

# Year 10 Science 2018 Index



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## Subject Code Information:

**Subjects with an A or B in their name:** these subjects are Semester long units that can be studied individually or together to make a full year subject. There is **no** assumption that A has been studied before students can undertake the B option. Some subjects highly recommend both are studied (see course descriptions).

**Subjects with a 1 or a 2 in their name:** these subjects are sequential. Before students can study the 2<sup>nd</sup> option they must undertake the 1<sup>st</sup> option. There **is** an assumption that students know the content of the 1<sup>st</sup> option before they undertake the 2<sup>nd</sup> to enable them to be successful.

**Length:** 2 Semesters

**Assumed Knowledge:**

Years 8 & 9 Science

**Description:**

This is a course designed for those students intending to study Stage 1 Chemistry and/or Stage 1 Physics and possibly any Stage 2 Science.

Science Studies addresses the Australian Curriculum Science Understandings in the Achievement Standards of:

- Biological Sciences
- Earth and Space Sciences
- Chemical Sciences
- Physical Sciences

Science as a Human Endeavour and Science Enquiry Skills will also be addressed through these topics over years 9 and 10.

By the end of Year 10, students analyse how the periodic table organises elements and use it to make predictions about the properties of elements. They explain how chemical reactions are used to produce particular products and how different factors influence the rate of reactions. They explain the concept of energy conservation and represent energy transfer and transformation within systems. They apply relationships between force, mass and acceleration to predict changes in the motion of objects. Students describe and analyse interactions and cycles within and between Earth's spheres. They evaluate the evidence for scientific theories that explain the origin of the universe and the diversity of life on Earth. They explain the processes that underpin heredity and evolution. Students analyse how the models and theories they use have developed over time and discuss the factors that prompted their review.

Students develop questions and hypotheses and independently design and improve appropriate methods of investigation, including field work and laboratory experimentation. They explain how they have considered reliability, safety, fairness and ethical actions in their methods and identify where digital technologies can be used to enhance the quality of data. When analysing data, selecting evidence and developing and justifying conclusions, they identify alternative explanations for findings and explain any sources of uncertainty. Students evaluate the validity and reliability of claims made in secondary sources with reference to currently held scientific views, the quality of the methodology and the evidence cited. They construct evidence based arguments and select appropriate representations and text types to communicate science ideas for specific purposes.

ICT skills will also be developed in this course.

**Assessment Details:**

Assessment will be made using a combination of assignment work, practical work and tests.

For more information on Australian Curriculum please visit:

<http://www.australiancurriculum.edu.au>

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**Length:** 2 Semesters

**Assumed Knowledge:**

Years 8 & 9 Science

**Description:**

A general Science course designed for Year 10 students who **do not** intend in studying Science as part of the SACE.

Science General addresses the Australian Curriculum Science Understandings in the Achievement Standards of:

- Biological Sciences
- Earth and Space Sciences
- Chemical Sciences
- Physical Sciences

Science as a Human Endeavour and Science Enquiry Skills will also be addressed through these topics over years 9 and 10.

Science General covers the same content as Science Studies, but is presented and assessed with a greater emphasis on practical and assignment work. This means that this subject **will not** adequately prepare students to undertake Chemistry or Physics at Stage 1 of the SACE, but will meet the requirements of Year 10 Australian Curriculum.

ICT skills will also be developed in this course.

***Students who wish to study Stage 1 Chemistry and/or Stage 1 Physics and/or Stage 2 Biology and Nutrition in future years should choose Year 10 SCIENCE STUDIES.***

**Assessment Details:**

Assessment will be from a combination of assignment work, practical work and tests.

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**Length:** 1 or 2 Semesters

**Assumed Knowledge:**

None (Year 9 Agricultural Science recommended).

**Description:**

A general unit designed to meet the needs of students from diverse backgrounds. This unit addresses animal welfare and working safely on the RHS farms. Students study a range of food and fibre production topics from both livestock and horticulture. Topics which may be covered include: soils, plant propagation, livestock breeding, nutrition, reproduction and predator control. The unit uses vineyard production to cover a broad range of plant science topics and sheep production to cover a broad range of animal science topics. Students are expected to participate in the general running of the RHS farms as a method of improving farming skills.

This course will enable students to develop a solid base of skills and knowledge for further Agricultural or Horticultural studies.

**Assessment Details:**

Regular tests, written assignments, practical skills.

**Future:**

Future studies in Agriculture or Horticulture.

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