



LOCATION: CLASSROOM | SUGGESTED DURATION: AN HOUR AND A HALF

# Food Waste is Bananas!

## STUDENT GOALS

- I am beginning to understand how supply chains can cause food waste.
- I am beginning to understand financial terms like 'supply and demand' and 'profit and loss'
- I know what a duopoly is

## CURRICULUM LINKS

- Consumer and financial literacy.
- Knowledge and understanding about the nature of food systems.
- Understanding the nutritional quality of food and the environmental impact of food manufacturing processes, consumption and waste.

We're all a little bit different and that's what makes life interesting. So why aren't bananas allowed to be a little bit different too? This lesson plan examines how supply and demand and duopolies drive food waste.

## WHY DO WE WASTE SO MANY BANANAS?

To understand this, we have to look at how bananas are grown, distributed, stored and bought. This is called the **supply chain**.

Most bananas are grown right up the top of Queensland, a long way from where most people in Australia live. Bananas are then often transported to a ripening center that is closer to where people live.

In Australia, we have what is called a **supermarket duopoly**. This means that two supermarkets, Coles and Woolies, sell most of Australia's food. Together, Coles and Woolies supply 65% of our food. They are very big businesses, and this gives them a lot of power. For example, Coles earned over **one billion dollars** profit in 2023.

Farmers generally run much smaller businesses. The average banana farm in Australia makes about **one hundred thousand dollars profit** each year. That's **0.01% of the supermarkets' profit**. So when the supermarkets tell farmers that they want the fruit to look a certain way, the farmers listen and try to supply that. If the supermarkets reject your bananas, the farmer will have already paid for the picking, sorting, packing and ALOT of transportation, meaning that they will have **made a loss**. They then need to work quickly to find someone else to buy fruit that the supermarket rejects, before the bananas get overripe. And the riper a banana is, the less people will want it, and so it will be worth less money. This is called **supply and demand**.

This means that the biggest point of wastage in the banana supply chain is on the farms, where the farmers make the decision if they will be paid enough for these bananas to pay for the **supply chain** that brings fruit to market. Farmers are guided in these decision by **specifications**.



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## DID YOU KNOW?

The **specifications** for the perfect Cavendish banana from Fresh Markets Australia are:

- All bananas in the box need to be the same colour.
- They must feel firm, not soft.
- They can't have any 'foreign smells or tastes'.
- They must be 'lightly arched, with blunted butt end and intact, damaged necks'.
- They can't have 'double pulp' or 'sausage shapes'.
- They need to be 16-22cm.
- Their girth needs to be 3-4cm.

Do you think all of these characteristics are important? How come there aren't any specifications for how a banana tastes?

Do you think that Woolworths is right when they say that it is **customer expectations** that drive their produce specifications? Can you think of any other reasons why they'd want bananas to always be the same size and shape?

## WHAT ARE SPECIFICATIONS?

Specifications are a list of characteristics that produce such as bananas needs to have, in order to be sold at a particular place or to be sold at all. Some of these characteristics are very important – for example, the fruit needs to be free from disease, to stop diseases spreading around Australia. Other characteristics are just about how the produce looks in terms of its size or shape.

In 2024, the government conducted an investigation into how supermarkets run their businesses. As a part of this, they asked Woolworths for the exact specifications for bananas. Woolworths did not tell them this, though they did say that "Our produce specifications exist to ensure the fruit and vegetables going into our stores meet **customer expectations for freshness and quality**". We do know that their specifications will be a lot like the ones from Fresh Markets Australia.

A lot of bananas are thrown away on the farm, but there are also businesses that will buy the bananas that supermarkets reject. The bananas might go to wholesale markets and end up at smaller fruit and veg stores, be sold to food service, or sold to companies that make food like banana bread or smoothies.

## WHAT HAPPENS TO ALL THE REJECTED BANANAS?

Recently, there have been a few companies start up like Farmers Pick or Good and Fugly that send boxes of fruit and vegetables that don't measure up to the supermarkets' 'beauty standards' straight out to customers. Coles itself also now has the **I'mPerfect** range, and Woolworths has **The Odd Bunch**. Here, they sell fruit and vegies that are a range of sizes and shapes for **cheaper**. This might be good for customers, but it means **less money for the farmers**.

**In 2021, farmers were getting about \$1.50 per kilo for bananas. These bananas were then selling for around \$4.50 per kilo.**

Do you think this is a good solution? Or do you think it would be better if many different types of bananas were ok to be sold at full price?



## EXERCISE ONE: KEY TERMS

Try to define the following key terms:

1. Supply Chain
2. Profit and Loss
3. Supply and Demand
4. Farm Gate Price
5. Supermarket Duopoly

## RESOURCES

<https://washingtonpost.com/recipes/whole-banana-bread-black-sesame-and-walnuts/>

<https://www.freshmarkets.com.au/wp-content/uploads/Banana-Carnavon-Cavendish-Ripened.pdf>

[https://endfoodwaste.com.au/wp-content/uploads/2024/03/Banana-Industry-Sector-Action-Plan\\_Summary.pdf](https://endfoodwaste.com.au/wp-content/uploads/2024/03/Banana-Industry-Sector-Action-Plan_Summary.pdf)

<https://farmerspicks.com.au/pages/faqs?hcUrl=%2Fen-US%2Fabout-farmers-pick-557464>

<https://www.horticulture.com.au/globalassets/hort-innovation/levy-fund-financial-and-management-documents/annual-investment-plans-pdfs-202223/hort-innovation-aip-2022-23-banana-r.pdf>

[https://www.harvesttohome.net.au/static/comprehensive-reviews/20220327\\_HIA\\_Bananas\\_Comprehensive%20Review%20P3%202022%20Dashboard.pdf](https://www.harvesttohome.net.au/static/comprehensive-reviews/20220327_HIA_Bananas_Comprehensive%20Review%20P3%202022%20Dashboard.pdf)

<https://www.horticulture.com.au/globalassets/laserfiche/assets/project-reports/ba17003/ba17003---final-report-complete.pdf>



# These Recipes are Bananas!

WHOLE BANANA BREAD.

## FRESH FROM THE GARDEN:

Eggs, and bananas if you're lucky!

## SEASON:

All year.

## SERVES:

30 tastes in the classroom, or 8-12 slices.

## Equipment

freezer

oven

food processor

scales

metric measuring cups

pastry brush

loaf pan or brownie pan

baking paper

bowls

whisks

spatula

## For the banana bread:

2 large very ripe bananas  
(around 340 grams), skin on

140 grams unsalted butter,  
melted and cooled

1 1/2 cups caster sugar

2 large eggs, room temp

2 teaspoon vanilla extract

2 teaspoons cinnamon

2 cups all-purpose flour

1 teaspoon baking soda

1 teaspoon fine sea salt

Yes! You can use bananas with their skin on to make a tasty banana bread!



## What to do:

1. Wash the bananas, cut off both ends and freeze them at least 8 hours, or overnight. Defrost.
2. Preheat oven to 160 degrees celsius. Grease a loaf pan or brownie pan with butter or cooking oil spray, and line with baking paper.
3. In a food processor, puree the bananas and peels until smooth. Measure out 320 grams. You can freeze the rest for next time.
4. Transfer the puree into a large bowl. Add the granulated sugar, melted butter, eggs and vanilla. Stir to mix well.
5. In another large bowl, whisk together the flour, cinnamon, the baking soda and salt until combined.
6. Add the dry ingredients to the banana mixture and stir just enough to incorporate.
7. Scrape the batter into the prepared loaf pan and smooth the top.
8. Bake for about an hour, until a tester inserted into the center comes out clean and the top is deeply browned.
9. Wait till cool then ice with an icing of choice. Cream cheese icing is good!



# These Recipes are Bananas!

BANANA KETCHUP

## FRESH FROM THE GARDEN:

Garlic, onion, and bananas if you're lucky!

## SEASON:

All year.

## SERVES:

30 tastes in the classroom, or one big bottle to put on everything!

## Equipment

oven

heavy base pot

spatula

## For the banana jam:

4 very very ripe bananas,

1 onion

40 grams garlic

1/3 cup vegetable oil

1 cup apple cider vinegar

1/3 cup soy sauce

1 tbsp tomato puree

1/2 tsp tumeric

1 tsp paprika or hot chilli,  
depending on how much spice  
you like

1 1/4 cups brown sugar

If you're know Filipino food, you know about banana ketchup! If not, you're about to find out. This version uses very ripe bananas with the peel on for low waste.

## What to do:

1. Roast whole bananas, skin on, in a 180 degree celcius oven until very soft and beginning to brown. Cool.
2. Blend onion, garlic and ginger together until smooth.
3. Heat oil on a medium heat in a large heavy base pot. Add the onion mix and cook it slowly, sitrring alot until it smells great, and is starting to go brown and stick to the bottom of the pot.
4. Stir through the tomato puree and the spices.
5. Blend the bananas, vinegar and soy sauce together. Add this to the pot, along with the sugar. Bring it slowly back to the boil. What does it look like? Too runny? If so, you can cook it until it's as thick as you like. Don't forget to stir!
6. Taste at the end to see if it needs more salt. You can add some more to your liking. Store in the fridge and use whenever you would use tomato sauce!

