Developing Ideas: Using design thinking to improve functionality of an object
IMPROVING MILK PACKAGING DESIGN AND FUNCTIONALITY FOR CHILDREN

ESSENTIAL QUESTION
How can I improve on something that already works?

WHAT ARE WE LEARNING?
- Prototypes can be used to evaluate whether a design meets the identified need
- To investigate a context to develop ideas that meet a specific need
- To solve problems by following a process

TRY THIS WITH
- Years 4 – 8
- Students who have an interest in solving problems through design
- Students who love interacting with other people in a learning context

FIND

Locate	Observe
Ask	Listen
Demonstrate	Infer

Introduce the Design Thinking Process

Watch the Shopping Cart Project to see design thinking in a real life context.

Set up a section of wall for each group to post sticky notes, brainstorms and photos.

Review the Pinterest boards.

Pose the problem in the Design Brief – Why do little kids spill milk when they pour it?

Support students to complete and record the following research for the Discover stage of the process:

- Observe and video kids of all ages pouring water from milk containers into cups
- Experiment with pouring 'milk' themselves
- Ask parents and kids about the problem of kids pouring milk
- Research the designs of milk containers and interview a designer

APPLY

Categorise	Experiment with
Theme	Discuss
Interpret	Reason

Review the Interpretation stage of the Design Brief as a class.

Discuss the discover sessions within each group – what did students learn about the problem of kids pouring milk? Record a podcast to refer back to.

Summarise the learnings into 10 main ideas. Group these ideas into themes e.g. grip or size.

Turn each theme into a question starting with How might we...? or What if...?

Work through the Ideate stage. Remind students that their milk container design must solve the problem of kids spilling milk when they pour it.

Brainstorm using the questions to guide thinking.

Discard ideas by discussing the reality of each one and vote on the best idea from those remaining.

PRODUCE

Modify	Analyse
Design	Solve
Test	Assess

Support students to understand the Experimentation stage of the brief and complete the following:

- Make prototypes for their container idea
- Observe and video kids pouring 'milk' to test the prototypes
- Ask kids about using the prototype
- Experiment with using the prototype themselves

Repeat this stage as often as is needed.

Use Present.me to compile a presentation that shares the group's design journey from discovery to evolution.

Include photos, videos and podcasts to help document this.

Submit their final design to Rosie at Mission Headquarters.

SUCCESS CRITERIA

Students can check they have completed the task successfully by:

- Modifying their design to reflect feedback from testing the prototype
- Completing a design that shows an understanding of the problem they are trying to solve
- Carrying out focused research that provides a good basis for designing their milk container

PRINCIPLES	VALUES	KEY COMPETENCIES	LEARNING AREAS	WORD BANK	RESOURCES REQUIRED
Community engagement	Innovation, inquiry and curiosity	Language, symbols and texts	Technology	Functionality	Design Thinking Process Fact Sheet
Coherence	Excellence	Participating and contributing	The arts	Prototype	Milk Packaging Pinterest board
	Community and participation	Thinking		Modification	Student Guide
				Criteria	Shopping Cart Project Vimeo