

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

| 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. Link to KS3 forces and solids, liquids and gases</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 culturing microbes. Link to particles</p> | <p>INTENT <u>Atomic Structure 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. Link to particles</p> <p><u>Bonding, Structure and Properties of Matter 5.2</u> We use theories of structure and bonding to explain the physical and chemical properties of materials including nanoparticles.</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>Energy 6.1</u> We learn why limits to the use of fossil fuels and global warming are critical problems for this century. Link to particle model</p> <p><u>Organisation 4.2</u> 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>INTENT <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 study static electricity. Link to electrons in 5.1</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. Link to ionic bonding in 5.2</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>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. <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. Link to balancing equations in 5.3</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. Recap bonding and DNA from cell biology</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. Link to photosynthesis in 4.4</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. Link to bioenergetics as examples of endothermic and exothermic reactions</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> |