2026 UNSW Robotics & Coding Challenge

Coding Challenge

3 Pathways — From Junior Coding to AI-Powered Rescue Games

Research a real problem from the 2026 Highway Collapse scenario, then design and build a rescue solution using block coding. The Coding Challenge offers three pathways suitable for all year levels, from Kindergarten to Year 12.

2026 Scenario: Emergency Protocol — The Highway Collapse

A massive geotechnical failure has severed a critical transport route. Students investigate the real-world emergency scenario and create coding projects that propose rescue solutions.

Path A — Junior Coding Explorers (K – Year 2)

Create an interactive rescue story, animation, or simple game using ScratchJr only, based on the Highway Collapse theme.

What to make:

- A rescue story with characters, scenes, and movement
- A simple rescue game (e.g., tap to move an ambulance)
- An animated sequence showing a rescue mission

Allowed tools:

- ScratchJr ONLY (iPad or Android tablet)

Requirements:

- Connection to the Highway Collapse rescue theme
- Multiple characters or objects
- At least one loop or repeating action
- A clear beginning and ending

Path B — Creative Coding: Rescue Mission (Year 3 – Year 12)

Investigate a real problem from the Highway Collapse scenario, then turn it into a game, simulation, or interactive coding project using MRT AI Studio block coding.

The core flow:

Research → Design → Code → Explain

Research topics:

- What dangers occur when a highway collapses?
- How should vehicles and people evacuate?
- What routes should ambulances and rescue teams take?
- How should traffic around the collapse be managed?
- How can rescue supplies be delivered?
- How could a temporary bridge or detour be designed?

Project requirements:

- A clear game goal connected to the rescue theme
- A start screen or instructions screen
- Obstacles or hazards
- At least one of: score, timer, lives, or levels
- A playable character or controllable object

- Evidence of real-world problem research

Allowed tools:

- MRT AI Studio (official platform — Scratch-compatible with AI extensions)

Scratch, Python, Unity, and other tools are NOT allowed.

Path C — AI Pose Rescue Game (Year 3 – Year 12)

Build a rescue game in MRT AI Studio, then add AI Pose Recognition to control it with body movements via webcam. This pathway combines creative coding with real machine learning.

What makes this special:

- Train your own AI model using Google Teachable Machine
- Use body movements (via webcam) to control game characters
- Real ML workflow: Collect data → Train → Test → Deploy
- Higher technical recognition = higher judging scores

Judging Divisions

All divisions use the same criteria, but judges evaluate relative to the student's year level. A simple but well-explained project can score higher than a complex one the student doesn't understand.

- **Division 1:** K – Year 2 (ScratchJr only)
- **Division 2:** Year 3 – Year 6
- **Division 3:** Year 7 – Year 12

Evaluation Criteria (100 points)

- Problem Research & Connection (20 pts)
- Game/Project Design (20 pts)
- Coding Logic & Technical Skills (30 pts)
- Creativity & Presentation (20 pts)
- AI Integration — Path C bonus (10 pts)

Submission Requirements

- A video link (YouTube Unlisted) — max 3 minutes
- A short description (300+ characters)
- Project file or code link (optional)

Submission deadline:

20 October 2026

How to Get Started

All MRT AI Studio tutorials, coding lessons, game design guides, project examples, and submission instructions are provided through the MRT eLearning courses (elearning.mrtrobotics.com) after registration. Students learn through structured courses before starting their project.

Australian Curriculum Connections

- **Digital Technologies:** Algorithms, programming, data representation, user interface design
- **Mathematics:** Problem-solving, logical reasoning, computational thinking
- **Science:** Inquiry skills, systems thinking
- **HASS:** Geography, economics, sustainability

Register: roboticscodingchallenge.org/register-hub

Challenge Details: roboticscodingchallenge.org/current

eLearning: elearning.mrtrobotics.com · info@roboticscodingchallenge.org

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