

Curriculum Map 2023-24						
Year 11						
Half term	Unit title with hyperlink to scheme of work	Unit summary	Skills & content covered	Skills & content revisited	Summary of formative marking, feedback and student response	Summative assessment schedule, including assessment criteria
Autumn Half-term 1	B7 Ecology	The Sun is a source of energy that passes through ecosystems. Materials including carbon and water are continually recycled by the living world, being released through respiration of animals, plants and decomposing microorganisms and taken up by plants in photosynthesis. All species live in ecosystems composed of complex communities of animals and plants dependent on each other and that are adapted to particular conditions, both abiotic and biotic. These ecosystems provide essential services that support human life and continued development. In order to continue to benefit from these services humans need to engage with the environment in a sustainable way. In this section we will explore how humans are threatening biodiversity as well as the natural systems that support it. We will also consider some actions we need to take to ensure our future health, prosperity and well-being.	<ol style="list-style-type: none"> 1. Communities 2. Abiotic and biotic factors 3. Adaptations 4. Feeding relationships 5. NP Sampling techniques 6. Water cycle 7. Carbon cycle 8. Decomposition (triple only) 9. P decomposition (triple only) 10. Impact of environmental change (triple only) 11. Biodiversity 12. Human impacts 13. Global warming 14. Maintaining biodiversity 15. Trophic levels (triple only) 16. Food production (triple only) 	<p>Biodiversity is vital to maintaining populations. Within a species variation helps against environment changes, avoiding extinction.</p> <p>Within an ecosystem, having many different species ensures resources are available for other populations, like humans. Explain how a lack of biodiversity can affect an ecosystem. Describe how preserving biodiversity can provide useful products and services for humans.</p> <p>Explain how variation helps a particular species in a changing environment.</p> <p>Explain how characteristics of a species are adapted to particular environmental conditions.</p> <p>Organisms in a food web (decomposers, producers and consumers) depend on each other for nutrients. So, a change in one population leads to changes in others.</p> <p>The population of a species is affected by the number of its predators and prey, disease, pollution and competition between individuals for limited resources such as water and nutrients. Describe how a species' population changes as its predator or prey population changes.</p> <p>Explain effects of environmental changes and toxic materials on a species' population.</p> <p>Combine food chains to form a food web.</p> <p>Explain issues with human food supplies in terms of insect pollinators.</p>	Seneca HW, in class teacher questioning, MCQ's, starter tasks	EOTT
Autumn Half-term 1	C7 Organic Chemistry	The chemistry of carbon compounds is so important that it forms a separate branch of chemistry. A great variety of carbon compounds is possible because carbon atoms can form chains and rings linked by C-C bonds. This branch of chemistry gets its name from the fact that the main sources of organic compounds are living, or once-living materials from plants and animals. These sources include fossil fuels which are a major source of feedstock for the petrochemical industry. Chemists are able to take organic molecules and modify them in many ways to make new and useful materials such as polymers, pharmaceuticals, perfumes and flavourings, dyes and detergents.	<ol style="list-style-type: none"> 1. Alkanes 2. Fractional Distillation 3. Alkenes 4. Cracking 5. Combustion of Hydrocarbons 6. Alcohols (Triple only) 7. Carboxylic Acids and Esters (Triple only) 8. Polymers (Triple only) 9. Structure Of DNA (Triple only) 	<p>Chemical formulae.</p> <p>Chemical Equations</p> <p>Chemical Reactions</p> <p>Combustion</p> <p>Separating Mixtures</p> <p>Genetics</p>	Seneca HW, in class teacher questioning, MCQ's, starter tasks	EOTT
Autumn 2	C8 Chemical Analysis	Analysts have developed a range of qualitative tests to detect specific chemicals. The tests are based on reactions that produce a gas with distinctive properties, or a colour change or an insoluble solid that appears as a precipitate. Instrumental methods provide fast, sensitive and accurate means of analysing chemicals, and are particularly useful when the amount of chemical being analysed is small. Forensic scientists and drug control scientists rely on such instrumental methods in their work.	<ol style="list-style-type: none"> 1. Formulations and Purity 2. Paper Chromatography 3. Gas Tests 4. Tests For Positive Ions 5. Tests for Negative Ions 6. Instrumental Analysis 	<p>Elements, Compounds, Mixtures</p> <p>Separating Mixtures</p>	Seneca HW, in class teacher questioning, MCQ's, starter tasks	EOTT
Autumn 2	P7 Magnetism and Electromagnetism	For this topic, the GCSE physics syllabus states that students should be able to: Describe the attraction and repulsion between unlike and like poles for permanent magnets and explain the difference between permanent and induced magnets Describe how to plot the magnetic field pattern of a magnet using a compass Draw the magnetic field pattern of a bar magnet showing how strength and direction change from one point to another Explain how the behaviour of a magnetic compass is related to evidence that the core of the Earth must be magnetic Describe how the magnetic effect of a current can be demonstrated Explain how the effect of an alternating current in one coil in inducing a current in another is used in transformers	<p>Magnetism syllabus topics included are:</p> <ol style="list-style-type: none"> 1. Electromagnetic induction 2. Electromagnets 3. Magnetic fields 4. Transformers 	<p>Magnetic poles, attraction and repulsion</p> <p>Magnetic fields by plotting with compass, representation by field lines</p> <p>Earth's magnetism, compass and navigation</p> <p>The magnetic effect of current, electromagnets, D.C. motors (principles only)</p>	Seneca HW, in class teacher questioning, MCQ's, starter tasks	EOTT
Spring 1	C9 Atmosphere	The Earth's atmosphere is dynamic and forever changing. The causes of these changes are sometimes man-made and sometimes part of many natural cycles. Scientists use very complex software to predict weather and climate change as there are many variables that can influence this. The problems caused by increased levels of air pollutants require scientists and engineers to develop solutions that help to reduce the impact of human activity	<ol style="list-style-type: none"> 1. Evolution Of The Earth's Atmosphere. 2. Greenhouse Gases. 3. Climate Change. 4. Carbon Footprint. 5. Atmospheric Pollutants. 	<p>Climate Change literacy task year 8.</p> <p>Earth's atmosphere.</p>	Seneca HW, in class teacher questioning, MCQ's, starter tasks	EOTT
Spring 1	C10 Using Resources	Industries use the Earth's natural resources to manufacture useful products. In order to operate sustainably, chemists seek to minimise the use of limited resources, use of energy, waste and environmental impact in the manufacture of these products. Chemists also aim to develop ways of disposing of products at the end of their useful life in ways that ensure that materials and stored energy are utilised. Pollution, disposal of waste products and changing land use has a significant effect on the environment, and environmental chemists study how human activity has affected the Earth's natural cycles, and how damaging effects can be minimised.	<ol style="list-style-type: none"> 1. Finite and Renewable Sources 2. Potable Water. 3. Waste Water 4. Analysing Water Required Practical 5. Life Cycle Assessments. 6. Recycling 7. Alternative Ways Of Extracting Metals (triple only) 	<p>Recycling/plastics - Ecology KS3.</p>	Seneca HW, in class teacher questioning, MCQ's, starter tasks	EOTT

Spring 2	P8 Space (Triple only)	<p>Those studying this topic are expected to learn about the important elements in our Solar System, such as the Sun, the planets, the moons, the dwarf planets, asteroids and comets. The GCSE physics syllabus states that you should be able to:</p> <p>Describe the life cycle of a star</p> <p>Describe the similarities and distinctions between the planets, their moons, and artificial satellites</p> <p>How scientists are able to use observations to arrive at theories such as the Big Bang theory</p>	<p>Space Physics syllabus topics included are:</p> <ol style="list-style-type: none"> 1. The expanding universe 2. The life cycle of a star 3. The Solar System 	<p>gravity force, weight = mass x gravitational field strength (g), on Earth $g=10 \text{ N/kg}$, different on other planets and stars; gravity forces between Earth and Moon, and between Earth and Sun (qualitative only)</p> <p>our Sun as a star, other stars in our galaxy, other galaxies</p> <p>the seasons and the Earth's tilt, day length at different times of year, in different hemispheres</p> <p>the light year as a unit of astronomical distance.</p>	Seneca HW, in class teacher questioning, MCQ's, starter tasks	EOTT
Revision, finishing units and End-of-year assessments						