

Science

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.

Year 7

Module Title	Module Overview
Earth – Earth Structure	In this unit, students will investigate the causes of weathering and erosion of rocks and describe how they occur as part of the rock cycle. Students will also learn about the layered structure of the Earth.
Earth – Universe	In this unit, students will be able to describe the appearance of planets or moons from diagrams showing their position in relation to the Earth and Sun and be able to explain why day and night and the Seasons occur. Students will also investigate the possibilities and limitations of space exploration.
Forces – Contact Forces	In this unit, students will explore the effects of balanced and unbalanced force pairs on objects and be able to describe and explain the observations they make in terms of resultant forces.
Forces - Gravity	In this unit students explore the relationship between mass and gravity, how the force of gravity is affected by different factors and the role of gravity in keeping the planets in orbit around the Sun.
Genes – Human Reproduction	In this unit, students will learn about the male and female reproductive system, the stages of development of the foetus and the role of the menstrual cycle in fertility. Students will also learn about how the lifestyle choice of a pregnant woman can have an impact on the growth and development of the unborn foetus.
Genes - Variation	In this unit, students will be able to identify examples of genetic and environmental variation and discuss the importance of variation within a species in order for it to survive.
Matter - Particle Model	In this unit students will begin to understand that all matter is made of particles and develop the ability to use the particle model to explain how materials can change state from solids to liquids and gases .
Matter – Separating Mixtures	In this unit, students will be able to describe the defining features of elements, compounds and mixtures and explore different methods of separating mixtures.
Organisms - Cells	In this unit, students will investigate the structure of the cell and how in multicellular organisms, these cells are organised into tissues, organs and organ systems to carry out life processes. Students will also look at specialised cells and be able to link their adaptation to a particular role.
Organisms - Movement	In this unit, students will learn that parts of the human skeleton work as a system for support, protection, movement and the production of new blood cells. Students will also be able to explain how antagonistic pairs of muscles create movement when one contracts and the other relaxes.
Reactions – Acids and	In this unit, students will learn the features of acids and alkalis, the role

Alkalis	of indicators and investigate the neutralisation reaction and its uses.
Reactions – Metals and non-metals	In this unit, students will be investigating the reactions of metals and non-metals with oxygen, the reaction of metals with acids and using investigations into reactivity to construct a reactivity series which can be used to make predictions about the behavior of unknown elements in chemical reactions.
Energy – Energy costs	In this unit, students will compare the amounts of energy transferred by different foods and activities, compare the energy usage and cost of running different home devices and explain the advantages and disadvantages of different energy resources.
Energy – Energy Transfers	In this unit, students will investigate energy transfers and be able to describe and explain the Law of Conservation of Energy.
Ecosystems - Interdependence	In this unit, students will be able to construct and analyse food chains and webs, predicting the effects of changing populations within the food webs and the impact of environmental factors.
Ecosystems – Plant reproduction	In this unit, students will be able to label the parts of the plant involved in sexual reproduction, be able to describe the sequence of events leading to seed formation and evaluate the different methods of seed dispersal.