

Food Unit 'Fight Food Waste' Food Education and Sustainability Training		
Stage	Stage 4, Year 7 and 8	
Weeks	10 Weeks (10 theoretical lessons and 9 practical lessons - 1.0 hour each to adjust)	
Timing		
Teacher		

Unit Overview

This Technologies unit includes 10 x one-hour theoretical lessons and 9 x one-hour supporting practical lessons.

Students will learn about the benefits of healthy eating, food waste prevention, and the vital role we can play in protecting our planet and creating a sustainable future.

Students will learn how to prepare and cook nutritious food, using the Australian Dietary Guidelines to highlight the health benefits of consuming different types of food per week for their age group and others and how to use food hygiene and safety practices when cooking food.

They will design and create recipes that focus on healthy eating, avoiding food waste and describe how the characteristics and properties of food determine preparation techniques and presentation when designing solutions as evidence of their learning.

Key inquiry questions include:

- Why is food waste an issue?
- Why is food wasted in the home?
- What can we do as individuals to reduce food waste?
- How can our individual actions create change and help build a sustainable future?
- How do we make informed, healthier food choices?
- How can we design a promotion to showcase how to fight food waste in Australia?
- How can we apply design thinking and design production skills to devise food waste solutions?



Table of Contents			
Curriculum Outcomes, Assessment, Adjustments, Understanding Goals, Curriculum Priorities, General Capabilities and Vocabulary			
Resources links	Pages 6-7		
LESSON 1: The essential question and scenario Practical: Fruit Bites or Tzatziki Dip With Vegetable Sticks (or Beetroot & Cottage Cheese Dip)	Pages 8-13		
LESSON 2: Investigating and defining - Understanding the issue of food waste Practical: Spaghetti Bolognaise (optional substitute of lentils instead of mince) or Fast Veggie Fritters	Pages 14-17		
LESSON 3: Investigating and defining - Future thinkers and innovative solutions Practical: Taco Salad (optional substitute of lentils instead of mince) or Honey Soy Noodle Stir Fry	Pages 18-21		
LESSON 4: Investigating and defining - Reducing food waste with kitchen science Practical: Pickling Vegetables or Spanish Pan Omelette	Pages 22-25		
LESSON 5: Investigating and defining - Understanding nutrition Practical: Wholemeal Pita Pizza or Chickpea and Lentil Kofta Pita Pockets	Pages 26-28		
LESSON 6: Generating a 'Use It Up' Recipe Card Practical: French Toast or Hummingbird Muffins (accompanying recipe Too Easy Ricotta)	Pages 29-32		
LESSON 7: Collaborating, managing & designing - Project planning and designing solutions Practical: Veggie Fried Rice or Pumpkin and Tomato Quiches	Pages 33-35		
LESSON 8: Producing and implementing - Produce, publish and present Practical: Easy Cheese Frittata or Poached Eggs in Tomato Sauce	Pages 36-38		
LESSON 9: Producing and implementing - Delivering the Fight Food Waste Promotion Practical: Students prepare 'Use It Up' recipe for their Fight Food Waste Promotion	Pages 39-40		
LESSON 10: Evaluation	Pages 40-42		
Please note we recommend you review external sources to ensure they are appropriate for your audience			



Main Outcomes in the Australian Curriculum					
Design and Technologies Knowledge and Understanding					
AC9TDE8K05	Analyse how properties of foods determine preparation and presentation techniques when designing solutions for healthy eating.				
AC9TDE8K04	Analyse how food and fibre are produced in managed environments and how these can become sustainable.				
AC9TDE8K02	Analyse the impact of innovation and the development of technologies on designed solutions for global preferred futures.				
AC9TDE8K01	Analyse how people in design and technologies occupations consider ethical and sustainability factors to design and produce products, services and environments.				
Design and Techno	logies Processes and Production Skills				
AC9TDE8P01	Analyse needs or opportunities for designing, and investigate and select materials, components, tools, equipment and processes to create designed solutions.				
AC9TDE8P02	Generate, test, iterate and communicate design ideas, processes and solutions using technical terms and graphical representation techniques, including using digital tools.				
AC9TDE8P03	Select, justify and use suitable materials, components, tools, equipment, skills and processes to safely make designed solutions.				
AC9TDE8P04	Develop design criteria collaboratively including sustainability to evaluate design ideas, processes and solutions.				
AC9TDE8P05	Develop project plans to individually and collaboratively manage time, cost and production of designed solutions.				



		Assessment		
Assessment for Learning Assessment as Learning			Assessment of Learning	
 Students' knowledge about the issue of food waste. including designated should be evaluated to achievement and understanding use of observational of the student understanding use of the student understa		ariety of work samples, assessment activities. These to determine students' level of lerstanding. In g may be assessed through the checklists, anecdotal records and ons to class discussions.	 Students engage in peer assessment, based on jointly derived criteria for activity completion. Student understanding may be assessed through the use of observational checklists, anecdotal records and analysis of contributions to class discussions. 	
		Adjustments		
			rc	
Consideration to instructions CTI				
☑ Consideration to printed material	СТРМ			
Consideration to time managemer	nt and organisation CTTM&O	☐ Other		



Understanding Goals	Cross Curricular Priorities
The following goals are provided as suggestions for teachers: UG1 Students have a deep understanding of why it is important to take action on food waste UG2 Students have an understanding of the behaviours that can reduce food waste in the home and/or at school UG3 Students have an increased knowledge and understanding of food waste at a local, national and global level UG4 Students understand where food comes from, and are better equipped to make informed, healthier food choices UG5 Students have an increased knowledge and confidence to prepare, cook and eat nutritious food in a sustainable manner	 □ Asia and Australia's engagement with Asia ☑ Aboriginal and Torres Strait Islander histories and cultures ☑ Sustainability
General Capabilities	
 ☑ Critical and Creative thinking ☑ Ethical understanding ☑ Digital Literacy 	 ✓ Intercultural Understanding ✓ Literacy ✓ Numeracy ✓ Personal and Social Capability
Vocabulary	
Constraints, Considerations, Dehydration, Ecological Footprint, Fermentation, Food System, Foo Preservation, Promotion, Sustainability, Supply Chain	od Waste, Future Thinkers, Nutrition, Nutrients, Pickling,



Resources

Food Waste Facts and Hunger Facts by OzHarvest https://www.ozharvest.org/sustainability/food-waste-facts/

Reduced Food Waste by Project Drawdown https://drawdown.org/solutions/reduced-food-waste

Use It Up by OzHarvest https://www.ozharvest.org/use-it-up/

Food Waste Explained by OzHarvest https://youtu.be/wgLuXvtaLyQ

Use It Up Video by OzHarvest https://youtu.be/-rGhLuZwRIU

Food Fighter - Sydney Harbour by OzHarvest https://youtu.be/sk09b0B 3UM

The Top Six to Fix | The Path to Half – Solutions to halve Victoria's food waste by 2030 by Sustainability Victoria https://assets.sustainability.vic.gov.au/asset-download/Report-The-Path-to-Half.pdf?mtime=20210127091447&focal=none

Food Safety and Hygiene by OzHarvest FEAST https://education.ozharvest.org/wp-content/uploads/2020/04/FEAST-Food-Safety-Hygiene_editable-2.pdf
Basic Knife Skills by Tasty https://youtu.be/G-Fg717G1zw

Sensory Vocabulary Poster by Food a Fact of Life https://www.foodafactoflife.org.uk/media/6174/sensory-vocabulary-p316.pdf

How To Slice Every Fruit | Method Mastery by Epicurious https://youtu.be/VilNuQX4hbM

How To Chop Every Vegetable | Method Mastery by Epicurious https://youtu.be/p28wMbunulQ

War on Waste: Plate Waste by ABC TV & iview https://www.youtube.com/watch?v=SFJqdbzOMzk

'Supervalue' – a look at food miles and food waste by Paul Bruce & Fiona McGee https://youtu.be/kjfYu0H49rM?si=0DflF-nF25tx1SbM

Climate Solutions 101 by Project Drawdown https://drawdown.org/climate-solutions-101/unit-3-reducing-sources

What To Do - Fight Food Waste by OzHarvest https://www.ozharvest.org/fightfoodwaste/what-to-do/

A-Z of Food Saving Tips by OzHarvest https://www.ozharvest.org/fightfoodwaste/wp-content/uploads/2018/05/A-Z-Food-Saving-Tips.pdf

Climate change food calculator: What's your diet's carbon footprint? by BBC https://www.bbc.com/news/science-environment-46459714

School Presentation by OzHarvest FEAST https://education.ozharvest.org/about/

OzHarvest School Presentation by OzHarvest https://youtu.be/Cv4smasuO6U

The Global Food Waste Crisis and the Danish Solution by Elise M. Dadourian https://youtu.be/e7HwD5Go3io

50 People Try To Dice An Onion by Epicurious https://youtu.be/KdD2Vm3pzeo

3 Ways To Chop Onions Like A Pro by Tasty https://youtu.be/0LJb66aYtG8

How to Crack an Egg by Howcast https://youtu.be/Is5qnn2mjuM

The Mind Behind – A Thought for Food by BBC Culture http://www.bbc.com/storyworks/culture/the-mind-behind/a-thought-for-food

OzHarvest founder Ronni Kahn looks back on her life by ABC News (Australia) https://youtu.be/ZSIMexgwzPI

Waste Not Want Not by ABC Landline https://www.abc.net.au/news/rural/programs/landline/2022-08-14/waste-not-want-not:-dealing-with-the-issue-of-

food/14019342?utm campaign=abc news web&utm content=link&utm medium=content shared&utm source=abc news web

TEDxAuckland | Beyond the zero waste restaurant by Matt Stone https://www.youtube.com/watch?v=56Y0TElkl90

UNEP appoints renowned Italian chef and food system activist Massimo Bottura as Goodwill Ambassador by UNEP https://www.unep.org/news-and-

stories/press-release/unep-appoints-renowned-italian-chef-and-food-system-activist-massimo



Refettorios by Food for Soul https://www.foodforsoul.it/what-we-do/refettorios-social-tables/

The Orb https://www.theorb.tas.gov.au/living-cultures/foods

50 People Try To Grate Cheese | Basic Skills Challenge by Epicurious https://youtu.be/HWS3IxfDOHE

Nicolas Appert by Britannica https://www.britannica.com/biography/Nicolas-Appert

The Father of Canned Food: Nicolas Appert - Hidden Genius by Stuff Of Genius HowStuffWorks https://youtu.be/z7ZCD8ZSB9U

Food and Wellbeing Curriculum Connections by The Australian Curriculum <a href="https://australiancurriculum.edu.au/resources/curriculum-ttps://australiancurriculum.edu.au/resources/curriculum-ttps://australiancurriculum.edu.au/resources/curriculum-ttps://australiancurriculum.edu.au/resources/curriculum-ttps://australiancurriculum.edu.au/resources/curriculum-ttps://australiancurriculum.edu.au/resources/curriculum-ttps://australiancurriculum-ttps:

connections/portfolios/food-and-wellbeing/

Australian Guide To Healthy Eating by Australian Government Department of Health https://www.eatforhealth.gov.au/guidelines/australian-guide-healthy-eating

Five Food Groups | Eat For Health https://www.eatforhealth.gov.au/guidelines/australian-guide-healthy-eating

How does cooking affect nutrients in veggies by Reactions https://youtu.be/6hFxSJcq-KU

Fresh or frozen food? Using science to prove which is best with surprising results by BBC https://youtu.be/As261YI0-6c

Use It Up Recipes by OzHarvest https://www.ozharvest.org/use-it-up/tips/

Use Up Leftovers by Big Oven https://www.bigoven.com/recipes/leftover

Simple Meal Recipes by Cancer Council https://www.cancercouncil.com.au/cancer-information/living-well/nutrition-and-cancer/recipes-and-snacks/simple-meal-recipes/

Vegetarian Recipes by The Heart Foundation https://www.heartfoundation.org.au/search/%22vegetarian%22

Tryfor5 Recipes by Nutrition Australia https://www.tryfor5.org.au/recipes-2

FEAST at Home recipes by OzHarvest FEAST https://education.ozharvest.org/home-resources/

Too Easy Ricotta by OzHarvest https://youtu.be/uklk dTtQYA

If Ed Sheeran's "Shape of You" was about Food Waste by Global Citizen https://youtu.be/B1-pKWOt2yM

Introducing 'I Value Food', a Campaign to End Food Waste by Sustainable America https://sustainableamerica.org/blog/introducing-i-value-food-a-campaign-to-end-food-waste/

Love Food Hate Waste by Waste and Resources Action Programme https://www.lovefoodhatewaste.com/

Feeding the 5000 by Feedback https://feedbackglobal.org/campaigns/feeding-the-5000/

Gruen by ABC iView https://iview.abc.net.au/show/gruen

Eleven things startups can do to get their pitch deck on point by SmartCompany https://www.smartcompany.com.au/startupsmart/advice/eleven-things-startups-can-do-to-get-their-pitch-deck-on-point/

FEAST Thank you by OzHarvest https://youtu.be/bxEL1LLWMjg https://youtu.be/e-ISR2iik60

Food Fighter Trailer by OzHarvest https://youtu.be/wqtu6 glpHg



	Lesson Sequences					
CONTENT	TEACHING LEARNING AND ASSESSMENT	DIFFERENTIATIO				
LESSON 1: Investigatir	g and defining – The essential question and scenario					
Analyse needs or opportunities for designing, and investigate and select materials, components, tools, equipment and processes to create designed solutions AC9TDE8P01 Develop design criteria collaboratively including sustainability to evaluate design ideas, processes and solutions AC9TDE8P04	Teacher background information In this lesson students are introduced to the issue of food waste and the assessment task for the unit. The essential question for the unit: How can the power of individual choice create a future without food waste? Assessment: The FEAST Food Unit 'Fight Food Waste' has been designed so teachers can modify the assessment tasks to suit the needs of their students. Before starting the FEAST program with your students, it is important to decide if the task will be assessed individually or as a group. Individual assessment: Look through the design brief and marking rubric to decide what you would like to assess your students on. The 'Use It Up' Recipe Card and Information Sheet are recommended to assess, whereas you may choose to omit the 'Fight Food Waste' Promotion. Group assessment: Form a team (max 4). Each member needs to actively participate and the workload needs to be shared evenly. It works best when the teacher selects the groups. Select a team name. Your team's name should reflect the theme of the unit in some way. For example: food fighters, future thinkers, change makers etc. Delegate tasks. As a team, delegate tasks for each member, ensuring the workload is shared evenly. This could be done by allocating the 'Use It Up' Recipe Card to Team Member 1, the Information Card to Team Member 2, the 'Fight Food Waste' Promotion planning to Team Member 3 and Team Member 4 could be the team leader, assisting each member with completing the task.	Support Students can discuss the features of the task and record their understandings using a recording device rather than in written form.				



Recommended activities

Individual student activity:

Students complete the pre-program survey. Please complete the online student pre-program surveys (this should take 10-15 minutes). The link is emailed to you prior to the start of the program (please contact feast@ozharvest.org if you have not received the link). You will need access to a device per student.

Whole class activity:

- Capture student's interest and find out what students already know about food waste. Ask students to define what 'food waste' might mean to them.
- Create a mind map capturing students' prior understanding of how food gets wasted, what type of food often goes to waste at school or at home and what recipes could be made using these foods.
 For example, bananas are often wasted, instead we could make banana bread, smoothies or banana pikelets.

Whole class activity:

Let's set the scene! Food waste is a global problem.

- Globally one third of all food produced is wasted, costing the global economy nearly \$1 trillion (USD) each year, while 828 million people still go hungry, and three billion people can't afford a healthy diet.
- Wasting food feeds climate change. In fact, 10% of global greenhouse gas emissions comes from food waste which rots in landfill and released methane into the atmosphere.
- But there's good news! According to scientists at Project Drawdown, reducing food waste is the most powerful way you can take climate action.
- In Australia, we waste more than 7.6 million tonnes each year and 2.5 million tonnes of it come from our homes. In 2021, OzHarvest launched their first national campaign 'Use It Up' to tackle food waste at home.

Source: Food Waste Facts and Hunger Facts | OzHarvest Sustainability

Drawdown: The Most Comprehensive Plan Ever Proposed to Reverse Global Warming

Use It Up | OzHarvest | Save food, save money, save the planet!



Watch the following videos as a class:

- Food Waste Explained by OzHarvest, to learn about the problem of food waste, the resources that go into producing food and what individuals can do to fight food waste. Watch here: https://youtu.be/wgLuXvtaLyQ animation (2:12 min)
- > <u>Food Fighter Sydney Harbour</u> by OzHarvest, to see how much food Australians waste each year. Watch here: https://youtu.be/sk09b0B_3UM (0:35min).
- <u>Use It Up Video</u> by OzHarvest, to see food wastes impact on climate change. Watch it here: https://youtu.be/-rGhLuZwRIU (0:49min).

Whole class activity:

- Share a copy of the design brief with the students and talk about the requirements of the task. See Your Design Brief in the Student Resources Design Folio, page 2.
- > **Explain** to the class that in this unit, their task is to:
- > Design a 'Use It Up' Recipe Card that uses up commonly wasted foods to create a delicious meal.
- > Design an Information Sheet with the following tips to promote your selected commonly wasted food:
 - a) Explain how the recipe tackles food waste.
 - b) Identify one storage tip to make your recipe last longer.
 - c) Explain how the recipe encourages healthy eating.
 - d) Explain one way you would cook or prepare your recipe to maintain or improve the nutritional value (e.g. steaming vegetables maintains vitamin content compared to boiling them).
 - e) Identify one food safety tip to consider when creating your recipe.
 - f) Discuss the characteristics and properties of the ingredients used in the recipe (e.g. flavour, appearance, texture, and aroma).

'Fight Food Waste' Promo (optional)

- > Teams are to compile their 'Use It Up' Recipe Cards and Information Sheets to assist with the creation of their promotion.
- The creative promotion will successfully promote their 'Use It Up' recipe idea, what they've learnt about food waste and how to inspire others to avoid wasting food.
- The promotion has been left open-ended to allow for student creativity. The promotion could be a speech, video advertisement, skit, jingle etc.

Consider ways you could help students with visual/ hearing impairments. (Scribing instructions on board or individual cards and ensuring that instructions are clear for all students before engaging in activities.)



Complete a Design Folio by completing all worksheets in the Student Resources Design Folio which includes templates for the 'Use It Up' Recipe Card, Information Sheet and the 'Fight Food Waste' Promo script (optional).

Whole class activity:

Check for student understanding by asking questions about the task and clarifying any unknown terminology. **Individual student activity:**

- Ask students to define the task they have been set by completing Analysis of The Design Brief and Criteria for Success in the Student Resources Design Folio, page 3-4.
- Analysis of the design brief: Students are tasked with looking carefully at the design brief and listing the specifications they are required to follow to complete the task (i.e. the considerations and constraints that may affect their project)
 - **Considerations** are flexible factors that allow the product to be modified for example choice of ingredients, allergies.
 - Constraints are inflexible factors that must comply with the design brief for example made within the practical lesson time frame, includes a top wasted food and appeals to target audience (adolescents)
- Criteria for success: Students refer to the design brief and their list of considerations and constraints to develop 6-8 criteria for success. Make sure students put them into question format.
 - O The criteria for success is used to assess design ideas, processes and solutions for the 'Use It Up' Recipe Card, Information Sheet and 'Fight Food Waste' promotion.
 - o For example: Did the 'Use It Up' Recipe Card include commonly wasted foods?

Whole class activity:

Brainstorm team names (if working in groups) and begin selecting commonly wasted foods for the task. Visit The Top Six to Fix | The Path to Half - Solutions to halve Victoria's food waste by 2030 by Sustainability Victoria (page 18-19). See Resource Initial Planning for The Unit in the Student Resources Design Folio, page 5.

Homework activity:

Conduct a home fridge and pantry food waste audit to understand the different types of food waste created at home. See Home Food Waste Audit by OzHarvest. Consider completing the audit at the beginning and at the end of the program and compare results.



<u>Practical Cooking Activity – Introducing safety and hygiene through the preparation of Fruit Bites or Dips</u> with Vegetable Sticks (Beetroot & Cottage Cheese Dip or Tzatziki Dip)

OzHarvest recommends that all classes make a simple cold recipe as their first cooking activity to introduce students to the importance of basic kitchen hygiene and safety before attempting more complex recipes.

Safety and hygiene introduction: Prior to undertaking the practical lesson students complete the worksheet Food Safety and Hygiene by OzHarvest FEAST. Visit https://education.ozharvest.org/wp-content/uploads/2020/04/FEAST-Food-Safety-Hygiene editable-2.pdf

It is recommended that teachers' set-up the classroom with the cooking ingredients and equipment (except knives) prior to the students arriving, ensuring each workstation has serving dishes on hand.

Whole class activity:

- Discuss cooking procedures and food safety. See Risk Assessment, FEAST Practical Guide, page 7.
- Read through the recipe with the whole class.
- **Demonstrate** how to prepare the recipe:
 - **Chop** different shaped fruit safely e.g. cut fruit to make a flat surface and make a claw shape with your hand holding the food keep your fingertips clear of the knife.
 - **Chop** carrot safely into sticks e.g. cut lengthways to make a flat surface and make a claw shape with your hand holding the food keep your fingertips clear of the knife.
 - o If time permits, watch <u>Basic Knife Skills</u> by Tasty (6:33min) to demonstrate a variety of basic knife skills. Watch here: https://youtu.be/G-Fg7I7G1zw
- Form groups or pairs recommended group size: 2 students.
- Students wash hands (download Hand Washing Poster by OzHarvest FEAST)
- Hand out knives when students have collected their ingredients and assembled at their workstations.
- Students prepare dish
- **Students wash dishes and clean up,** explain the planned washing up process, including wiping down workstations and pack away/reset for next class.
- Students eat

Consider allowing students to fill out 'answer cards' for these questions to submit individually, or a 1-to-5 confidence rating to gauge student understanding.



Whole class activity - Wrap up:

- Discuss or write the following questions on the whiteboard for students to respond to:
 - O How does the recipe tackle food waste?
 - O How does the recipe encourage healthy eating?
 - O What skills have been used throughout the recipe?
 - O Did the cooking and preparation of the recipe maintain or improve its nutritional value? Explain.
 - O How did you consider food safety and hygiene when completing this practical cooking task?
 - Describe the sensory properties of the final dish using the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life. Visit https://www.foodafactoflife.org.uk/media/6174/sensory-vocabulary-p316.pdf

If time permits watch:

- How To Slice Every Fruit Method Mastery by Epicurious. Watch here: https://youtu.be/VjINuQX4hbM (23:36min)
- How To Chop Every Vegetable Method Mastery by Epicurious. Watch here: https://youtu.be/p28wMbunulQ (42:42min) for an interesting end to the lesson, watching chefs slicing, chopping and dicing their way through a range of interesting fruits and vegetables, explaining knife safety tips and tricks throughout.
- Ask students which fruits and vegetables they have tried and identify the knife safety techniques demonstrated throughout the video.



LESSON 2: Investigating and defining - Understanding the issue of food waste

Analyse the impact of innovation and the development of technologies on designed solutions for global preferred futures

AC9TDE8K02

Analyse how food and fibre are produced in managed environments and how these can become sustainable AC9TDE8K04

Analyse how properties of foods determine preparation and presentation techniques when designing solutions for healthy eating AC9TDE8K05

Teacher background information

Students investigate and define food waste.

Did you know that food waste feeds climate change? When we think of climate change, we think of solar panels and electric cars, but rarely of the impact of the food we eat, or in this case don't eat. Up to 10% of global greenhouse gas emissions come from wasted food (that's more than the entire aviation industry). For many it's an overwhelming issue and people don't believe they can make a difference. The good news is that according to Project Drawdown, reducing your food waste has been identified as a leading solution to address climate change.

Do you know where the majority of food gets wasted? Food waste happens across the whole supply chain, from farms for fork – but over a third comes from our homes, and 70% of wasted food is perfectly edible. The good news is that food waste at home is mostly avoidable, if you get into good habits, such as: **buying** only what you need, **storing** food correctly and **using up** what you have before buying more! OzHarvest is committed to the national target of halving food waste by 2030 and is searching for creative thinkers to design solutions to end food waste!

Food waste definition: 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.

Recommended activities

Whole class activity: Watch:

- Craig Reucassel as he goes undercover to determine how much food Australians waste when eating out. War On Waste: Plate Waste by ABC TV & iview. Watch here: https://www.youtube.com/watch?v=SFJqdbzOMzk%20 (2:29min).
- A thought provoking short Australian film showing all the resources that go into making our food. <u>'Supervalue' - a look at food miles and food waste</u> by Paul Bruce and Fiona McGee. Watch here: https://youtu.be/kjfYu0H49rM?si=0DfIF-nF25tx1SbM (5:00min).
- Learn to stop harmful greenhouse emissions in the lecture <u>Climate Solutions 101</u> by Project Drawdown. Watch here: https://drawdown.org/climate-solutions-101/unit-3-reducing-sources (starts from 8min)

Support



Whole class activity:

Brainstorm in small groups and write a sentence about why we should care about the issue of food waste. See **Resource What is Food Waste?** in the Student Resources Design Folio, page 6.

Individual student activity:

Research food waste using the information and links below. See Resource What is Food Waste? in the Student Resources Design Folio, page 7. This task will inform the development of the students' 'Use it Up' Recipe Card, Information Sheet and 'Fight Food Waste' Promo. Students may visit the following sites to research what food waste is, commonly wasted foods and why we need to avoid wasting food.

- Food Waste Facts and Hunger Facts by OzHarvest. Visit https://www.ozharvest.org/food-waste-facts/
- What To Do Fight Food Waste by OzHarvest. Visit https://www.ozharvest.org/fightfoodwaste/what-to-do/
- <u>A-Z of Food Saving Tips</u> by OzHarvest. Visit https://www.ozharvest.org/fightfoodwaste/wp-content/uploads/2018/05/A-Z-Food-Saving-Tips.pdf
- The Top Six to Fix | The Path to Half Solutions to halve Victoria's food waste by 2030 (p18-19) by Sustainability Victoria. Visit https://assets.sustainability.vic.gov.au/asset-download/Report-The-Path-to-Half.pdf?mtime=20210127091447&focal=none

Other suggested activities

Individual student activity:

Explore the interactive food calculator by BBC to see examples of how the food we eat impacts our environment. Visit <u>Climate change food calculator: What's your diet's carbon footprint?</u> by BBC. Visit https://www.bbc.com/news/science-environment-46459714

Whole class activity: Book an OzHarvest presentation at

https://education.ozharvest.org/resources/#presentation or watch the OzHarvest School presentation by OzHarvest at https://youtu.be/Cv4smasuO6U (8.19min) to learn about the issue of food waste, food insecurity and why OzHarvest does the work that they do.

Watch The Global Food Waste Crisis and The Danish Solution by Elisa Dadourian explaining the social, economic, and environmental consequences of food waste and how Denmark are leading the effort to combat this global issue. Watch here: https://www.youtube.com/watch?v=e7HwD5Go3io (19:33min).



Practical Cooking Activity- Spaghetti Bolognese or Fast Veggie Fritters (time 30-35 minutes)

<u>It is recommended that teachers' set-up the classroom with the cooking ingredients and equipment (except knives)</u> prior to the students arriving, ensuring each workstation has serving dishes on hand.

Test whether the electric frypans are overloading the power in the room as this may result in a power outage. **Do you have a student with an egg allergy?** If making Fast Veggie Fritters, substitute one egg for 2 tablespoons of water, 1 teaspoon oil and 2 teaspoons of baking powder.

Do you have students who are vegan or vegetarian? If making Spaghetti Bolognese, remove the lean beef mince from the ingredients.

Whole-class activity:

- Discuss safety when using hot appliances. See Risk Assessment, FEAST Practical Guide, page 7.
- Read through the recipe with the whole class.
- Demonstrate
 - Knife safety by discussing the incorrect and correct ways to dice an onion as demonstrated in the video <u>50 People Try To Dice An Onion</u> by Epicurious. Watch here: https://youtu.be/KdD2Vm3pzeo?si=VbQn_oLbRBKL8LRe (3:19min).
 - O How to dice an onion correctly by watching 3 Ways To Chop Onions Like A Pro by Tasty. Watch here: https://youtu.be/0LJb66aYtG8?si=NjOsNp2dQd1vAngc (5:10min).
 - Measure ingredients accurately. See How to read recipe measurements, FEAST Recipes, page
 4. And How to measure ingredients by OzHarvest. Watch here: https://ozharvest.wistia.com/medias/59i2tri98o
 - Fast Fritters: How to crack an egg by Howcast. Watch here: https://youtu.be/Is5qnn2mjuM (1:07min).
- Form groups or pairs recommended group size: 2 students.
- Students wash hands
- Hand out knives when students have collected their ingredients and assembled at their workstations.
- Students prepare dish
- Students wash dishes and clean up
- Students eat

Consider ways you could help students with visual/hearing impairments. (Scribing instructions on board or individual cards and ensuring that instructions are read clearly for all students before engaging in activities.)



Whole class activity - Wrap up:

- > Discuss or write the following questions on the whiteboard for students to respond to:
 - O How does the recipe tackle food waste?
 - O How does the recipe encourage healthy eating?
 - O What skills have been used throughout the recipe?
 - O Did the cooking and preparation of the recipe maintain or improve its nutritional value? Explain.
 - O How did you consider food safety and hygiene when completing this practical cooking task?
 - O Describe the sensory properties of the final dish using the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life. Visit https://www.foodafactoflife.org.uk/media/6174/sensory-vocabulary-p316.pdf
- Conduct a <u>Cooking Class Food Waste Audit</u>. Record results and announce this week's winner. Consider making this a class challenge with other classes and observe if there is a decline in food wastage throughout the term. See <u>Cooking Class Food Waste Audit</u> on the FEAST Resources Practical tab.
- Discuss how we can substitute ingredients to reduce our environmental impact, such as including lentils to reduce meat consumption. Is the Bolognese recipe meat based? Should we do a veggie Bolognese so it's an example of a plant-based substitute? What's the relevance of the Fritters? Use up wilted veggies and any herbs.
- > **Describe** the sensory properties of the final dish using the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life.
- **Discuss** characteristics and properties of the ingredients that determine preparation techniques. For example:
- > **Spaghetti Bolognese:** The onions and garlic when chopped and browned release flavours. If using the minced beef, notice that when cooked it releases fats. The tomatoes add flavour, texture, and moisture to the dish. The vegetables provide a specific flavour, add texture, and colour, and contribute to the volume of the dish.
- Fast Veggie Fritters: The flour and egg mixture when heated hardens and browns and the cheese melts. The mixed vegetables (fresh or frozen) added to the mixture adds flavour, texture and moisture to the dish. The vegetables provide a specific flavour, add texture, and colour and the self-raising flour contribute to the volume of the dish.



LESSON 3: Investigating and defining - Future thinkers and innovative solutions to fight food waste

Analyse the impact of innovation and the development of technologies on designed solutions for global preferred futures AC9TDE8K02

Analyse how food and fibre are produced in managed environments and how these can become sustainable AC9TDE8K04

Analyse how properties of foods determine preparation and presentation techniques when designing solutions for healthy eating AC9TDE8K05

Teacher background information

Students investigate future thinkers who are helping to fight food waste, produce healthy food and promote the benefits of healthy eating. And explore innovative solutions to tackle food waste and ensure a sustainable food future.

Future thinkers are individuals who are working towards improving the world we live in and are helping to create a better food system. From farmers to chefs, academics to food activists, any one whose work helps to ensure that everyone has access to healthy nutritious food and design innovative solutions to reduce food waste.

Recommended activities

Whole class activity:

- > Watch The Mind Behind- A thought for food by BBC Culture to learn about future thinker Ronni Kahn, CEO and Founder of OzHarvest. Watch here: http://www.bbc.com/storyworks/culture/the-mind-behind/a-thought-for-food (1:30min).
- Watch OzHarvest founder Ronni Kahn looks back on her life by ABC News (Australia). Watch here: https://www.youtube.com/watch?v=ZSIMexqwzPI (4:38min).

Whole class activity:

Resources Design Folio, page 11.

Watch Waste Not Want Not: Dealing with the issue of food waste by ABC Landline and complete the accompanying worksheet. Science, innovation, value-adding and food recovery programs are helping to reduce food waste across the supply chain. Watch here:
<a href="https://www.abc.net.au/news/rural/programs/landline/2022-08-14/waste-not-want-not:-dealing-with-the-issue-of-food/14019342?utm_campaign=abc_news_web&utm_content=link&utm_medium=content_shared&utm_source=abc_news_web (12:12min). See Resource Dealing with the issue of food waste in the Student

Support

Teachers group students with differing abilities together and assign learning buddies.

Where needed students may be grouped in pairs with peer support.



Analyse how people in design and technologies occupations consider ethical and sustainability factors to design and produce products, services and environments

AC9TDE8K01

Individual student activity:

Write a persuasive text, using the scaffolding provided, on the topic "innovative ways to tackle food waste are essential in tackling climate change". See **Resource Innovative Ways to Reduce Food Waste** in the Student Resources Design Folio, page 8-10.

Other suggested activities

Whole class activity:

Watch TEDxAuckland Talk Beyond the zero waste restaurant by chef Matt Stone.

Future thinker Matt explains how he reduces waste in his restaurants to zero and in turn makes the food, ecosystem and community better. Watch here: https://www.youtube.com/watch?v=56Y0TElkI90 (9:08min).

Individual student activity:

Discover a future thinker named <u>Massimo Bottura</u> who is an Italian chef and food waste fighter. Visit https://www.unep.org/news-and-stories/press-release/unep-appoints-renowned-italian-chef-and-food-system-activist-massimo

Learn about <u>Refettorios</u> by Food for Soul designed by Massimo. Visit <u>https://www.foodforsoul.it/what-we-do/refettorios-social-tables/.</u>

Whole class activity:

Reflect on the essential question: How can the power of individual choice create a future without food waste? Discuss with the class their chosen future thinkers and how they are creating a future without food waste.

Individual student activity:

Research three future thinkers such as Kylie Kwong, Matt Moran, Alex Elliott-Howery, Massimo Bottura, Matt Orlando, Dan Barber, Matt Stone and Jo Barrett who are all food innovators. **Choose** one future thinker and write a short biography or review their work.

Individual student activity:

Visit The Orb (https://www.theorb.tas.gov.au/living-cultures/foods) to learn about Australian Indigenous ingredients. Ask students to write about five things they learnt.



<u>Practical Cooking Activity: Trav's Taco Salad (time: 20 minutes) or Honey Soy Noodle Stir Fry (time: 50 minutes)</u>

Travis Harvey is OzHarvest's Executive Chef and a master of zero-waste cooking. Alongside the chef team, Travis creates thousands of delicious meals using rescued ingredients that may have otherwise been wasted. He has created this delicious Taco Salad for FEAST.

Taco Salad vegetarian option: Substitute 1 tin of refried beans and 1 tin of kidney beans for the lentils and mince.

Whole-class activity:

- Discuss safety when using hot appliances with students. See Risk Assessment, Practical Guide.
- **Read** through the recipe with the whole class. Can any ingredients be sourced from the school garden?
- Demonstrate
 - Taco Salad: demonstrate how to dice a tomato. Cut the tomato in half and place the flat side on the chopping board. Make a claw shape with your hand holding the food – keep your fingertips clear of the knife.
 - Honey Soy Noodle Stir Fry: How to use a box grater correctly by watching <u>50 People Try To</u>
 <u>Grate Cheese | Basic Skills Challenge</u> by Epicurious. Watch here:
 https://youtu.be/HWS3IxfDOHE
- Form groups: recommended group size: 2 students.
- Students wash hands
- Hand out knives when students have collected their ingredients and assembled at their workstations.
- Students prepare dish
- Students wash dishes and clean up
- Students eat

Teachers group students with differing abilities together and assign learning buddies.

Consider ways you could help students with visual/hearing impairments. (Scribing instructions on board or individual cards and ensuring that instructions are read clearly for all students before engaging in activities.)



Whole class activity: - Wrap up

- > Discuss or write the following questions on the whiteboard for students to respond to:
 - O How does the recipe tackle food waste?
 - O How does the recipe encourage healthy eating?
 - O What skills have been used throughout the recipe?
 - O Did the cooking and preparation of the recipe maintain or improve its nutritional value? Explain.
 - O How did you consider food safety and hygiene when completing this practical cooking task?
 - Describe the sensory properties of the final dish using the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life. Visit https://www.foodafactoflife.org.uk/media/6174/sensory-vocabulary-p316.pdf
- Conduct a <u>Cooking Class Food Waste Audit</u>. Record results and announce this week's winner. Consider making this a class challenge with other classes and observe if there is a decline in food wastage throughout the term. See <u>Cooking Class Food Waste Audit</u> on the FEAST Resources Practical tab.

Discuss how you used up the ingredients and why these foods are often wasted?

Discuss characteristics and properties of the ingredients that determine preparation techniques. For example: **Taco Salad:** The onions when chopped release flavours. The minced beef releases fats. The tomatoes add flavour, texture, and moisture to the dish. The vegetables provide a specific flavour, add texture, and colour, and contribute to the volume of the dish.

Honey Soy Noodle Stir Fry: The egg mixture hardens when heated. The vegetables provide colour, release flavour and have a crunchy texture. The noodles are partially cooked and only need warming up.



LESSON 4: Investigating and defining – Reducing food waste with kitchen science

Analyse the impact of innovation and the development of technologies on designed solutions for global preferred futures

AC9TDE8K02

Analyse how food and fibre are produced in managed environments and how these can become sustainable AC9TDE8K04

Analyse how properties of foods determine preparation and presentation techniques when designing solutions for healthy eating AC9TDE8K05

Teacher background information

Students research how different methods of food preservation can change the characteristics and properties of food, extending the life of ingredients and in turn reducing food waste.

Recommended activities

Whole class activity:

Discuss food preservation as a method that stops good food from going to waste, provides an opportunity to consume a variety of fruits, vegetables, and other food products all year-round. Dehydration and fermentation are two other ways we can preserve food to prevent it from being wasted. Preserving food using food preparation techniques, impacts its sensory properties (taste, texture, aroma, and appearance).

Whole class activity:

Talk about how dehydration removes moisture so that bacteria, yeast, and moulds cannot grow and spoil food. Fermentation, specifically pickling, is another method of food preservation where a food is soaked in a solution of water, vinegar, salt, sugar, or oil that prevents spoilage.

Whole class activity:

Talk about Food Technologist Nicholas Appert, who in 1795 began experimenting with ways to preserve food, succeeding with soups, vegetables, juices, dairy products, jellies, jams, and syrups. Nicholas invented the basis of modern canning technique by preserving the process of boiling and preserving food in glass jars. Visit https://www.britannica.com/biography/Nicolas-Appert

Whole class activity:

Watch <u>The Father of Canned Food: Nicolas Appert - Hidden Genius</u> by Stuff Of Genius HowStuffWorks to learn more about Nicholas Appert. Watch here: https://youtu.be/z7ZCD8ZSB9U (1:37min)

Support

Where needed information is read aloud to some students.



Whole class activity:

Describe the sensory properties of food using the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life. Visit https://www.foodafactoflife.org.uk/media/6174/sensory-vocabulary-p316.pdf
This activity can be completed using a variety of foods, such as:

Apricot, tinned apricot, dried apricot

• Tomato: sundried tomato, canned tomato

• Cabbage: sauerkraut

• Onion: dried onion, pickled onion

• Cucumber: pickled cucumber

See **Resource Exploring Food Preservation and the Sensory Properties** in the Student Resources Design Folio, page 12.

Discuss how incorporating one of the preservation methods of an ingredient into a recipe can change the sensory properties of the dish. For example adding sundried tomato into pasta sauce enhances the taste and flavour of the dish.

Other suggested activities

Homework Activity: Look through recipe books and websites and research how different cultures pickle vegetables. Share findings with the class.

Practical: Pickling Vegetables or Spanish Pan Omelette (30-45 minutes)

Talk about the history of pickling and why it has been used for thousands of years as a technique to reduce food waste and enjoy foods all year round.

Share how vegetables can be pickled using any shape you choose. Some vegetables we love to pickle include carrots, cherry tomatoes, beans, and asparagus.

Talk about how in times of abundance preserving food is the best way to sustainably fill up the pantry and use up surplus food that may have otherwise gone to waste, and the different cultures that use pickling techniques.



Whole-class activity:

- Discuss safety when using hot appliances with students. See Risk Assessment in the FEAST Practical Guide, page 7.
- > Read through the recipe with the whole class.
- Demonstrate
 - Pickling Vegetables: How to cut the carrot/cucumber lengthways to make a flat surface and make a claw shape with your hand holding the food – keep your fingertips clear of the knife.
 - Spanish Pan Omelette: How to thinly slice the potatoes to ensure they are sufficiently cooked.
- > Form groups or pairs recommended group size: 2 students.
- > Students wash hands
- Hand out knives when students have collected their ingredients and assembled at their workstations.
- > Students prepare dish.
- Students wash dishes and clean up: explain the planned washing up process, including wiping down workstations and pack away/reset for next class.
- > Students eat.

Whole class activity - Wrap up:

- Discuss or write the following questions on the whiteboard for students to respond to:
 - O How does the recipe tackle food waste?
 - O How does the recipe encourage healthy eating?
 - O What skills have been used throughout the recipe?
 - O Did the cooking and preparation of the recipe maintain or improve its nutritional value? Explain.
 - O How did you consider food safety and hygiene when completing this practical cooking task?



Describe the sensory properties of the final dish using the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life. Visit https://www.foodafactoflife.org.uk/media/6174/sensory-vocabulary-p316.pdf

Conduct a <u>Cooking Class Food Waste Audit</u>. Record results and announce this week's winner. Consider making this a class challenge with other classes and observe if there is a decline in food wastage throughout the term. See <u>Cooking Class Food Waste Audit</u> on the FEAST Resources Practical tab.

Discuss how the ingredients in the recipe were used and therefore avoided from going to waste.

Discuss characteristics and properties of the ingredients that determine preparation techniques. For example: **Pickling Vegetables:** The acid from the vinegar will preserve the vegetables by killing off any microorganisms to prevent spoilage. The vegetables provide colour and retain a crunchy texture after the pickling process. **Spanish Pan Omelette:** The egg mixture when heated hardens and the potatoes soften. The spices provide flavour and colour and the capsicum and olives provide flavour and a crunchy texture.



LESSON 5: Investigating and defining - Understanding nutrition

Analyse how properties of foods determine preparation and presentation techniques when designing solutions for healthy eating AC9TDE8K05

Teacher background information

Students explore nutrients in food and have increased knowledge and confidence to prepare, cook and eat nutritious food. Understanding the role and health benefits of the five food groups. No single food contains all the required nutrients our body needs, so it's important to eat a variety of foods to maintain a healthy diet.

The content covered in this lesson supports and builds on the primary school Health and Physical Education (HPE), Science and Technologies Food and Wellbeing Australian Curriculum outcomes. Source: Curriculum Connections.

Recommended activities

Whole class activity:

Talk with students about what the <u>Australian Guide To Healthy Eating</u> by the Australian Government Department of Health shows us about the recommended daily food consumption. The bigger the portion of the pie chart means you should eat the most of this food group in a day. Visit https://www.eatforhealth.gov.au/guidelines/australian-guide-healthy-eating.

Whole class activity:

Facilitate group discussion about five food groups and ask tricky questions:

Q: "Does fruit juice or dried fruit go into the fruits group or the 'extras' group?"

A: Australian Dietary Guidelines advises that only ½ cup fruit juice or 2 tablespoons of dried fruit count towards a single fruit serve. Any more than that and even 100% fruit juice would be counted as an 'extra' food.

Q: "Are lentils, chickpeas, and beans part of the vegetable group or meat and alternatives group?" A: They are both! They are packed with protein and so they can go in either. Protein helps us grow and helps our muscles repair.

Support

Where needed students have responses scribed by the teacher or a peer.



Individual student activity:

Research the essential five food groups and provide a brief summary on the importance of each food group using the website https://www.eatforhealth.gov.au/food-essentials/five-food-groups. See Resource My Five Food Groups in the Student Resources Design Folio, page 13.

Individual student activity:

Adapt recipes to make healthy choices. The OzHarvest Wholemeal Pita Pizza reduces food waste by using a range of from the fridge toppings and is a healthy alternative to ordering takeaway pizzas. Using the <u>Australian Guide to Healthy Eating</u> students complete the table provided and add three extra ingredients to the pizza that would increase the overall nutritional value of the recipe. Students explain how the recipe addresses healthy eating and reduces food waste. See **Resource Adapting Recipes to Make Healthy Choices** in the Student Resources Design Folio, page 15.

Whole class activity:

Learn how cooking vegetables can affect the nutritional value. For example, heat breaks down the plant cell walls releasing vitamins and minerals for easier absorption, but over cooking can lead to nutrient loss. To get the best nutrient value, steaming vegetables maintains vitamin content compared to boiling them. **Watch**: How does cooking affect nutrients in veggies by Reactions to delve deeper into how cooking impacts vegetable nutritional value. Watch here: https://www.youtube.com/watch?v=6hFxSJcq-KU (4:32min).

Whole class activity:

Talk to students about how different food storage options can affect the nutritional value of food e.g. frozen produce maintains its vitamins compared to refrigerated produce. Watch Fresh or frozen food? Using Science to prove which is best with surprising results!- by BBC. Watch here: https://www.youtube.com/watch?v=As261YIO-6c (4:37min).



Practical: Wholemeal Pita Pizza or Chickpea and Lentil Kofta Pita Pockets (time 20-30 minutes)

Talk with students about how the ingredients and cooking methods we select when developing a recipe impacts the nutritional value of the recipe.

Whole-class activity:

- > **Read** through the recipe with the whole class.
- > Form groups or Pairs recommended group size: 2 students.
- > Students wash hands
- Hand out knives when students have collected their ingredients and assembled at their workstations.
- > Students prepare dish.
- > **Students wash dishes and clean up:** explain the planned washing up process, including wiping down workstations and pack away/reset for next class.
- > Students eat.

Whole class activity - Wrap up:

Discuss or write the following questions on the whiteboard for students to respond to:

- O How does the recipe tackle food waste?
- How does the recipe encourage healthy eating?
- O What skills have been used throughout the recipe?
- O Did the cooking and preparation of the recipe maintain or improve its nutritional value? Explain.
- How did you consider food safety and hygiene when completing this practical cooking task?
- Describe the sensory properties of the final dish using the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life. Visit <u>https://www.foodafactoflife.org.uk/media/6174/sensory-vocabulary-p316.pdf</u>

Conduct a <u>Cooking Class Food Waste Audit</u>. Record results and announce this week's winner. Consider making this a class challenge with other classes and observe if there is a decline in food wastage throughout the term. See <u>Cooking Class Food Waste Audit</u> on the FEAST Resources Practical tab.



LESSON 6: Generating and designing - 'Use It Up' Recipe Card and Information Sheet

Analyse the impact of innovation and the development of technologies on designed solutions for global preferred futures

AC9TDE8K02

Analyse how food and fibre are produced in managed environments and how these can become sustainable AC9TDE8K04

Analyse how properties of foods determine preparation and presentation techniques when designing solutions for healthy eating AC9TDE8K05

Generate, test, iterate and communicate design ideas, processes and solutions using technical terms and graphical

Teacher background information

Students develop design techniques and research skills whilst referring to the design brief/challenge.

Recommended activities

Invite students to revisit the design brief and think about what is possible in the time they have available to undertake their tasks in this unit.

Students prepare a project plan and outline what needs to be done, who is responsible, when things will be done and write it down as a suggested order of the work.

Consider will they use digital or non-digital equipment and tools? How might they work safely and cooperatively? How might they appropriately source their images and information that are used to create their recipes?

See **Resource 'Use It Up' Recipe Card & Information Sheet Project Plan i**n the Student Resources Design Folio, page 16.

'Use It Up' Recipe - Generate solutions and draft ideas

Before you research your recipe consider the following:

- O What commonly wasted food item features in your recipe?
- What ingredients and equipment are needed to prepare your recipe?
- o What healthy cooking methods are used?
- O Who is the recipe for? Any dietary requirements such as gluten free, vegetarian?
- O What ingredients are in season, fresh and local?
- O What ingredients do you already have?
- Cost and time.
- Expertise.

Ask students to research and document recipe ideas in their Design Folio. See **Resource Inspirational Ideas** in the Student Resources Design Folio, page 17.

Students **research** three healthy recipes that include their top wasted food to adapt for the task.

Support

Provide a scaffolded design brief for students to elaborate on.



representation techniques, including using digital tools AC9TDE8P02

Select, justify and use suitable materials, components, tools, equipment, skills and processes to safely make designed solutions AC9TDE8P03

Analyse how people in design and technologies occupations consider ethical and sustainability factors to design and produce products, services and environments

AC9TDE8K01

Recipe ideas may be gathered by browsing websites including:

- Use It Up Recipes by OzHarvest. Visit https://www.ozharvest.org/use-it-up/tips/
- o <u>Use Up Leftovers</u> by Big Oven. Visit https://www.bigoven.com/recipes/leftover
- Simple Meal Recipes by Cancer Council. Visit https://www.cancercouncil.com.au/cancer-information/living-well/nutrition-and-cancer/recipes-and-snacks/simple-meal-recipes/
- Vegetarian Recipes by The Heart Foundation. Visit https://www.heartfoundation.org.au/search/%22vegetarian%22
- o <u>Tryfor5 Recipes</u> by Nutrition Australia. Visit https://www.tryfor5.org.au/recipes-2
- <u>FEAST at Home recipes</u> by OzHarvest FEAST. Visit https://education.ozharvest.org/home-resources/

Individual student activity:

Select their top three recipes and write why they have selected each recipe in the spaces provided. Students choose one recipe and justify why they have chosen it, explaining how the recipe utilises their commonly wasted food and how it addresses healthy eating.

Other suggested activities

Class discussion:

Materials, tools, equipment, and evaluation

Challenge students to think about the materials, tools, and equipment they will need to design and create their 'Use It Up' Recipe Card and Information Sheet. 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 'Use It Up' Recipe Cards?

Challenge students to be in the solution business and define three ways to not waste food. For example, checking the food in the fridge regularly, looking at use by dates and moving food that needs to be used up to the front? Do they need to get creative and cook new recipes using food that might otherwise be wasted?



Practical: French Toast or Hummingbird Muffins (time 40-50 minutes)

It is recommended that both recipes are served with the Too Easy Ricotta.

Students learn to make their own ricotta! Making ricotta is a great way to reduce food waste by using up milk and watching a science process first-hand: mixing milk with an acidic ingredient like vinegar causes some of the milk proteins to curdle. Serve the ricotta with your hummingbird muffin or French toast. Whole-class activity:

- Discuss safety when using hot appliances with students. See Risk Assessment, Practical Guide
- > **Read** through the recipe with the whole class.
- Demonstrate
 - Handmade Ricotta: watch how to make <u>Too Easy Ricotta</u> by OzHarvest (0.41min). Watch here: https://www.youtube.com/watch?v=uklk_dTtQYA&t=3s
 - French Toast and Hummingbird Muffins: watch <u>How to Crack an Egg</u> (1.07min) by Howcast.
 Watch here: https://www.youtube.com/watch?v=Is5qnn2mjuM
- > Form groups or pairs recommended group size: 2 students.
- > Students wash hands
- Hand out knives when students have collected their ingredients and assembled at their workstations.
- > Students prepare dish
- > Students wash dishes and clean up
- Students eat

Whole class activity - Wrap up:

Discuss or write the following questions on the whiteboard for students to respond to:

- How does the recipe tackle food waste?
- How does the recipe encourage healthy eating?
- > What skills have been used throughout the recipe?
- > Did the cooking and preparation of the recipe maintain or improve its nutritional value? Explain.
- How did you consider food safety and hygiene when completing this practical cooking task?
- Describe the sensory properties of the final dish using the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life. Visit https://www.foodafactoflife.org.uk/media/6174/sensory-vocabulary-p316.pdf

Consider ways you could help students with visual/hearing impairments. (Scribing instructions on board or individual cards and ensuring that instructions are read clearly for all students before engaging in activities.)



Conduct a <u>Cooking Class Food Waste Audit</u>. Record results and announce this week's winner. Consider making this a class challenge with other classes and observe if there is a decline in food wastage throughout the term. See <u>Cooking Class Food Waste Audit</u> on the FEAST Resources Practical tab.

Discuss the recipe, ingredients, preparation and cook time. Discuss how the recipe can use up foods that might otherwise be wasted. For example, using stale bread in French Toast, over-ripe fruit in the Hummingbird muffins or leftover milk to make ricotta.

Discuss characteristics and properties of the ingredients that determine preparation techniques. For example:

French Toast: The bread base adds texture, fruit adds flavour, texture, and moisture to the dish. The fruit provides a specific flavour, adds texture, and colour, and contributes to the volume of the dish. **Hummingbird Muffins:** The flour and egg mixture when heated hardens and browns. The fruit provides

Hummingbird Muffins: The flour and egg mixture when heated hardens and browns. The fruit provides colour, moistness and flavour.

Too Easy Ricotta: When the milk is heated and the vinegar added, the mixture curdles and changes texture to firm and spreadable.



LESSON 7: Generating and Designing 'Use It Up' Recipe Card and Information Sheet

Generate, test, iterate and communicate design ideas, processes and solutions using technical terms and graphical representation techniques, including using digital tools AC9TDE8P02

Select, justify and use suitable materials, components, tools, equipment, skills and processes to safely make designed solutions
AC9TDE8P03

Develop design criteria collaboratively including sustainability to evaluate design ideas, processes and solutions

AC9TDE8P04

Develop project plans to individually and collaboratively manage

Teacher background information

Students action how they are going to produce their 'Use It Up' Recipe Card and Information Sheet.

Recommended activities

Individual student activity 'Use It Up' Recipe Card

Now that students have chosen their recipe, it's time to create their 'Use It Up' Recipe Card. **Ask** students to draft their 'Use It Up' Recipe Card by completing the template provided or creating their own. See **Resource 'Use It Up' Recipe Card Template** in the Student Resources Design Folio, page 20.

Individual student activity Information Sheet

Ask students to draft their Information Sheet that answers the questions outlined in the design brief. Students can draft their answers in the template provided or create their own. See **Resource Information Sheet Template** in the Student Resources Design Folio, page 21.

Before students begin drafting their Information Sheet they may consider revisiting the following questions and websites:

- a) Explain how the recipe tackles food waste. Refer to Resource What is Food Waste in the Student Resources Design Folio, page 6-7, completed at the beginning of the unit.
- b) Identify one storage tip to consider when creating your recipe. Visit What To Do Fight Food Waste by OzHarvest https://www.ozharvest.org/fightfoodwaste/what-to-do/.
- c) Explain how the recipe encourages healthy eating. Visit The Five Food Groups | Eat For Health by the Australian Government Department of Health https://www.eatforhealth.gov.au/food-essentials/five-food-groups.
- d) Explain one way you would cook or prepare your recipe to maintain or improve the nutritional value (e.g. steaming vegetables maintains vitamin content compared to boiling them). Watch How does cooking affect nutrients in veggies by Reactions https://www.youtube.com/watch?v=6hFxSJcq-KU.

Support

Provide a card template to help students identify required content and structure their 'Use It Up" Recipe Card and Information Sheet.



time, cost and production of designed solutions
AC9TDE8P05

- e) Identify one food safety tip to consider when creating your recipe. Complete the <u>Food Safety and Hygiene</u> worksheet by OzHarvest https://education.ozharvest.org/wp-content/uploads/2020/04/FEAST-Food-Safety-Hygiene editable-2.pdf.
- f) Discuss the characteristics and properties of the ingredients used in the recipe (e.g. flavour, appearance, texture and aroma). View the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life https://www.foodafactoflife.org.uk/media/6174/sensory-vocabulary-p316.pdf.

For students who are creating their own templates:

- 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.

Practical activity: Use It Up Veggie Fried Rice or Pumpkin and Tomato Quiches (time: 20 – 40 minutes)

Consider pre-cooking the rice for this recipe to save on time, given that brown rice requires longer cooking time or alternatively purchase microwave rice packets.

Whole-class activity

- Discuss safety when using hot appliances with students.
- > Read through the recipe with the whole class.
- **Demonstrate**
 - Veggie Fried Rice: How to mince the garlic by using a pinch of salt and the back of the knife to crush the garlic cloves.
 - o Pumpkin and Tomato Quiches: demonstrate how to roll the slice of bread so that it flattens.
- Form groups or pairs recommended group size: 2 students.
- > Students wash hands
- Hand out knives when students have collected their ingredients and assembled at their workstations.
- > Students prepare dish
- Students wash dishes and clean up



> Students eat

Whole class activity - Wrap up:

Discuss or write the following questions on the whiteboard for students to respond to:

- How does the recipe tackle food waste?
- How does the recipe encourage healthy eating?
- What skills have been used throughout the recipe?
- Did the cooking and preparation of the recipe maintain or improve its nutritional value? Explain.
- How did you consider food safety and hygiene when completing this practical cooking task?
- Describe the sensory properties of the final dish using the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life. Visit https://www.foodafactoflife.org.uk/media/6174/sensory-vocabulary-p316.pdf

Conduct a <u>Cooking Class Food Waste Audit</u>. Record results and announce this week's winner. Consider making this a class challenge with other classes and observe if there is a decline in food wastage throughout the term. See <u>Cooking Class Food Waste Audit</u> on the FEAST Resources Practical tab.

Discuss the recipe, ingredients, preparation and cook time. Discuss how the following foods found in the recipe can be used and thereby avoid them going to waste. For example, Veggie Fried Rice can use up limp carrots, sad beans and wilted greens.

Discuss characteristics and properties of the ingredients that determine preparation techniques. For example:

Veggie Fried Rice: The vegetables add colour, volume and texture. The rice provides volume and the herbs or spring onions add flavour, texture, and moisture to the dish.

Pumpkin & Tomato Quiches: The pumpkin and tomatoes provide a specific flavour, add texture, and colour, and contribute to the volume of the dishes. The egg and cheese mixture when heated hardens and browns.



LESSON 8: Producing and implementing – The 'Fight Food Waste' Promo

Analyse how properties of foods determine preparation and presentation techniques when designing solutions for healthy eating AC9TDE8K05

Generate, test, iterate and communicate design ideas, processes and solutions using technical terms and graphical representation techniques, including using digital tools AC9TDE8P02

Teacher background information

Students research and develop their 'Fight Food Waste' Promo and finalise their 'Use It Up' Recipe Card and Information Sheet.

Recommended activities

Class discussion: What is a promotion or promo for short?

A promotion is an activity that supports or encourages a cause, a venture or an aim.

Watch <u>If Ed Sheeran's "Shape of You" was about Food Waste</u> by Global Citizen. This video is a lighthearted creative promotion to reduce food waste <u>https://www.youtube.com/watch?v=B1-pKWOt2yM</u> (2:25min).

Discover global food waste avoidance promotions/campaigns:

- > OzHarvest 'Use It Up': https://www.ozharvest.org/use-it-up/
- I Value Food: https://sustainableamerica.org/blog/introducing-i-value-food-a-campaign-to-end-food-waste/
- Love Food Hate Waste: https://www.lovefoodhatewaste.com/
- Feeding the 5000: https://feedbackglobal.org/campaigns/feeding-the-5000/

Ask students to begin brainstorming and recording ideas and information for their 'Fight Food Waste' Promo. See **Resource 'Fight Food Waste' Promo** in the Student Resources Design Folio, page 23.

Class discussion: Students need to consider the following when drafting their ideas:

- > How will you inform, educate, inspire about preventing food waste?
- How does your promotion inform your target audience? Consider their cultural and racial diversity.
- How long will your promotion be?
- > Where will your promotion take place?
- What medium will you use for your promotion? For example a song, poster, play, dance or speech.

In groups or individually, students complete their 'Fight Food Waste' Promo project plan and outline what needs to be done, who is responsible and when tasks need to be done. Students review Resource 'Fight Food Waste' Promo Project Plan in the Student Resources Design Folio, page 19.

Support

Where needed scaffolding is supplied.



Creating the final solution:

Ask students to gather the materials and tools they require.

Talk with students about how they might share and present their final solution to an audience. Whether they might use food photography, a display folder, a digital presentation, or a combination of these to show evidence of their design and production process.

Other suggested activities

Whole-class activity:

Discover how some people promote new ideas and concepts by reviewing creative promotions made in the 'Gruen' television program by ABC iView. Watch here: https://iview.abc.net.au/show/gruen. **Note:** Teachers Gruen is classified PG. Adult guidance is recommended for people under 15 years. Please preview episodes prior to showing class as some episodes have explicit content.

Class discussion: there are different ways of promoting items, the key features should include:

- 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
- Preparing for questions

Read Eleven things startups can do to get their pitch deck on point by SmartCompany for more information about the key features of a promotion. Visit

https://www.smartcompany.com.au/startupsmart/advice/eleven-things-startups-can-do-to-get-their-pitch-deck-on-point/.

Homework activity:

Conduct a second home fridge and pantry audit at the end of the term to understand the different types of food waste created at home. Reflect on results of both audits conducted at the beginning and end of the term. Have your food waste behaviours at home changed? See Home Food Waste Audit by OzHarvest.



Practical activity: Easy Cheese Frittata or Poached Eggs in Tomato Sauce (time: 30-45 minutes)

Whole-class activity

- > **Discuss safety** when using hot appliances with students.
- > **Read** through the recipe with the whole class.
- > Form groups or Pairs recommended group size: 2 students.
- > Students wash hands
- Hand out knives when students have collected their ingredients and assembled at their workstations.
- Students prepare dish
- > Students wash dishes and clean up
- > Students eat

Whole class activity - Wrap up:

Discuss or write the following questions on the whiteboard for students to respond to:

- How does the recipe tackle food waste?
- > How does the recipe encourage healthy eating?
- > What skills have been used throughout the recipe?
- Did the cooking and preparation of the recipe maintain or improve its nutritional value? Explain.
- > How did you consider food safety and hygiene when completing this practical cooking task?
- Describe the sensory properties of the final dish using the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life. Visit https://www.foodafactoflife.org.uk/media/6174/sensory-vocabulary-p316.pdf

Conduct a <u>Cooking Class Food Waste Audit</u>. Record results and announce this week's winner. Consider making this a class challenge with other classes and observe if there is a decline in food wastage throughout the term. See <u>Cooking Class Food Waste Audit</u> on the FEAST Resources Practical tab.

Discuss characteristics and properties of the ingredients that determine preparation techniques. For example: **Easy Cheese Frittata**: Cheese adds texture and when heated hardens and browns. The garlic and onion add flavour and the frozen vegetables and spinach also provide a specific flavour, add texture, and colour, and contribute to the volume of the dish.

Poached Eggs in Tomato Sauce: The eggs when heated harden and provide texture, colour and flavour. The tomatoes and spinach have a specific flavour, texture, and colour, and add volume to the dish.



LESSON 9: Finalise 'Use It Up' Recipe Card and Information Sheet and Deliver the 'Fight Food Waste' Promotion

Analyse how properties of foods determine preparation and presentation techniques when designing solutions for healthy eating AC9TDE8K05

Develop design criteria collaboratively including sustainability to evaluate design ideas, processes and solutions AC9TDE8P04

Analyse how people in design and technologies occupations consider ethical and sustainability factors to design and produce products, services and environments

AC9TDE8K01

Teacher background information

Students finalise their 'Use It Up' Recipe Card and Information Sheet and deliver their 'Fight Food Waste' Promo.

Recommended activities

Students finalise their 'Use It Up' Recipe Card, Information sheet, 'Fight Food Waste' Promo script and design folio. **See Resources 'Use It Up' Recipe Card, Information Sheet and 'Fight Food Waste' Promo** in the Student Resources Design Folio, pages 24-26.

Individual assessment:

- Students share final designs with a peer in the class and seek feedback on their ideas.Group assessment:
- Students present their 'Fight Food Waste' Promo to their peers.

<u>Practical activity: Prepare 'Use It Up' Recipe for the 'Fight Food Waste' Promo or choice of 'Use It Up' recipe - Anything Curry, Everything Salad or Leftover Greens Pie</u>

Note: students cooking an OzHarvest developed 'Use It Up' recipe are required to visit: https://www.ozharvest.org/use-it-up/tips/ to access the recipe ingredients and steps.

Whole-class activity

- > **Discuss safety** when using hot appliances with students.
- > Form groups or pairs recommended group size: 2 students.
- Students wash hands.
- Hand out knives when students have collected their ingredients and assembled at their workstations.
- > Students prepare dish.
- Students wash dishes and clean up: explain the planned washing up process, including wiping down workstations and pack away/reset for next class.
- > **Students eat** or present the recipe at the Waste Avoidance Campaign.
- Discuss or write the following questions on the whiteboard for students to respond to:
- O How does the recipe tackle food waste?
 - O How does the recipe encourage healthy eating?

Support



- O What skills have been used throughout the recipe?
- O Did the cooking and preparation of the recipe maintain or improve its nutritional value? Explain.
- O How did you consider food safety and hygiene when completing this practical cooking task?
- Describe the sensory properties of the final dish using the <u>Sensory Vocabulary Poster</u> by Food a Fact of Life

Conduct a <u>Cooking Class Food Waste Audit</u>. Record results and announce this week's winner. Consider making this a class challenge with other classes and observe if there is a decline in food wastage throughout the term. See <u>Cooking Class Food Waste Audit</u> on the FEAST Resources Practical tab.

LESSON 10: Evaluating

Analyse how properties of foods determine preparation and presentation techniques when designing solutions for healthy eating AC9TDE8K05

Develop design criteria collaboratively including sustainability to evaluate design ideas, processes and solutions AC9TDE8P04 **Teacher background information**

In this lesson, students will deliver their 'Fight Food Waste' Promo and 'Use It Up' Recipe Cards. Students assess the results of the research undertaken to produce recipes, cards, and promotions.

Recommended activities

Whole class activity:

Students present their 'Fight Food Waste' Promo which includes successfully promoting their 'Use It Up' recipe idea, and what they've learnt about food waste and how to inspire others.

Students listen to presentations and reflect critically on:

- How much do their fellow students know about the subject matter?
- > How well have they used their chosen medium?
- How creative is their promotion?
- What is unique or eye-catching about their visual style?
- What concepts about the subject matter have they chosen to emphasize?
- Have they missed anything?

Support



Whole-class activity:

Students reflect on their learning by reviewing their criteria for success they developed at the beginning of the unit. See Resource **Analysis of The Design Brief and Criteria For Success** in the Design Folio. Students reflect on all aspects involved in researching and designing their 'Use It Up' Recipe Card and Information Sheet and Promotion.

Individual student activity:

Students evaluate their work by completing **Resource Evaluating** in the Student Resources Design Folio, page 27. Students use their criteria for success to evaluate their 'Use It Up' Recipe Card, Information Sheet and 'Fight Food Waste' Promotion.

Students can answer the following questions:

- Did you meet the design brief requirements?
- How can our food choices have a positive impact on our environment?
- > How do our food choices impact our health?
- > How did each member contribute to the task?

Individual student activity:

Students complete the post-program survey. Please complete the online student & teacher post-program surveys (this should take 10-15 minutes). The link will have been emailed to you by Week 9 of the term (please contact feast@ozharvest.org if you haven't received the link). You will need access to a device per student.

- For students completing a survey: Show Ronni's "Thank you" video to encourage students to complete the survey. View video here: https://youtu.be/bxEL1LLWMjg
- For students not completing a survey: please show this "Thank you" video from Ronni to your students to thank them for being part of our FEAST program and encourage them to continue their journey fighting food waste. View video here: https://youtu.be/e-ISR2iik60



Other suggested activities

Individual student activity:

Students self-assess their work samples by using the marking rubric provided in the FEAST Unit of Work to evaluate their individual and/or group contribution to the task.

Whole class activity:

Watch the 2018 Food Fighter Documentary (1hour 26 minutes) where Ronni Kahn sets out to expose and highlight Australia's food waste crisis. Watch the trailer here: https://youtu.be/wqtu6 glpHg

Available on Apple TV: https://tv.apple.com/au/movie/food-fighter/umc.cmc.1lf61zgvzpwv0dlt757kqpdlo

Thank you.

Please contact the FEAST team at <u>FEAST@ozharvest.org</u> if you have any questions or would like any additional resources. We thank you for delivering FEAST at your school.

Reflection

Questions to guide reflection:

- To what level did students achieve the learning outcomes?
- How effective were the activities in helping students to understand key concepts and achieve the learning outcomes?
- How did the teaching strategies and activities facilitate student engagement?
- How could the unit be improved to enhance student engagement and learning?