



Waste Free

Lunch

Lending Kit

This lending kit has been developed by West Lothian Council Recycling and Waste Services to help schools and pupils minimise their waste and understand how the choices they make can affect the environment. It can aid in the development of a school waste action plan and work towards Eco-school accreditation.

This lending kit contains –

- Waste free lunch guide
 - Waste Audit Kit
- Examples of a wasteful and a waste free lunch
 - Portion game
 - Food Waste True or False Fact Cards
- Recipes for packaging-free healthy snacks
 - Sample letter to parents/guardians

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Overview

Packed lunches and school dinners can generate a significant amount of food and packaging waste. The Scottish Government has set a target to reduce food waste in Scotland by 33% by 2025.

Food waste sent to landfill rots and releases methane – a greenhouse gas even more harmful than carbon dioxide. Food waste placed in our food bins avoids this by recycling it into fertiliser and compost, but is still a waste of all the resources and effort that have gone into producing it (and the money we have paid for it).

By understanding how we can reduce our own food and packaging waste, schools can play a significant part in minimising the waste they generate, reducing the amount sent to landfill and increasing recycling rates.

A waste free lunch gives pupils the opportunity to make informed decisions about the choices they make and the way they can affect the environment.

This guide gives opportunities to incorporate other themes into lessons including, recycling, healthy eating, portion sizes, climate change, food miles and food journeys. It can also be used as the basis for discussion and to encourage ideas for a more sustainable school and community.

The Waste Free Lunch is divided into 3 lessons with approximated times. Schools may wish to spend more or less time on each section depending on class size and teaching time restrictions.

Links to Eco-School and Curriculum for Excellence

Eco-Schools Topics			
Litter	Reduction in packaging means fewer items available to litter.		
Waste Minimisation	New habits formed during waste free lunch.	Identification of types of waste and discussion on how these can be reduced.	Monitoring and evaluation.
School Grounds	Opportunity to use any produce grown in school garden.		
Health and Wellbeing	Encourage healthy snacks that also reduce packaging waste e.g. fruit instead of crisps		
Food and the Environment	Identification of types of waste and how these can be minimised.	Waste action plan for food waste and packaging.	
Sustaining Our World	Where does our food come from and what journey has it taken before we eat it?	Reducing packaging waste sent to landfill.	

Lesson 1 – Too Good to Waste

Level: First and Second

Lesson Time: 20mins + lunch + 30min

Lesson focus: Food waste

Experiences and outcomes:

Through contributing my views, time and talents, I play a part in bringing about positive change in my school and wider community. HWB 0-13a / HWB 1-13a / HWB 2-13a / HWB 3-13a / HWB 4-13a

First Level

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

I can estimate how long or heavy an object is, or what amount it holds, using everyday things as a guide, then measure or weigh it using appropriate instruments and units. MNU 1-11a

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

Second Level

I can show my understanding of what I listen to or watch by responding to literal, inferential, evaluative and other types of questions, and by asking different questions of my own. LIT 2-07a

I can discuss the environmental impact of human activity and suggest ways in which we can live in a more environmentally responsible way. SOC 2-08a

I can show the equivalent forms of simple fractions, decimal fractions and percentages and can choose my preferred form when solving a problem, explaining my choice of method. MNU 2-07b

Learning Intentions:

We are thinking about where our food and packaging comes from and where the waste goes.

We are sorting our lunch waste into different categories.

We are weighing each waste category using the spring balance or scales.

We are recording the weight of each category and providing a visual representation by taking photographs.

We are analysing the results to check

Success Criteria:

I understand the effort and resources that go into producing food.

I know what happens to food waste when it is recycled and if it goes to landfill.

I can sort waste into categories and measure and quantify these categories.

I can take part in a discussion and express my ideas on how to reduce waste.

if we have separated our waste correctly and suggesting ways we could have produced less waste.	
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Suggested resources:

Bin bags, waste icon cards, spring balance, scales.

<https://www.zerowastescotland.org.uk/food-waste/teaching-resources/primary>

Activities:

Activity 1 – Watch the Extraordinary Life and times of Strawberry.

[Life of a strawberry Stop food waste save the food \(youtube.com\)](#)

Activity 2 - Complete life of a strawberry worksheet. Appendix 1

Activity 3 – Have lunch and separate waste into 3 categories. Weigh and analyse waste.

Activity 4 – Watch How is Food waste recycled video -

<https://www.westlothian.gov.uk/article/32078/Recycling-Downloads>

Activity 5 - Discuss the Food Waste Fact sheet – Appendix 2, and think about ways that the waste from lunches could be reduced.

Teachers Notes

Pupils should think about the effort that has gone into creating the food that they eat. The energy, water, animal feed, fuel, transport at different stages, preparation, manufacturing, cooking, packaging etc.

It may be easier for the whole class to have a packed lunch in the classroom. The canteen may be able to organise packed lunches for those who usually have a school lunch. That way the total amount of waste that the class has produced can be analysed.

Weigh the waste using the spring balance and take photos and notes of what has been thrown away. You could think about the journeys some of the food has been on before it has ended up in the bin. Talk about the difference between avoidable food waste (making or buying too much) and unavoidable food waste (fruit and vegetable peelings, egg shells, tea bags etc.).

Calculate the weight of the waste that would be produced for a week or a year, for the class or for the whole school.

The food waste fact sheet explains the impact food waste can have on climate change and the money we could save by only buying food we will eat. Ask pupils to come up with ideas on how they could waste less food.

Lesson 2 – Packaging

<p>Level: First and Second</p> <p>Lesson Time: 30mins (plus time to make snack)</p>	
<p>Lesson Focus: Packaging and portion size</p>	
<p>Experiences and Outcomes:</p> <p>Through contributing my views, time and talents, I play a part in bringing about positive change in my school and wider community. HWB 0-13a / HWB 1-13a / HWB 2-13a / HWB 3-13a / HWB 4-13a</p> <p>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 1-35a / HWB 2-35a</p> <p><u>First Level</u></p> <p>I understand that my body needs energy to function and that this comes from the food I eat. I am exploring how physical activity contributes to my wellbeing HWB 1-28a</p> <p>I can take appropriate action to ensure conservation of materials and resources, considering the impact of my actions on the environment. TCH 1-06a</p> <p>I can consider ways of looking after my school or community and can encourage others to care for their environment. SOC 1-08a</p> <p>I can use a range of simple food preparation techniques when working with food TCH 1-04a</p> <p><u>Second Level</u></p> <p>I am developing dexterity, creativity and confidence when preparing and cooking food TCH 2-04a</p> <p>I can analyse how lifestyles can impact on the environment and Earth’s resources and can make suggestions about how to live in a more sustainable way. TCH 2-06a</p> <p>I can show my understanding of what I listen to or watch by responding to literal, inferential, evaluative and other types of questions, and by asking different questions of my own. LIT 2-07a</p> <p>I can discuss the environmental impact of human activity and suggest ways in which we can live in a more environmentally responsible way. SOC 2-08a</p>	
<p>Learning Intensions:</p> <p>We are learning about what happens to our waste packaging when we recycle it and when we don’t recycle it.</p> <p>We are making a healthy snack, with no extra packaging.</p> <p>We are learning about portion sizes to</p>	<p>Success Criteria:</p> <p>I know which items should go in which recycling bin.</p> <p>I understand what happens to my waste after I throw it away.</p> <p>I can make suggestions on what we can all do to reduce packaging waste.</p>

reduce waste, save money and stay healthy.	<p>I have made a healthy snack and packed it in a reusable container.</p> <p>I can judge what size of portion is right for me.</p>
<p>Suggested resources: https://www.zerowastescotland.org.uk/food-waste/teaching-resources/primary</p> <p>Recipe cards – appendix 3</p> <p>Portion size game</p>	
<p>Activities</p> <p>Activity 1 – Find out how packaging waste is recycled by watching the videos at https://www.westlothian.gov.uk/article/32078/Recycling-Downloads</p> <p>Activity 2 – Make a healthy snack with no packaging waste – appendix 3</p> <p>Activity 3 – Play the portion size game.</p>	

Teachers Notes:

The short videos on the Waste education section of the council’s website show what happens to packaging after it is collected in the recycling bins. There are various videos online showing how a landfill site is operated. Discuss what the problem of putting waste into landfill might be (space, toxins leaking out, lots of recyclable things we could use getting buried in the ground).

A visit from the Waste Education team can be arranged to discuss in more detail how packaging is recycled and what happens when waste goes to landfill. Contact wasteaware.council@westlothian.gov.uk . We can also arrange for small groups of pupils to visit the materials recovery facility in Broxburn.

There are several healthy packaging free snack recipes in appendix 3. Some of which do not require cooking. Ask pupils to bring a reusable box or wrap to put their snack in, or have a craft session making reusable beeswax food wraps.

https://www.westlothian.gov.uk/media/40268/Beeswax-Wraps-Activity/pdf/Beeswax_Wraps.pdf

The Portion Size game can be played in groups. Pupils should measure out the amount of each food that they think is the correct portion size for them, before the correct amount is revealed.

Lesson 3 - Waste Free Lunch

<p>Level: First and Second Lesson Time: 30mins + lunch</p> <p>Lesson Focus: Waste Free Lunch</p>	
<p>Experiences and outcomes: Through contributing my views, time and talents, I play a part in bringing about positive change in my school and wider community. HWB 0-13a / HWB 1-13a / HWB 2-13a / HWB 3-13a / HWB 4-13a</p> <p><u>First Level</u></p> <p>Throughout all my learning, I take appropriate action to ensure conservation of materials and resources, considering the impact of my actions on the environment. TCH 1-02a</p> <p>I can estimate how long or heavy an object is, or what amount it holds, using everyday things as a guide, then measure or weigh it using appropriate instruments and units. MNU 1-11a</p> <p>I can consider ways of looking after my school or community and can encourage others to care for their environment. SOC 1-08a</p> <p><u>Second Level</u></p> <p>I can analyse how lifestyles can impact on the environment and Earth's resources and can make suggestions about how to live in a more sustainable way. TCH 2-06a</p> <p>I can show the equivalent forms of simple fractions, decimal fractions and percentages and can choose my preferred form when solving a problem, explaining my choice of method. MNU 2-07b</p> <p>I can discuss the environmental impact of human activity and suggest ways in which we can live in a more environmentally responsible way. SOC 2-08a</p>	
<p>Learning Intentions:</p> <p>We are sorting our lunch waste into different categories.</p> <p>We are weighing each waste category using the spring balance.</p> <p>We are recording the weight of each category and providing a visual representation by taking photographs.</p> <p>We are analysing the results and comparing them to the previous results.</p>	<p>Success Criteria:</p> <p>We have made changes to our lunch to reduce food and packaging waste.</p> <p>By comparing the waste left after each lunch we can make comparisons and measure the reduction in waste.</p>

Suggested resources:

Letter to parents – Appendix 4

Waste Audit Kit – bin bags, waste icon cards, tarpaulin, spring balance

Activities:

Activity 1 – Hold a waste free lunch, separating any waste (there shouldn't be much!) into landfill, food waste or recycling. Weigh and analyse the waste. Compare results to previous lunch and work out how much waste would be saved if you had a waste free lunch every day.

Activity 2 – Food Waste True or False Cards

Teacher's Notes:

Make sure a letter to parents/guardians is sent home in advance to allow plenty time to organise a waste free lunch for their child.

As in lesson 1, it may be easier to have lunch together in the classroom, with clear bin bags set out to collect any waste, you can get these from your FM team.

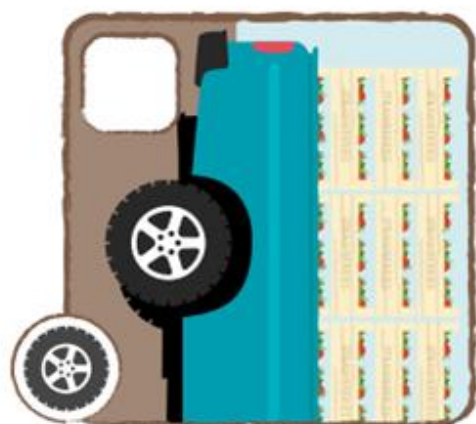
Visually analyse any waste collected and compare it to the notes made on the waste collected during lesson one. Is there still waste that could have been avoided?

You can use the True or False cards as a whole class activity or split into groups.

Discuss how the class could let the rest of the school know what they have learned about the effort that goes into creating food, what happens to food and packaging waste when it is recycled and not recycled and ways that the school could reduce food and packaging waste.

You could borrow our waste audit lending kit and survey the waste from the whole school, or organise a waste free picnic for the whole school at the end of term.

Life of a strawberry worksheet



Cut out and put each part of the strawberry's journey in the correct order.

Food Waste Facts



Food waste in landfill releases nasty gases that are bad for the planet.

If we put food waste into the food waste bin, we can collect the gases and use them to make electricity.

Every household in the UK spends £470 a year on food that doesn't get eaten.



Over one third of all food made in the world goes to waste.

2.6 million slices of bread are wasted every day in Scotland.



When we waste food we waste all the effort that went into producing the food in the first place ...

the energy, fuel, water and time it took to grow, harvest, store, transport and cook the food.

Food Waste Facts



Food waste in landfill releases methane, a greenhouse gas which is even more harmful than carbon dioxide.

If food waste was a country it would be the third biggest emitter of greenhouse gases.



Food Wasted—

8.3 million tonnes from consumers.

1.6 million tonnes from retailers.

4.1 million tonnes from manufacturers.

3 million tonnes from restaurants.

45% of all fruit and vegetables produced are wasted.



The most commonly wasted foods in Scotland are –

- Milk (31, 000 tonnes)
- Bread - 2.6 million slices every day in Scotland!
- Carbonated drinks (23, 000 tonnes)
- Potatoes (19, 000 tonnes)
- Ready Meals (14, 000 tonnes)

Waste Free Snack Recipes

The best kind of waste free snack is fruit or veg which comes in its own natural packaging. A few carrot sticks at break time and a hand full of strawberries at lunch is a great way to up your 5 a day. Below are some recipes which can be made in bulk and kept in reusable packaging. Remember to recycle any packaging from ingredients.

Fruit salad – the easiest no waste, no cook snack!

Chop up a selection of fruit and enjoy. Make sure to pop any peelings and cores in the food waste bin!

Energy Bites - no cook recipe

Ingredients:

100g Oats
3 tbsp Peanut butter
3 tbsp Honey
100g Seeds/raisins/chocolate chips
Pinch of salt

Method:

Mix all the ingredients together in a bowl. You want them just sticky enough to be able to roll them together into ball, so you may need to adjust the quantities of honey and peanut butter. Roll them in to golf ball sized balls and pop them in the fridge for 20mins to firm up.

You can adapt the ingredients to suit allergies and dietary requirements. For example use a different type of nut butter, or a smaller amount of chocolate spread. You could add shredded coconut, different types of seeds, or chocolate chips, honey can be substituted for maple syrup.

Nice Cream – Blended frozen Fruit – dairy free alternative to ice cream.

Chop up your choice of fruit, make sure you include banana so it's nice and creamy. Pop it in the freezer overnight, then blitz until smooth in a food processor – add coco powder to make it chocolatey or peanut butter.

Vegetable peel crisps

Ingredients - Potato/carrot/parsnip/beetroot

Scrub, slice thinly or use a peeler. Put in a bowl with a small amount of olive oil. Mix and place on a baking sheet, bake for 10 – 15 mins turning half way through.

Popcorn

Heat enough oil to cover the base of a large pan. Add enough corn kernels to cover the base in a single layer. Cover with the lid and keep the heat low/medium. After a few minutes the kernels will start to pop. Once the popping has slowed down and most of the kernels have popped remove from the heat add salt/sugar/ other flavourings or leave plain.

Roasted chickpeas – a tasty savoury snack

Ingredients:

Can of cooked chickpeas

2 tbsp oil

Spice mix: 3/4 tsp turmeric, 3/4 tsp ground cumin, 1 1/2 tsp paprika

Salt and pepper

Method:

Pre-heat oven to 180°C.

Rinse chickpeas and spread onto a clean dry tea towel to remove excess water. Remove any loose skins and discard.

Put into bowl, add oil, spices (if using) and salt and pepper, and mix well until all the chickpeas are coated.

Line a roasting tin with greaseproof paper and empty chickpeas into tin, spreading out as much as possible. Place in oven and cook for 40 minutes, stirring occasionally to prevent sticking and to ensure they cook evenly.

Remove and allow to cool completely. They will continue to harden as they cool (don't be alarmed if they still feel soft when you take them out of the oven). Store in an air tight container if not eating immediately.

Sweet potato brownies

Ingredients:

100g low-fat spread, plus extra to grease

150g 70% cocoa dark chocolate, broken into pieces

200g sweet potato, cooked and mashed
140g light muscovado sugar
2 medium eggs, beaten
2tsp vanilla extract
125g plain flour
½tsp baking powder
50g hazelnuts (or other nuts), chopped (not essential)

Preheat the oven to 180°C/fan 160°C/gas 4. Lightly grease a square, loose-based 20cm cake tin with low-fat spread, then base line with baking paper.

Put the low-fat spread and chocolate into a microwave-proof bowl and heat for 10 sec or until the spread has melted. Stir to melt the chocolate pieces completely.

In another bowl, mix the sweet potato and muscovado sugar together until smooth. Add the melted chocolate mixture, eggs and vanilla, then beat until thick.

Stir in the flour, baking powder and hazelnuts, then pour the batter into the tin. Bake for 20–25 min or until firm to the touch but still slightly moist in the middle.

Allow to cool completely in the tin, then cut into squares.

Sample letter to parents

Dear Parent/Guardian,

Our class is holding a waste free lunch on and would like your child to participate. This works towards Eco-schools accreditation and promotes awareness of the impact of food and packing waste on our environment.

Before our waste free lunch, we will collect the waste from our normal lunches and weigh it. We will also weigh any waste from our waste free lunch to compare the difference.

On the day of the waste free lunch we are asking for your child to come to school with a packed lunch that contains as little disposable packaging as possible. Examples of items that could be included in a waste free lunch can be found below.

- Homemade sandwich, packed in a reusable box or wrap
- Leftovers from the previous evening's dinner.
- A drink in a refillable water bottle
- Piece of fruit
- Carrot sticks (in a reusable container)
- Homemade snack (flapjacks, brownies etc. in a reusable container or wrap)

The waste free lunch is part of a wider series of lessons looking at food journeys, recycling, healthy eating and portion size.

If you have any concerns about this activity or wish to discuss the matter further, please contact the class teacher in the first instance.

Yours faithfully
Head Teacher

Wasteful Lunch

Plastic carrier bag
Sandwich bag
Yogurt pot and disposable spoon
chocolate bar wrapper
Crisp packet
Juice carton

Waste Free Lunch

Re-useable lunch bag/box
Reusable sandwich box
Banana
Reusable snack box
Reusable water bottle.

Portion size game

Scales x4
Instructions
Pasta
Rice
Cereal
Noodles

Other suggested foods that could be used in the Portion size game not included in loan box -

Popcorn
Orange juice (you'll need cups and a measuring jug)
Chocolate (for something fun you can eat after the game)

Sources of Information:

<https://scotland.lovefoodhatewaste.com/why-save-food>

<https://www.zerowastescotland.org.uk/resources/bitesize-food-waste-course>

<https://www.netzeronation.scot/take-action/eating-greener/recycling-food-waste>