



Melbourne Archdiocese
Catholic Schools

Professional Learning



Engineering Challenges for a Changing World

Exploring the 'E' in STEM:
Applying Science & Mathematics in real world contexts

"...While subject knowledge is important, employers really want people who can find and solve problems, think in three dimensions, understand systems and constantly adapt and improve processes." Bill Lucas 2017

Overview

Contextualising Science and Mathematics in real-world applications supports learner engagement, deep learning and the full flourishing of learners as envisioned in *MACS 2030: Forming Lives to Enrich the World*.

Description:

This professional learning activity is held in conjunction with Akorn Education and Brickulum, providing engineering and STEM-based expertise for planning educational opportunities.

The program will provide theory and practice exploring systems thinking, different types of engineering and investigate the application of scientific and mathematical concepts in the context of engineered solutions to real world problems. Through building challenge workshops we'll explore themes addressing curriculum areas:

- Simple machines
 - Force & movement – levers, pulleys, inclined planes, wheel & axle.
 - Energy – kinetic, potential, mechanical
- Structural engineering
 - Forces – compression and tension, loads
 - Measurement – dimensions, analysis of strength to weight ratios.
 - Structural efficiency of 3D shapes - triangles, columns, arches
 - Materials
- Engineering Design Process
 - Design & Digital Technologies
 - Creating solutions with LEGO

Teachers will leave empowered to engage students with engineering and design principles in the classroom.

Register for this activity in OPL via the CEVN website

Activity Name	Engineering Challenges for a Changing World
Activity Code	24SCI502A
Activity Date	Thurs 9 th May, Thurs 23 rd May, Thursday 6 th June
Closing Date	Friday 3 rd May
Contact	Shelley Waldon (Science & STEM Lead)
Email	swaldon@macs.vic.edu.au
Phone	03 9267 0228

When

Seminar 1 – (1 hour online)
Engineering & Design in the Curriculum

Thursday 9th May (3.45 – 4.45)

Seminar 2 – (1 hour online)
Forces, Structures & STEM for Humanity

Thursday 23rd May (3.45 – 4.45)

Practical – whole day workshop
Thursday 6th June (8.30 – 4.00)

Where

Seminars 1 & 2 – online.

Registered participants will be sent a link to join the Zoom sessions and access recordings of the webinars.

Practical Day

Catholic Leadership Centre
576 Victoria Parade
East Melbourne

Who should register

Middle year's classroom teachers, specialist teachers and learning leaders from Primary and Secondary schools. No prerequisite or specialist knowledge required

Cost

Nil

How to register

Register via the CEVN website <https://cevn.cecv.catholic.edu.au> in the [Online Professional Learning \(OPL\)](#) application by **Friday 3rd May**