



SANTA MARIA
COLLEGE

Science Electives

Why do we need to learn this? It is the cry of students all over the world when confronted with a Science textbook.

Often these texts are full of abstract concepts with seemingly no relevance to a child's future. Great teachers bring these concepts to life, but at Santa Maria College, we go a step further. We show our students exactly what a future in science could look like by offering four Science electives. Each of these electives Connect Learning to Life and involve working with real life scientists from a number of organisations and universities.

Year 7 STEngineers



STEngineers harnesses student's natural curiosity and creativity to innovate possible solutions to real world problems. The students are guided through the Design Thinking process, to understand issues and then design, create, test, evaluate and improve their solutions.

Finally, the girls present their concepts using various forms of media to demonstrate their learning, particularly in the Personal and Thinking Attributes domains.

A key focus of this elective is to expose students to innovative thinking outside of the school environment by partnering with university and industry mentors, such as Engineers Australia.

**#Curiosity, #Creativity, #Problem solving,
#Resilience, #Critical thinking**

Year 9 Marine Science



The majority of Australia's inhabitants live along its coastline, a wonderful resource for recreation, employment, industry and tourism. Understanding our oceans is critical to developing appropriate conservation and measures for its long-term survival. The Marine Science course provides students with knowledge of marine plants, animals and the environment, along with practical skills for researching marine habitats.

Students have the opportunity to work with organisations such as Swan River Trust, Sea Shepherd and the Department of Parks and Wildlife. Field work may include Swan River studies, a Penguin Island tour and a visit to AQWA.

**#Stewardship, #Respect, #Creativity, #Collaboration,
#Analytical Skills, #ICT Capabilities**

Year 8 Science Quest



Students design and conduct a range of scientific investigations, particularly into areas of personal interest. Through this elective, students develop skills in researching, planning and carrying out experiments to investigate real-world issues.

For example:

- Solutions to environmental issues.
- Aquaponics maintenance and testing.
- The use of biodegradable materials to reduce landfill.
- 3D printing solutions for engineering problems.

Student projects are presented to various audiences and may be entered into local and national competitions through Engineers Australia, CSIRO and SciTech.

**#Analytical skills, #Adaptability, #Problem solving,
#Resilience, #Confidence**

Year 10 BrainSTEM



BrainSTEM allows students to explore cutting-edge science, above and beyond the regular curriculum. Neuroscience and biotechnology are two fields of great interest to those researching possible causes and treatments of diseases. Students will investigate how the nervous system coordinates the body and the impact of various diseases and the environment on its function.

Students will work with researchers from Murdoch University and the Harry Perkins Institute to learn how neuroscience and biotechnology offer hope to those suffering neurological and other diseases.

**#Initiative, #Critical Thinking, #Adaptability,
#Analytical Skills, #Confidence**