SCIENCE

Junior Science helps students prepare for an increasingly technology based life in the 21st century. Our Junior units will emphasise these skills. It will also prepare our students for a broad range of career paths.

In the science modules students will **question, predict, plan, conduct experiments, process, analyse and evaluate information, and communicate their ideas.**

In year 8 and 9 and 10 students will study a full year of science which will include the modules outlined below.

YEAR 8 MODULES INCLUDE

EARTH AND SPACE SCIENCE
• rock types (Igneous, Sedimentary and Metamorphic), how they were formed and the minerals they are made of.
BIOLOGICAL SCIENCE
• cells, the structures within cells, and how the structures have special functions. • how multi-cellular organisms have specialised organs and how the organs have specialised functions that enable then to survive and reproduce.
CHEMISTRY
• the properties of the various states of matter (solid, liquid, gas) in terms of how the particles of matter move and how the particles are arranged in each state, • the differences between elements compounds and mixtures as described by the particles that they are made of. • how chemical change involves formation of new substances.
PHYSICAL SCIENCES
• forms of energy including Kinetic, Potential and Heat energy as well as how energy can cause change within systems.

YEAR 9 MODULES INCLUDE

EARTH AND SPACE SCIENCE
• the theory of plate tectonics, continental movement and the effect on global patterns.
BIOLOGICAL SCIENCE
• how multi-cellular organisms rely on their internal systems to respond to external changes and maintain their functioning. • how ecosystems consist of communities of independent organisms, are made up of biotic and abiotic factors and how matter and energy flow through an ecosystem.
CHEMICAL SCIENCES
• atoms and their components ie. protons, neutrons and electrons. • natural radioactivity and how atoms decay over time. • chemical reactions and how atoms are rearranged to form new substances. During a chemical reaction mass is not created nor destroyed. • chemical reactions such as combustion and the reactions of acids, are important in both living and non-living systems and involve energy transfer.
PHYSICAL SCIENCES
• how forms of energy are transferred in a variety of ways through different mediums.

YEAR 10 MODULES INCLUDE

EARTH AND SPACE SCIENCES
• features of the universe such as galaxies, stars and solar systems, the Big Bang Theory and how the universe began. • how Global Systems including the Carbon Cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere.
BIOLOGICAL SCIENCE
• how characteristics are transferred from one generation to another via the DNA and genes. • Biodiversity, the theory of evolution by natural selection and the range of scientific evidence that supports the theory.
CHEMICAL SCIENCES
• Atomic structure, properties of elements and how they are organised into the Periodic Table. • types of chemical reactions and their products as well as the rates of reactions.
PHYSICAL SCIENCES
• energy conservation in a system can be explained by describing energy transfers and transformations. • how the motion of objects can be described and predicted using the laws of physics.