Education Pack Fighting against food waste



Primary 1 - 3



Primary 4 - 6



Primary 6 - 7



Secondary



Whole school



Introduction

Welcome to the Love Food Hate Waste education pack for the Scottish curriculum. Love Food Hate Waste is here to help us all make the most of the food we love. By taking simple steps we can all reduce the food that we end up throwing away, saving ourselves money and reducing our impact on the planet. In Scotland, Love Food Hate Waste is run by Zero Waste Scotland as part of our drive to value resources and inspire change.

Through a variety of engaging and easy to use inter-disciplinary lessons, your learners are given a voice on a significant problem facing our world today. They are able to contribute directly in a positive and tangible way to the Global Goals for sustainable development from the United Nations and the Scottish Government pledge to reduce the food we throw away by 33%.

We are here to support your teaching and enhance learning. Along with curriculum links and engaging activities this pack includes:

Primary lessons

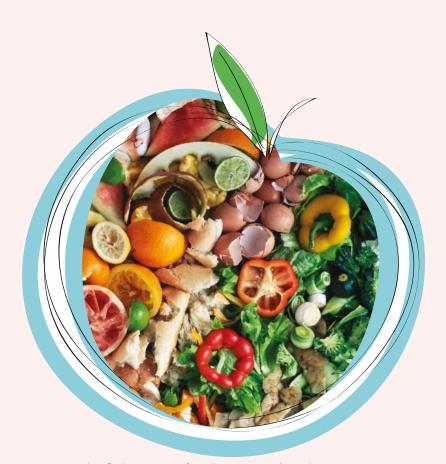
The first lesson of each age group will inform and inspire your learners, the second will have them loving and valuing food, while the third will give them all the practical know-how to hate waste and save food from the bin.

• Secondary lessons

Subject specific and stand-alone, these lessons are the perfect opportunity to embed Learning for Sustainability across the curriculum and tackle a pressing global issue in a different context.

• Whole school lessons

Putting your learning into practice, the whole school lessons facilitate your engagement with food in the school setting and support you in sharing what you've learned with the wider community.



Thank you for joining us in the fight against food waste and we hope you enjoy taking your learners along on this journey to save food from the bin.

The Love Food Hate Waste team, Zero Waste Scotland.

lfhw@zerowastescotland.org.uk







Primary 4 - Primary 6

Curriculum links

Mid primary lessons	Lesson 1 Shock spending scandal	Lesson 2 Your country needs you	Lesson 3 Plate promise
Expressive Arts	EXA 0-01a / EXA 1-01a / EXA 2-01a, EXA 1-02a/EXA 2-02a, EXA 0-07a / EXA 1-07a / EXA 2-07a / EXA 3-07a, EXA 0-13a / EXA 1-13a / EXA 2-13a, EXA 0-15a / EXA 1-15a / EXA 2-15a / EXA 3-15a		
Health and Wellbeing	HWB 1-35a / HWB 2-35a	HWB 1-35a / HWB 2-35a	HWB 1-35a/HWB 2-35a, WB 2-36a
Literacy and English		LIT 1-04a, LIT 1-24a, LIT 1-26a,	LIT 0-10a, LIT 1-04a
Numeracy and Mathematics	MNU 1-20b	LIT 1-28a / LIT 1-29a	MNU 1-20b
Sciences	SCN 1-02a, SCN 1-04a	MNU 1-20b	
Social Studies	SOC 1-08a		SOC 1-08a, SOC 1-18a
Technology	TCH 1-03a / TCH 2-03a, TCH 1-04b / TCH 2-04b	SOC 1-14a, SOC 1-08a	TCH 1-03a / TCH 2-03a, TCH 1-04b / TCH 2-04b
Religious and Moral Education		TCH 1-02a	





In a nutshell

This lesson looks at the extent of food waste in Scotland and the financial implications of wasting food that could have been eaten. Learners consolidate this information by writing a news article and performing a play about the 'spending scandal' and why they should value food and not waste it.





Core learning

We are learning about the amount of food we throw away in Scotland that could have been eaten. We understand that by saving food we are also saving money and reducing our impact on the planet.



Preparation

- Print or share the 'Food waste diary' with each learner and ask them to record food waste in their home over one week.
- Share the 'Food waste in Scotland' quiz with learners.
- Display 'Shock spending scandal' PowerPoint.



Starter

Explain to the class that today we will be learning about how much food we waste in Scotland. To begin we are going to see how much they know already. Ask learners to complete the 'Food waste in Scotland' quiz.

Why not show this short film from the Food and Agriculture Organisation of the United Nations to help learners appreciate the world's food waste problem:

www.youtube.com/watch?v=loCVrkcaH6Q





Main

News Article

Ask learners to pretend that they are reporters from a Scottish newspaper. They have just discovered how much money is being wasted in food that is thrown away. Ask them to write a breaking news article titled 'Shock spending scandal in Scotland'.

Remind learners to use the statistics and facts that they've learned - they may also want to do some additional research. They should be clear (no jargon), concise (keep to the facts) and correct (reference where your information is from).

The emphasis should be that this is happening in our own homes and that people are unaware of what they can do to change it.

The article should include:

- A relevant image.
- Persuasive and emotive language.
- A beginning which grabs attention.
- All the facts see the quiz and PowerPoint.
- A middle section with a quote from someone affected by food being wasted.
- A powerful ending what final thought do you want to leave your audience with?

Ask learners to read their article aloud in small groups and encourage meaningful peer feedback. They should tell each other what was good about their articles and what would make it even better.



News Article - act it out!

Ask learners to work collaboratively in groups of 6 to 8 to produce and film a news report on 'Shock spending scandal in Scotland'.

The play should have a live news reporter in a studio with various reporters interviewing people affected by the $\mathfrak{L}1.1$ billion worth of food chucked out unnecessarily in Scotland.

Learners should come up with a name for their news show, they may even want to find music to accompany it. Learners could draw inspiration from their articles.



Here are some suggested characters:

News anchor - The news anchor introduces the news report.

Stage suggestions - Wears a blazer sitting behind a desk while shuffling papers.

Reporters - Introduced by the news anchor, the reporters interview various characters.

Stage suggestions - Carries a microphone or pretends to do so.

Fisherman/woman - Talks about how much hard work fishing is and the difficult conditions at sea. Expresses anger at fish being wasted.

Stage suggestions - Dressed in wet weather gear, pretends to be by the

Farmer - Talks about working long hours tending crops which can be affected by the weather. Expresses surprise that people would waste valuable food.

Stage suggestions - Holds a carrot or other vegetable, wears wellies.

Cow - Talks about how long the milking process is. Expresses sadness that her milk is being wasted!

Stage suggestions - Dressed in ears with black spots, moos intermittently.

Shopper - Talks about how shocked they are about how much money they are wasting and how they would much rather spend £460 on games, books, shoes, hobbies, holidays. The shopper is sad that they can't buy these things now.

Stage suggestions - Holds a shopping bag or handbag

The play should be rehearsed and when learners are ready it should be recorded.



Dessert

Tell learners that the Scottish Government has set a target of reducing food waste by 33% in Scotland by 2025. How do they think they could contribute to this target? Ask learners to look at the food waste diaries that they have kept all week and to see what food that they could have avoided wasting.

Ask them to think about what they could have done with the food that they wasted:

- Put it in the freezer
- Stored it in the fridge
- Reimagined it into something else



Extra helping

Why not ask learners to perform their play to the rest of the school and/or parents?

Curriculum for Excellence Experiences and Outcomes Expressive Arts

- EXA 0-01a / EXA 1-01a / EXA 2-01a: I have experienced the energy and excitement of presenting/performing for audiences and being part of an audience for other people's presentations/performances.
- EXA 1-02a: I have the opportunity to choose and explore a range of media and technologies to create images and objects, discovering their effects and suitability for specific tasks.
- EXA 2-02a: I have the opportunity to choose and explore an extended range of media and technologies to create images and objects, comparing and combining them for specific tasks.
- EXA 0-07a / EXA 1-07a / EXA 2-07a / EXA 3-07a: I can respond to the work of artists and designers by discussing my thoughts and feelings.
 I can give and accept constrictive comment on my own and others' work.
- EXA 0-13a / EXA 1-13a / EXA 2-13a: Inspired by a range of stimuli,

I can express and communicate my ideas, thoughts and feelings through drama.

• EXA 0-15a / EXA 1-15a / EXA 2-15a / EXA 3-15a: I can respond to the experience of drama by discussing my thoughts and feelings. I can give and accept constructive comment on my own and others' work.

Health and Wellbeing

HWB 1-35a / HWB 2-35a: When preparing and cooking a variety
of foods, I am becoming aware of the journeys which foods make from
source to consumer, their seasonality, their local availability and their
sustainability.

Numeracy and mathematics

 MNU 1-20b: I have used a range of ways to collection information and can sort it in a logical, organised and imaginative way using my own and others' criteria.

Sciences

- SCN 1-02a: I can explore examples of food chains and show an appreciation of how animals and plants depend on each other for food.
- SCN 1-04a: I am aware of different types of energy around me and can show their importance to everyday life and my survival.

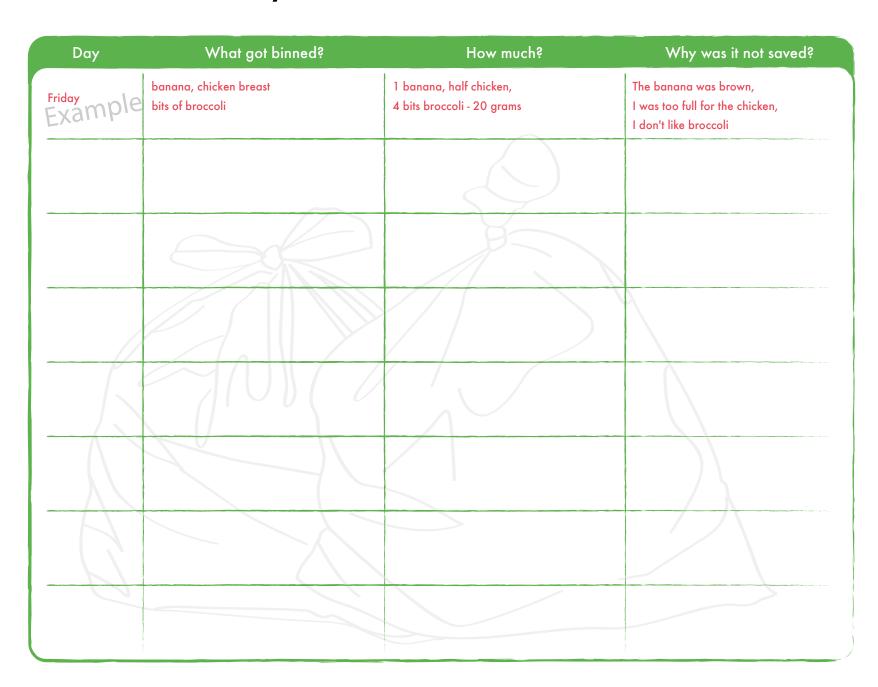
Social Studies

 SOC 1-08a: I can consider ways of looking after my school or community and can encourage others to care for their environment.

Technologies

- TCH 1-03a / TCH 2-03a: As I extend and enhance my knowledge of features of various types of software, including those which help find, organise, manage and access information, I can apply what I learn in different situations.
- TCH 1-04b / TCH 2-04b: I can create, capture and manipulate sounds, text and images to communicate experiences, ideas and information in creative and engaging ways.

Food waste diary





Helpful tips

Pin your diary to the fridge to remind you to fill it in!

Record waste from every meal

Include all food waste (e.g. peelings, fruit skins, tea bags etc.)

A rough estimate of the quantity will be fine.





In a nutshell

This lesson looks at what life was like during World War II (WWII) and how rationing led to a greater appreciation of food with very little being wasted. It compares how much we valued food then to how much we waste now. It looks at propaganda posters used during WWII and asks learners to create a poster to help reduce food waste.



Core learning

We are learning that during World War II children like us would have valued food more than we do now but we understand that even though our food is not rationed we should still value it and save it from the bin.



Preparation

For this activity you will need:

- Display 'Your country needs you' PowerPoint.
- 3 eggs at different stages of freshness.
- Clear container or glass filled with water.

For the 'Pickled and preserved taste test' you will need a range of pickled items such as onions, cucumbers, eggs, cabbage, beetroot and the equivalent non-pickled or preserved items to compare.

Please note: For the egg float activity you will need an egg that is going or has gone off. This can take a long time (weeks or even months) and is something to consider before doing this activity.





Starter

Show the class the following video which provides real life accounts of what life was like during World War II Britain:

https://www.youtube.com/watch?v=35NpLveVZDg



Ask learners the following key questions:

- Do you think that children appreciated food more at this time?
- Why do you think this is? Examples from the video include sweets and chocolate not being readily available and having to gueue for food.
- What is hour favourite food? How would you feel if this food was no longer available because of rationing?

Explain that food was rationed during World War II and for some time after because it was scarce and needed to be fairly distributed to make sure that everyone had enough. This affected the way people treated food. They valued it more and wasted very little.

The limited supply of food meant that families and communities often grew their own vegetables such as onions, potatoes and turnips. They also made their food last longer by preserving it in various ways such as pickling and making sauces, jams and chutneys.

The government had a campaign called Dig for Victory! Why not have a wee look at the first 1 min 20 seconds of this film:

http://media.nationalarchives.gov.uk/index.php/dig-for-victory/

Learners will now look at propaganda in more detail.



Main

Show learners the 'Your country needs you' PowerPoint which contains images of posters that were produced during WWII. Some of these posters focus on not wasting food by taking too much. Explain that these posters were produced by the government at the time to motivate and influence British citizens to take action and support the war effort. You may wish to explore the concept of propaganda in more detail (e.g how it can be biased to one point of view and politically motivated).

Ask learners to design their own WWII style propaganda poster to motivate people to reduce food waste now. You may want to show the 'Shock spend scandal' PowerPoint from lesson 1 here and encourage learners to use these statistics.

Learners should consider using:

- · Catchy slogans and persuasive language
- Techniques like rhyming and alliteration
- Bold colours
- Eye-catching images
- Incentives

If you are taking part in the 'Autopsy of food waste' whole school lesson it might be an idea to use your posters to decorate the dining hall.



"Just a bit of news, I have a real orange..."







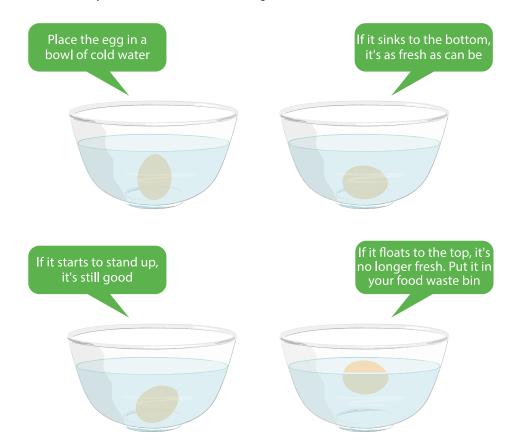
Dessert

Why not try one or both of these activities to bring the lesson to life for your learners?

Who's the bad egg?

Ask learners how they know when food has gone off?

Answers may include smells, taste, looks funny or the date labels (use by) tell us so. Explain to learners that in WWII there weren't any date labels. Tell them that they will be investigating how to tell if eggs have gone off without any information other than a glass of water.



Taking a number of eggs of differing freshness put them in a clear container filled with water and ask learners to note down the differences between the eggs.

- If the egg floats it has gone bad and isn't safe to eat.
- If the egg lies flat it is very fresh and safe to eat.
- If the egg is on its side it is still good to eat but not the most fresh egg.

Ask learners why they think this is? What could cause the egg to float? Tell them that egg shells have tiny holes in them that are too small for us to see but allow some air to get through. The longer the time since the egg was laid, the more time air has had the chance to get into the egg. The more air that the air has in it, the more it will float.

Don't get in a pickle

Remind the class that during WWII pickling vegetables was a great way to make vegetables last longer and go further. Pickling is still done today! Ask the class what pickled food they have tried? What about jams and chutneys or other preserved food?

Explain to learners that they are now going to take part in a 'Pickled and preserved taste test'.

Offer them a range of pickled and preserved food and ask them to rate the foods from 1-5 with 1 meaning 'didn't like at all' to 5 meaning 'loved it'. Why not compare and contrast the pickled or preserved food with the unpickled or unpreserved:

- Pickled onions with unpickled onions
- Tomato chutney with tomatoes
- Raspberries with raspberry jam

Ask learners if they think this is a good way of making food last longer?

Explain to the class that pickling food in liquids like vinegar and brine prolong the lifespan of foods by preserving it from decay and 'bad' bacteria or microorganisms (the types that cause food poisoning).

Some foods may go under natural fermentation at room temperature.

This is when 'good' bacteria (lactic acid bacteria) eat sugars in the food

and then leave behind lactic acid which is a type of

vinegar. Other pickles are made by placing vegetables and other foods in vinegar you can find in a supermarket.

Keeping the food air tight means the 'good' bacteria can grow and multiply limiting the growth of 'bad' bacteria. That combined with the solution it is held in (vinegar or salty solution) and the temperature the it is stored at can play a part in the change of taste and texture of the food kept in the jar or container.

Why not try some simple pickling with your learners? Recipes can be found online.





Extra helping

Why not try this interactive game about rationing during WWII:

 $www.bbc.co.uk/schools/primary history/world_war2/food_and_shopping$

Why not write down a recipe from WWII that helps prevent food from being wasted. This might have been passed down through your family or you could find one on the internet.

Curriculum for Excellence Experiences and Outcomes Health and Wellbeing – Food and Health

HWB 1-35a / HWB 2-35a: When preparing and cooking a variety
of foods, I am becoming aware of the journeys which foods make from
source to consumer, their seasonality, their local availability and their
sustainability.

Literacy

- LIT 1-04a: As I listen or watch, I can identify and discuss the purpose, key words and main ideas of the text, and use this information for a specific purpose.
- LIT 1-24a: I can present my writing in a way that will make it legible and attractive for my reader, combining words, images and other features.
- LIT 1-26a: By considering the type of text I am creating, I can select ideas and relevant information, organise these in an appropriate way for my purpose and use suitable vocabulary for my audience.
- LIT 1-28a / LIT 1-29a: I can convey information, describe events or processes, share my opinions or persuade my reader in different ways.
 Social Studies
- SOC 1-14a: I can compare aspects of people's daily lives in the past with my own by using historical evidence or the experience of recreating an historical setting.
- SOC 1-08a: I can consider ways of looking after my school or community and can encourage others to care for their environment.

Technologies

 TCH 1-02a: Throughout all my learning, I take appropriate action to ensure conservation of materials and resources, considering the impact of my actions on the environment.





In a nutshell

This lesson consolidates the learning from the previous two lessons and provides information on practical ways that food can be saved from the bin. Learners create their own plate promise explaining what they will do personally to reduce the amount of food they waste.



Core learning

We are learning that small things like planning meals, understanding labels and storing food correctly can have a big impact on what we throw away. We understand that saving food from the bin is important.



Preparation

- Display 'Plate promise' PowerPoint
- Print 'Plate promise' worksheet 1 per learner
- Large paper plates 1 per learner
- White paper, pencils, scissors, and PVA glue
- Images of food (you could ask learners to bring these in prior to the lesson)

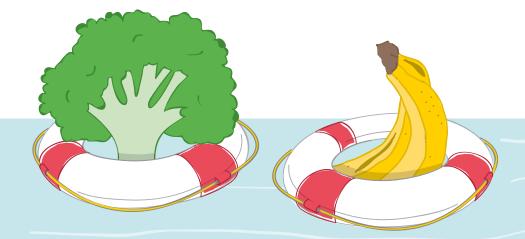


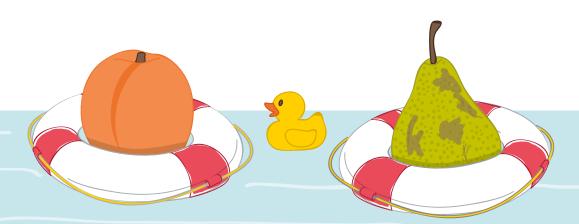
Starter

In previous lessons learners explored how wasting food costs money and how we don't appreciate it today as much as children did living during WWII. Explain to learners that today they are going to explore some ways that we can save food in our own homes.

Show learners this 'Plate promise' PowerPoint. The main points to emphasise include:

- Plan knowing what meals we are having this week and how we'll use everything up
- Check looking in our cupboards and shelves before going shopping
- Labels The 'use by' date is important as it is about food safety, but the 'best before' date is just an indication of when food is at it's absolute best in terms of quality
- Portion not taking what we can't finish
- Store putting food in the right places to keep it fresher for longer
- Wrap protecting food that needs a little extra help
- Use up turning food into other tasty meals
- Freeze freezing things we want to save for another day







Main

Create a cake challenge

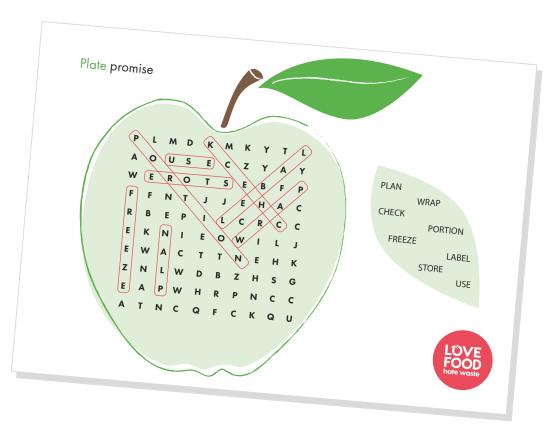
Tell learners to imagine that they are going to make a cake. Explain that they already have eggs to make the cake. Challenge them to list the other ingredients that they'll need to buy from the shops. Refer to a recipe if necessary. Once learners have their shopping lists, you may wish to have a broader discussion about why making lists is important and what would happen to the cake if one ingredient was missing.

Give each learner a 'Plate Promise' worksheet. Ask learners to complete both the quiz and the wordsearch. You may wish to display the quiz and talk your learners through the questions rather than printing.

Once the quiz and wordsearch have been completed ask learners the following questions:

- Do you think it is important to plan meals before you go food shopping? It means we buy only what we are going to use.
- What can you do with food that you cook but don't eat?
 Store it properly, freeze it or reimagine it into something else.
- What can happen if we don't store food properly?
 It can spoil more quickly.
- How can we make sure that we make just enough and not too much?
 Be more aware of portion sizes when we are cooking.
- What do 'best before' dates mean?
 They are a guide to when food tastes its best but not for when it is safe to eat.
- Are there any foods that you have learned that you can freeze that you didn't think you could before?

Common answers are milk, egg and beans.



Answers to "Plate promise quiz"

- Question 1: Have a list of meals we are going to have that week with the ingredients we need that we don't already have.
- Question 2: Check what's in our cupboards and fridge before we go and make a note.
- Question 3: On their own away from other fruit.
- Question 4: In the cupboard or bread bin.
- Question 5: Wrapped up and in the bottom of the fridge.
- Question 3: All of the above.
- Question 4: You can freeze all of these foods!



Dessert

Explain to learners that they are going to create a 'plate promise'. Give each learner a large paper plate and ask them to create a collage of their favourite foods which is big enough to cover the plate.

They can cut images of their favourite foods from magazines and the internet or by uploading them to a collage maker site such as

https://en-gb.padlet.com/

Ask learners to stick the images of their favourite foods onto the plate using PVA glue. When the whole plate is covered paint another layer of PVA glue over the top to stick down any loose edges.

Ask learners to trace around their hands with a pencil on a piece of paper and cut out the shape of their hands. Ask learners to write what they promise to do to reduce how much food they throw out in the middle of the hand.

Depending on the capabilities of your learners this could be a sentence or one of the keywords they explored earlier such as:

- Plan
- Check
- Portion
- Labels
- Store
- Wrap
- Use up
- Freeze

Once the plate is dry, ask learners to stick their hand complete with promise onto the plates. Lastly, ask learners to stick their name or get creative with arts and crafts to design their name onto the top of the plate.

Thank learners for all their hard work and their promises and commitment to reducing food waste. Tell them they really can make a difference. It may be worth reminding learners that their parents/carers also have a role to play in tackling food waste.

You might want to make a wall display with your learners plate promises and display it somewhere in the school - a good place would be in the dinner hall to remind them when it really counts! If you are taking part (or have taken part) in the 'Autopsy of food waste' whole school lesson you might want to put these plate promises on display alongside the other artwork.





Extra helping

Why not create a digital wall display and ask learners to post their food saving pledges to it using Padlet?

https://en-gb.padlet.com/

Learners could post to the padlet from home what their families are committing to doing to reduce food waste at home. You may wish to display the quiz and talk your learners through the questions rather than printing.



Curriculum for Excellence Experiences and Outcomes Health and Wellbeing

- HWB 1-35a / HWB 2-35a: When preparing and cooking a variety
 of foods, I am becoming aware of the journeys which foods make from
 source to consumer, their seasonality, their local availability and their
 sustainability.
- HWB 2-36a: By investigating food labelling systems, I can begin to understand how to use them and to make healthy food choices.

Social Studies

- SOC 1-08a: I can consider ways of looking after my school or community and can encourage others to care for their environment.
- SOC 1-18a: I have participated in decision making and have considered the different options available in order to make decisions.

Numeracy and mathematics

 MNU 1-20b: I have used a range of ways to collection information and can sort it in a logical, organised and imaginative way using my own and others' criteria.

Technologies

- TCH 1-03a / TCH 2-03a: As I extend and enhance my knowledge of features of various types of software, including those which help find, organise, manage and access information, I can apply what I learn in different situations.
- TCH 1-04b / TCH 2-04b: I can create, capture and manipulate sounds, text and images to communicate experiences, ideas and information in creative and engaging ways.

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PLAN
WRAP
CHECK
PORTION
FREEZE
LABEL
STORE
USE



Plate promise quiz

Question 1

When we go shopping it is best to?

- Have a list of meals we are going to have that week with the ingredients we need that we don't already have
- Decide what to buy when we get to the shops
- Only pick things that are our favourite colour

Question 2

When we go to buy food how can we make sure we don't buy the same thing twice?

- Make a guess when we get there
- Ask someone in the shop what they think
- Check what's in our cupboards and fridge before we go and make a note

Question 3

Where is the best place to store bananas?

- In the fruit
- In the fridge
- On their own away from other fruit

Question 4

Where is the best place to store bread?

- In the fridge
- In the cupboard or bread bin
- In the freezer

Question 5

If you have an open packet of meat how should it be stored?

- Unwrapped in the fruit bowl
- Unwrapped in the fridge
- Wrapped up and in the bottom of the fridge

Question 6

If you have vegetables leftover from dinner what could they be made into the next day?

- Omelette
- Pasta
- Soup

Question 7

Which of the following food do you think you can't freeze?

- Uncooked chicken
- Cooked pasta
- Bananas
- Milk
- Beans



A'peeling links & resources

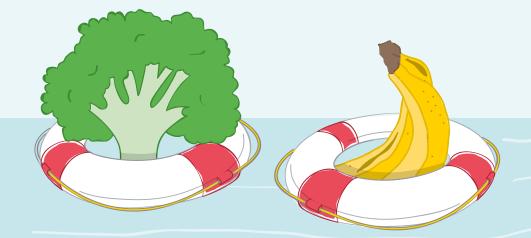
We hope that you have enjoyed working through this food waste fighting education pack from Love Food Hate Waste. If you're still hungry for more, why not explore some of the links below?

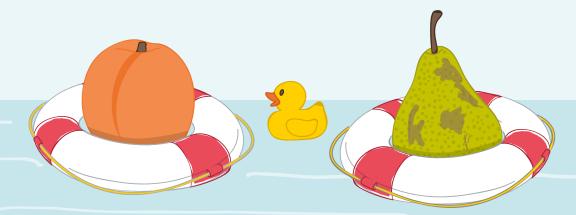
- The Global Goals for sustainable development from the United Nations - this pack contributes directly to goal 12.
 Responsible Consumption & Production but touches on others including goals 11 and 13.
- Wasteless
- Food for Life don't forget to share your success in the stories section.
- Quality Meat Scotland
- Royal Highland Education Trust
- Food and Drink Federation Scotland
- Eco Schools Scotland
- Chefs @ School

- Royal Environmental Health Institute of Scotland
- Food Standards Scotland
- Scottish Business in the Community Food for Thought
- Seafood in Schools
- Better Eating Better Learning
- Making Things Last A Circular Economy Strategy for Scotland, including the food waste target.
- The Crunch Food, Health & our Environment

With special thanks to Do Be Ltd for their work in developing this resource.







Love Food Hate Waste is delivered in Scotland by Zero Waste Scotland





scotland.lovefoodhatewaste.com facebook.com/lovefoodhatewastescotland lfhw@zerowastescotland.org.uk

01786 433960