

07 \ˈsi-ən(t)l
S
Science
the study of knowledge and the process for acquiring new knowledge, known as the scientific method

10 \tek-ˈnā-lə-jē
T
Technology
the application of scientific knowledge for practical purposes

11 \ˈnir-ɪŋ
E
Engineering
the action of working actively to bring something about

11 \ˈmath-ˈmā-tiks
M
Mathematics
the abstract science of numbers, quantity, and space

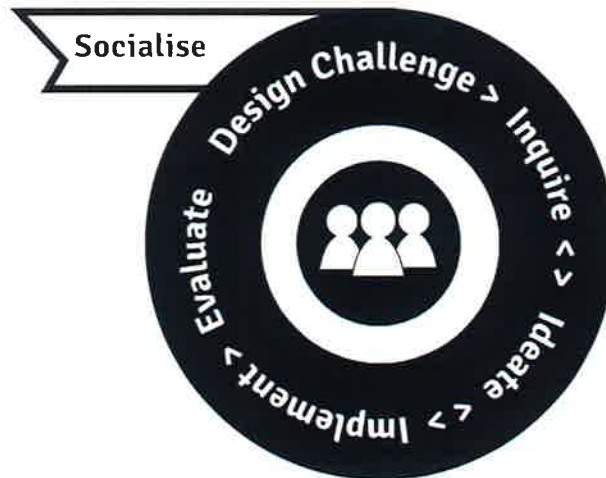
06 \ˈdi-zɪn
d
Design
the conceptual and communicative phase of the development of a product

STEM^d ACADEMY

The study of STEM^d will help students develop the capabilities of successful and creative 21st century citizens and enable them to respond to unknown future challenges.

Students in the STEM^d Academy will work collaboratively, managing time and other resources to effectively create design solutions.

Students will reflect on the STEM^d Inquiry Process and consider how these skills may be improved in future problem solving cycles.



The STEM^d Inquiry Process helps students respond to Design Challenges across the STEM disciplines. The process is divided into overlapping phases, consisting of Socialise, Design Challenge, Inquiry, Ideate, Implement and Evaluate.



In the Socialise phase, students are introduced to the context – the ‘big problem’ – in which learning is to occur. In this phase, students are curious, ask questions and connect to prior knowledge.



In the Design Challenge phase, a specific problem is posed for the students to address, typically in the form of a design challenge. In this phase, students extend their knowledge or consider the challenge problem from different perspectives.



In the Inquiry phase, students come to understand the problem. They generate clarifying questions, they critique, explore and investigate needs, opportunities and information, they decompose the problem, and they take into consideration requirements and constraints.



In the Ideate phase, students are generating, designing, evaluating and communicating alternative design solution. In addition to designing the solution, students will also plan how they will manage their time and resources.



In the Implement phase, students chosen design solution is produced. In addition to ‘building’ this may involve learning new skills to be able to produce the solution.



In the Evaluate phase, the solution is tested. It is compared to the original problem specification to see if the requirements are met within the specified constraints. Students will present and compare their solutions.