understanding. For each material, students should be able to identify key properties and link these to their common uses. Students will also study the Haber process and how it is carried out economically on an industrial scale. This builds extensively upon knowledge of equilibrium conditions in *Chapter C8* and students should be able to explain why the industrial conditions for the Haber process are described as a compromise. Students should also be able to recognise the importance of the Haber process in the production of ammonia, being able to explain how ammonia is an important feedstock in the production of fertilisers, both in the laboratory and industrially alongside potassium and phosphorus fertilisers. **Combined Science students** – will start revision of weaker areas
How will students be assessed?	C14 (The Earth's resources) Checkpoint Required practical – Analysis and purification of water samples from different sources, including pH, dissolved solids and distillation	C15 (Using our resources) Checkpoint

Literacy – What keywords will be taught?	Potable, pure, sustainable, finite, renewable, ground water, fresh water, sea water, rain water, filter, sterilise, organic matter, sewage, effluent, sludge, screening, agricultural, ore, extraction, phytomining, bioleaching, life cycle assessment, reduce, reuse, recycle	Corrosion, Sacrificial protection, Galvanise, Alloys, Monomers, Thermosoftening, Thermosetting, Manufacture, Fertiliser
What employability skills are being developed?	Analysing chemicals and their quantities	Skills such as investigative and analytical which can lead to careers as: Materials engineer, Materials scientist, Industrial engineer, Polymer scientist, Metallurgist, Inorganic chemist, Glass blower, Ceramic engineer
Wider Curriculum Links?	Business (supply and demand) Food tech (water supplies)	DT (Materials and their composition) Geography (Agriculture) Maths (Proportions)
What useful websites are there for this topic?	 Free science lessons  Primrose Kitten  Seneca  BBC Bitesize	 Free science lessons  Primrose Kitten  Seneca  BBC Bitesize
What wider reading could be done for this topic?	Textbooks: AQA Chemistry for GCSE Combined Science: Trilogy (Oxford) Textbooks: AQA Chemistry for GCSE Separate Science (Oxford)	Textbooks: AQA Chemistry for GCSE Combined Science: Trilogy (Oxford) Textbooks: AQA Chemistry for GCSE Separate Science
What else can students be doing independently to develop their understanding of this topic?	Exam questions Numeracy practice Practice and use of videos to recap the required practical carried out	Exam questions Numeracy practice