

KS3 Science at Trinity Academy Cathedral

By the end of KS3, we aim for students to have a broad and balanced knowledge of key topics that encourage the exploration and understanding of the world around them. Our curriculum encompasses the National Curriculum and follows a spiral structure, constantly building upon prior knowledge in order to reinforce understanding at a deeper level.

We aim for our students to develop into confident, resilient, and reflective learners who enjoy science and move on and up to be successful at GCSE, which we begin in year 9. We ensure that we also prepare students in both practical and mathematical skills, for them to fully access the curriculum and explore investigations scientifically. Additionally, we begin to expose all learners to ambitious career pathways and develop their confidence in making informed decisions regarding financial, social, ethical, and political issues through the discussion of 'THINK Big Questions'.

	Biology	Chemistry	Physics
Year 7	<p>The differences between species, how cells build up to organisms and how to use a microscope.</p> <p>Our digestive system, the effects of a healthy diet, and how poor diet can impact health.</p> <p>The role of diffusion in the body. Gas exchange in the lungs and the effects of smoking and lung damage.</p> <p>The structure and function of the skeleton, including joints and looking at the heart.</p> <p>Flowers, plants and their importance to us.</p> <p>Different transport systems in both animals and plants. This includes the circulatory system.</p>	<p>How we experience different states of matter and how matter is composed of atoms, compounds and mixtures.</p> <p>Introduction to the periodic table of elements, and the chemical and physical properties of those elements.</p> <p>An introduction to basic chemical reactions, including how we represent them and the different types.</p> <p>Acids, alkalis and neutralisation.</p> <p>What the Earth is made of and the rock cycle.</p> <p>Word equations in more detail focusing on displacement reactions and thermal decomposition.</p>	<p>How we experience forces, moments and how to measure them.</p> <p>How we experience speed, motion and how to measure and record the speed of objects.</p> <p>How we experience gravity.</p> <p>Measuring weight as a force, mass and the effect of mass on different planets.</p> <p>Magnets and their effects.</p> <p>Space and the structure of our solar system.</p> <p>Waves and their effects in mechanical situations, such as light, water and other vibrations.</p> <p>Sound waves and how echoes work.</p>

	Biology	Chemistry	Physics
Year 8	<p>Reproduction, including the menstrual cycle, gestation and birth.</p> <p>Leaves and how they are adapted for photosynthesis.</p> <p>Enzymes and how they function in both plants and animals.</p> <p>Food chains, webs and the interdependence of organisms.</p> <p>Work of Watson, Crick and Franklin.</p> <p>DNA mutations, and the importance of gene banks.</p>	<p>The periodic table, investigating properties.</p> <p>Elements, compounds and mixtures as well as a variety of separation techniques.</p> <p>Different methods of separating mixtures including filtration and chromatography.</p> <p>Composition of the atmosphere and the carbon cycle.</p> <p>The reactivity series and the use of carbon to refine metals.</p> <p>Recycling.</p> <p>The properties of gases and their application.</p>	<p>Comparison of waves to electromagnetic waves.</p> <p>Particle model including its limitations, as well as chemical and physical changes.</p> <p>The states of matter, chemical and physical changes and density.</p> <p>The transfer of thermal energy as well as the different types of energy stores.</p> <p>Series and parallel circuits, and the relationship between current, voltage and resistance.</p> <p>Mechanics of the eye and the interactions of light, colour and reflection.</p> <p>The ear.</p> <p>How ultrasound is used.</p>