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Science Year 10
Agriculture A & B Year 10
STEM Year 10

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 2nd option they must undertake the 1st option. There is an assumption that students know the content of the 1st option before they undertake the 2nd to enable them to be successful.
Science

Year 10

Length: 2 Semesters

Assumed Knowledge:
Years 8 & 9 Science

Description:
This compulsory Science course builds on knowledge and skills developed in Year 9.

Students will learn about basic chemistry and investigate the structure and purpose of the periodic table. They will design a chemical timer to highlight their understanding of rates of reactions and look at a range of chemical reactions from the world around them. This topic is followed by unit looking at DNA and genetics. In this topic students discover the structure and function of DNA and how it contributes to genetic traits and variation. Students will learn about Charles Darwin and investigate the theory of evolution and natural selection. Road Science will also be a focus. This topic acts as an introduction to Newton’s laws and basic physics. Students will then investigate the transfer of energy in various models and establish links with physics and car safety. Students will also design an investigation into global systems, looking at various cycles and interactions within the Earth’s spheres. The final topic for the year is about the origin of universe in which students analyse the quality of evidence in relation to the big Bang.

The following topics provide the framework for learning in Year 10 Science:

- Road Safety
- Genetics
- Evolution
- Trends of the Periodic Table
- Chemical Reactions
- The Universe
- Global Systems

Assessment Details:
Evidence of student achievement will be collected against a number of practical investigations, STEM inquiries, tests and research tasks.

For more information on Australian Curriculum please visit: http://www.australiancurriculum.edu.au

Future:
Stage 1 Biology, Stage 1 Chemistry, Stage 1 Nutrition, Stage 1 Physics, Stage 1 Psychology

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Agriculture A & B Year 10

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.

Selected students* will also get an opportunity to participate in Royal Adelaide Show for Merino Wether competition.

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

*See subject Coordinator for more info.

Assessment Details:
Written assignments and practical skills.

Future:
Future studies in Agriculture or Horticulture.
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**Description:**
Science, Technology, Engineering and Mathematics (STEM) are essential areas of study that foster students’ skills and prepare them to participate in a rapidly changing world and contribute to Australia’s future development and prosperity.

This is an elective unit offered to year 10 students who have a passion and aptitude for STEM to participate in activities which further enhance and extend their understanding of STEM concepts, skills, applications, subjects and career pathways.

Within this subject, students will engage in a range of Inquiry based learning activities and explore these using both Scientific methods and the Engineering Design process.

Possible Topics could include:

- A Mission to Mars
- Drones in Agriculture
- Zombie Apocalypse
- Designing a Playground
- Eco Design
- Natural Disasters: Operation Survival
- Indigenous Weapons
- Industry Based Challenges

Throughout all of these topics, students will further develop their critical and creative thinking skills, as well as their understanding of each of the four STEM disciplines.

**Assessment Details:**
Students will be assessed on a portfolio of work, where they will complete two independent inquires, one collaborative inquiry and one Science as a Human Endeavour research task.

This program will be assessed using as Stage 1 Scientific Studies.

**Future:**
Stage 1 Biology, Stage 1 Chemistry, Stage 1 Nutrition, Stage 1 Physics, Stage 1 Psychology