Unitar Online Catalogue

CIFAL Singapore - Research and Development Programme (RDP)

People

□□□□ : 1 Aug 2026

□□ :	Other
□□ :	Singapore, Singapore
□□ :	1 □□ 2026 to 1 □□ 2027 (□□□)
□□ :	2 Weeks
□□□□ :	Decentralize Cooperation Programme
□□ :	https://unitar.org/about/offices-training-centres-around-world/cifal-singapore
□□ :	US$0.00
□□□□□ email:	Cradle@science.edu.sg
□□ :	NIL

□□□□

The Research & Development Programme (RDP) offers students with opportunities to engage in R&D-style investigative and prototyping work targeting the UNSDGs.

□□□□

We aim to meet the following objectives through our collaborative efforts:

● Provide applied STEM experience to passionate students from local schools through mentored science/engineering R&D project work (“Research and Development Programme”, RDP)

● Incorporate UNSDGs 6, 7, 9, 12, and 13 as the focus of R&D project work to enhance sustainability understanding and support the achievement of SDG 4 targets

● Provide students with opportunities for science communication through the sharing of research findings

Refer to program objectives above.

□□□□□

Over 2 intensive weeks, all students will be exposed to technology and engineering through various relevant masterclasses on tools and equipment usage (e.g., Computer Aided Design and Laser Cutting), as well as concepts in scientific research and engineering.

Each group is matched with a mentor from the Science Centre with corresponding field(s) of expertise. At the end of the camp, student teams develop prototypes to address a community issue.

The planned research and prototyping fields include synthesis of bioplastic, wastewater treatment, making paper using food waste, and sorting/recycling of trash.

Related UNSDGs:
• Goal 6: Clean Water and Sanitation
• Goal 7: Affordable and Clean Energy
• Goal 9: Industry, Innovation, and Infrastructure
• Goal 12: Responsible Consumption and Production
• Goal 13: Climate Action

□□

Lectures, hands-on experiments, discussion among peers and lecturer, peer presentations, prototypes.

□□□□

Students 15-18 years

□□□□

Past examples:

Biology-related project: Synthesis of bioplastics using algae/plant-based materials
In order to reduce waste generation, students created a mould for the bioplastics and optimised the protocol for synthesis. Their synthesised bioplastics were then analysed for viability.

Chemistry-related project: Removal of Bisphenol A from water by silica-coated magnetic iron oxide
Clean, potable water is vital to support urban populations. In this project, students developed a suitable protocol to measure bisphenol A (BPA) concentration using spectrophotometry. The effectiveness of silica-coated magnetic iron oxide for the removal of BPA in water was evaluated through spectrophotometric measurements.

Engineering-related project: SMART Waste Sorting Bin
Most recycling bins are contaminated with non-recyclable items. To alleviate this issue, students designed and built waste bin prototypes that could identify the type of waste and automatically open the lid of the matching bin, encouraging correct waste disposal.