

What are the aims and intentions of this curriculum?

The Year 11 Curriculum Intent is developed to inspire and challenge our students at Rosedale College of all abilities and aspirations.

The content is presented in an order that tells a coherent and logical story through physics, and is taught in the order that best suits our students. They are ten required practicals, and they are all linked to areas of the content where it would be most appropriate to teach them to embed skills and knowledge.

The Learning Objective/s below list clearly what our students need to know and be able to do. Further sections outline the opportunities to develop Scientific Communication Skills as well as the requirements for the skills in working scientifically, maths and practical assessment. Eight of the ten required practicals will be completed by our students following the Combined Science (Trilogy). The subject content is presented clearly, in a logical teaching order, with opportunities for skills development throughout the Scheme of Work. These Units of Study provide opportunities and preparation for progression onto Post 16 Sciences.

Term	Topics	Knowledge and key terms	Skills developed	Assessment
Summer 2	Physics <ul style="list-style-type: none"> • Forces • Observing and recording motion • Waves • Magnetism and electromagnetism 	Pupils will learn: <ul style="list-style-type: none"> - How to describe forces and their interactions, work done and energy transfer, and forces and elasticity. - How to describe the behavior of forces and motion, and momentum. - About waves in air, fluids and solids, and electromagnetic waves. - About permanent and induced magnetism, magnetic forces and fields, and the motor effect. 	Pupils are able to: <ul style="list-style-type: none"> - Use force and extension data to compare the behavior of different materials in deformation using the idea of proportionality. - Demonstrate that a force can cause an object to speed up, slow up, slow down or change the direction of moving object. - Explain that sound waves are mechanical and light waves are examples of electromagnetic waves which travel very quickly. - Demonstrate that magnets attract magnetic materials at a distance, and magnetism is a non-contact force. 	<ul style="list-style-type: none"> - Required practical: Hooke's Law - Required practical: Newton's law of motion - Required practical: Ripple tank - Required practical: Infrared radiation - End of Chapter Examination

Autumn 1	Chemistry <ul style="list-style-type: none"> • The rate and extent of chemical change • Organic chemistry • Chemical Analysis • Chemistry of the atmosphere • Using the earth's resources 	Pupils will learn: <ul style="list-style-type: none"> - About rate of reactions, reversible reactions and dynamic equilibrium. - About carbon compounds as fuels and feedstock, fractional distillation, hydrocarbons, cracking and alkenes. - About purity, formulations, chromatography and the identification of common gases. - The composition and evolution of the Earth's atmosphere, carbon dioxide and methane as greenhouse gases, and common atmospheric pollutants and their sources. - About using the Earth's resources and obtaining potable water, life cycle assessment and recycling. 	Pupils are able to: <ul style="list-style-type: none"> - Describe that some reactions are fast and some are slow. - Explain that crude oil, coal and natural gas are fossil fuel. - Demonstrate that coloured dyes can be analysed and separated by paper chromatography. - Debate that the Earth is getting warmer – this is called global warming. - Explain that useful products are made from the raw materials found on the Earth 	<ul style="list-style-type: none"> - Required practical: Rate of reactions (concentration, temperature or surface area) - Working scientifically - Required practical: Paper Chromatography - Required practical: Purification of water samples - End of Chapter Examination
Autumn 2	Biology <ul style="list-style-type: none"> • Homeostasis and the human nervous system • Hormonal coordination in humans • Reproduction 	Pupils will learn: <ul style="list-style-type: none"> - About homeostasis and the structure and function of the nervous system. - About homeostasis, the human endocrine system, hormones in human reproduction, contraception, hormones in infertility treatment and negative feedback. - About the structure of DNA, genes, chromosomes and genome. 	Pupils are able to: <ul style="list-style-type: none"> - Describe that the body consists of a range of different types of cells and systems. - Explain that the reproductive system includes the parts of the body concerned with reproduction in humans. - Explain the Human Genome Project, meiosis, protein synthesis, sexual and asexual reproduction, sex determination and other genetic inheritance. 	<ul style="list-style-type: none"> - Required practical: Reaction time - Working scientifically - End of Chapter Examination
Spring 1	Biology <ul style="list-style-type: none"> • Variation • The development of understanding of genetics and evolution. • Classification of living organisms 	Pupils will learn: <ul style="list-style-type: none"> - That variation helps species adapt to environment changes. - That biodiversity is vital to stop extinctions. - About traditional binomial classification and modern methods of classification. 	Pupils are able to: <ul style="list-style-type: none"> - Describe how a lack of biodiversity can affect an ecosystem. - Describe how preserving biodiversity can provide useful products and services for humans. - Describe the problems with classification. 	<ul style="list-style-type: none"> - Working scientifically - Chapter review - End of Chapter Examination

Spring 2	<p>Biology</p> <ul style="list-style-type: none"> • Adaptation, interdependence and competition • Organisation of an ecosystem • Biodiversity and the effect of human interaction an ecosystem 	<p>Pupils will learn:</p> <ul style="list-style-type: none"> - That there is competition within communities, interdependence and adaptations. - About the levels of organization, the carbon and water cycles, and the impact of environmental change. - About biodiversity, waste management, land use, deforestation, global warming, and maintaining diversity. 	<p>Pupils are able to:</p> <ul style="list-style-type: none"> - Describe that organisms (and species) in an ecosystem are dependent on other organisms (and species) in many ways, including as a food source. - Explain that all life on Earth depends on organisms that photosynthesise, producing food and maintaining levels of carbon dioxide and oxygen in the atmosphere. - Describe how humans are responsible for adding high levels of carbon dioxide to the atmosphere (climate change). 	<ul style="list-style-type: none"> - Working scientifically - Required practical: Quadrant sampling techniques - Chapter review - End of Chapter Examination
Summer 1	All topics revision content			