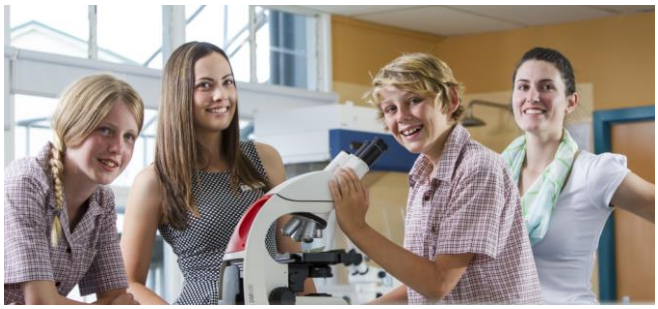
Year 9 Core Science

Overview

Core Science is compulsory in year 9. The course builds on the knowledge and skills developed in previous years. Core Science conforms to the Australian Curriculum where students learn scientific experimental and research skills and study scientific theory.

Students wishing to continue studying science subjects in years 11 and 12 should perform well in core science in year 9. Those students interested in agriculture should consider the *Agricultural Science* elective.

In Year 9, students consider the operation of systems at a range of scales. They explore ways in which the human body as a system responds to its external environment and the interdependencies between biotic and abiotic components of ecosystems. They are introduced to the notion of the atom as a system of protons, electrons and neutrons, and how this system can change through nuclear decay.



Students learn that matter can be rearranged through chemical change and that these changes play an important role in many systems. They are introduced to the concept of the conservation of matter and begin to develop a more sophisticated view of energy transfer. They begin to apply their understanding of energy and forces to global systems such as continental movement.

Topics studied

Energy on the move	Students discover that energy transfer through different mediums can be explained using wave and particle models.
Movement on the earth's surface	Students will understand that the theory of plate tectonics explains global patterns of geological activity and continental movement.
Inside the Atom	Students learn that all matter is made of atoms which are composed of protons, neutrons and electrons; natural radioactivity arises from the decay of nuclei in atoms.
Nature of science and experimentation	Students appreciate that the scientific method can be used to answer questions and learn new knowledge.
Responding to the world	Students learn that multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment
Systems of life	Students will discover that ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems.
Chemical change	Students will understand that chemical reactions involve rearranging atoms to form new substances; the law of conservation of matter. They will also discover that chemical reactions are important in both non-living and living systems and involve energy transfer.

Study Pathways