

STEM at Glen Iris Primary School FAQ

What is STEM?

STEM education is a teaching and learning approach where the curriculum areas of Science, Technologies (Design and Technologies including the context of Engineering and Digital Technologies) and Mathematics are integrated, enabling a deeper engagement in each of the disciplines. STEM education aims to bring these curriculum areas together in an interdisciplinary and/or transdisciplinary manner enabling skills such as critical and creative thinking, ethical decision-making, collaboration and communication to be used in a rich and authentic way.

Science often fuels technological advances. A single new technology general relies on many different scientific ideas. (University of California Museum of Paleontology, 2014).

Why do we need it?

The Department of Education and Training (DET) released a document called “STEM in the Education State” which stated that there is:

a greater need for STEM capabilities than ever before. Our employers are increasingly looking for workers who are creative problem solvers, innovative and critical thinkers, and able to use new technologies. (2016)

The Office of the Chief Scientist has suggested that 75% of the fastest growing occupations require STEM knowledge and yet overall student results in Australia in science and mathematics are declining.

In addition to the career opportunities that STEM education may provide is the opportunity to improve student engagement and participation, encourage active learning and address some real world problems and challenges through an innovative and stimulating STEM education program.

Where does STEM fit into the Victorian Curriculum?

The Victorian Curriculum F-10 is:

- derived from the Australian Curriculum
- comprised of eight learning areas and four capabilities, with each learning area/capability having their own content descriptions and achievement standards.

STEM is directly related to the learning areas of: Science, Technologies, and Mathematics.

LEARNING AREAS	CAPABILITIES
The Arts <ul style="list-style-type: none">• Dance• Drama• Media Arts• Music• Visual Arts• Visual Communication Design	Critical and Creative Thinking Ethical Intercultural Personal and Social
English	
Health and Physical Education	
The Humanities <ul style="list-style-type: none">• Civics and Citizenship• Economics and Business• Geography• History	
Languages	
Mathematics	
Science	
Technologies <ul style="list-style-type: none">• Design and Technologies• Digital Technologies	

What does STEM education look like at GIPS?

To ensure consistency throughout the school all units reflect curriculum guidelines and a variety of teaching and learning approaches including inquiry based learning, problem based learning, design process and creative learning.

Within an inquiry unit of work, multiple curriculum areas are combined. At least one inquiry topic each semester at GIPS will incorporate the STEM learning focus into their broader program and include maths, digital technology, design and technology and other related subjects and capabilities.

The term newsletter gives parents information on upcoming inquiry topics.

Are there any useful resources that can give me additional information about STEM or provide examples of STEM activities?

- <http://education.abc.net.au/home#!/resources> previously called ABC Splash; this site has a range of resources, including videos and lesson plans, about coding, robotics, nanotechnology, design solutions, engineering, construction, makerspaces, careers and news.
- http://www.sciencemuseum.org.uk/educators/classroom-resources/activities/eyf_teacher_pack - classroom resources K-10 and Engineer Your Future resource pack.
- www.resourcesmartschools.vic.gov.au/ - ResourceSmart Schools is a Victorian Government initiative that helps schools benefit from embedding sustainability in everything they do. Schools take action to minimise waste, save energy and water, promote biodiversity and reduce greenhouse gas emissions.
- www.coolaustralia.org/ - Cool Australia is a leading not-for-profit organisation dedicated to supporting teachers with high quality teaching tools, resources and professional development courses

For more information on the Victorian Curriculum

Science <http://victoriancurriculum.vcaa.vic.edu.au/science/curriculum/f-10>

Design and Technologies <http://victoriancurriculum.vcaa.vic.edu.au/technologies/design-and-technologies/curriculum/f-10>

Digital Technologies <http://victoriancurriculum.vcaa.vic.edu.au/technologies/digital-technologies/curriculum/f-10>

Mathematics <http://victoriancurriculum.vcaa.vic.edu.au/mathematics/curriculum/f-10>

Critical and Creative Thinking <http://victoriancurriculum.vcaa.vic.edu.au/critical-and-creative-thinking/curriculum/f-10>

Personal and Social Capabilities <http://victoriancurriculum.vcaa.vic.edu.au/personal-and-social-capability/curriculum/f-10>