

Future Food Education Modules

Teacher's Guide Years 1-2





Educational Modules

Future Foods

Bunjil Place have teamed up with multi-sensory experience designers, Post Dining, to develop four "Future Food" modules based on the themes of Casey Cornucopia, exploring the food systems of the Casey region.

The modules encourage students to consider issues of food security in building a sustainable future. They will be encouraged to incorporate design thinking, scientific analysis and the creative arts to reimagine food systems and what we put on our plates!

The four modules for year levels 1-8 include:

1. Food Waste
2. Water Footprint of foods
3. Future Proteins
4. Local Native Foods

We hope you enjoy this adventure into our culinary future...

Bon voyage!

Module 1: Food Waste



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Module 1: Food Waste



[This module has an accompanying powerpoint](#)

Curriculum Links

Cross Curriculum Priorities



Sustainability

Year 1 Content

HASS | Skills | Interpreting, Analysing, Evaluating | AC9HS1S03: interpret information and data from observations and provided sources, including the comparison of objects from the past and present

Year 1-2 Content

HEALTH & PE | Personal, social and community health | Making healthy and safe choices | AC9HP2P06: investigate a range of health messages and practices in their community and discuss their purposes

DESIGN & TECHNOLOGIES | Knowledge and understanding | Technologies and society | AC9TDE2K01: identify how familiar products, services and environments are designed and produced by people to meet personal or local community needs and sustainability

DESIGN & TECHNOLOGIES | Knowledge and understanding | Technologies context: Food and fibre production; Food specialisations | AC9TDE2K04: explore how food can be selected and prepared for healthy eating

Learning Objectives

Understand what food waste is and how we can reduce food waste at home

Learning Outcomes

- Be able to identify one or more ways to reduce food waste
- Know how to dispose of food waste sustainably



Module 1: Food Waste



SLIDE 1-2 7-10 min



Discussion:

Q: Ask if students know what food waste is?

- Encourage answers which are examples of food waste or answers which mention food going bad or going in the bin.
- Conclude with the definition: "food that is thrown away or goes bad before it can be eaten"

Q: Ask if students know why we have food waste & where does it come from?

- Prompt answers such as buying too much food, serving ourselves more food than we can eat, forgetting about food in the cupboard or fridge, leaving food out of the fridge for too long, not knowing which parts are edible.

SLIDE 3-4 3-5 min



Learn about Food Waste in Australia

- Australia currently wastes 7.3 million tonnes of food each year;
- This is the equivalent of 13,000 Olympic sized swimming pools;
- OR one in five shopping bags ending up in the bin
- Food waste comes from our homes, our supermarkets, cafes and restaurants, and from farms.

Why is food waste a problem?

- If food scraps go to landfill, they become trapped without air among all of the other waste. Without air, they take longer to break down and they create pollution;
- This type of pollution can lead to climate change;
- By saving food waste from landfill, we are caring for our environment and looking after the planet.



Module 1: Food Waste



SLIDE 5-6 5-7min



Let's look at some ways we can reduce food waste!

We can COOK some scraps, for example:

- Green tops of carrots and beetroot - soups or salads;
- Vegetable skins e.g. pumpkin, potato, carrot, cucumber don't need to be peeled off. They are very good for us;
- Stems of broccoli or cauliflower;
- Banana peel! It can be cooked into a curry or made into banana bread;
- Sometimes scraps need to be cooked for longer before they can be eaten, like pumpkin skin.

SLIDE 7 5-7 min



We can CREATE more food

- Many plants can be regrown at home from food scraps such as a seed or a top. Has anyone tried re-growing food from scraps? If so, what did you grow?

Examples

- Spring onions re-grow quickly by putting the white bottoms with roots in a glass of water;
- Root vegetables like carrots and beetroot tops (the part you cut off where the leaves sprout from) will re-sprout if placed semi-submerged in water. They can then be planted;
- Cos lettuce, bok choy, celery, leeks all re-grow if the bottom is placed in water on a windowsill.



Module 1: Food Wasre



SLIDE 8-9 3-5 min



We could COMPOST our food scraps:

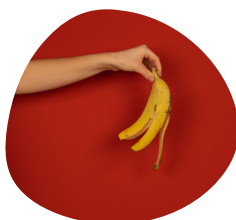
Recycling food scraps to turn them into soil!

- This is a natural process where food decays with the help of worms, tiny bacteria and fungi;
- Breaks down plant scraps into nutrients which can then be used for fertiliser to help more plants grow;
- You can compost at home OR you put scraps into your food & garden bin - this will be composted by the council.

Additional info on food recycling in Casey Council:

<https://www.casey.vic.gov.au/rubbish-recycling-food-waste>

SLIDE 10-15 10 min



WORKSHEET & GUESSING GAME

- Draw a line from each item of food to one or more of the matching methods; Cook, create, compost;
- Use the slides as prompts to help the students figure out the answers;
- Students can colour these in if you have time.

Hint: Some foods may have more than one answer.
(And they can all be composted)

BONUS ACTIVITY



Grow celery on windowsill in classroom!

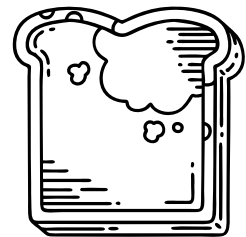
Place celery bottoms in a recycled glass jar filled with water - leave on the windowsill in the sun and watch the tops re-grow! Toothpicks may help to keep the celery in place. This can also be done with spring onions, root vegetables and herbs!

Can you help save food waste?

Choose which items you would cook, create or compost by drawing a line to each item. Some food waste might belong to two actions.



mouldy bread



pumpkin seeds

celery leaves



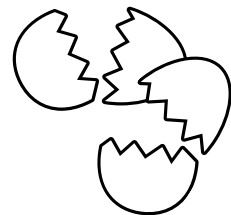
banana peel



celery end



carrot top



eggshells

Module 2: Water Footprint



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Module 2: Water Footprint



[This module has an accompanying powerpoint](#)

Curriculum Links

Cross Curriculum Priorities



Sustainability

> Year 1 Content

SCIENCE | Science understanding | Biological sciences | [AC9S1U01](#): identify the basic needs of plants and animals, including air, water, food or shelter, and describe how the places they live meet those needs

> Year 1-2 Content

HEALTH & PE | Personal, social and community health | Making healthy and safe choices | [AC9HP2P06](#): investigate a range of health messages and practices in their community and discuss their purposes

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DESIGN & TECHNOLOGY | Knowledge and understanding | Technologies context: Food and fibre production; Food specialisations | [AC9TDE2K03](#): explore how plants and animals are grown for food, clothing and shelter

Learning Objectives

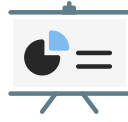
Recognise that different foods use different amounts of water to produce

Learning Outcomes

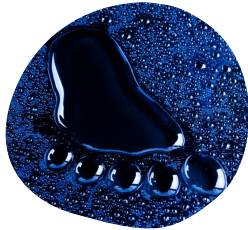
- Describe what water footprint means
- List foods with a low and high water footprint
- Describe what factors affect a food's water footprint



Module 2: Water Footprint



SLIDE 1-2: 6-7 min



Hand out printed copies of the worksheet and have students fill them in as you go through the module.

Introduce Water Footprint:

Q: Does anyone know what water footprint is?

A: It's the amount of water needed to grow, farm and prepare food.

Water footprint is made of:

- The water used to GROW the crops (both rain and irrigation);
- Water for animals to drink;
- It's also the water used to FARM food: harvesting, fertilising, cleaning equipment;
- Water in food PROCESSING factories: water added to canned food, or water to clean factory machinery.

All products have a water footprint, not just food:

- Clothes, cars, pens and pencils can all have their water footprint measured.

SLIDE 3-6: 10-12 min

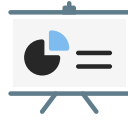


DISCUSSION ACTIVITY: Which food has the lowest water footprint?

- Look at the four foods on the screen and ask students to think about which one uses the least water to produce;
- Consecutively ask students to stand up if they think it's chicken / chickpeas / kangaroo / beef;
- Reveal the answers on the next slides - starting with the lowest.



Module 2: Water Footprint



SLIDE 3-6: 10-12 min



Note: lower water footprint foods are more sustainable.
Low footprint = less water (We will explore high and low water footprint further in the upcoming slides)

ANSWERS:

1. Chickpea (1300L for every 1kg of food)
2. Kangaroo (3000L of water per 1kg)
3. Chicken (3300L of water per 1kg)
4. Beef (15,400L of water per 1kg)

(Kangaroo and chicken are very close)

SLIDE 7-8: 5 min



Explore HIGH water footprint:

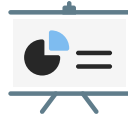
- Farmed animals require farmed feed AND drinking water to live - 98% of water footprint for farmed animals comes from the water footprint of their feed!
- Cows require more food and more water because they are much larger than chickens. Cows, sheep and pigs drink a lot of water because they come from landscapes which have a lot of rainfall;
- Highly processed foods have a high water footprint because of all the processing and equipment needed to make them.

WORKSHEET ACTIVITY

On your worksheets, use a red pencil to draw a water drop next to the foods with a higher water footprint.



Module 2: Water Footprint



SLIDE 9-11 10 min



What makes a LOW water footprint?

Overall, plants need less water than animals as they get most of their energy from the sun other plants.

Kangaroos

Kangaroos have a lower water footprint compared to other animals. Even though they are large animals, they are native to the Australian environment where there is less water around:

- Kangaroos eat native scrub and farmers do not have to grow feed for them;
- They drink less water as their body can reabsorb/recycle water passing through their intestines. Cattle and poultry can't do this;
- They can go months without drinking any water at all.

Other foods with low water footprint:

- Fruits and vegetables;
- Grains and cereals (like oats, wheat for bread);
- Legumes like baked beans, chickpeas, lentils;
- Eggs.

Exception: nuts have a high water footprint as these trees and crops require a lot of water

WORKSHEET ACTIVITY

On your worksheets, use a blue pencil to draw a circle around the foods with a low water footprint.

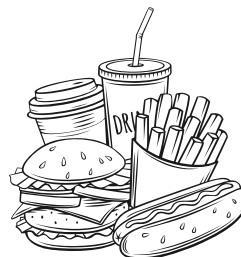
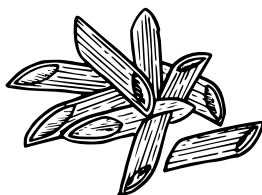
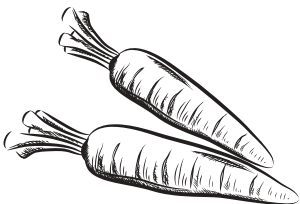
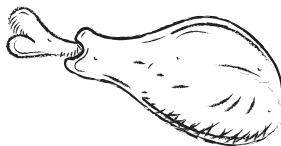
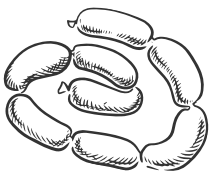
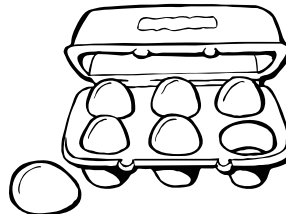
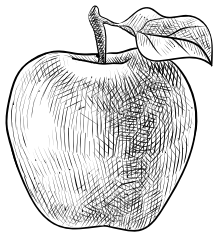
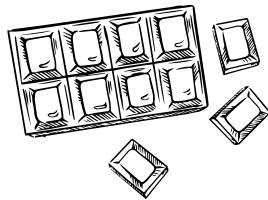
Name: _____

Water footprint

Draw a red water drop next to the foods with a high water footprint.



Draw a blue circle around the foods with a low water footprint.



Module 3: Edible insects (Future Proteins)



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Module 3: Edible Insects



[This module has an accompanying powerpoint](#)

Curriculum Links

Cross Curriculum Priorities



Sustainability

Year 1 Content

SCIENCE | Science understanding | Biological sciences | [AC9S1U01](#): identify the basic needs of plants and animals, including air, water, food or shelter, and describe how the places they live meet those needs

SCIENCE | Science understanding | Earth and space sciences | [AC9S1U02](#): describe daily and seasonal changes in the environment and explore how these changes affect everyday life

Year 1-2 Content

DESIGN & TECHNOLOGY | Knowledge and understanding | Technologies context: Food and fibre production; Food specialisations | [AC9TDE2K03](#): explore how plants and animals are grown for food, clothing and shelter

Learning Objectives

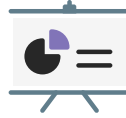
Identify certain insects as a sustainable and healthy food source

Learning Outcomes

- Be able to name at least one species of edible insect
- Be able to describe why insects are good for our health
- Be able to list at least one reason why insects are a sustainable food source



Module 3: Edible Insects



SLIDE 2: 7-10 min



Insects as Food: Interactive questions

- Put your hands up if you knew that some insects are edible?
- Put your hands up if you've ever eaten an insect that was served to you as food?

GUESSING GAME:

1. Can you guess how many types of edible insects there are around the world? (Answer: 2100)
2. Can you guess how many native Australian insects can be eaten? (Answer 60)
3. Can you guess how many countries in the world eat insects? (Answer 130)

SLIDE 3-5: 6-7 min



ACTIVITY: "Who Am I" game

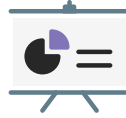
Explain that you will read out a list of "Who am I" questions. Students can raise their hand to guess what edible insect is being described.

Who Am I #1: Crickets

1. I am small, and brown or green;
2. I have big strong legs that let me jump very high;
3. I like to eat grass and crops;
4. I make chirping songs in the evenings;
5. You can eat me roasted or fried;
6. I am a cricket!



Module 3: Edible Insects



Crickets are very nutritious!

- Crickets have calcium which is good for our? Bones and teeth!
- Crickets are very high in protein which is good for our? Muscles and helping us grow
- Crickets are high in fibre which is good for our gut!

SLIDE 6-9 8-10 min



Who Am I #2: Mealworms

1. I am very small, and I have a long brown body;
2. I am often used to feed pet lizards or chickens, but humans can eat me too!
3. If you don't eat me, I will turn into a beetle;
4. I wriggle around and have very tiny legs that you hardly see against my long body;
5. I live on the ground and like dark places;
6. I am a mealworm!

Mealworms are very nutritious!

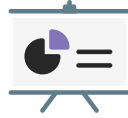
- They are very high in protein - just like crickets - which is good for our muscles and helping us grow;
- They are high in fibre which is good for our gut!
- They have fats which help our brains and heart to grow.

Lifecycle

Mealworms are the larvae (baby) form of a darkling beetle. The beetle will lay hundreds of eggs which hatch into mealworms. Then just like how a caterpillar turns into a cocoon, mealworms turn into a pupae - encasing themselves in a hard shell where they don't eat or drink or move. They stay like this for a couple of weeks before hatching into a beetle.



Module 3: Edible Insects



SLIDE 10-12 5 min



Who Am I #3: Witchetty Grub

1. I am big and juicy and I can be as big as your hand;
2. I am native to Australia. I live underground in the roots of one special type of bush. I live here because I eat the sap of the bush;
3. I am usually white or very light brown in colour;
4. If you don't eat me I will eventually transform into a big moth;
5. I taste delicious when roasted on a campfire;
6. I am a witchetty grub!

Witchetty grubs

They are one of the most famous forms of bush tucker, prized by different groups of Aboriginal people across the desert in Australia. They are full of nutrients to give you lots of energy!

SLIDE 13 5 min



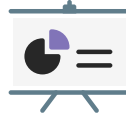
Why eat bugs?

- They can be farmed in crates and boxes which can be stacked on top of each other - so they take up very little space. This makes them good for farming in cities where there isn't much space;
- They are very small so they don't need as much food and water as animals like cows and pigs. This means they have a very low water footprint - who can remember what water footprint means?
- They grow very quickly and are easily renewable;
- They are very good for us and they taste delicious!

Put your hands up if you would try eating insects?



Module 3: Edible Insects

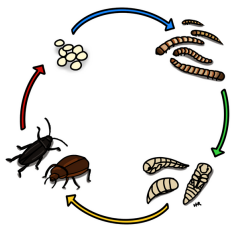


SLIDE 14 1 min



WARNING - DO NOT GO AND EAT BUGS YOU FIND IN THE GARDEN. THESE ARE NOT SAFE TO EAT. ONLY EAT BUGS IF THEY HAVE BEEN COOKED BY AN ADULT AND ARE BEING SERVED AS FOOD.

BONUS ACTIVITIES



Grow your own mealworm farm!

- You will need some layered containers, at least two with a mesh bottom;
- Start with meal worms sourced from a pet shop in one layer;
- Once the mealworms progress through each stage of the cycle you will end up with a layer for worms, pupae and beetles;
- Keep in a dark environment and watch the cycle of life!

For more info visit:

<https://bugible.com/2018/03/20/how-to-farm-your-own-mealworms/>

Offer your students edible insect tastings:

Purchase some snack crickets or mealworms from Circle Harvest <https://circleharvest.com.au/>

Name: _____

Edible insects



DO NOT eat bugs you find yourself



1. How many countries eat insects?



2. _____ and _____

are foods that help people grow strong

_____ and _____.



3. Farming insects is good for the planet because they use less

L _____, W _____

and F _____.

Module 4: Native Foods



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Module 4: Native Foods



[This module has an accompanying powerpoint](#)

Curriculum Links

Cross Curriculum Priorities



Aboriginal and Torres Strait Islander Histories and Cultures

Year 1-2 Content

SCIENCE | Science understanding | Earth and space sciences | [AC9S1U02](#): describe daily and seasonal changes in the environment and explore how these changes affect everyday life

HASS | Knowledge and Understanding | Geography | [AC9HS1K04](#): how places change and how they can be cared for by different groups including First Nations Australians

HASS | Skills | Interpreting, Analysing, Evaluating | [AC9HS1S03](#): interpret information and data from observations and provided sources, including the comparison of objects from the past and present

DESIGN & TECHNOLOGY | Knowledge and understanding | Technologies context: Food and fibre production; Food specialisations | [AC9TDE2K03](#): explore how plants and animals are grown for food, clothing and shelter

Learning Objectives

Recognise and appreciate First Nations people's place on Country; identify native foods

Learning Outcomes

- Identify we live on the traditional country of the Bunurong & Wurundjeri people
- Be able to identify one or more native foods, including the local chocolate lily



Module 4: Native Foods



SLIDE 1-2: 10 min



What is native food?

Q: Does anyone know what native means?

A: Native foods are plants and animals that grow naturally in Australia. They were not brought here from other countries.

Discussion:

- Has anyone tried any native foods?
- Do you remember where you tried them?
- Does anyone know the names of any native foods?

Examples on slide:

Top images: lemon myrtle, wattleseed, bush lime

Bottom images: saltbush, quandong, bush tomato

SLIDE 3-5: 15 min



Learning your Aboriginal Country.

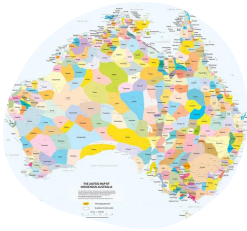
1. Give students the worksheet provided;
2. On the map of Australia, colour in the state of Victoria
3. On the map of Victoria, draw a star where; Melbourne/Casey is. Use the powerpoint slide to help you.



Module 4: Native Foods



SLIDE 3-5: 15 min



Learning your Aboriginal Country CONT.

Show students the Aboriginal map of Australia:

- These are the original Aboriginal countries in Australia;
- Each group had a different language and knew about their own climate and landscape;
- Some knew about the desert, some knew about the rainforest, some knew about the beach;
- Every Aboriginal group learnt about their own country, and they looked after it;
- By caring for the plants and animals, there was always enough food to go around.

Where we live in Casey is the traditional land of the Bunurong/Boon Wurrung and Wurundjeri people:

4. Help students to copy the names Bunurong and Wurundjeri on their map.

SLIDE 6 5 min



Foods that grow on Bunurong / Boon Wurrung & Wurundjeri Country.

- Water: we are near the beaches - seafood such as eels & mussels were found here;
- Plants: inland, plants such as wild yams, and plant roots, native spinach grew;
- Land animals: birds eggs, kangaroos and possums.



Module 4: Native Foods



SLIDE 7 10-12 min



ACTIVITY: Draw a chocolate lily onto your map

- Another native food to this country is the Chocolate Lily;
- It has chocolate scented flowers;
- The part we eat is actually the roots;
- We have 10 minutes to draw a chocolate lily onto our page.

Extra info: Why draw plants?

Through looking closer at plants and taking the time to get to know them better, we also get to know the world around us that much better.

BONUS ACTIVITY

Purchase some native food samples and offer the students to try: <https://melbournebushfood.com.au/>

Name:

Native Food



I live on

B _____ and

W _____ j _____ Country.

Draw a
native
chocolate
lily here



**These Future Food
Education modules have
been designed for Casey
Cornucopia by Post Dining.**

Postdining

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We design multi-sensory experiences that reimagine the relationship between people, food and the environment. Our designs take the form of immersive performances, exhibitions, workshops, events and festival programming. For Arts Industry, Corporate and Educational groups.

**Learn more about
Post Dining here!**