

### **EGGS**

# Stud**E**nts fight food and packaging waste throu**G**h entrepreneurial education and **G**ameba**S**ed learning

Project activity:

# IO2.A2.A1 How To Become a Youth Activist

#### **VERSION 1**



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#### Introduction

Across Europe, there is increasing concern for the environment and the role of humans in contributing to climate change and pollution. In the UK, 27% recognise the environment as one of the most pressing issues facing the country<sup>1</sup>. Movements such as Extinction Rebellion and the work of influential campaigner Greta Thunberg have left many, particularly young people, asking what they can do to make a difference.

This document sets out some ways in which young people can make a positive impact on the environment through their actions at home, at school and within the community. It is designed to be a practical document outlining some of the activities which aspiring youth activists can undertake to create a positive impact and inspire others to do the same. By inspiring and encouraging others to make positive changes around food and packaging waste, young people can create a wider impact than would otherwise be the case, while simultaneously working towards related goals such as reducing poverty and increasing engagement within educational settings.

This document comprises output IO2.A2.A1 "How to Become a Youth Activist" of the StudEnts fight food and packaging waste through entrepreneurial education and Game-baSed learning (EGGS) project.

<sup>&</sup>lt;sup>1</sup> https://yougov.co.uk/topics/politics/articles-reports/2019/06/05/concern-environment-record-highs



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#### Section 1: Making a difference at home and through personal actions

#### Managing your food waste

Around a third of the food produced worldwide for humans to eat is wasted every year! In the EU, 173kg of food waste is generated per person, per year<sup>2</sup>. Some of this food is wasted by shops, restaurants, farms, or during processing, but 53% is wasted by people at home<sup>3</sup>.

This is a big problem for several reasons:

- The resources (such as water, soil, energy required for fertilizers, transportation and refrigeration) needed to produce this food are wasted. In many places around the world, these resources are scarce.
- 2. Food waste contributes to climate change. Wasted food is often sent to landfill, and as it rots it generates greenhouse gases such as methane which contribute to climate change. The energy used to produce and transport the wasted food also produces greenhouse gases such as carbon dioxide. An estimated 8% of greenhouse gas emissions are generated by food waste<sup>4</sup>.
- 3. Food waste costs us money. Think about the money your family spends each week on food which is never eaten what would you have rather spent it on?
- 4. Food waste is also an ethical issue globally, there are roughly 820 million people who do not have enough to eat<sup>5</sup>.

Luckily, there steps which each of us can take to reduce the amount of food we waste and its impact on the environment.

When we think about managing food waste, it is helpful for us to think about "Reduce, Reuse, Recycle". Reducing our food waste is the best thing we can do for the environment, followed by reusing, which in turn is followed by recycling.

Tips for **reducing** your food waste:

- 1. Portion sizes. Make sure you only prepare enough food that you can eat.
- 2. Buying the right amount. Only buy the food you need. Not only will you avoid wasting food, you'll also save money! A shopping list can help you do this.
- 3. Pay attention to best-before and use-by dates. Remember that a food past its best-before date will often still be good to eat.
- 4. Store food properly. Some food will last much longer if you store it properly. This will be different for each food.

<sup>&</sup>lt;sup>5</sup> https://www.who.int/news/item/15-07-2019-world-hunger-is-still-not-going-down-after-three-years-and-obesity-is-still-growing-un-report



<sup>&</sup>lt;sup>2</sup> https://www.europarl.europa.eu/news/en/headlines/society/20170505STO73528/food-waste-the-problem-in-the-eu-in-numbers-infographic

 $<sup>\</sup>frac{3}{https://www.europarl.europa.eu/news/en/headlines/society/20170505STO73528/food-waste-the-problem-in-the-eu-in-numbers-infographic}$ 

<sup>4</sup> https://www.bbc.com/future/article/20200224-how-cutting-your-food-waste-can-help-the-climate

To **reuse** your food waste, try using your leftovers in another dish or be used to create a new ingredient.

#### Banana bread recipe

One example of a dish which uses food which would otherwise be wasted is banana bread. Banana bread uses overripe bananas, and the browner they are the better it will taste!

#### Important: Make sure you get an adult to help you with this, as cooking can be dangerous!

#### **Ingredients**

4 overripe bananas (mashed) 300g flour

120g butter or margarine

220g caster sugar

2 medium eggs

90ml plain yoghurt

1 teaspoon of vanilla extract

1 teaspoon of baking soda

Half a teaspoon of salt



#### How to cook

- 1. Mix the flour, salt, and baking soda in a bowl.
- 2. In a second bowl, add the butter and sugar and mix well.
- 3. Add the eggs, plain yoghurt, vanilla extract, and mashed bananas to the second bowl and mix well.
- 4. Add the flour mixture from the first bowl into the second and mix well.
- 5. Add the mixture to a tin. Make sure you grease the tin with butter, so the banana bread doesn't stick.
- 6. Put the tin into an oven which has been pre-heated to 180C/350F. You should leave it until it is well-risen and a golden colour. This should take around an hour.
- 7. Remove from the oven. Remember to be very careful as the tin will be extremely hot. Get an adult to help you and make sure you wear oven mitts!
- 8. Wait for the banana bread to cool, then remove from the tin and enjoy.

Can you think of any other ways to reuse leftover food which would otherwise be wasted?

To **recycle** your food waste, try composting. If you have food waste which can't be reused, you can compost it to produce nutrient-rich soil for your garden.

#### Composting your food waste.

Composting is a great way to help the environment! When we send organic waste (such as food, paper and cardboard) to landfill, it is buried deep underground where it decomposes anaerobically, which means without oxygen. When this happens, a lot of methane is produced which contributes to global warming. When this food waste is composted, it can decompose aerobically, which means with oxygen. This means a lot less methane is produced. Composting also reduces the need for trucks to take the waste away.

Step by step guide to starting a simple compost bin:

- 1. Find a place to put your compost bin. This should be somewhere in partial shade (so that it does not become too dry in summer) and sheltered from too much rain (so it does not become waterlogged). Ideally the bin should have holes in the bottom and be placed on bare soil this will allow worms to enter the compost and allow any excess water to drain away.
- 2. Line the bottom of the compost bin with sticks and leaves.
- 3. Start adding to your compost bin! You should add a mixture of food waste and dead plant materials (such as leaves, shredded cardboard, and paper). Avoid putting meat, fish, dairy products, or greasy food in your bin, as this can attract pests.
- 4. Wait for your waste to turn into compost. This can take as long as a year, so be patient! Use this compost in the garden to help plants grow.

#### Tips:

- Waste will compost more easily if it's in smaller pieces. Waste cardboard or paper should be shredded or cut into pieces before it goes in the compost bin.
- Turn over the pile of compost every few weeks using a spade or a pitchfork. This helps oxygen reach the innermost layers of the compost.
- A good ratio of waste is: Two parts "green waste" (e.g., food waste, grass clippings and leaves) to one part "brown waste" (e.g., straw, egg shells, shredded paper and cardboard).
- Remember that it is far better to avoid wasting food in the first place than it is to compost! Reduce, Reuse, Recycle!
- Why not start a compost bin or compost heap at school too?

The guide above is to create a simple compost bin, but there are many different types of more "advanced" composter available to use at home:

Wormeries compost food faste wit	h the help of worms. The worms
help aerate (mix with air) the wast turns into compost more quickly.  You should be careful what types of do not like certain types, such as g with a regular compost bin, you sh fish.	e, meaning it breaks down and of food waste you add, as worms inger, chilli or citrus fruits. Like



Bokashi bins use bacteria to break down food waste in a process called "fermentation". A big advantage of bokashi bins is that they can be used to break down food such as meat, fish and dairy (which you should avoid putting in a regular compost bin).

Rather than create compost, bokashi bins create a "pre-compost" which you can then add to a regular compost bin.



Outdoor hot compost bins use heat to break down food waste more quickly. These bins are well-insulated and have a tight fitting lid, meaning that the heat generated by the bacteria as it breaks down food waste is retained.

In this way, food can be turned into compost within 1 to 3 months, while a regular compost bin might take a year or so to do the same!

This type of compost bin creates compost which is ready to use immediately in the garden.

Source: The Big Compost Experiment, <a href="https://www.bigcompostexperiment.org.uk/about/about-composting">https://www.bigcompostexperiment.org.uk/about/about-composting</a>

#### Managing your packaging waste

Think of all the food your family buys each month. Almost certainly, most of this food will come packaged in an array of different ways – cardboard boxes, glass jars, plastic bottles, and bags. While this packaging is attractive and convenient, most will only be used once and then thrown away. 40% of the 400 million tonnes of plastic produced is single use<sup>6</sup>.

In the EU, 174kg of packaging waste is generated per person, per year<sup>7</sup>. Not all of this waste is recycled – much of it is taken to landfill or littered.

This waste is a problem for several reasons:

1. Packaging takes energy to produce and transport, which contributes to climate change. In many cases, food will be excessively packaged, for example, where fruit is individually wrapped in plastic.

https://ec.europa.eu/eurostat/statistics-explained/index.php/Packaging waste statistics



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<sup>&</sup>lt;sup>6</sup> https://www.bbc.co.uk/newsround/42810179

- 2. Some packaging waste is difficult or impossible to recycle. Examples include used pizza boxes (which are contaminated with grease), plastic bags (which can clog and damage sorting machines) and black plastic food trays (which automatic sorting machines find difficult to identify).
- 3. A lot of packaging waste is littered. Not only does litter look disgusting, but it can also create problems for wildlife which can be hurt by mistaking it for food or becoming trapped. While a discarded orange or banana peel may decompose within weeks, a plastic bottle can last 450 years before biodegrading<sup>8</sup>.
- 4. Packaging waste often washes into rivers and oceans. Over 8 million tonnes of plastic enter the oceans every year<sup>9</sup>. This has a negative impact on the environment, as animals can become trapped or mistake plastic for food. Every year, plastic kills an estimated 100,000 animals in the oceans.

Luckily, there steps which each of us can take to reduce the amount of packaging we waste and its impact on the environment.

When we think about managing packaging waste, it is helpful for us to think about "Reduce, Reuse, Recycle". Reducing our packaging waste is the best thing we can do for the environment, followed by reusing, which in turn is followed by recycling.

#### Tips for **reducing** your packaging waste:

1. Avoid food which is excessively packaged. Ask yourself "does this food need this much packaging?" For a banana packaged on a Styrofoam tray and wrapped in plastic, the answer should be "no!" Instead try to buy food which is sold loose or in less packaging.



Source: Plastic Pollution Coalition,

https://www.plasticpollutioncoalition.org/blog/2016/4/6/should-plastic-wrapped-organics-be-banned

2. Learn which types of packaging are difficult or impossible to recycle and try to avoid these while shopping.

<sup>&</sup>lt;sup>9</sup> https://www.iucn.org/resources/issues-briefs/marine-plastics



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<sup>&</sup>lt;sup>8</sup> https://www.telegraph.co.uk/environment/2018/01/10/stark-truth-long-plastic-footprint-will-last-planet/

3. Reduce how much food you waste. Remember, if you waste a packet of food, you will also be wasting the packaging it came in.

#### Tips for reusing your packaging waste:

- 1. Try not to buy plastic bags every time you go shopping. Instead of throwing your plastic bags away, save them to use next time. Many shops sell canvas shopping bags which will last you for years!
- 2. Think about how containers could be reused. For example, Tupperware which takeout food arrives in can be reused, as can glass jars and plastic bottles! Make sure you thoroughly rinse these before reusing them.

#### Tips for recycling your packaging waste:

- Make sure you put the right materials in your recycling bins. The types of packaging which
  can be recycled will vary from area to area. If you can't recycle a certain type of packaging
  using your bin at home, you may still be able to do so by visiting a local recycling centre.
  More information should be available on the website of your local council/municipality but
  ask an adult if you can't find this.
- 2. Avoid putting plastic bags in your recycling, and these are difficult to recycle and can cause problems. Instead, try to reuse them next time you go shopping.
- 3. Keep the packaging waste you recycle clean rinse out plastic bottles and metal cans. Where cardboard is covered in grease (for example a pizza box), this should not be recycled and instead should be put in your regular waste bin.
- 4. Cardboard and paper can be added to your compost bin. It should be shredded into small pieces to help it decompose more easily.

Remember that reducing the waste you create in the first place is better than recycling! Reduce, reuse, recycle!

#### **Understand and reduce your water footprint**

Water is essential for humans to survive – your body is two thirds water! Every day the average person needs to drink roughly 2 liters of water to stay hydrated and healthy. Without it, our bodies would not be able to remove waste or process nutrients in order to function properly.

Water plays a very important role in producing the food we eat. Farmers use water to help their crops grow, especially in areas of the world where the climate is dry. This is called irrigation. Water is also used to wash food (such as tomatoes or peppers) before it is sold. Animals need to drink, and without them we wouldn't be able to have meat or the many types of food such as cheese, eggs or butter!

To put it simply, to produce food we need to use a lot of water. The amount of water used to produce a food is what we call its "water footprint". Some types of food, such as beef, require far more water to produce than others. The table below gives some examples of the water footprint of different foods:

Food Item	Serving Size	Water Footprint
Steak (beef)	6 ounces	674 gallons
	1 (includes bread, meat,	
Hamburger	lettuce, tomato)	660 gallons
Ham (pork)	3 ounces	135 gallons
Eggs	1 egg	52 gallons
Soda	17 ounces	46 gallons
Coffee	1 cup	34 gallons
Wine	1 glass	34 gallons
Salad	1 (includes tomato, lettuce, cucumbers)	21 gallons

Source: Water Footprint Network, WaterStat - water footprint statistics, https://waterfootprint.org/en/resources/waterstat/

Water footprints are important because in many areas where food is grown, the amount of water being used is unsustainable. This means that if the amount of water used remains the same then future generations will not be able to meet their needs. In many areas of the world, over-use of water is already leading to problems such as water shortages, pollution, ground subsidence, soil erosion and soil quality degradation.

70% of fresh water used globally is used to produce food. With demand for food growing due to population increase and the impacts of climate change, we all need to think about how our choices effect the environment.

Fill out the <u>Water Footprint Calculator</u>. This calculates the water you use directly (such as in the kitchen and bathroom) and indirectly (the water used to produce the food you eat, energy you consume and the products you buy).

- 1. What is your water footprint in total?
- 2. What is the water footprint of your diet?
- 3. Were you surprised at the water footprint of your diet?
- 4. What changes do you think you could make to reduce your water footprint?

The table below lists types of food and the liters of water needed to produce them:

Item         liters           Apple (1 apple)         70           Apple juice (1 glass)         190           Barley (1 kg)         1300           Beef (1 kg)         15500           Beer (1 glass)         75           Bread (1 slice)         40           Cheese (1 kg)         5000           Chicken meat (1 kg)         2500           Coorout (1 kg)         2500           Coffee (1 cup)         140           Eggs (1 egg)         200           Goat meat (1 kg)         4000           Hamburger (1 burger)         2400           Maize (1 kg)         900           Milk (1 glass)         200           Orange (1 orange)         50           Pork (1 kg)         4800           Rice (1 kg)         3400           Mutton (1 kg)         6100           Sorybeans (1 kg)         1800           Sugar (from cane) (1 kg)         1500           Tea (1 cup)         30           Wheat (1 kg)         1300           Wine (1 glass)         120		
Apple juice (1 glass) 190 Barley (1 kg) 1300 Beef (1 kg) 15500 Beer (1 glass) 75 Bread (1 slice) 40 Cheese (1 kg) 5000 Chicken meat (1 kg) 2500 Coconut (1 kg) 2500 Coffee (1 cup) 140 Eggs (1 egg) 200 Goat meat (1 kg) 4000 Hamburger (1 burger) 2400 Maize (1 kg) 900 Millet (1 kg) 5000 Millet (1 kg) 5000 Millet (1 kg) 900 Millet (1 kg) 5000 Millet (1 kg) 4800 Sorghum (1 kg) 3400 Mutton (1 kg) 5000 Sorghum (1 kg) 2800 Soybeans (1 kg) 1800 Sugar (from cane) (1 kg) 1500 Tea (1 cup) 30 Wheat (1 kg) 1300	Item	liters
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Beef (1 kg)         15500           Beer (1 glass)         75           Bread (1 slice)         40           Cheese (1 kg)         5000           Chicken meat (1 kg)         3900           Coconut (1 kg)         2500           Coffee (1 cup)         140           Eggs (1 egg)         200           Goat meat (1 kg)         4000           Hamburger (1 burger)         2400           Maize (1 kg)         900           Millet (1 kg)         5000           Milk (1 glass)         200           Orange (1 orange)         50           Pork (1 kg)         4800           Rice (1 kg)         3400           Mutton (1 kg)         6100           Sorghum (1 kg)         2800           Soybeans (1 kg)         1800           Sugar (from cane) (1 kg)         1500           Tea (1 cup)         30           Wheat (1 kg)         1300	Apple juice (1 glass)	190
Beer (1 glass)         75           Bread (1 slice)         40           Cheese (1 kg)         5000           Chicken meat (1 kg)         3900           Coconut (1 kg)         2500           Coffee (1 cup)         140           Eggs (1 egg)         200           Goat meat (1 kg)         4000           Hamburger (1 burger)         2400           Maize (1 kg)         900           Millet (1 kg)         5000           Milk (1 glass)         200           Orange (1 orange)         50           Pork (1 kg)         4800           Rice (1 kg)         3400           Mutton (1 kg)         6100           Sorghum (1 kg)         2800           Soybeans (1 kg)         1800           Sugar (from cane) (1 kg)         1500           Tea (1 cup)         30           Wheat (1 kg)         1300	Barley (1 kg)	1300
Bread (1 slice)         40           Cheese (1 kg)         5000           Chicken meat (1 kg)         3900           Coconut (1 kg)         2500           Coffee (1 cup)         140           Eggs (1 egg)         200           Goat meat (1 kg)         4000           Hamburger (1 burger)         2400           Maize (1 kg)         900           Millet (1 kg)         5000           Millet (1 kg)         5000           Milk (1 glass)         200           Orange (1 orange)         50           Pork (1 kg)         4800           Rice (1 kg)         3400           Mutton (1 kg)         6100           Sorghum (1 kg)         2800           Soybeans (1 kg)         1800           Sugar (from cane) (1 kg)         1500           Tea (1 cup)         30           Wheat (1 kg)         1300	Beef (1 kg)	15500
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Chicken meat (1 kg)       3900         Coconut (1 kg)       2500         Coffee (1 cup)       140         Eggs (1 egg)       200         Goat meat (1 kg)       4000         Hamburger (1 burger)       2400         Maize (1 kg)       900         Millet (1 kg)       5000         Millet (1 kg)       5000         Milk (1 glass)       200         Orange (1 orange)       50         Pork (1 kg)       4800         Rice (1 kg)       3400         Mutton (1 kg)       6100         Sorghum (I kg)       2800         Soybeans (1 kg)       1800         Sugar (from cane) (1 kg)       1500         Tea (1 cup)       30         Wheat (1 kg)       1300	Bread (1 slice)	40
Coconut (1 kg)         2500           Coffee (1 cup)         140           Eggs (1 egg)         200           Goat meat (1 kg)         4000           Hamburger (1 burger)         2400           Maize (1 kg)         900           Millet (1 kg)         5000           Millet (1 glass)         200           Orange (1 orange)         50           Pork (1 kg)         4800           Rice (1 kg)         3400           Mutton (1 kg)         6100           Sorghum (1 kg)         2800           Soybeans (1 kg)         1800           Sugar (from cane) (1 kg)         1500           Tea (1 cup)         30           Wheat (1 kg)         1300	Cheese (1 kg)	5000
Coffee (1 cup)     140       Eggs (1 egg)     200       Goat meat (1 kg)     4000       Hamburger (1 burger)     2400       Maize (1 kg)     900       Millet (1 kg)     5000       Milk (1 glass)     200       Orange (1 orange)     50       Pork (1 kg)     4800       Rice (1 kg)     3400       Mutton (1 kg)     6100       Sorghum (1 kg)     2800       Soybeans (1 kg)     1800       Sugar (from cane) (1 kg)     1500       Tea (1 cup)     30       Wheat (1 kg)     1300	Chicken meat (1 kg)	3900
Eggs (1 egg)       200         Goat meat (1 kg)       4000         Hamburger (1 burger)       2400         Maize (1 kg)       900         Millet (1 kg)       5000         Milk (1 glass)       200         Orange (1 orange)       50         Pork (1 kg)       4800         Rice (1 kg)       3400         Mutton (1 kg)       6100         Sorghum (I kg)       2800         Soybeans (1 kg)       1800         Sugar (from cane) (1 kg)       1500         Tea (1 cup)       30         Wheat (1 kg)       1300	Coconut (1 kg)	2500
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Hamburger (1 burger)     2400       Maize (1 kg)     900       Millet (1 kg)     5000       Milk (1 glass)     200       Orange (1 orange)     50       Pork (1 kg)     4800       Rice (1 kg)     3400       Mutton (1 kg)     6100       Sorghum (1 kg)     2800       Soybeans (1 kg)     1800       Sugar (from cane) (1 kg)     1500       Tea (1 cup)     30       Wheat (1 kg)     1300	Eggs (1 egg)	200
Maize (1 kg)     900       Millet (1 kg)     5000       Milk (1 glass)     200       Orange (1 orange)     50       Pork (1 kg)     4800       Rice (1 kg)     3400       Mutton (1 kg)     6100       Sorghum (l kg)     2800       Soybeans (1 kg)     1800       Sugar (from cane) (1 kg)     1500       Tea (1 cup)     30       Wheat (1 kg)     1300	Goat meat (1 kg)	4000
Millet (1 kg)     5000       Milk (1 glass)     200       Orange (1 orange)     50       Pork (1 kg)     4800       Rice (1 kg)     3400       Mutton (1 kg)     6100       Sorghum (l kg)     2800       Soybeans (1 kg)     1800       Sugar (from cane) (1 kg)     1500       Tea (1 cup)     30       Wheat (1 kg)     1300	Hamburger (1 burger)	2400
Milk (1 glass)       200         Orange (1 orange)       50         Pork (1 kg)       4800         Rice (1 kg)       3400         Mutton (1 kg)       6100         Sorghum (l kg)       2800         Soybeans (1 kg)       1800         Sugar (from cane) (1 kg)       1500         Tea (1 cup)       30         Wheat (1 kg)       1300	Maize (1 kg)	900
Orange (1 orange)     50       Pork (1 kg)     4800       Rice (1 kg)     3400       Mutton (1 kg)     6100       Sorghum (I kg)     2800       Soybeans (1 kg)     1800       Sugar (from cane) (1 kg)     1500       Tea (1 cup)     30       Wheat (1 kg)     1300	Millet (1 kg)	5000
Pork (1 kg)       4800         Rice (1 kg)       3400         Mutton (1 kg)       6100         Sorghum (I kg)       2800         Soybeans (1 kg)       1800         Sugar (from cane) (1 kg)       1500         Tea (1 cup)       30         Wheat (1 kg)       1300	Milk (1 glass)	200
Rice (1 kg)     3400       Mutton (1 kg)     6100       Sorghum (I kg)     2800       Soybeans (1 kg)     1800       Sugar (from cane) (1 kg)     1500       Tea (1 cup)     30       Wheat (1 kg)     1300		50
Mutton (1 kg)     6100       Sorghum (1 kg)     2800       Soybeans (1 kg)     1800       Sugar (from cane) (1 kg)     1500       Tea (1 cup)     30       Wheat (1 kg)     1300	Pork (1 kg)	4800
Sorghum (I kg)         2800           Soybeans (1 kg)         1800           Sugar (from cane) (1 kg)         1500           Tea (1 cup)         30           Wheat (1 kg)         1300	Rice (1 kg)	3400
Soybeans (1 kg)         1800           Sugar (from cane) (1 kg)         1500           Tea (1 cup)         30           Wheat (1 kg)         1300	Mutton (1 kg)	6100
Sugar (from cane) (1 kg)         1500           Tea (1 cup)         30           Wheat (1 kg)         1300	Sorghum (I kg)	2800
Tea (1 cup) 30 Wheat (1 kg) 1300	Soybeans (1 kg)	1800
Wheat (1 kg) 1300	Sugar (from cane) (1 kg)	1500
(1.1.5)	Tea (1 cup)	30
Wine (1 glass) 120	Wheat (1 kg)	1300
	Wine (1 glass)	120

Item	gallons
Apple (1 apple)	18
Apple juice (1 glass)	50
Barley (1 lb)	156
Beef (1 lb)	1857
Beer (1 glass)	20
Bread (1 slice)	11
Cheese (1 lb)	599
Chicken meat (1 lb)	467
Coconut (1 lb)	300
Coffee (1 cup)	37
Eggs (1 egg)	53
Goat meat (1 lb)	479
Hamburger (1 burger)	634
Maize (1 lb)	108
Millet (1 kg)	599
Milk (1 glass)	53
Orange (1 orange)	13
Pork (1 lb)	575
Rice (1 lb)	407
Mutton (1 lb)	731
Sorghum (I lb)	336
Soybeans (1 lb)	216
Sugar (from cane) (1 lb)	180
Tea (1 cup)	8
Wheat (1 lb)	156
Wine (1 glass)	32

Source: Water Footprint Network, WaterStat - water footprint statistics, <a href="https://waterfootprint.org/en/resources/waterstat/">https://waterfootprint.org/en/resources/waterstat/</a>

Make a list of 5 foods from the table above which you have recently eaten.

- 1. Which food had the highest water footprint?
- 2. Could you replace this food with one which has a lower water footprint (for example, replacing beef with chicken)?
- 3. Which food had the lowest water footprint?
- 4. Are there any foods which you will eat less of now you know about its water footprint?

By now, you will have noticed that a big proportion of the water we use comes from our diet. Here are some tips on how to reduce your water footprint:

- 1. Waste less food. As the food we eat uses so much water, it is important that we avoid wasting it as much as possible.
- 2. Eat less meat. As you now know, meat takes a lot of water to produce. This is because animals not only drink water, but they eat a lot of food which also took water to grow. Meat can be substituted for vegetarian alternatives.
- 3. Eat less animal products such as butter, eggs, and cheese. Instead, try to eat more vegetables which not only need less water, but are also healthy!
- 4. Drink tap water rather than juice, soda, or milk. Just one glass of apple juice takes 50 gallons of water to produce!

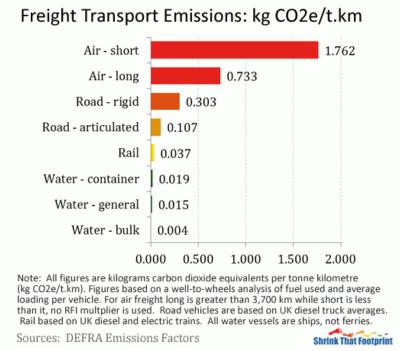
Think about where the food you eat was grown. In many areas, the amount of water being used to produce food is unsustainable. This means that future generations will not be able to meet their needs. If you can, try to eat less food produced in areas where water is scarce.

#### Understand and reduce your food miles

Think of all the different types of food you have in your kitchen cupboards. Some of these foods will have been produced locally, but others may have been produced thousands of miles away! To help us think about the distance our food has travelled and the environmental impact this has, we can use "food miles". Food miles are a measurement of the number of miles food has had to travel from where it was produced to reach our plates.

Food miles are important because transport creates greenhouse gases including carbon dioxide (CO2) which contribute to climate change. More food miles generally mean a greater negative impact on the environment.

We also need to consider the type of transportation used, as some are far more polluting than others. The graph below shows the CO2 emissions produced by different forms of transport:



Source: Shrink That Footprint, The tricky truth about food miles, <a href="http://shrinkthatfootprint.com/food-miles/">http://shrinkthatfootprint.com/food-miles/</a>

It is important to remember that CO2 is not the only pollutant that transport creates. Other harmful gases such as sulphur dioxide (SO2) and Nitrogen Dioxide (NOx) are created from burning fossil fuels like petrol and diesel.

Many foods can only be grown locally for part of the year – when it's "in season". Out of season, these foods must be imported from elsewhere or grown in heated greenhouses. For example, locally grown strawberries are available in the UK only during summer. During winter they are imported via plane which has a large impact on the environment. This means that food can have a much greater negative impact on the environment when it is bought at certain times of the year.

One of the best ways to reduce your food miles is to learn how to identify where a food is from by looking at the packaging. This will help you choose food which is produced closer to where you live, reducing its environmental impact.

#### Task:

Go to your kitchen and find 5 different types of food. Look at the packet to find out where the food was produced. Please note that not every product will list this. The table below shows some examples of how this information may appear:



Make a list of each food, and the country where they were produced. Go to <a href="https://www.distance.to/">https://www.distance.to/</a> and calculate how far each has travelled to reach your country.

- 1. Which food had the most food miles?
- 2. Which food had the least food miles?
- 3. How do you think the food was transported to you do you think it was transported by lorry, ship, or plane? Think about how long it would stay fresh and whether it would need to be kept refrigerated during transport.
- 4. Could any of the food have been produced in your country at a different time of year?
- 5. Did any of the food in your kitchen not make it clear where it was produced? Do you think this makes it harder for consumers to make an informed decision?
- 6. Did any of the food have several ingredients? Do you think all of these ingredients came from the same place?

Here are some further tips on how to reduce your food miles:

- 1. Try to eat food which is grown locally. For lots of food, this will depend on the time of year when the food is "in season". For example, tomatoes are grown locally in the UK during the summer, but in the winter, they must be transported all the way from Spain or elsewhere.
- 2. Remember to think about where the ingredients of a food were produced, not just the finished product. For example, a cake may be baked locally, but use wheat grown in Canada and fruit grown in Africa.
- 3. Grow your own food! If you have a garden or allotment, growing your own food is a great way to avoid unnecessary food miles. Gardening is also great for your mental and physical health!

#### Section 2: Making a difference at school and in the community

#### Reducing food waste at school

Think about the food you eat every day at the school canteen. Chances are you don't always finish everything on your plate. Perhaps you didn't like what you bought, or the portion size was too big for you to finish. The food left over from one meal may not seem like much, but if all your classmates do the same throughout the year, then it will quickly add up!

Food waste is a huge issue for several reasons:

- 1. Wasting food means we waste all the resources it took to produce it. Every meal we eat took water, soil, fertilizer and energy for transport and refrigeration to produce. In many areas these resources are scarce or dwindling.
- 2. By wasting food, we are contributing to climate change. When we waste food, it often goes to landfill where it is left to rot. As food rots in landfill, greenhouse gases such as methane are produced.
- 3. Wasting food also wastes money. If you only bought what you needed, you'd have more money to spend on other things.
- 4. There are roughly 820 million people who do not have enough to eat<sup>10</sup>. If we all did our part to avoid food waste, the resources used to produce food which isn't eaten could be used to feed them.

There are ways we can encourage your school to reduce food wasted in the cafeteria and help the environment. Some ways are easy to do, such as changing menus to encourage more people to eat food with a low environmental impact. Other ways, such as donating food to charity, can help tackle other important societal issues like poverty.

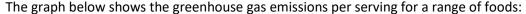
The tips below should be discussed with your teachers, who will be able to put these ideas into practice:

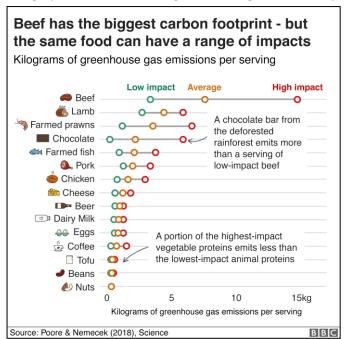
#### Promote food which has a low impact on the environment

Consider that some meals have a far greater environmental impact than others. A meal with lots of meat or ingredients flown in from other countries will damage the environment far more than one made of locally grown vegetables.

<sup>&</sup>lt;sup>10</sup> https://www.who.int/news/item/15-07-2019-world-hunger-is-still-not-going-down-after-three-years-and-obesity-is-still-growing-un-report







Source: BBC, Climate change food calculator: What's your diet's carbon footprint?, https://www.bbc.com/news/science-environment-46459714

Which of these foods does your school canteen serve? Think about how food with a lower environmental impact could be promoted. Menus could be redesigned to make certain foods more appealing, such as including a picture or by making the text stand out. Many school canteens will label food as being a "healthy option," perhaps they could label food as being an "environmental option"? You could also suggest that on certain days of the week, only vegetarian options will be available.

#### Find out what happens to wasted food

Do you know what happens to unsold food in your canteen? What about the leftovers on your plate? There's a good chance that this ends up being thrown in the bin and ending up in landfill. There are many ways it could be reused or recycled instead:

- Food which is unsold at the end of the day will often still be good to eat. This could be donated to a local charity or food bank and go towards feeding vulnerable people in the community.
- 2. Some restaurants will put leftovers in a box for you to take home. Could your cafeteria do something similar? Maybe they could put the box in the fridge until the end of the day.
- 3. Leftover food can often be used to create something delicious, for example, unsold fruit could be used to create jam or marmalade!
- 4. Many schools have a separate bin for food waste, which is then used to create compost. By composting food waste instead of sending it to landfill, we not only reduce greenhouse gas emissions, but we also get nutrient-rich compost! You can create a basic compost bin cheaply and easily, but there are lots of more advanced designs available such as in-vessel composting or wormeries. Perhaps setting up a compost bin could be a class project?

5. Leftovers could be used to feed farm animals, create fertilizer for fields or be used to generate biogas. Biogas is fuel generated from waste in an anaerobic digester by microorganisms.

Talk to your teachers about these options and think about other ways that food waste from your school could be reused or recycled. But remember, the best option is always to reduce the amount we waste in the first place! Reduce, reuse, recycle!

#### Promote healthy portion sizes

How big are the portion sizes in your canteen? If a lot of food is being wasted each lunchtime, it might be because the portion sizes are too big! If this is the case, try talking to a teacher to see if they can be made smaller. By serving less food we not only reduce food waste but help tackle the problem of childhood obesity.

#### Election as class representative

Becoming a class representative is a powerful way to have the voices of your fellow students heard. Class representatives form a link between students and teachers, helping to make sure that problems faced by students are resolved through student council meetings. You may also be responsible for organising activities or events.

Tips for becoming class president:

- Start by deciding what issues your campaign will focus on. Think about what things in your school could be improved on and talk to other students about which issues are most important to them.
- Think about practical ways to address these in your school. You might focus on solving a local
  problem such as littering on the school yard by organising a litter pick. Or you could focus on
  a wider issue, such as global warming by reducing the amount of food wasted in school and
  installing a compost bin.
- Ask other students who agree with your campaign issues to spread the word. You will get more votes if you work with a team.
- In your speech and posters, talk about why your campaign issues are important using facts. You should outline the practical steps that you will make in the school to address these issues.

Remember, even if you are unsuccessful in becoming class president, you will still have raised awareness about important issues!

#### Litter picking on the school grounds or in the community

Besides being an eyesore, litter can be very harmful to wildlife and cause pollution. Animals can become tangled or mistake it for food and eat it. Some litter such as food or paper will degrade quickly, but some will take many hundreds of years to break down.

For these reasons it is a good idea to do a litter pick, and it's a great way to meet other people interested in helping the environment! Remember, if you are under 18 you should be supervised by an adult, for example a teacher or a parent.

#### You will need to:

- 1. Identify somewhere with a lot of litter on the school grounds or in the community.
- 2. Make sure you have permission to be on the land. If you are picking up litter at your school you should ask your teachers. Some local councils or private landowners may only give you permission to pick litter on their land if you have insurance and have done a full risk assessment.
- 3. Check the area for any hazards. Picking litter next to busy roads or on slopes can be dangerous. Is there any dangerous litter in the area such as syringes, broken bottles or chemical containers? Think about whether the area has any wildlife that could be dangerous, or which you could disturb.
- 4. If you see any hazards, ask a teacher for advice on what to do. On the day, all volunteers should be told about the hazards before they start.
- 5. Make sure that you and other volunteers have the right equipment, including:
  - Thick gloves which won't let sharp objects poke through.
  - Study boots to prevent slipping or twisted ankles.
  - Litter grabbers, brooms, brushes, shovels, etc.
  - High visibility vests, particularly if you want to collect litter near to a busy road.
  - Strong bags to collect the rubbish in.
  - Access to a first aid kit with things like plasters and antiseptic.

Once you have filled the bags, they should be collected for disposal. If you only collect a small amount, each volunteer could take a bag and dispose of this at home. If a lot is collected, then you will need to talk to an adult about how to dispose of this (e.g., at a recycling centre).

Remember to take a before and after photo of the area you have cleaned! Share them on twitter using **#Trashtag** 

#### Creating posters about food and packaging waste

Posters are a good way of spreading the word about packaging waste! Make sure to use an eyecatching design which summarises important information. Ask a teacher if your class can run a competition to create the best poster.

Your posters could include:

- Facts about how long different packaging types will take to decompose (plastic can take many hundreds of years to break down!).
- Pictures of the impact which packaging waste can have on the environment, for example, on sea turtles which have eaten plastic.
- Information on "Reduce, Reuse, Recycle".
- Ways that packaging could be reused in imaginative ways (for example as plant pots).

Think about where it would be most effective to place the posters - busy corridors where many people walk past are great! If your school has recycling bins, you could put a poster next to them which informs students on which types of packaging can be recycled.

## Encouraging supermarkets to donate food close to its sell-by date, and provide more food in packaging which can be recycled

Individual consumers can help reduce food and packaging waste, but more can be done by encouraging supermarkets to do their bit to help the environment. Every year, supermarkets throw away lots of food which is still good to eat, but which is close to its sell-by date. They also sell food in packaging which is difficult or impossible to recycle.

Writing a letter is a quick but effective way to have an impact. This lets the supermarket know that the issue of food and packaging waste is important to people like you! It is also an opportunity to encourage them to do more to help the environment and people in need.

You should look on the supermarket's website for the best way to contact them.

You can also write to your member of parliament. Your member of parliament can work to introduce new laws and legislation which helps the environment. You can find out who your member of parliament is online or ask a teacher to help you do this.

A persuasive letter can follow this format:

- 1. Introduce yourself and say why you have chosen to write this letter.
- 2. Say what the problem is, and why it is important both to you individually, and for society and the planet.
- 3. Suggest some practical solutions to the problem (for example, you could suggest that food is donated to a local food bank or charity). You should give examples of where others have done this, and how it has helped society and the environment.
- 4. End your letter with a "call to action" what actions do you want them to take to make sure something is done?

Remember to include a return address so you can receive their reply! Before you send your letter, ask your teacher or a parent to read over it.

#### Running a food drive event

Although so much food is wasted every day, there are still many people who don't have enough to eat. Many of these people rely on charities and food banks to avoid going hungry. Unfortunately, many of these organisations often receive less food than they need to feed all those who rely on them.

Organising a food drive is a great way to help feed people who are in need, while also reducing food waste!

#### You'll need to:

- Ask your teachers whether you can run a food drive at your school, and whether they can help out!
- 2. Contact a local organisation which accepts food donations. This may be a food bank, homeless shelter, or religious organisation (such as a church). You can find these organisations by searching online.

- 3. When contacting organisations, ask them which products they are most in need of. For example, they might already have lots of tinned food but not much which is fresh. Or it may be that they receive donated vegetables from a local farm and don't need any more. You should find out what is needed most and focus on collecting those items.
- 4. Find out if they accept non-food items. Many food banks also distribute items such as soap, washing up liquid and toothpaste.
- 5. Ask if there are certain times of year when demand for their services is very high. For example, in countries where poor children receive free school means, organisations may need more food during school holidays. If this is the case, you may want to think about when you organise your food drive (e.g., just before your school goes on holiday).

Once you know which organisation to donate to, and which type of food (or non-food item) they are most in need of, you can decide how you will go about collecting it.

- 1. Find an area in your school where students can leave donations. This should be somewhere students go every day. A table at the school entrance or at the back of the assembly hall are good places for this.
- 2. A table may fill up with donations quickly, so make sure you have somewhere to move this food and store it before you give it to your chosen organisation. You must ensure the food is stored appropriately (for example, kept in a cool, clean area) so it doesn't spoil.
- 3. Spread the word about the food drive. You can ask your teachers to mention this in an assembly and create posters and leaflets. Make sure you mention what types of food (or non-food) items you want to collect, and the reasons why you are running the food drive. Try to inspire people to help feed people in need and help reduce food waste!
- 4. Once your food drive is over, or when you have a substantial amount of food collected, you can donate this to your chosen organisation! Some organisations will pick up large donations, but if this is not the case you can ask a teacher or a parent to help you transport the food.

#### Tips:

- It's a good idea to set a collection target. You could aim to collect a certain number of meals worth of food, or a specific weight be ambitious! Progress towards this goal could be represented using a chart which is filled in every day.
- If your school has an own clothes day or a disco, you could ask for a donation of food as part of this.
- Make sure that all the food donated is within its use-by date.
- Fresh food may not have a long shelf life. Remember that the organisation you donate to will need time to distribute the food while it is still good to eat.
- Be smart about how you store the food before making the donation. Make sure it is kept cool and dry, and that any specific storage instructions are followed closely.
- There may be some students in your school who would benefit from donated food. Why not talk to your teachers about how donated food could be shared with students in need?