

<b>Subject</b>	Science
<b>Year Group(s)</b>	8

### Mission Statement

At Ratton we believe that Scientists need an author's words for communication, an athlete's skill and enjoyment of practical work, a geographer's respect and understanding of the wonders of the Earth and most importantly, the ethics and integrity to do what is right for all of humanity.

Term	Module Title	Module Overview
	<b>Earth – Climate</b>	In this unit students will learn about the composition of the Earth's atmosphere and how the balance of the gases is kept constant due to natural cycling of elements and compounds. Students will also study the effect of human activity on climate change and look at the possible consequences of global warming
	<b>Earth – Earth resources</b>	In this unit students will learn about the Earth's role as an important provider of raw materials. Students will study how the extraction of different metals from ores varies depending on the reactivity of the metal and gain an understanding of the importance of recycling materials in order to live sustainably.
	<b>Electromagnets - Current</b>	In this unit, students will be able to describe what current is, its role in making components work and construct circuits to allow them to measure current and elicit rules about how it is affected in both series and parallel circuits. Students will also investigate electrostatic charge and how electric field affects charged objects
	<b>Electromagnets – Voltage and Resistance</b>	In this unit, students will be able to describe what voltage is and construct circuits to allow them to measure voltage and elicit rules about how voltage is affected in both series and parallel circuits. Students will also investigate resistance and its effect on the current flowing in a circuit.
	<b>Forces – Pressure</b>	In this unit students will begin to understand the force of pressure acting in liquids and on surfaces and be able to explain their observations in terms of the forces acting in different situations.
	<b>Forces - Speed</b>	In this unit students will begin to understand how resultant forces acting on an object affects its motion and speed. Students also are required to develop their numeracy skills by calculating the speed of an object and drawing and analysing distance –time graphs to represent motion.
	<b>Genes – Evolution</b>	In this unit students will learn about the theory of Natural Selection and how this gives rise to evolution of species. Students will also learn about the importance of biodiversity and the need to live sustainably in order to preserve this.
	<b>Genes - Inheritance</b>	In this unit students will learn about the organisation of the human genetic material and how patterns of inheritance can explain the similarities and differences between parents and offspring. Students will also learn about the implications of genetic mutations.
	<b>Ecosystems - Photosynthesis</b>	In this unit students will learn about the process of photosynthesis and how the plant uses the products of the reaction in different ways. Students will also learn about the adaptation of different tissues and structures in plants to allow for efficient photosynthesis.

	<b>Ecosystems - Respiration</b>	In this unit students will learn about the process of respiration and how the body can respire aerobically or anaerobically depending on the conditions and our needs at that time. Students also learn about how we can use anaerobic respiration in yeast for brewing and baking
	<b>Organisms - Breathing</b>	In this unit students will learn about how the body is adapted to allow for efficient gas exchange in the lungs and which lifestyle and health factors may affect this. Students will also learn about the differences between aerobic and anaerobic respiration
	<b>Organisms - Digestion</b>	In this unit students will learn about the importance of a healthy balanced diet and the processes that occur in our body to digest the large food molecules into smaller, soluble ones.
	<b>Reactions – Chemical energy</b>	In this unit students will learn why it is that some chemical reactions get hotter and some get colder and be able to link their observations to the energy transfers happening during chemical bond breaking and making in a reaction.
	<b>Reactions – Types of reaction</b>	In this unit students will learn about different types of chemical reaction and represent them with both word and symbol equations
	<b>Waves - Light</b>	In this unit, students will construct ray diagrams from practical investigations to show how light rays behave when they are reflected, refracted and dispersed and be able to explain how images are formed in mirrors.
	<b>Waves – Behaviour of waves</b>	In this unit students will learn about the behaviour of waves in terms of their movement, reflection, transmission and absorption by a medium