



YEAR 11 SCIENCE 2023-2024

YEAR	TRINITY 2	MICHAELMAS 1	MICHAELMAS 2	LENT 1	LENT 2	TRINITY 1
11	<p>Big Idea: Forces Forces In this unit pupils will learn about scalar and vector quantities, interaction of forces, resultant forces and how to determine the overall resultant force. Pupils will also learn about acceleration, interpretation of distance time graphs and velocity time graphs, Newton's second law and terminal velocity, reaction times, stopping distances and momentum. They will also learn about forces and elasticity and investigate Hooke's law.</p> <p>Big Idea: Reactions Rate and Extent of Reactions In this unit pupils will learn about how to identify the rate of reaction from experimental data and graphs. They will also learn about the factors that affect the rate of reaction (temperature, concentration, pressure, surface area, catalysts) and link them to the collision theory. Pupils will also learn about reversible reactions, dynamic equilibrium and how to</p>	<p>Big Idea: Matter Big Idea: Reactions Organic Chemistry In this unit pupils will learn about the composition of crude oil, fractional distillation, hydrocarbons and their properties, reactions of hydrocarbons and cracking Chemical Analysis In this unit pupils will learn about pure substances, mixtures and formulations, separating substances using chromatography and how to test for gases.</p> <p>Big Idea: Waves Waves In this unit pupils will learn about the different types of waves and their properties, how to calculate wave speed, reflection and refraction of waves. Pupils will also learn about the electromagnetic spectrum, the properties of the waves and their uses.</p>	<p>Big Idea: Earth Chemistry of the Atmosphere In this unit pupils will learn about the Earth's atmosphere, origins and its evolution to the current atmosphere. Pupils will also learn about greenhouse gases and other pollutants and their impact on the atmosphere.</p> <p>Big Idea: Genes Inheritance, Variation and Evolution In this unit pupils will learn about sexual and asexual reproduction, cell division by meiosis, the structure of DNA and the human genome. They will also learn about genetic inheritance, inherited disorders and the benefits and risks of genetic screening. Pupils will learn about variation, selective breeding, genetic engineering before learning about evolution by natural selection and the evidence to support this. They will also learn how all living organisms are classified</p>	<p>Big Idea: Ecosystems Ecology In this unit pupils will learn about ecosystems, abiotic and biotic factors within them and how to sample the organisms within an ecosystem. Pupils will also learn about the relationships between organisms in an ecosystem including the feeding relationships, competition and adaptations that enable them to survive. They will also learn about the different cycles within an ecosystem such as the decay cycle, water cycle, carbon cycle. Pupils will learn about biodiversity, methods used to maintain biodiversity and the effects of land, air and water pollution on biodiversity.</p> <p>Big Idea: Electromagnetism Magnets and Magnetism In this unit pupils will learn about the properties of magnets, magnetic field, electromagnetism, the motor effect, Fleming's left hand rule and magnetic flux density.</p>	<p>Big Idea: Earth Using Resources In this unit pupils will learn about types of Earth's resources, the need for potable water, water purification, recycling materials and the need to carry out life cycle assessments.</p>	



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Big Idea: Organisms

Homeostasis and Response

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