Curriculum map - Science

Year 10

These topics are taught in different orders dependent on the subject specialism of the teacher. This benefits the class as teachers can teach first in their specialism which facilitates forming solid relationships with their class and therefore more effective learning by students. In the same way as year 9 a different order also ensures smaller groups within practical lessons in order for effective learning to take place.

Assessments are completed after the topic has finished for lower stakes testing and within the end of year 10 test at the end of the year. Informal assessment that also takes place may include homeworks set on educake or exam questions on top of assessment for learning tasks that will take place in class. Practical skills are assessed within the GCSE through exam questions. During the required practicals there is a common proforma for writing up the method which ensures this is a standardised practice which will ready them for their GCSEs.

	Ideas Covered	Why is it Important?	Why Now?	Impact	Assessment
Organisation	Description and functions of the digestive system, respiratory system and circulatory system Concept and application of enzymes	This topic is focussed on the human body and how it functions. This is essential to understand how our body works	This topic links to prior content from year 7 (diffusion), year 8 (diet) and year 9 (active transport and osmosis)	Students will be able to list and explain the function of the various organs found in the digestive, circulatory and respiratory systems	Topic test and end of year assessment
Ecology	Methods of ecological sampling Problems and solutions to a rising human population	Humans can impact their environment and this module allows students to implement practical skills to assess the human impact on biodiversity	This topic links to year 8 content on ecosystems and is done at the beginning or the end of the year so outside field work is possible	Students will be able to describe how humans impact their environment and describe the required practical	Topic test and end of year assessment
Metal Reactivity	How the reactivity of metals can be determined Reactivity of the alkali metals, halogens and noble gases	This topic has some applications in the real world and also aids understanding of the organisation of the periodic table	This follows on from the group 1,7 and 0 topic in year 9 and is an ideal time to revisit this	Students will be able to describe how to conduct experiments in order to determine the reactivity of the alkali metals, halogens and noble gases	Topic test and end of year assessment
Quantitative Chemistry	Chemical calculations	This is a stretching topic	This is an early topic in the	Students will be able to calculate relative atomic	Topic test and end of year

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		for the students maths skills and develops problem solving skills	syllabus but it is taught later in order that the students have further maths skills before attempting some of the equations	mass, the percentage of an element in a compound and balance equations. Higher tier will also calculate solubility equations and reacting masses	assessment
Atmosphere	Evolution of the composition of the atmosphere	This explains not only about how our atmosphere enabled life but the current problems of global warming	This links in with many other environmental topic in this year	Students will be able to describe how the atmosphere of the Earth began and how it is now changing again	Topic test and end of year assessment
Using Resources	Using chemistry to break down sewage and purify water Conduct a life cycle assessment	This has many aspects that are applicable to real life situations and the life cycle assessment teaching contributes to the development of evaluation skills	This has links to both the atmosphere topic and the ecology topic also taught in year 10	Students will be able to describe how potable water is made, how wastewater is made safe and how to conduct an LCA	Topic test and end of year assessment
Electrolysis	The process of electrolysis	This explains how aluminium, that is used in many different real life situations, is obtained	This can be a challenging concept to grasp and therefore a better topic for year 10 then year 9	Students will be able to describe the process of electrolysis and how it is applicable to aluminium	Topic test and end of year assessment
Rate of reactions	How factors change the rate of reaction Reversible reactions Equilibria (H)	Reactions take place throughout real life and this topic explores factors that can speed up or slow down these reactions	This has a large practical element to it and therefore it is a good time to consolidate both practical skills and knowledge of practical equipment	Students will be able to explain what will change rates of reaction	Topic test and end of year assessment
Waves	Concept and measurement of waves The electromagnetic spectrum	Waves enable us to see, hear and change the channel on the TV. There are many other applications that are linked to the knowledge in this topic	This follows the waves topic in year 7, reinforcing the basics taught then and the applying them to the electromagnetic spectrum	Students will be able to describe transverse and longitudinal waves and how to measure wave speed	Topic test and end of year assessment

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Electricity	Further explanation and application of electricity	Simple electrical circuits, the mains electricity supply and how we keep safe when using mains electricity	Follows on from the year 8 electricity topic, reinforcing and building on the basic concepts covered in that topic	Students will understanding the basic working of electrical circuits and how we are kept safe when using electricity	Topic test and end of year assessment
Magnetism	Further explanation and application of magnetism	Simple concepts of magnetism and electromagnetic machines such as motors and generators.	Follows on from the year 8 topic, reinforcing and building on the basic concepts covered in that topic	Students will understand how simple electromagnetic machines such as motors and generators work	Topic test and end of year assessment