



THE MAYFIELD LOOP

**TEACHING &
LEARNING RESOURCE**

Curriculum Resource

Version 1.1





MAYFIELD LOOP UNIT OVERVIEW & CURRICULUM MAPPING

STEM Mapping: Mayfield Loop Curriculum

1.0 Overview

This unit addresses STEM key aspects framework:

- Responding to needs, opportunities or problems (including Global Sustainable Development Goals [SDGs])
- Using STEM practices (ways of thinking, knowing, doing and being)
- Designing and producing STEM solutions and/or enterprises

Mapped to authentic contexts and the Australian Curriculum's 3 dimensions, the unit addresses key learning areas (Science, Technologies, Maths and HASS), along with ACARA Cross Curriculum Priorities and General Capabilities ([Key aspects of STEM | V9 Australian Curriculum](#)).

Each lesson uses the Mayfield Loop to help students evaluate and redesign a learning space. They integrate STEM thinking, real-world problem-solving, and student voice, first by evaluating a learning space, then through ideating – integrating feedback for better outcomes. The unit can be extended over several lessons to create a STEM Design Project where students redesign a learning space and pitch.

2.0 Unit Plan: The Mayfield Loop

Unit Title: Learning Spaces by Design: Using the Mayfield Loop to Evaluate and Improve Our Environment

Duration: 2 x 40-minute (approx.) lessons*

*Additional lessons/time could be provided to facilitate a STEM Design Project.

Year Levels: 3-10*

*Some adjustments to language, curriculum, and pedagogy may be required to suit each particular year level and learning context.

Focus: STEM, Wellbeing, Design Thinking, Learning Environments

STEM Integration

- Real-world, authentic problem
- Uses data to inform decisions
- Integrates science, technologies, maths, and HASS
- Builds general capabilities
- Encourages innovation, empathy, and ethical design
- Produces tangible solutions that can influence the school environment

Mayfield Loop Core Questions

- **Emotional Pulse:** Are you content learning in this space today? Y/N. Why?
- **Agency:** Do you feel you can adapt this space to suit your needs? Y/N. Why?
- **Positive Learning:** Where do you feel most able to concentrate or learn well? Why?
- **Friction:** Where do you find it hardest to focus or learn? Why?
- **Active:** Where do you feel most energised or playful? Why?
- **Rest:** Where do you feel most calm or at ease? Why?
- **Avoidance:** Is there anything in this space you avoid? (touching, sitting on, looking at, or being near) Why?
- **Change:** If we could change one thing about this space, what would it be?
- **Keep:** What should never change here?

Lesson by Lesson Overview

	Lesson 1: Evaluating our Learning Space	Lesson 2: Designing a Better Learning Space
Key Curriculum Links	<ul style="list-style-type: none"> • D&T: Technologies & Society • Science Inquiry Skills • Mathematics: Space & Statistics • HASS: Place & Liveability • General Capabilities: CCT, PSC, Literacy, Numeracy • Cross-Curriculum: Sustainability 	<ul style="list-style-type: none"> • D&T: Engineering Principles & Systems • Mathematics: Measurement & Space • Science as a Human Endeavour • HASS: Human Wellbeing • General Capabilities: CCT, PSC, Ethical Understanding • Cross-Curriculum: Sustainability, Caring for Country (optional)
STEM Focus	<ul style="list-style-type: none"> • Systems thinking • Human–environment relationships • Data interpretation • Scientific observation 	<ul style="list-style-type: none"> • Design thinking • Engineering principles • Measurement & spatial reasoning • Sustainable design • Collaboration & ethical decision-making
Learning Concepts	<ul style="list-style-type: none"> • Sensory and emotional mapping • Heatmapping of learning zones • Identifying friction and flow • Analysing environmental qualities (light, sound, temperature, air) 	<ul style="list-style-type: none"> • Ideation (multiple concepts) • Sketching and annotating designs • Using Mayfield data as evidence • Presenting solutions
Learning Intentions	<p>Students will:</p> <ul style="list-style-type: none"> • Use the Mayfield Loop to evaluate a learning environment • Identify strengths and challenges in the space • Map sensory and emotional responses • Reflect on how space affects learning and wellbeing 	<p>Students will:</p> <ul style="list-style-type: none"> • Use insights from Lesson 1 to redesign part of a learning space • Apply design thinking to propose improvements • Justify design decisions using evidence • Present their ideas clearly

Success Criteria	<p>I can:</p> <ul style="list-style-type: none"> Describe how the space makes me feel Identify areas that support or hinder learning Map my experience onto a floor plan Suggest one change and one keep with justification 	<p>I can:</p> <ul style="list-style-type: none"> Identify a problem in the space Propose a design solution Explain how my design improves learning or wellbeing Present my idea clearly
Learning Activities	<ol style="list-style-type: none"> Entry Activity: First impressions walkthrough Contextual Data Snapshot: Light, noise, temperature, air Mayfield Loop Questions: Individual reflection Spatial Mapping: Annotated heatmap Group Discussion: Change & Keep Plenary: Class insight snapshot 	<ol style="list-style-type: none"> Entry Activity: Review class insight snapshot Define the Design Challenge: “How might we improve this space?” Ideation: Three quick sketches Develop a Concept: Annotated design + justification Gallery Walk: Peer feedback Plenary: Identify quick wins and long-term ideas
Assessment	<p>Formative</p> <ul style="list-style-type: none"> Observations Heatmaps Written responses 	<p>Formative / Summative</p> <ul style="list-style-type: none"> Concept sketch Written justification Peer feedback Reflection paragraph <p>Extension (STEM Design Project)</p> <ul style="list-style-type: none"> Scale Model / Cardboard Model Floor Plan Perspective Drawing Digital Model 3D printed design <p>Accompanying designer’s statement / pitch / proposal / presentation / portfolio</p>

3.0 Curriculum Mapping Table

Below is a comprehensive mapping of **Lesson 1 (Evaluation)** and **Lesson 2 (Design Challenge)** to the STEM Connections framework.

STEM Connections Mapping Table

Category / Element	Lesson 1	Lesson 2
STEM KEY ASPECTS		
STEM Element	A. Responding to Needs, Opportunities, Problems	
Real-world issues	Students identify comfort, focus, wellbeing issues in their learning space	Students redesign the space to address identified issues
SDGs	SDG 3, 4, 11	SDG 3, 4, 9, 11, 12
Mental health & wellbeing	Students reflect on emotional pulse and sensory experience	Students design solutions that improve wellbeing
Sustainable cities & communities	Students identify environmental qualities	Students propose sustainable improvements
Category	B. STEM Practices (Ways of Thinking, Knowing, Doing, Being)	
Ways of Thinking	Critical reflection, systems thinking	Design thinking, creative problem-solving
Ways of Knowing	Understanding relationships between space & behaviour	Applying ergonomic, environmental, and design knowledge
Ways of Doing	Mapping, annotating, interpreting sensory data	Sketching, modelling, measuring, evaluating
Ways of Being	Communicating insights, respecting diverse experiences	Collaborating, innovating, ethical design

Category / Element	Lesson 1	Lesson 2
AUSTRALIAN CURRICULUM ALIGNMENT		
Science Strand	C. Science Alignment	
Physical sciences	Light, sound, heat observations	Applying principles to improve space
Science as a Human Endeavour	Understanding how environments affect people	Designing for human needs
Science Inquiry Skills	Observing, recording, analysing	Evaluating, concluding, applying evidence
Technologies Strand	D. Technologies Alignment (Design & Technology / Digital Technologies)	
D&T: Technologies & Society	How space affects learning	Designing for inclusion, sustainability
D&T: Engineering Principles	Identifying flow, layout issues	Redesigning layout, systems
D&T: Materials & Technologies	Observing materials in use	Selecting materials for redesign
D&T: Processes & Production	Mapping, analysing	Ideating, prototyping, refining
DT: Data Representation	Heatmaps, contextual data	Using data to justify design
DT: Digital Systems	Optional digital mapping	Optional digital prototyping
Mathematics Strand	E. Mathematics Alignment	
Measurement	Observing spatial qualities	Measuring, scaling, planning
Space	Mapping zones	Designing layouts
Statistics	Analysing class data	Using data to justify design
Number	Minimal	Calculating quantities, spacing

HASS Strand	F. HASS Alignment	
Geography: Place & Liveability	Identifying liveability factors	Designing for improved liveability
Human Wellbeing	Reflecting on comfort & stress	Designing for wellbeing
HASS Skills	Observing, analysing	Evaluating, communicating
Capability	G. General Capabilities	
Critical & Creative Thinking	Analysing space	Designing solutions
Personal & Social Capability	Reflecting on feelings	Collaborating ethically
Ethical Understanding	Respecting diverse needs	Designing for fairness & inclusion
Literacy	Written reflections	Written justifications
Numeracy	Interpreting data	Measuring, calculating
Digital Literacy	Optional digital mapping	Optional digital prototyping
Intercultural Understanding	Considering diverse users	Designing inclusive spaces
Priority	H. Cross-Curriculum Priorities	
Sustainability	Identifying environmental qualities	Designing sustainable improvements
Aboriginal & Torres Strait Islander Histories & Cultures	Optional: sensory connection to place	Optional: Caring for Country principles
Asia & Australia's Engagement with Asia	Not central	Optional design inspiration
Solution Type	I. STEM Solution Types	
Environments	Evaluating a constructed environment	Redesigning the environment
Products	N/A	Furniture, acoustic solutions
Services	N/A	New procedures for using space
Communications	Heatmaps, reflections	Presentations, design proposals
Enterprises	N/A	Student-led improvement initiatives