

design challenge

CREATE FOR YOUR COMMUNITY!

**STEM Design Challenge
for National Science Week
20 & 21 August 2020**

**THIS NATIONAL SCIENCE WEEK,
THE UNIVERSITY OF TECHNOLOGY SYDNEY,
ENGINEERS WITHOUT BORDERS AUSTRALIA
& TECH GIRLS MOVEMENT FOUNDATION
INVITE REGIONAL STUDENTS TO
CREATE FOR YOUR COMMUNITY
IN A TWO-DAY DESIGN CHALLENGE!**

**REGISTER
YOUR
SCHOOL
TODAY!**

[Register here!](#)

On Thursday 20 & Friday 21 August, classes from Stage 3 and 4 can join our virtual classroom to design, create and build solutions to problems in their community using technology, engineering, science and maths.

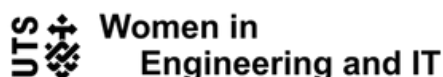
This could be designing an application for a local business, prototyping a robot for agriculture or designing infrastructure for better transport.

Before the event, teachers can access videos and templates on our online 'Blackboard Learn' portal and participate in an online workshop on design thinking.

While this challenge is open to all students, we have designed the event to actively target regional girls participation in STEM.



An Australian Government Initiative





Register your school by 12th August by completing this short form.

Design Challenge Agenda

Thursday 13 August Teacher Briefing

3.30pm - 4.30pm
Teacher professional development:
Design Thinking

Thursday 20 August Design Challenge Day 1

9.30am - 10.15am
Live webinar with panel of STEM professionals in regional NSW incl. Q&A.
This will also be recorded and shared to enable future viewing.

10:15am to 3:30pm
During Day 1, students will:

- Watch videos on design thinking to get ideas flowing
- Identify stakeholders in the community and understand their problems
- Define the problem to solve
- Ideate, refine and evaluate solutions
- ‘Drop in’ to online meetings via Zoom with mentors from UTS, Tech Girls, EWB and industry from 12pm-1pm and 2pm-3pm

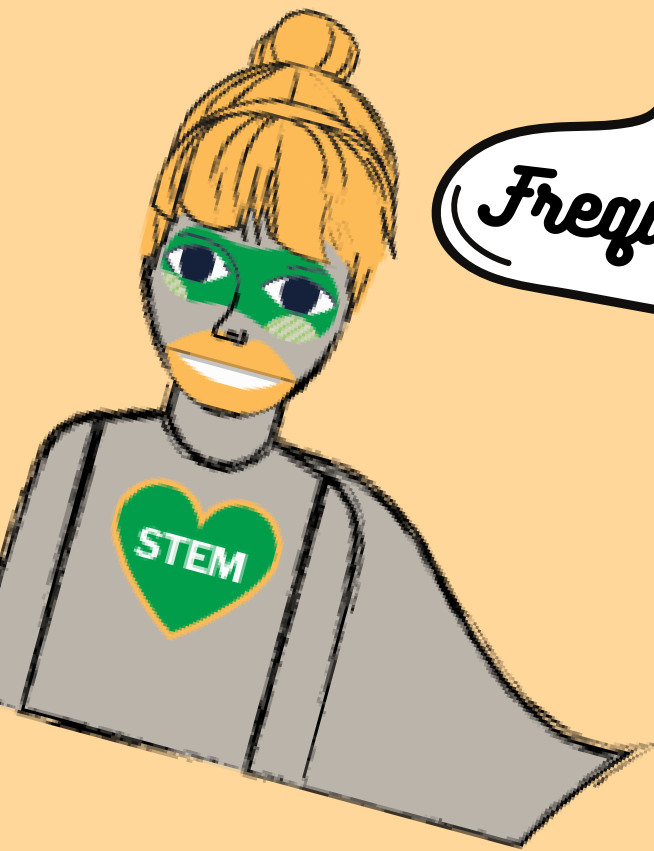
Friday 21 August Design Challenge Day 2

9.30am - 10.00am
Morning inspiration from STEM professionals in regional NSW.
This will also be recorded and shared to enable future viewing.

10:00am to 3:30pm
During day 2, students will:

- Design and develop prototypes using materials or technology at school
- ‘Drop in’ to online meetings via Zoom with mentors from UTS, Tech Girls, EWB and industry from 12pm-1pm and 2pm-3pm
- Pitch your idea and prototype via video and submit for judging by 3.30pm





Frequently Asked Questions

“ Is this challenge mapped to the curriculum?

Yes - the design thinking process covers curriculum outcomes across digital technologies, Science and cross-curriculum priorities. Please see attachment for full curriculum mapping.

“ How does the class join the webinar?

Classes can join the webinar via a Zoom link, using a smartboard or projector to show the panellists. Classes submit questions via the chat function so a camera or microphone is not required.

“ How much time is needed to complete the challenge?

Students should not need longer than 2 hours each day. It is up to schools and teachers what time suits them best for classes to participate.

“ How does the judging work?

Students are to submit their pitch videos by 3.30pm on Friday 21 August via Blackboard Learn. A panel of STEM professionals will judge the entries and a winner will be announced on Monday 24 August via social media.

“ How do we access the resources?

Upon registration you will be given a link to Blackboard. From there, Teachers can download videos prior to the challenge to watch as a class and print the templates for each group of students. Teachers can record and upload the videos of each student group. Alternatively, if students have access to computers, internet and the 'Blackboard Learn' portal they can access videos and templates at their own pace and submit their final solutions themselves. Please advise us if internet access is an issue and resources can be mailed via USB.

“ What equipment do students need for prototyping?

Students can use a range of materials and technology for prototyping depending on their solutions. It is important that they use equipment the school already has access to so they can continue to explore after the challenge. This could include:

- Cloud-based technology for developing apps or games: Code.org AppLab, MIT App Inventor, Tynker, Scratch, Blockly
- Cloud-based software for designing 3D products or worlds: Minecraft Education, TinkerCAD, SketchUp
- Robots e.g. Lego Ev3 or WeDo, Ozobots, Spheros, Dash and Dot
- Microprocessors: Microbits, Thinkershields, Makey Makeys, Arduinos
- Everyday materials: Aluminium foil (for conductivity), batteries, spaghetti and sticky tape, cardboard