

# Problem to Pitch



## STEAM EDUCATION FOR SUSTAINABLE DEVELOPMENT

UNIT FOCUS: PROBLEM TO PITCH - PROJECT-BASED LEARNING, PROJECT DEVELOPMENT AND MANAGEMENT

### CURRICULUM AREAS:

Science, Design, Technology, Maths Environment, Sustainability

4 QUALITY EDUCATION



11 SUSTAINABLE CITIES AND COMMUNITIES



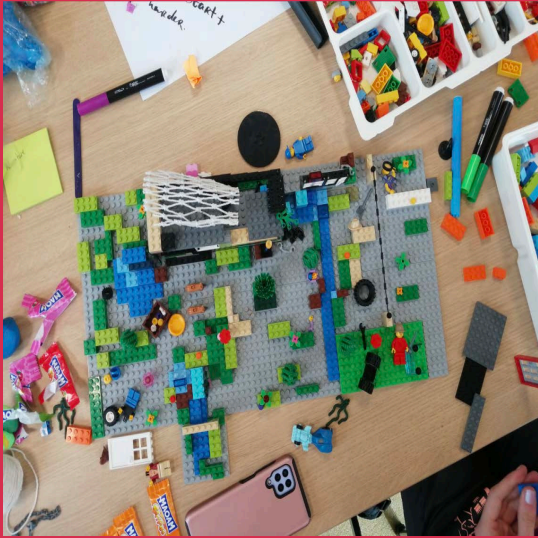
12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



# Problem to Pitch



## CURRICULUM AREAS

Science, Design, Technology,  
Maths Environment, Sustainability

## Problem to Pitch - Project Management

**Problem to Pitch** is a generic project management module that can be adapted to any topic. It introduces students to the concept and process of Design Thinking; the cognitive, strategic and practical processes for creative problem solving.

The module encourages students to engage with their local context to enable them to explore real-world problems in meaningful and tangible ways that are manageable.

The module encourages the development of 21st Century skills supporting students to keep up with the lightning pace of a constantly changing technologised world. Design thinking helps the students to understand that they can create their own future by enabling them to design their own experiences and participation.

Using linked learning and systemic thinking with practical methods of learning, including inquiry and project-based methods, the activities support teachers and students to undertake projects that address contemporary issues on a local scale, in line with the Sustainable Development goals and the 2030 agenda.

### **In this project-based learning module, the learner will...**

- develop skills of organising, planning and scheduling
- develop awareness of the basics of design-thinking for problem-solving
- practice problem solving and critical thinking skills as individuals and part of a group
- be introduced to project management tools such as Lean Canvas, Logic models, 5Ws (who, what when, why where)
- Vision boards and a Pecha Kucha presentation

### **This module includes:**

- Lesson plans
- Accompanying resources
- Optional assessments
- Skill support resources

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# Problem to Pitch – Module Overview

4 QUALITY EDUCATION



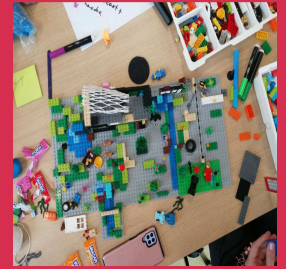
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## Problem to Pitch – Introduction to Design Thinking, Project Development and Management

**Lesson 1: What is Design Thinking?** Design Thinking is the cognitive, strategic and practical processes for creative problem solving. This lesson will introduce students to the 5 stages of Design Thinking to build a foundational understanding of the process.

**Worksheets include:** Introduction to Design Thinking, Stakeholder Mapping, Flipped Classroom

**Lesson 2:** Empathy 1- Stanford Design School's five chairs exercise encourages students to learn how to develop design principles for a user profile. Students will consider the 5 users needs (this sets the design principles) and develop ideas on paper and create 3D prototypes of their designs. This activity encourages students to iterate on their designs and practice using different materials.

**Worksheets include:** User profiles worksheet – there are also project specific worksheets related to specific goals and other project modules, Empathy Map, Step into the Problem worksheet.

**Lesson 3: Defining the Problem:** In this lesson students will begin to understand how to define a problem. Students are asked to begin to identify a real problem they have wanted to address on a local or global level, using the SDGs as a starting theme. Students also have an opportunity to develop an awareness of a local problem

**Worksheets include:** Define the Problem support sheet, Problem Tree worksheet

**Lesson 4: Ideate, Generating and Remixing** - Ideas This lesson enables students to develop an understanding of the process of generating ideas starting with their personal experience and then moving into project themes.

**Worksheets Include:** Ideate Remix worksheet and Remix SWOT worksheet

**Lesson 5:** Ideate 2 Generating and Remixing Ideas 2.0 Good Idea / Bad Idea. This lesson builds on lesson 4 and enables students to develop an understanding of the importance of developing ideas and looking for opportunities to iterate and improve on existing ideas. Students are also introduced to Open Source concepts e.g. iteration and collaboration.

**Lesson 6: Prototype Your Idea** - In this lesson students will begin to consider their ideas for prototyping, develop a concept statement and look at ways to prototype their ideas depending on their users / audience.

**Worksheets Include:** Ready Steady prototype worksheet and Ready, Set, Design worksheet

**Lesson 7: Test Your Idea** - Evaluating an idea is a key aspect of Design Thinking. In this lesson students will begin the process of testing their ideas with potential users. Students will learn that this is not the end of the process and that they may learn something that means they might need to return to an earlier stage e.g. Define or Ideate.

**Worksheets Include:** 5 Ws of Business planning, 8Ws Business planning, Lean Canvas and Zone Map