



2025 STEM MAD

National Student Showcase



STEM MAD National Project Criteria – Secondary

The following criteria have been developed to guide teachers and students in the development of their projects.

Design process

- Uses a Design Process in understanding and creating solutions to the problem, which may include the following stages:
 - 1) Empathise with key stakeholders
 - 2) Define the problem
 - 3) Ideate possible solutions
 - 4) Develop prototypes
 - 5) Test prototypes and make modifications following testing
 - 6) Iterate the prototype-test-modify cycle
 - 7) Share & explain outcomes
- Documents research, reflections, and evaluations of each stage of the design process

Innovation and creativity

- Identifies the unique/novel aspects of a problem that exists in the real-world
- Applies creative and/or innovative approaches when developing solutions to the problem
- Develops interesting, engaging, and imaginative solutions to the problem

STEM skills and capabilities

- Uses a range of STEM skills - logical reasoning, questioning, problem solving, that address the general capabilities (Critical and Creative Thinking, Ethical, Intercultural, Personal and Social) in designing a solution to the problem
- Makes connections across the STEM disciplines
- Applies engineering principles in the process of designing a solution to the problem

STEM disciplines – Knowledge and understanding

- Applies scientific and/or mathematical concepts in developing solutions to the problem
- Demonstrates understanding of the scientific and/or mathematical concepts relating to their project, including their relevance and application in context

Making A Difference (MAD)

Identifies the way the solution intends to *Make A Difference* by addressing [Service](#), [Environment](#), and/or [Product](#); through the lens of Catholic stewardship, solidarity, common good, citizenship, humanity, and wellbeing.

Communication

- Creates a pitch video that is a **maximum of 2.5 minutes** in length
- Demonstrates capacities to articulate their learning through the journey from conception to showcase including the design process
- Uses visual communication principles to optimise engagement, including creative use of the screen space in the pitch video
- Selects and uses appropriate digital tools to create the pitch video
- Pitch video includes appropriate visuals and has high sound quality
- Presentation of key elements of the project, including demonstration of the prototype (product/solution)

Teamwork

- Each team has up to 4 members
- All team members contribute to the project and pitch video