



HT1:	HT2:	Assessment	HT3:	HT4:	Assessment	HT5	HT6:	Assessment
<p>INTENT <u>Particle Model of Matter 6.3</u> We learn how the particle model is widely used to predict the behaviour of solids, liquids and gases (gas pressure) and how this has many applications in everyday life.</p> <p>Link to KS3 forces and solids, liquids and gases</p> <p>CL- Deep Sea Diver, Materials Engineer, Jeweller.</p> <p><u>Cell Biology 4.1</u> We explore how structural differences between types of cells enables them to perform specific functions within the organism. We learn about</p>	<p>INTENT <u>Quantitative Chemistry 5.3</u> We use quantitative analysis to determine the formulae of compounds and the equations for reactions. We learn about yield and atom economy.</p> <p>CL- Pharmacist and Chemical Engineer.</p> <p><u>Chemical Changes 5.4</u> We learn about the extraction of important resources from the earth makes use of the way that some elements and compounds react with each other and how easily they can be 'pulled apart'. We also learn about titrations.</p>	<p>Students will be assessed by a series of end of topic tests followed by a larger interleaved assessment at the end of the term.</p>	<p>INTENT <u>Bioenergetics 4.4</u> We explore how plants harness the Sun's energy in photosynthesis in order to make food. We also explore aerobic vs anaerobic respiration.</p> <p>Link to balancing equations in 5.3</p> <p>CL- Farmer, Gardener, Sports Athlete.</p> <p><u>Atomic Structure 6.4</u> We revisit the structure of the atom and how this links to ionising radiation. Nuclear fission/fusion.</p> <p>Recap bonding and DNA from cell biology</p> <p>CL- Medical Physicist, Radiographer, Radiation Protection Practitioner.</p>	<p>INTENT <u>Infection and Response 4.3</u> We study the pathogens which cause infectious disease in plants and animals. We also learn about monoclonal antibodies.</p> <p>Link to photosynthesis in 4.4</p> <p>CL- Pathologist, Doctor, Lab researcher.</p> <p><u>Energy Changes 5.5</u> We learn that energy changes are an important part of chemical reactions. The interaction of particles often involves transfers of energy due to the breaking and formation of bonds. We learn about chemical cells and fuel cells.</p> <p>Link to bioenergetics as examples of endothermic and exothermic reactions CL- Energy engineer.</p>	<p>Students will be assessed by a series of end of topic tests followed by a larger interleaved assessment at the end of the term.</p>	<p>INTENT <u>Ecology 4.7</u> In this section we will explore how humans are threatening biodiversity as well as the natural systems that support it. We also learn the factors which speed up the rate of decay and sustainable food production.</p> <p>Delivered in the warmer months for fieldwork</p> <p>CL- Ecologist, Marine Biologist, Conservationist, Sustainability Officer.</p> <p><u>Rate and Extent of Chemical Change 5.6</u> We learn that whilst the reactivity of chemicals is a significant factor in how fast chemical reactions proceed, there are many variables that can be</p>	<p>INTENT</p> <p>Interleaving of paper 1 topics covered</p> <p>Review of paper 1 exam</p> <p>Gap analysis of paper 1 assessments</p> <p>Revision following gap analysis</p> <p>CEW – whole school</p>	<p>Students will be assessed by a series of end of topic tests followed by a larger interleaved assessment at the end of the term</p>



<p>culturing microbes.</p> <p>Link to particles</p> <p>CL – Animal Technician, Biologist, Botanist, General Practitioner (GP), Hospital Doctor, Pharmacologist.</p> <p>Bonding, Structure and Properties of Matter 5.2</p> <p>We use theories of structure and bonding to explain the physical and chemical properties of materials including nanoparticles.</p> <p>CL- Materials Engineer, Nanotechnologist, Research and Development Manager.</p> <p>Atomic Structure</p>	<p>Link to ionic bonding in 5.2</p> <p>CL- Quarry Engineer, Geoscientist.</p> <p>Organisation 4.2</p> <p>We learn about the human digestive system which provides the body with nutrients and the respiratory system that provides it with oxygen and removes carbon dioxide. We will also learn how the plant's transport system is dependent on environmental conditions to ensure that leaf cells are provided with what they need for photosynthesis.</p> <p>CL- Dietitian, Cardiologist, Vet, Nutritionist,</p>		<p>Quantitative Chemistry 5.3</p> <p>We use quantitative analysis to determine the formulae of compounds and the equations for reactions. We learn about yield and atom economy.</p> <p>CL- Pharmacist and Chemical Engineer.</p>	<p>Atomic Structure 6.4</p> <p>We revisit the structure of the atom and how this links to ionising radiation. Nuclear fission/fusion.</p> <p>Recap bonding and DNA from cell biology</p> <p>CL- Medical Physicist, Radiographer, Radiation Protection Practitioner.</p>		<p>manipulated in order to speed them up or slow them down. We learn that some reactions are reversible and the yield can vary depending on the conditions.</p> <p>Link to energy changes</p> <p>Link to organisation (enzymes as catalysts)</p> <p>Link to limiting factors in Bioenergetics</p> <p>CL- Pollution Prevention Control Officer, Chemical Engineer, Chemical Technician, Materials Scientist.</p> <p>Waves 6.6</p> <p>We learn how waves carry energy from one place to another and how they carry information, including deflection of waves and sound waves.</p> <p>Link to atomic structure and taught</p>		
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<p><u>and the Periodic Table 5.1</u> We learn how arrangement of elements in the modern periodic table (including transition elements) can be explained in terms of atomic structure which provides evidence for the model of a nuclear atom with electrons in energy levels.</p> <p>Link to particles</p> <p>CL- Research Scientist, Chemist.</p>	<p>Phlebotomist, Surgeon.</p> <p><u>Energy 6.1</u> For the students to look at the different types of energy store, observe in everyday examples how they can be transferred and calculated and investigate the main energy resources.</p> <p>Link to KS3 energy resources</p> <p>CL- Energy Engineer, Oceanographer, Hydrologist.</p> <p><u>Electricity 6.2</u> We learn about electrical charge and current in series and parallel circuits. We also learn about the domestic uses of electricity and how it is supplied. We</p>					<p>before 5.9</p> <p>CL- Audiologist, Acoustic Engineer, Seismologist, Optometrist, Sound Engineer, Lightning Designer.</p>		
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CURRICULUM MAP – Year 10 TRIPLE SCIENCE
Each topic will cover the key enquiry processes,
relevant maths skills and cultural capital. See
corresponding schemes of work for more detail.



ST JAMES'
CATHOLIC HIGH SCHOOL

KEY
Biology
Chemistry
Physics

study static
electricity.

Link to electrons in
5.1

CL- Electronic and
Electrical Engineer.