

Programme of Study/Scheme of Work 2023-2024

Subject – Science

Year group: 10

Unit Outline. (Overview of what is being delivered in each half-term)	Key Skills to be developed	Methods used to develop skills. What tasks/activities will you use to maximise outcomes? (Based on deconstructing the tasks proven to be effective at KS 3/4)	Success criteria. (How will you know and record if pupils have learnt what is required?)	Cross curricular links. (What are the key skills which could be used in other subjects?)	Assessment /Criteria / Methods
<p><u>Autumn 1</u></p> <p>Cells and organisation</p> <p>Photosynthesis</p>	<p>Cells as the fundamental unit of living organisms, including how to observe, interpret and record cell structure using a light microscope</p> <p>the functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts</p> <p>the similarities and differences between plant and animal cells</p> <p>the role of diffusion in the movement of materials in and between cells</p> <p>the structural adaptations of some unicellular organisms</p> <p>the hierarchical organisation of multicellular organisms: from cells to tissues to organs to systems to organisms</p>	<p>Generic:</p> <p>PowerPoint presentations</p> <p>Group discussion</p> <p>Video clips</p> <p>Peer support/</p> <p>Matching activities</p> <p>Worksheets</p>	<p>Completion of mini tasks in lessons and formative assessment</p> <p>Home work</p> <p>Summative assessment</p>		<ul style="list-style-type: none"> - Individual feedback (WWW-EBI) - Peer marking - Self marking - Verbal feedback - Grading (Emerging, Developing, Secure) <p>Summative assessment</p>

Building up resilience, managing myself and communication.

	<p>the reactants in, and products of, photosynthesis, and a word summary for photosynthesis</p> <p>the dependence of almost all life on Earth on the ability of photosynthetic organisms, such as plants and algae, to use sunlight in photosynthesis to build organic molecules that are an essential energy store and to maintain levels of oxygen and carbon dioxide in the atmosphere</p> <p>the adaptations of leaves for photosynthesis</p>				
<p><u>Autumn 2</u></p> <p>Chemical reactions</p>	<p>Chemical reactions as the rearrangement of atoms representing chemical reactions using formulae and using equations</p> <p>combustion, thermal decomposition, oxidation and displacement reactions</p> <p>defining acids and alkalis in terms of neutralisation reactions</p> <p>the pH scale for measuring acidity/alkalinity; and indicators</p> <p>reactions of acids with metals to produce a salt plus hydrogen</p>	<p>Generic:</p> <p>PowerPoint presentations</p> <p>Group discussion</p> <p>Video clips</p> <p>Peer support/</p> <p>Matching activities</p> <p>Worksheets</p>	<p>Completion of mini tasks in lessons and formative assessment</p> <p>Home work</p> <p>Summative assessment</p>		<ul style="list-style-type: none"> - Individual feedback (WWW-EBI) - Peer marking - Self marking - Verbal feedback - Grading (Emerging, Developing, Secure) <p>Summative assessment</p>

	<p>reactions of acids with alkalis to produce a salt plus water</p> <p>what catalysts do</p>				
<p>Spring 1</p> <p>Light waves</p>	<p>The similarities and differences between light waves and waves in matter</p> <p>light waves travelling through a vacuum; speed of light</p> <p>the transmission of light through materials: absorption, diffuse scattering and specular reflection at a surface</p> <p>use of ray model to explain imaging in mirrors, the pinhole camera, the refraction of light and action of convex lens in focusing (qualitative); the human eye</p> <p>light transferring energy from source to absorber, leading to chemical and electrical effects;</p> <p>photosensitive material in the retina and in cameras</p> <p>colours and the different frequencies of light, white light and prisms (qualitative only);</p> <p>differential colour effects</p>	<p>Generic:</p> <p>PowerPoint presentations</p> <p>Group discussion</p> <p>Video clips</p> <p>Peer support/</p> <p>Matching activities</p> <p>Worksheets</p>	<p>Completion of mini tasks in lessons and formative assessment</p> <p>Work created for display</p> <p>Home work</p> <p>Summative assessment</p>		<ul style="list-style-type: none"> - Individual feedback (WWW-EBI) - Peer marking - Self marking - Verbal feedback - Grading (Emerging, Developing, Secure, Mastering) <p>Half term summative assessment</p>

	in absorption and diffuse reflection				
<u>Spring 2</u>	<p>The relationship between health and disease</p> <p>communicable diseases including sexually transmitted infections in humans (including HIV/AIDs)</p> <p>non-communicable diseases</p> <p>bacteria, viruses and fungi as pathogens in animals and plants</p> <p>body defences against pathogens and the role of the immune system against disease</p> <p>reducing and preventing the spread of infectious diseases in animals and plants</p> <p>the process of discovery and development of new medicines</p> <p>the impact of lifestyle factors on the incidence of non-communicable diseases</p>	<p>Generic:</p> <p>PowerPoint presentations</p> <p>Group discussion</p> <p>Video clips</p> <p>Peer support/</p> <p>Matching activities</p> <p>Worksheets</p>	<p>Completion of mini tasks in lessons and formative assessment</p> <p>Work created for display</p> <p>Home work</p> <p>Summative assessment</p>		<ul style="list-style-type: none"> - Individual feedback (WWW-EBI) - Peer marking - Self marking - Verbal feedback - Grading (Emerging, Developing, Secure, Mastering) <p>Half term summative assessment</p>

<p><u>Summer 1</u></p> <p>Atomic structure and the Periodic Table</p>	<p>A simple model of the atom consisting of the nucleus and electrons, relative atomic mass, electronic charge and isotopes the number of particles in a given mass of a substance the modern Periodic Table, showing elements arranged in order of atomic number position of elements in the Periodic Table in relation to their atomic structure and arrangement of outer electrons properties and trends in properties of elements in the same group characteristic properties of metals and non-metals chemical reactivity of elements in relation to their position in the Periodic Table</p>	<p>Generic: PowerPoint presentations Group discussion Video clips Peer support/ Matching activities Worksheets</p>	<p>Completion of mini tasks in lessons and formative assessment</p> <p>Work created for display</p> <p>Home work</p> <p>Summative assessment</p>		<ul style="list-style-type: none"> - Individual feedback (WWW-EBI) - Peer marking - Self marking - Verbal feedback - Grading (Emerging, Developing, Secure, Mastering) Half term summative assessment
--	--	---	--	--	---

<p>Summer 2</p> <p>Forces</p>	<p>Forces and fields: electrostatic, magnetic, gravity forces as vectors calculating work done as force x distance; elastic and inelastic stretching pressure in fluids acts in all directions: variation in Earth's atmosphere with height, with depth for liquids, up-thrust force (qualitative)</p>	<p>Generic: PowerPoint presentations Group discussion Video clips Peer support/ Matching activities Worksheets</p>	<p>Completion of mini tasks in lessons and formative assessment</p> <p>Work created for display Home work</p> <p>Summative assessment</p> <p>Completion of mini tasks in lessons and formative assessment</p> <p>Work created for display</p> <p>Home work</p> <p>Summative assessment</p>		<ul style="list-style-type: none"> - Individual feedback (WWW-EBI) - Peer marking - Self marking - Verbal feedback - Grading (Emerging, Developing, Secure, Mastering) Half term summative assessment
--------------------------------------	---	---	---	--	---