

Embedding the design cycle through science inquiry

with Primary Connections

Technology as design parallels science as inquiry. Teaching and learning science using the 5E model and the design cycle is an effective STEM practice.

The following table shows how the [Australian Curriculum: Technologies](#)- Processes and Production Skills, intellectually and pedagogically connected with the phases of the 5E model for science inquiry.

Use this matrix to inform planning, or to audit existing science inquiries for the purpose of increasing links to design technologies.

TECHNOLOGY AS DESIGN

SCIENCE AS INQUIRY		INVESTIGATING AND DEFINING	GENERATING AND DESIGNING	PRODUCING AND IMPLEMENTING	EVALUATING
	ENGAGE	Be presented with a design task.	Have a range of products to investigate/compare.	Create what they think a product might look like.	Evaluate a 'bad' product.
	EXPLORE	Explore contexts and uses for design.	Design investigations and experiences to gain knowledge.	Create prototypes to test ideas.	Conduct product tests.
	EXPLAIN 1	Suggest new success criteria based on what they know.	Explain what they have learned and how that effects product design.	Create prototypes to show what they know.	Critique prototypes based on what they know.
	EXPLAIN 2	Look at expert success criteria.	Research design principles of experts.	Follow an expert procedural task.	Evaluate expert products.
	ELABORATE	Consider new contexts and success criteria.	Design investigations to gain understanding of new contexts.	Produce prototypes applying what they have learned in a new context.	Suggest improvements on previous designs based on a new context
	EVALUATE	Create a design task and criteria based on a scenario, suggest what would need to be investigated to meet the brief.	Explain what they have learned, how that applies to the design task and what they still need to know.	Produce a final design to show what they know and suggest how they would modify for production.	Evaluate prototypes using success criteria and suggest improvements.