



LOCATION: CLASSROOM | SUGGESTED DURATION: 1 AND 1/2 HOURS.

Food Waste is Unappealing!

STUDENT GOALS

- I can think of how to use 'waste' produce so it doesn't become waste at all
- I understand percentages
- I can scale up percentages to work out waste for larger groups of people.

CURRICULUM LINKS

- Consumer and financial literacy
- Knowledge and understanding about the nature of food systems
- Informed and appropriate food preparation choices when experimenting with, preparing, consuming and disposing of food in a sustainable manner.
- Understanding the nutritional quality of food and the environmental impact of food manufacturing processes, consumption and waste.

Which fruits and vegetables do you peel? Which ones don't you peel? Why? Does everyone peel the same fruits and vegetables? Or does it vary?

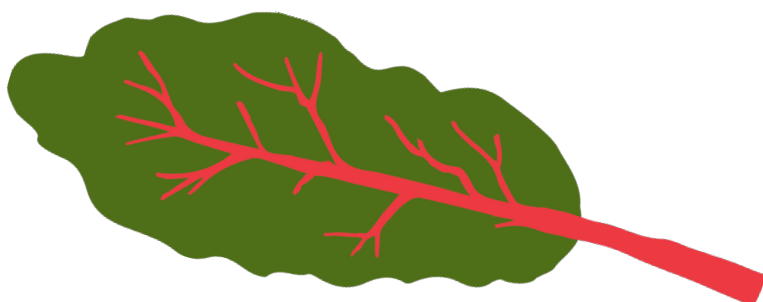
This lesson uses peels and scraps from vegetable preparation to explain maths concepts such as percentages, proportions and scaling up.

DID YOU KNOW?

Peels are often **higher in vitamins and minerals** than the rest of the fruit or vegetable.

Peels are much **higher in fibre** than the rest of the produce: this not only helps you feel full for longer, but also helps your gut health long term.

Washing will remove most of the residual pesticides from peels. Peeling will take away more, but the loss of nutrients and fibre probably outweighs the health risks from pesticides.





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EXERCISE ONE: PEELS AND PERCENTAGES

A peel doesn't seem like much waste when you just do one carrot or apple but it sure does add up! Let's work out just how much.

DID YOU KNOW?

The skin of the potato is **very high in iron** compared to the rest of the potato.

Iron helps move oxygen around the body, and without enough iron we can feel very tired and not be able to concentrate.

MEASURING

1. Take a potato and weigh it.
2. Peel the potato and weigh the peel.
3. What percentage of the potato is the peel? What fraction?

SCALING UP

Australians eat an average of 17kg of potatoes a year, and mostly they are buying those with peels on.

1. How many kilos of potato per person could be saved if we ate their peels?
2. How many kilos could be saved for your school?
3. How many kilos could be saved for the whole of Australia?



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EXERCISE TWO: FARM WASTE

Waste doesn't only happen at home, it also happens on the farm. Mostly this is very hard for us as customers to judge, because we don't see it. But sometimes you can get 'dutch carrots' that still have their leaves and stalks on. This lets us estimate how much farm waste a carrot produces.

MEASURING

1. Weigh the tops of the carrots you are using in the recipe.
2. Weigh the stalks that you have to throw out
3. Weigh the peels of carrots you are using in the recipe.
4. Weigh the peeled carrots.
 - a. What percentage of the carrot is tops and what percentage is stalks?
 - b. What percentage of the carrot is peels?
 - c. What percentage is peels?

SCALING UP

Australians eat around 7 kilos of carrots per year. Mostly, people buy carrots without their tops and stalks, but that still have their peels on. So!

1. How many kilos of 'farm waste' carrot tops and stalks are wasted to create those 7kgs of carrots?
2. How many kilos of carrots are wasted through peeling (assuming everyone is peeling their carrots)?
3. Now, scale up! How many kilos of farm waste are there for all the carrots eaten by everyone in your school in a year? For everyone in Australia?
4. And how many kilos of peels are wasted for everyone in your school in a year? For everyone in Australia.

RESOURCES

<https://www.growingproduce.com/vegetables/the-skinny-on-potato-skin/>

<https://www.qff.org.au/presidents-column/the-year-of-horticulture-continues-celebrating-the-humble-carrot/>

<https://www.bbc.com/future/article/20250124-eat-the-peel-why-you-might-be-throwing-away-the-best-bit-of-your-fruit>

https://www.healthline.com/nutrition/peeling-fruits-veggies#TOC_TITLE_HDR_4



A-peel-ling Recipes: Crispy Potato Skins

FRESH FROM THE GARDEN:

Potatoes.

SEASON:

All year, but new season potatoes are generally harvested June-August in warm climates, and between December-February in cool climates.

SERVES:

Variable.

Equipment

oven

fridge

bowl or storage container

salad spinner or paper towels

baking tray

baking paper

For the skins:

potato peels

olive oil

salt

lemon juice, if keeping

This recipe for Crispy Potato Skins is the perfect thing to do when you're making something that you want really smooth and skin free, like a creamy mashed potato.

What to do:

1. Soak your potato skins in water for a few hours. You can keep a container of water with a squeeze of lemon juice in it in the fridge and add the skins to it over a couple of days. The lemon juice stops the peels going a funny colour.
2. When you are ready to cook the skins, drain the water off and dry the potato skins well, either with a salad spinner or blot them dry with paper towels.
3. Preheat your oven to 200 degrees celcius.
4. Toss the peels in olive oil.
5. Line baking tray with baking paper, and put peels in a single layer.
6. Cook in the oven, stirring them occasionally to make them crisp. It'll probably take about 25 minutes.
7. When they are ready, take them out and sprinkle them with salt. Eat while nice and hot.



A-peel-ling Recipes: Scrappy Carrot Pesto

FRESH FROM THE GARDEN:

Carrots, garlic, parsley.

SEASON:

All year.

SERVES:

20 tastes in the classroom, 4 at home.

Equipment

oven

metric measuring scales

jugs and spoons

tea towel

chopping board

cook's knife

grater and juicer

small frying pan

food processor

serving bowl

For the pesto:

1 cup pine nuts*

2 garlic cloves

1 cup parsley leaves, well packed

the tops and peels from 2-3

carrots, making about 2.5

cups altogether, well packed**

1 cup olive oil

juice of a lemon

pinch of salt

* can substitute cashews, pepitas or sunflower seeds.

** feathery leaves only, discard tough stems, and make sure peels are well washed.

If you manage to buy dutch carrots, or you grow your own carrots, you can make this recipe. This recipe uses up the peels and tops of carrots to make a delicious pesto which you can schmear on toast, mix through pasta or eat (with carrot sticks!!) as a snack. It's perfect for using the carrots you grow in your school's Kitchen Garden.

What to do:

1. Preheat the oven to 180 degrees celcius.
2. Make sure you have all the ingredients in the list, and they are prepared properly.
3. Toast the nuts in the oven until they smell good, and are nice and brown.
4. Add the garlic and the toasted nuts to the bowl of a food processor. Process the mix until fine and crumbly.
5. Add the parsley leaves, carrot tops and carrot peels to the food processor and process until finely chopped.
6. Place the parmesan in the bowl of the food processor. With the motor running, slowly add the olive oil.
7. Add the lemon juice and salt and pulse to combine.
8. Check seasoning and adjust if necessary.
9. If you are storey the pesto, put a layer of oil on top, and keep in the fridge.