

YEARS  
7-8

# DAIRY FOODS LOVED BUT NOT WASTED



AN EDUCATIONAL  
RESOURCE FOR  
YEARS 7-8

# ACKNOWLEDGEMENTS

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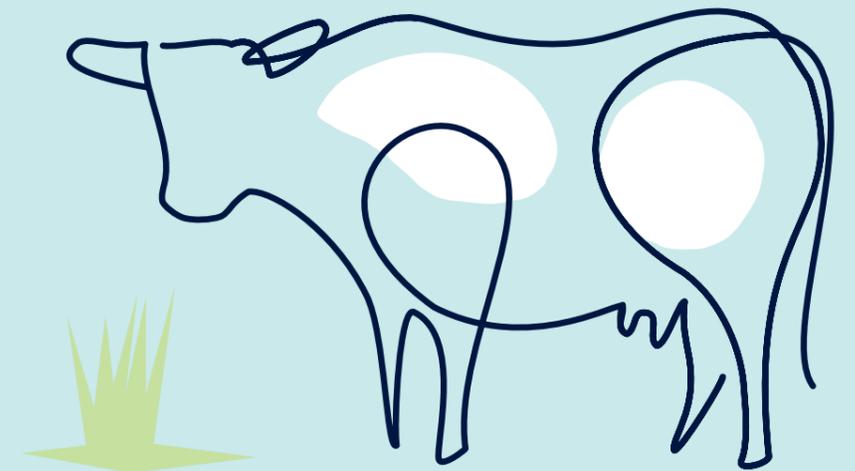
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# INTRODUCTION

This resource contains a unit of work in Technologies in Design and Technologies for the food specialisations content of the Australian Curriculum.

The resource material aims to help teachers and students in secondary schools understand more about dairy foods, healthy eating, and food waste prevention. Students develop knowledge and understanding about dairy products through designing and producing delicious dairy recipes. These practical food preparation activities support students to explore how food preparation techniques impact on the properties and characteristics of dairy foods.

Using design and production skills, students design dairy based recipes and recipe/information cards that explain how to avoid food waste and how food preparation techniques can impact on the properties and characteristics of dairy food.

**Safety:** Ensure all student allergies, intolerances and other dietary requirements are known and considered when participating in practical tasks.

## Aim

This resource book provides schools with opportunities to:

- Develop understandings about the Australian dairy industry and the nutritious products it produces;
- Implement food technologies and home economics-related content and processes;
- Encourage students to prepare and cook nutritious and healthy food using dairy products;
- Develop understandings about how to use food selection tools and recipes and design a meal;
- Demonstrate to students that anyone can design, prepare and cook a meal that uses foods that otherwise might have gone to waste;
- Develop food preparation skills and techniques;
- Discover and envision a range of creative solutions to real-world problems of food waste;
- Use project based learning (PBL) approaches to investigate and respond to a challenge, task or project;
- Apply thinking skills and develop an appreciation of the processes they can apply as they encounter problems, unfamiliar information and new ideas;
- Dream and consider the many possible solutions to deal with food production challenges;
- Design the steps required to create sustainable solutions for the problems identified; and
- Deliver and debrief solutions.



# EDUCATIONAL APPROACH

This resource contains a unit of work in Technologies in Design and Technologies for the food specialisations content of the Australian Curriculum.

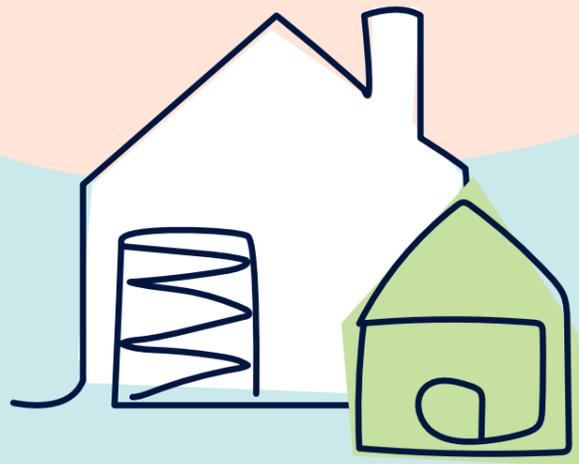
PBL uses the *solution fluency* through six phases: Define; Discover; Dream; Design; Deliver and Debrief. The phases of the model are based on the 21st Century Fluencies created by Crockett et al. (2011).

The Essential Fluencies are outlined extensively in the book '*Mindful Assessment*' (Crockett, L. & Churches, A. (2016) *Mindful Assessment* published by Solution Tree. See also '*Solution Fluency*', Global Digital Citizen Foundation website.



## FACT

**AUSTRALIAN DAIRY IS  
A \$13 BILLION FARM,  
MANUFACTURING AND  
EXPORT INDUSTRY,  
DIRECTLY EMPLOYING  
43,000 AUSTRALIANS  
ON FARMS AND IN  
DAIRY PROCESSING.**



## CURRICULUM LINKS

### Technologies-Content

The following content descriptions, cross-curriculum priority and general capabilities have been incorporated into the unit.

### Design and Technologies Knowledge and Understanding

Investigate the ways in which products, services and environments evolve locally, regionally and globally and how competing factors including social, ethical and sustainability considerations are prioritised in the development of technologies and designed solutions for preferred futures (ACTDEK029)

Analyse how the characteristics and properties of food determine preparation techniques and presentation when designing solutions for healthy eating (ACTDEK033)

Critically analyse factors, including social, ethical and sustainability considerations, that impact on designed solutions for global preferred futures and the complex design and production processes involved (ACTDEK040)

### Design and Technologies Process and Production Skills

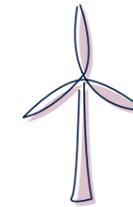
Critique needs or opportunities for designing and investigate, analyse and select from a range of materials, components, tools, equipment and processes to develop design ideas (ACTDEP035)

Generate, develop, test and communicate design ideas, plans and processes for various audiences using appropriate technical terms and technologies including graphical representation techniques (ACTDEP036)

Select and justify choices of materials, components, tools, equipment and techniques to effectively and safely make designed solutions (ACTDEP037)

Independently develop criteria for success to evaluate design ideas, processes and solutions and their sustainability (ACTDEP038)

Use project management processes when working individually and collaboratively to coordinate production of designed solution (ACTDEP039)



### Cross-curriculum priority: Sustainability

O1.3: Sustainable patterns of living rely on the interdependence of healthy social, economic and ecological systems.

O1.5: World views are formed by experiences at personal, local, national and global levels, and are linked to individual and community actions for sustainability.

O1.7: Actions for a more sustainable future reflect values of care, respect and responsibility, and require us to explore and understand environments.

O1.8: Designing action for sustainability requires an evaluation of past practices, the assessment of scientific and technological developments, and balanced judgments based on projected future economic, social and environmental impacts.

### General capabilities:



Critical and creative thinking



Literacy



Numeracy



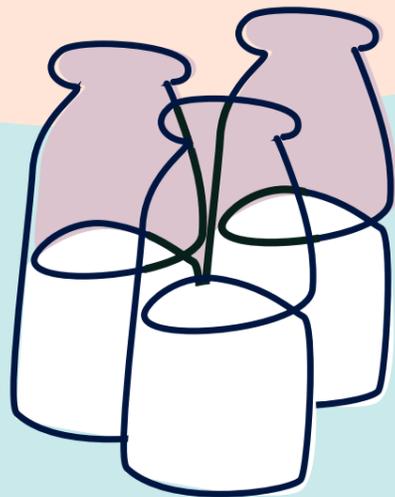
Personal and social capability



Information and communication technology capability

## FACT

**ALL DAIRY PRODUCTS  
STEM FROM MILK.  
MILK IS A NATURAL DRINK  
FILLED WITH ESSENTIAL  
NUTRIENTS INCLUDING  
PROTEIN AND CALCIUM.  
EXCESS MILK CAN BE  
UPCYCLED IN RECIPES  
LIKE PANEER.**



## DAIRY FOODS – LOVED BUT NOT WASTED

### The essential question:

**What happens when we understand all the things we can do to produce healthy food and prevent food waste?**

### Scenario and design brief:

Turning food waste into good taste is very on-trend. Did you know that some of the main reasons for food waste in the home, at school, in cafés and restaurants, is because the use by date expires, leftovers get thrown in the bin, we buy too much, we serve too much, or it gets forgotten at the back of the fridge.

The Australian dairy industry cares about the huge volume of good food going to waste in Australia. It supplies excess milk and other dairy products to Foodbank - Australia's largest food relief organisation. Learn more about the dairy industry's commitment to minimising food waste [here](#).

It is searching for 'change making' students to bring their love of food and cooking together and explore the range of healthy recipes that can be created using foods from the dairy food group, combined with rescued or excess fruits and vegetables.

The challenge involves you researching chefs who have turned foods that might be wasted into a menu must have, and learning about their contributions as social and environmental change makers.

Discover and analyse the way these chefs apply sustainability considerations in their cooking by sourcing and creating recipes with quality and in-date ingredients that are perfectly edible but would otherwise go to waste.

The design brief is to upcycle dairy foods including milk, cheese, cream, butter and yoghurt left over or found to be in excess quantities in your fridge at home, then to rescue them and recreate two nutritious recipes to educate others about healthy eating and preventing food waste.

Research, trial and test your recipe ideas at home and in the school kitchen. Then, design 'Loved Not Wasted Recipe Cards' that illustrate the steps involved in cooking with the upcycled and rescued foods, and include a paragraph discussing how the recipe addresses food waste. You also need to design 'Information Cards' that detail the nutritional properties of the ingredients used.

Then, sell your 'loved but not wasted recipes' to an audience in a 'pitch' as part of a food tech and sustainability 'Pitch' competition.

Your Design Folio needs to include the research, analysis of findings, the recipe and information card designs and the script for the 'pitch' presentation. Put your design mojo to work!

## FACT

**THE DAIRY INDUSTRY IS A MAJOR PLAYER IN FOOD RECOVERY AND MAKES DONATIONS TO CHARITIES LIKE FOODBANK.**



## STEP 1: DEFINE



### Objective:

Have students illustrate their understanding of the challenges set out in the scenario by providing an oral definition of the task.

### Share the scenario and design brief

Share the essential question, scenario and design brief with the class and talk about the tasks that need to be addressed. Ask students to define the task they have been set. See [Resource 1.1](#) in the Student Design Folio.

Discuss how our ecological footprint is influenced by what we eat, how food is produced, how far it has travelled, how it is packaged, prepared and cooked, the portion size and how we dispose of what is left.

Capture student's interest and find out what students already know about food waste, dairy foods that are sometimes wasted, and chefs that are rescuing, recovering and reviving foods that may have otherwise been wasted in the hospitality industry.

Ask students to define what 'food waste' might mean. See [Resource 1.2](#) in the Student Design Folio.

As a class, discover and record some **facts about food waste**. See [Resource 1.2](#) in the Student Design Folio.

Ask questions to establish students' prior understandings about what dairy foods might be rescued from school or at home that could be cooked with. For example, excess dry milk powder, excess fresh milk, leftover cream, nuggets of cheese, and excess butter or yoghurt.

Talk with the class about the types of recipes that might be made using dairy foods and other foods that are sometimes wasted at home like over-ripe bananas, slightly bruised fruit, or bendy beans and carrots.

Invite students to recall the focus of the task that they are to undertake. See [Resource 1.2](#) in the Student Design Folio.

Ask students what they might need to know more about, in order to undertake the task set.

Might they need to know more about food waste? Might they need to know about the chefs in the hospitality industry who are repurposing food and avoiding food waste? Might they have to know something about how to cook recipes that use leftovers, excess or rescued food? Might they need to know something about how the characteristics and properties of dairy foods influence preparation techniques? Might they need to know what a 'pitch' is? Might they need to establish detailed success factors so that their recipe meets the criteria set by the task?

As a homework task, ask students to undertake an audit of the fridge at home and record:

- how many leftovers can be found;
- how many foods have a use by date that has expired;
- how many bendy carrots, unloved pieces of celery, bruised beans, pieces of wilted lettuce, blemished cauliflower or other over ripe vegetables can be found;
- how many dairy foods that are found to be in excess quantities in the fridge can be found; and
- graph the results.

### Prerequisite for progression:

Ask students to articulate their understanding of the task/challenge through oral conversation and if appropriate a written (scribed) statement.

See [Resource 1.2](#)

**Note:** *The Prerequisite for Progression are the checkpoints that occur at the end of each stage of the learning sequence. This is the time at which formative feedback is given to the students about what they have accomplished in that stage. It describes what the students must complete before they move onto the next phase of the unit. (Crockett, et, al, 2011)*

## STEP 2: DISCOVER



### Objective:

Have students research and collect information about how to work with new ideas, preparation techniques and sustainability considerations to prepare, select ingredients and design recipes, recipe cards and a pitch that can educate others about healthy eating and preventing food waste.

### Change makers

To initiate the inquiry, talk about change makers like Nicholas Appert, who in 1795 began experimenting with ways to preserve foodstuffs, succeeding with soups, vegetables, juices, dairy products, jellies, jams, and syrups.

Discover a change maker named [Steven Satterfield](#) who is a chef and author of a cook book with recipes that use ingredients like carrot tops and apple cores into sauces, salads, stews, desserts and more.

Ask students to research and learn more about chefs like Massimo Bottura, Matt Moran, Tim Ma, Jared Baker, Stefan De Fonseca, Bobby Hay, Matt Orlando, Dan Barber, Roxanne Spence and Chahan Dashi, who are all transforming foods that might otherwise be wasted. See [Resource 1.3](#) in the Student Design Folio.

Discuss how these change makers are in the solution business and how they all designed or constructed food solutions with a purpose in mind. Talk about the science and technology concepts, understandings and mathematical skills they would use in their work.

Ask students to brainstorm and record the types of understandings and skills that they need to learn in order to understand how to rescue, re-invent or revive dairy foods that are left over, found to be in excess quantities in their homes, and then to rescue them and recreate two nutritious recipes to educate others about healthy eating and preventing food waste.

### Experiment in the school kitchen

**Safety:** Ensure all student allergies, intolerances and other dietary requirements are known and considered when participating in practical tasks.

### Food safety, hygiene and reminders

Discuss food safety and hygiene procedures with the class. Talk about how safety and hygiene are very important when preparing or eating food. Talk about washing hands, using clean and dry utensils for different food products, keeping work surfaces clean and dry, and importantly storing food safely. Remind the class that in this unit they will be experimenting with a variety of food preparation techniques that impact on the characteristics and properties of dairy products.

### Recipe 1: Make a recipe with milk and fruit that needs to be used

Set up a workbench with milk and fruit that needs using. For example, bruised or over ripe fruit, including bananas, pears, mangoes, strawberries, apricots, nectarines, apples, watermelon, etc.

Instructions can read:

*Make a recipe with milk and fruit that needs to be used.*

*Consider how you might transform the milk and fruit into something else.*

Ask the students working in small groups, to brainstorm, then trial and test how they might transform the milk and fruit into a recipe.

Invite students to share and compare their recipe ideas.

Ask students to justify their recipe ideas and discuss ways in which using the milk and reviving the fruit in their suggested way can prevent food waste.

Task students with writing the steps involved in making their recipe with excess milk, and bruised or over ripe fruit. See [Resource 1.3](#) in the Student Design Folio.

### Recipe 2: Invent a recipe with...

Set up a workbench with bendy carrots or beans, floppy celery, soft tomatoes, rock like bread, butter and odds and ends of dried up cheese.

Instructions can read:

*Make a recipe with bendy carrots or beans, floppy celery, soft tomatoes, rock like bread, butter and odds and ends of dried up cheese.*

*Get creative and plan a way you might transform the ingredients into something tasty and healthy.*

Ask the students working in small groups, to brainstorm, then trial and test how they might transform the ingredients into a recipe.

Invite students to share and compare their recipe ideas.

Ask students to justify their recipe ideas, and discuss ways in which reviving the ingredients in their suggested way can prevent food waste.

Task students with writing the steps involved in making their recipe with the suggested ingredients. See [Resource 1.3](#) in the Student Design Folio.

### Recipe 3: Create recipes from loved dairy products and unloved produce lying in the bottom of the fridge

Set up a workbench with milk, cheese, yoghurt and shrivelled mushrooms, less than perfect looking or perfect looking corn and cucumbers, wilted or fresh lettuce, bendy or fresh carrots or beans, floppy or fresh cucumbers, celery, and tomatoes.

Instructions can read:

*Make a recipe with food you can find in the dairy section and vegetable drawer of a fridge.*

Ask the students working in small groups, to brainstorm, then trial and test how they might transform the ingredients into something tasty and healthy.

Ask the students to explain how they might transform the ingredients into a recipe.

Invite students to share and compare their recipe ideas.

Ask students to justify their recipe ideas, and discuss ways in which reviving the ingredients in their suggested way can prevent food waste.

Task students with writing the steps involved in making their recipe with the suggested ingredients. See [Resource 1.3](#) in the Student Design Folio.

### Recipe 4: Create recipes using excess yoghurt, cucumber, salt and mint

Set up a workbench with plain, natural yoghurt, cucumbers, salt and mint.

Instructions can read:

*Get creative and plan a recipe that uses the ingredients and design something tasty and healthy.*

Ask the students working in small groups, to brainstorm, then trial and test how they might transform the ingredients into something tasty and healthy.

Ask the students working in pairs or small groups to explain how they might transform the ingredients into a recipe.

Invite students to share and compare their recipe ideas.

Ask students to justify their recipe ideas, and discuss ways in which reviving the ingredients in their suggested way can prevent food waste.

Task students with writing the steps involved in making their recipe with the suggested ingredients. See [Resource 1.3](#) in the Student Design Folio.

Re-group after the kitchen activities and reflect on what has been experienced and learned and critique the recipes. Do they help reduce food waste? Are they nutritional recipes? Do they help increase our knowledge and confidence to prepare, cook and present healthy food that address food waste issues?

### Function of different ingredients

As a class, deconstruct some of the earlier set recipes and ask students to explain the function of the ingredients.

For example, in Recipe 1 the milk helps to combine the ingredients and add flavour and nutrition. The fruit provides a specific flavour, and adds texture, volume and colour.

In Recipe 2, the vegetables provide a specific flavour, add texture and colour, and contribute to the volume of the dish. The bread gives shape and structure and the cheese helps to combine the ingredients and adds flavour. The butter provides moisture on the bread.

Ask students to deconstruct Recipes 3 and 4 in their Design Folios. See [Resource 1.3](#) in the Student Design Folio.

Go further and ask students to use two 'Wasty Recipes' on the OzHarvest website and continue deconstructing them and explaining the function of the ingredients. See [Resource 1.3](#) in the Student Design Folio.

## Recipe cards

Remind students that their 'Loved Not Wasted Recipe Cards' need to illustrate the steps involved in cooking with the upcycled and rescued foods, and include a paragraph discussing how the recipe addresses food waste.

Ask students to consider the impact on the environment, when milk, yoghurt, cheese, butter, cream or ice cream is wasted. How are these foods and their containers disposed of? What might the impact be?

Watch [Behind the News](#) and the episode about banning food waste and discover more about food waste, what's happening in France and Australia. Record five or more ways to avoid food waste.

Challenge students to be in the solution business and define three skills needed to not waste food. Might they need to check the food in the fridge regularly, look at use by dates and move food around in the fridge and the cupboard so that the food that needs to be used is at the front? Might they need to get creative and cook new recipes using food that might otherwise be wasted?

Challenge students to start practicing recipe writing and to research more about ways to avoid food waste.

## Nutrients and properties

Ask students to use the [Dairy Matters](#) website, read for information and explain the properties of and nutrients in individual dairy foods that might feature in their recipes.

## Information cards

Remind students that their 'Information cards' need to detail the nutritional properties of the ingredients that might feature in their recipes.

## The pitch

Engage students in [how to develop a pitch](#). Review pitches made in the television program 'Shark Tank' for ideas. Ask students to use [Resource 1.3](#) in the Student Design Folio to record information.

Ask students to read about how there are [different ways of pitching](#) and learn about the key features of a pitch, including:

- Making a statement
- Identifying the problem and having something unique for the market space
- Telling a story that is tight, simple and compelling
- Keeping your audience engaged
- Including graphs to make figures and potential figures clear
- Using testimonials, and
- Preparing for questions.

## Refocus on the task

Inspire students with a range of [recipes](#) that can be found on "The Dairy Kitchen" website.

Re-focus students' attention on the Design Tasks.

Ask each student to share what their research has told them and what they still have to accomplish within the task with their peers, the teacher and family.

## Prerequisite for progression:

Students have worked as a class and individually and collected information about how to work with new ideas, preparation techniques and sustainability considerations to prepare, select ingredients and design and create recipes. They have also developed a pitch that can educate others about healthy eating and preventing food waste.

They have experimented with a variety of food preparation techniques that impact on the characteristics and properties of dairy products. Websites, practical activities and texts are used to contextualise understanding. Students share their ideas within others.

# STEP 3: DREAM



## Objective:

Have students imagine how they are going to upcycle dairy foods left over or found to be in excess quantities in their fridge at home; rescue them and recreate two nutritious recipes; create recipe and information cards that are designed to educate others about healthy

eating and preventing food waste; and how they are going to produce a folio of ideas to explain their entrepreneurial thinking and design a pitch as part of a 'Pitch' competition.

## Visualise

Ask students to visualise their different recipe ideas and sketch them in their Design Folio. Ask them to label each ingredient and the cooking method they intend using. See [Resource 1.4](#) in the Student Design Folio.

Ask students to create a vision for their recipe and information cards that they are re-imagining.

Ask students to use all the knowledge they have gathered to visualise an appropriate solution about how they see their products being produced.

Invite students to think about what is positive and possible in the time they have available to undertake their tasks in this unit, and consider aspects like 'where they are now', 'where they want to be', 'where they need to be' and 'where to from here'.

## Imagine solutions and draft ideas

Ask questions to stimulate the possible ways of designing and creating their work samples. For example:

- What foods that might otherwise be wasted will your recipe feature?
- Consider which recipe you will prepare, the ingredients and equipment needed to cook it.
- How will you design and create 'Loved Not Wasted Recipe Cards' describing how to cook with a food rescued from home.
- Will you use hand drawn illustrations, food photography and/or digital technologies for your recipe cards to explain and document the foods and the processes used in creating the recipes?
- How will you inform, educate and inspire healthy eating and preventing food waste?
- How will you design Information Cards that teach nutritional properties and functions of the ingredients?

Ask students to develop possible solutions by brainstorming all possible solutions.

Invite students to begin visualising their own work samples. See [Resource 1.4](#) in the Student Design Folio.

Focus student's attention on the following prompts:

- What might you have to do to make your design ideas possible?
- What might they include?
- How might they be created?
- What are the different ways they could be created?

Ask students to record and make decisions about what's practical, possible and preferable about their draft ideas. See [Resource 1.4](#) in the Student Design Folio.

### Materials, tools, equipment and evaluation

Challenge students to think about the materials, tools, and equipment they will need to design and create the designs. Will they use digital or non-digital equipment and tools? How might they work safely? How might they appropriately source their images and information that is used to create the recipe cards?

Ask students how they might evaluate whether their recipe, cards and accompanying pitch meet the original criteria of their task? Might they create a matrix of success criteria?

### Prerequisite for progression:

The students have chosen their key ideas for their recipes. They have visualised and discussed how they want to design and create their recipes and cards. They have identified ways to create recipes using food that might otherwise be wasted.

Each student has developed a solution for how they will upcycle dairy foods left over or found to be in excess quantities in their fridge at home; rescue them and recreate two nutritious recipes; create recipe and information cards that are designed to educate others about healthy eating and preventing food waste; and how they are going to produce a folio of ideas to explain their entrepreneurial thinking and design a pitch as part of a 'Pitch' competition.

They have answered the questions posed in the dream phase.

## STEP 4: DESIGN



### Objective:

Have students explain, prepare and action how they are going to upcycle dairy foods left over or found to be in excess quantities in their fridge at home; rescue them and recreate two nutritious recipes; create recipe and information cards that are designed to educate

others about healthy eating and preventing food waste; and how they are going to produce a folio of ideas to explain their thinking and design a pitch as part of a 'Pitch' competition.

### Project planning

Ask students to explain, prepare and action how they are going to document their design ideas for their upcycled recipes, their 'Loved Not Wasted Recipe Cards' and Information Cards. See [Resource 1.5](#) in the Student Design Folio.

Ask students to draft a storyboard with the messaging being used in the accompanying 'pitch' presentation they are going to design.

Invite students to develop a project plan outlining the planning and production steps required to complete their design tasks.

What?	How?	When?	Who?	Completed (Y/N)

Encourage students to ask themselves questions including:

- How will I make these projects happen?
- What knowledge do I have, and what do I still need to research?
- What skills do I have, and what skills are missing?

Invite students to implement their plans, then trial and test out their recipes for their rescued foods using appropriate food safety principles and processes.

Talk about how the students might use a blog, food photography, display folder, digital presentation or a combination of these to show evidence of their design and production process.

Ask students to draft the recipes for their 'Loved Not Wasted Recipe Cards' that feature the upcycled and rescued foods, and to draft their paragraphs discussing how the recipe addresses food waste. See [Resource 1.5](#) in the Student Design Folio.

Ask students to draft the designed 'Information Cards' that detail the nutritional properties of the ingredients they used. See [Resource 1.5](#) in the Student Design Folio.

Talk about the importance of a clear layout of information and a clear design that makes it easy for an audience to understand and interpret the information given.

Talk about the importance of sourcing graphics, photos and information correctly.

Review rules on personal safety, group safety, and classroom and furniture safety with the students. Ask students to establish a workstation and to gather the materials and tools they require. Talk about storing their work samples safely and keeping a record of the processes they use to create it.

Talk with students about how they might share and present their 'pitch' to an audience?

Ask students to explain how they plan to finalise and create their designs with another peer in the class and seek feedback on their ideas.

### Designing the solutions

Ask students to gather the materials, tools, and equipment needed and then plan each step involved in creating the digital or non-digital work samples.

Invite students to start creating their four detailed, informative and eye-catching recipe cards and presentation. See [Resource 1.5](#) in the Student Design Folio.

Talk with students about how they might share and present their recipe cards to an audience?

Invite students to finalise their presentation narrative. See [Resource 1.5](#) in the Student Design Folio.

Ask students to finalise and create their work samples to share them with another peer in the class and seek feedback on their ideas.

### Prerequisite for progression:

Students are able to document in oral or written/digital forms how this project is to occur. The understanding is demonstrated by the students explaining their design and production thinking to a peer in the class.

## STEP 5: DELIVER



### Objective:

Have students publish and deliver the upcycled recipes they have created, the 'Loved Not Wasted Recipe Cards', the Information Cards, Design Folio and their 'Pitch' part of a food tech and sustainability 'Pitch' competition.

### Produce, publish and present

Ask students to photograph and publish their upcycled recipes, 'Loved Not Wasted Recipe Cards, Information Cards and accompanying 'pitch' presentation and insert them in [Resource 1.6](#) in the Design Folio.

### Students present their designed products.

Host a 'Pitch' competition and ask students to sell their 'pitch' about the ideas behind the upcycled recipes they created.

### Prerequisite for progression:

Each student has published and delivered the upcycled recipes they have created, the 'Loved Not Wasted Recipe Cards', the Information Cards, the Design Folio and their 'Pitch' part of a food tech and sustainability 'Pitch' competition.

## STEP 6: DEBRIEF



### Objective:

Assess the results of upcycled recipes students have created, the 'Loved Not Wasted Recipe Cards', the Information Cards, Design Folio and their 'Pitch'.

### Reflections

Ask students to reflect on their learning and all aspects involved in researching and designing recipes that can be created using food that might otherwise be wasted.

Ask students to re-tell their findings about the ways people in the food and hospitality industry are working with new ideas to re-imagine how food can be selected, prepared and delivered to customers.

Ask students to evaluate their upcycled dishes, their designed recipe and information cards and 'pitch', and write about whether they matched the definition of the task and were feasible.

Ask students to write about the quality of their planning, their finished dish and pitch, and whether they enjoyed the task.

Identify and describe the most surprising thing they learned.

Evaluate their work samples and write about whether their work:

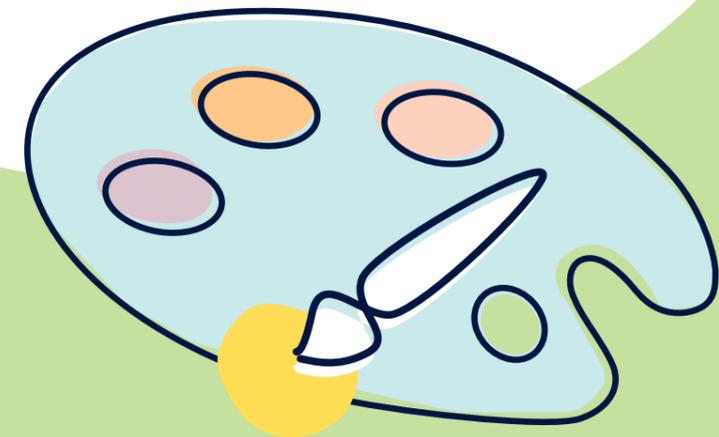
- matched the definition of the task, and
- educated others about healthy eating and preventing food waste.

Ask questions like "what would you do differently next time?"

Write about the quality of their planning, their finished work samples and whether they enjoyed the tasks.

Challenge students to re-design their upcycled recipes, recipe or information cards and pitch presentation where needed. See [Resource 1.8](#) in the Design Folio.

# STUDENT DESIGN FOLIO LOVED BUT NOT WASTED



# THE DESIGN FOLIO

Your Design Folio is a vital communication tool for your design project.

It should document your design project's development. You need to show evidence of every aspect of your first thoughts, your research, planning, design ideas and your final evaluation of your designed solutions.

Use concept maps, word clouds, sketches, annotated concept sketches, photographs, flow charts, labelled drawings, patterns and information to communicate your ideas.



## Resource 1.1 Your Design Brief



### The essential question:

What happens when we understand all the things we can do to produce healthy food and prevent food waste?

### Scenario and design brief:

Turning food waste into good taste is very on-trend. Did you know that some of the main reasons for food waste in the home, at school, in cafés and restaurants is because the use by date expires, leftovers get thrown in the bin, we buy too much, we serve too much, or it gets forgotten at the back of the fridge.

The Australian dairy industry cares about the huge volume of good food going to waste in Australia. It supplies excess milk and other dairy products to Foodbank - Australia's largest food relief organisation. Learn more about the dairy industry's commitment to minimising food waste [here](#).

It is searching for 'change making' students to bring their love of food and cooking together and explore the range of healthy recipes that can be created using foods from the dairy food group, combined with rescued or excess fruits and vegetables.

The challenge involves you researching chefs who have turned foods that might be wasted into a menu must have, and learning about their contributions as social and environmental change makers.

Discover and analyse the way these chefs apply sustainability considerations in their cooking by

sourcing and creating recipes with quality and in-date ingredients that are perfectly edible but would otherwise go to waste.

The design brief is to upcycle dairy foods including milk, cheese, cream, butter and yoghurt left over or found to be in excess quantities in your fridge at home. You can then rescue them and recreate two nutritious recipes to educate others about healthy eating and preventing food waste.

Research, trial and test your recipe ideas at home and in the school kitchen. Then, design 'Loved Not Wasted Recipe Cards' that illustrate the steps involved in cooking with the upcycled and rescued foods, and include a paragraph discussing how the recipe addresses food waste. You also need to design 'Information Cards' that detail the nutritional properties of the ingredients used.

Then, sell your 'loved but not wasted recipes' to an audience in a 'pitch' as part of a food tech and sustainability 'Pitch' competition.

Your Design Folio needs to include the research, analysis of findings, the recipe and information card designs and the script for the 'pitch' presentation. Put your design mojo to work!



### Food Waste

Most food waste is avoidable and can be largely attributed to lack of knowledge and awareness.

Food waste occurs when any food that could have been eaten by people is wasted or thrown away. Food is wasted every day along the whole food supply chain – from when it’s grown, during transportation, in the packaging and manufacturing process, at the supermarkets and above all, in our homes.

Research and record information about why we all need to reduce food waste.

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Identify some of the main reasons for food waste in at home.

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### What is your challenge?

Read your design brief carefully.

Write a definition of the tasks and challenges you need to undertake.

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### Change Makers

The Australian dairy industry is a major player in food recovery and makes donations to charities like Foodbank.

There are many change makers in the hospitality industry who are combining creative cooking, together with nutrition knowledge, healthy eating and food waste prevention to protect the environment and help everyone lead a fully sustainable life.

What do you know about the Australian dairy industry, these chefs and topics?

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Research five chefs and use the table below to record their names and what they are doing to avoid food waste.

Chef's Name	Culinary Contributions

Let the research begin. Identify what you need to know and what you need to be able to do.

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### Kitchen Science

#### Recipe 1: Make a recipe with milk and fruit that needs to be used

*How might you transform the milk and fruit into something else?*

Document your ideas, then trial and test how you might transform the excess milk and bruised and over ripe fruit into a recipe.

Explain ways in which using the milk and reviving the fruit in your suggested way can prevent food waste.

Write the steps involved in making your recipe with excess milk, and bruised or over ripe fruit.



#### Recipe 2: Invent a recipe with...

*How might you make a recipe with bendy carrots or beans, floppy celery, soft tomatoes, rock like bread, butter and odds and ends of dried up cheese? Get creative and plan a way you might transform the ingredients into something tasty and healthy.*

Document your ideas, then trial and test how you might transform the ingredients into a recipe.

Explain ways in which reviving the ingredients in your suggested way can prevent food waste.

Write the steps involved in making your recipe with the suggested ingredients.



**Recipe 3: Create recipes from loved dairy products and unloved produce lying in the bottom of the fridge**

*How might you make a recipe with foods you can find in the dairy section and vegetable drawer of a fridge, like milk, cheese, yoghurt and shrivelled mushrooms, less than perfect looking or perfect looking corn and cucumbers, wilted or fresh lettuce, bendy or fresh carrots or beans, floppy or fresh cucumbers, celery, and tomatoes?*

Document your ideas, then trial and test how you might transform the ingredients into something tasty and healthy.

Explain ways in which reviving the ingredients in your suggested way can prevent food waste.

Write the steps involved in making your recipe with the suggested ingredients.



**Recipe 4: Create a recipe using excess yoghurt, unloved cucumber, salt and mint**

*Get creative and plan a recipe that uses excess natural yoghurt, unloved cucumbers, salt and mint and design something tasty and healthy.*

Document your ideas, then trial and test how you might transform the ingredients into something tasty and healthy.

Explain ways in which reviving the ingredients in your suggested way can prevent food waste.

Write the steps involved in making your recipe with the suggested ingredients.

Reflect on what has been experienced and learned and critique the recipes. Do they help reduce food waste? Are they nutritional recipes? Do they help increase our knowledge and confidence to prepare, cook and present healthy food that address food waste issues?





### Inspirational ideas

Record the inspirational recipes, ingredients, preparation techniques and cooking ideas found in [recipes](#) on "The Dairy Kitchen" website.



### The 'Pitch'

Discover [how to develop a pitch](#). Record some ideas.

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Read about how there are different ways of pitching and learn about the [key features of a pitch](#), including:

- Making a statement
- Identifying the problem and having something unique for the market space
- Telling a story that is tight, simple and compelling
- Keeping your audience engaged
- Including graphs to make your figures and potential figures clear
- Using testimonials, and
- Preparing for questions.

Experiment with texts, images and info graphics that you might include in your pitch in the space below.

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### Recipe Cards

Explain your vision of your 'Loved Not Wasted Recipe Cards'.

#### Recipe Card 1

#### Recipe Card 2



### Information Cards

Explain your vision of your 'Information Cards'.

#### Card 1

#### Card 2





Design your recipe and information cards.



Design your pitch presentation

Write the introduction:

Write the body:

Write the conclusion:

Resource 1.6 Deliver



Make your solution(s) and place photos of them here.

Resource 1.7 Debrief



Were you successful? Why or why not?



How would you improve your upcycled recipes, the designed recipe and information cards, the 'pitch' presentation?

## BIBLIOGRAPHY



# DISCOVER DAIRY

[dairy.edu.au](http://dairy.edu.au)

