

# From your plate to the planet

The environmental impact of what we eat



# Introduction

Food Production is responsible for approximately **one third** of all greenhouse gas emissions contributing to global warming.

That's about 19 times the amount from the commercial airline industry.



# Learning Intentions

We are learning to:

- Find out different factors that contribute to the environmental impact of what we eat.
- Gather and compare data about the environmental impacts of different foods.
- Evaluate the source and quality of the data.
- Draw a conclusion based on the data about what will make the biggest difference in reducing our impact.
- Think creatively about how to do this.

# Success Criteria

We will:

- Gather data using the online calculators.
- Create a visualisation
- Discuss what conclusions we can draw from the data.
- Design a label to show information about the carbon emissions of a food item.

# Lesson structure

## **Part 1 and 2:**

- Data Gathering & Visualisation
- Analysis & Discussion

## **Part 3:**

- Creative Activity – design a food label

# Data Gathering & Visualisation

## Task 1:

Calculate the **food miles** of each of the food items using the [food miles calculator](#).

If the country of origin is not specified, how could you make an educated guess?



The screenshot shows the 'Food Miles Calculator' interface on a green background. It is divided into three steps:

- Step 1: Where are you?** A dropdown menu for 'Your Location' is set to 'United Kingdom'.
- Step 2: Where has your food come from...?** A dropdown menu for 'Country' is set to 'New Zealand'. Below it, there is a text instruction: 'Have a look on the packaging to see whereabouts the product has come from and then simply select it from the list below.'
- Step 3: What are you tracking?** A text input field for 'Food Item:' contains the word 'Apple'. Below this is a 'Submit' button.

At the bottom of the form is a cartoon character of a pink egg with arms and legs, and the website URL [foodmiles.com](http://foodmiles.com).

[foodmiles.com](http://foodmiles.com)

# Data Gathering & Visualisation

## Task 2:

Visualise the data.

Three Options:

- Order the food cards from most to least number of food miles
- Draw a graph using paper and pencil
- Use graphing software or a free online tool such as [Kids' Zone Create a Graph](https://www.kidszone.co.uk/learn/activities/create-a-graph/)



The screenshot shows the 'Food Miles Calculator' interface on a green background. It is divided into three steps:

- Step 1: Where are you?** A dropdown menu labeled 'Your Location' is set to 'United Kingdom'.
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[foodmiles.com](https://www.foodmiles.com)

# Data Gathering & Visualisation



## CREATE A GRAPH

If you want to use the 'Create a Graph' go to [dataed.in/createagraph](https://dataed.in/createagraph)

The screenshot shows a web interface for creating a graph. On the left, there is a sidebar with 'Help' and 'Examples' tabs. The 'Help' tab is active, displaying instructions for 'Graph Title', 'Source', 'Data Set', 'Items & Groups', and 'Min & Max Values'. The main area contains a form with the following fields:

- Graph Title:** Carbon emissions
- X Axis Label:** item
- Y Axis Label:** emissions
- Source:** (empty)
- Data Set:** Items: 5, Groups: 1
- Group Label:** Group 1
- Color:** Bar (with a color selection icon)
- Item Label** and **Value** table:

Item Label	Value
Item 1: apple	2
Item 2: banana	5
Item 3: beef	604
Item 4: chocolate	80
Item 5: fish	146

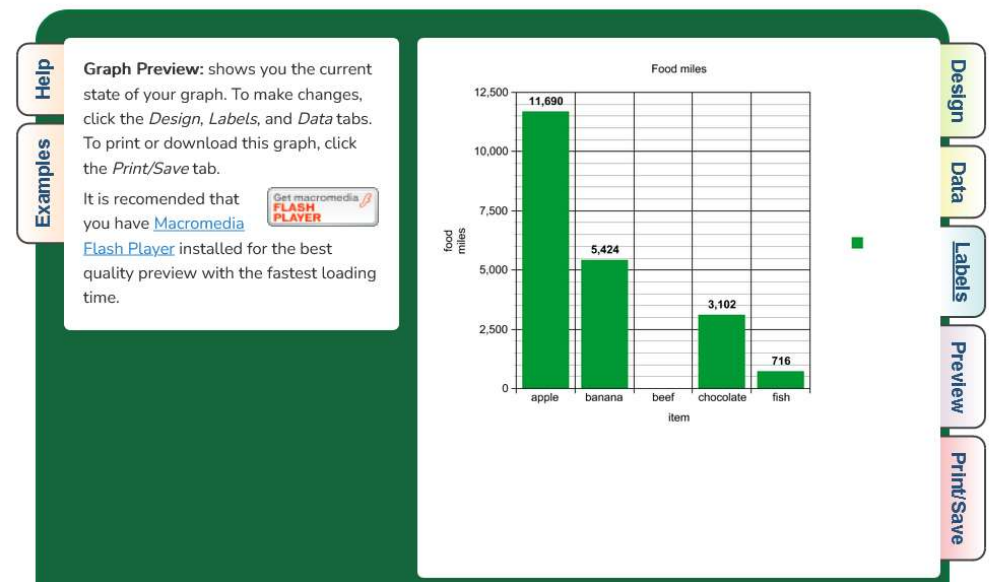
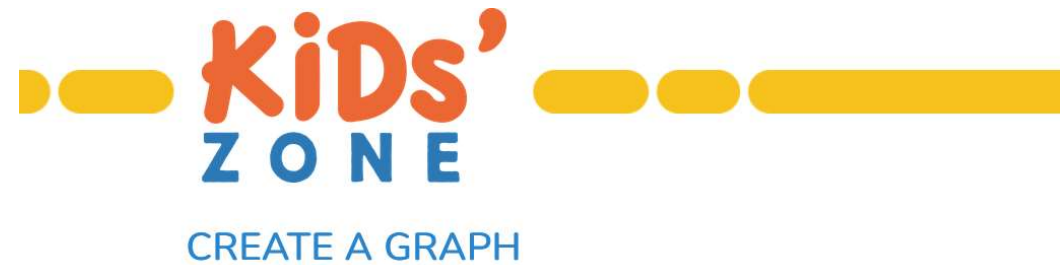
At the bottom, there are fields for **Min-Value:** and **Max-Value:** (both empty).

On the right side of the interface, there is a vertical sidebar with buttons for 'Design', 'Data', 'Labels', 'Preview', and 'Print/Save'.



# Data Gathering & Visualisation

If you want to use the 'Create a Graph' go to [dataed.in/createagraph](http://dataed.in/createagraph)



# Data Gathering & Visualisation

## **Task 3:**

Calculate the **carbon emissions** for each item.

Choose one of the three emissions calculators. Later you can compare your results with others in your class who have used a different calculator.

# Data Gathering & Visualisation

### Carbon Calculator

Ingredient category	Ingredient	Region of origin	Amount
Fruits & Vegetable	Apples	Oceania (including Australasi)	1

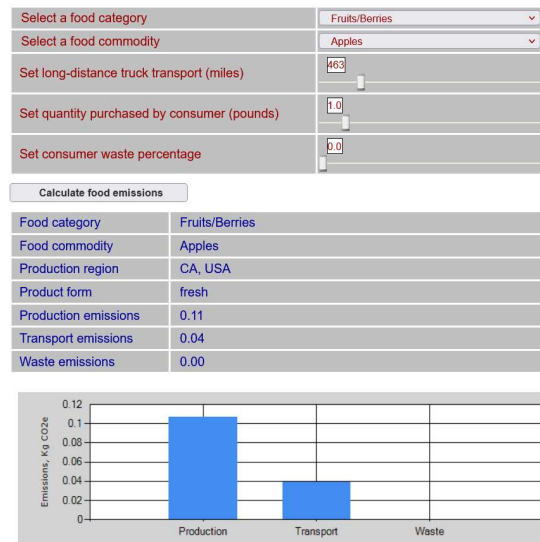
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### Recipe Listing

Please estimate the number of servings:

Ingredient	Amount	Greenhouse Gases
Apples	1 kg	1.17kg CO <sub>2</sub> e(1.17kg CO <sub>2</sub> e/kg)

Plate Up for the Planet  
[dataed.in/foodcalc1](https://dataed.in/foodcalc1)



Carbon emissions calculator  
[dataed.in/foodcalc2](https://dataed.in/foodcalc2)

### How do your food choices impact on the environment?

Which food would you like?

Apples

How often do you have it?

1-2 times a week

1 apple per serving

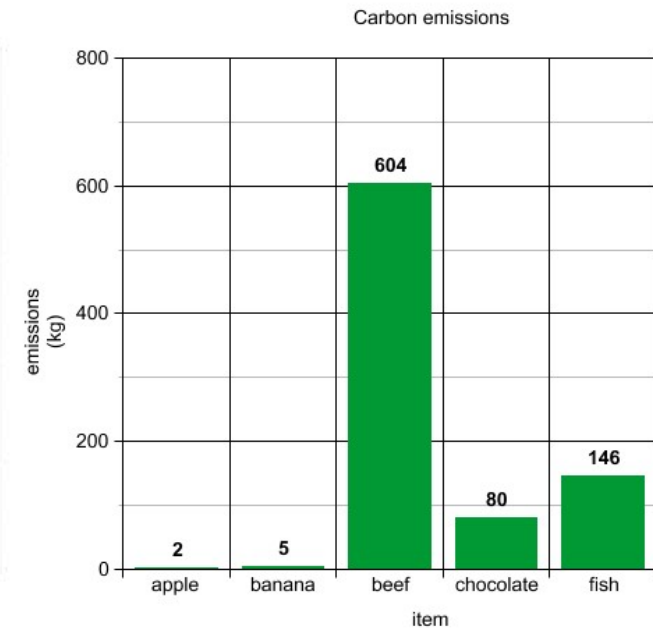
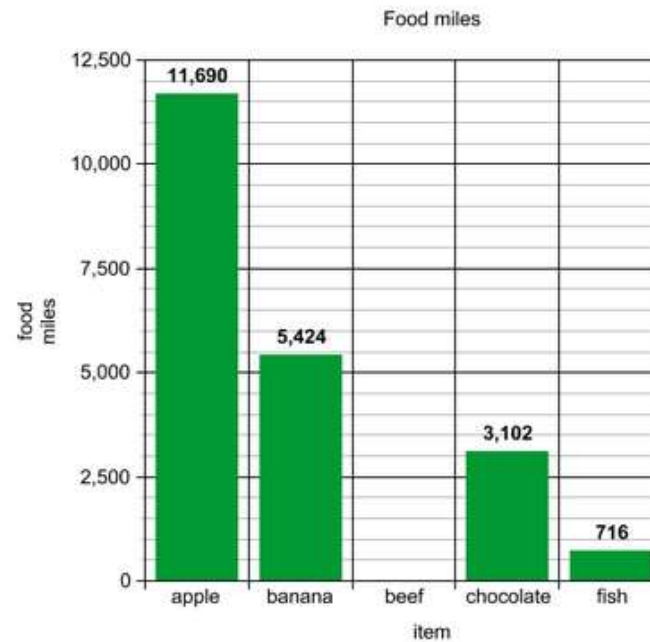
Over an entire year your consumption of apples is contributing **2kg** to your annual greenhouse gas emissions.

BBC food calculator  
[dataed.in/foodcalc3](https://dataed.in/foodcalc3)

# Data Gathering & Visualisation

**Task 4:**  
Visualise  
your data.

## Sample Graphs



# Data Gathering & Visualisation

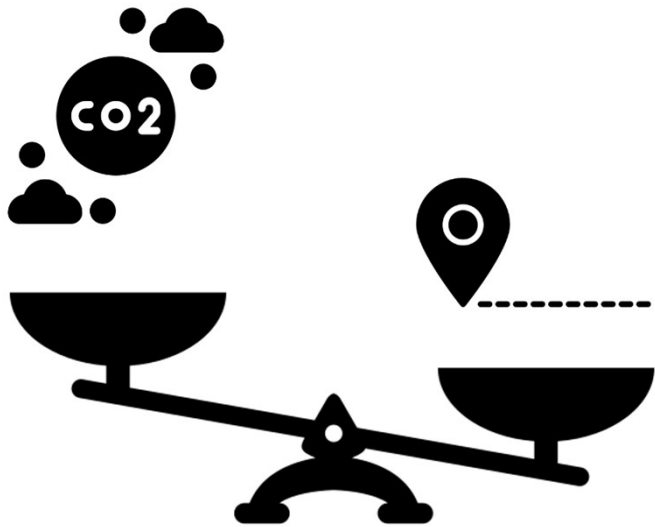
## ***Bonus Activity***



Use a supermarket shopping website to find out the price per kg of each item.

Visualise the data.

# Discussion questions



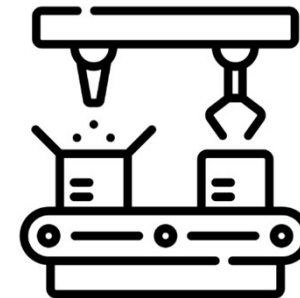
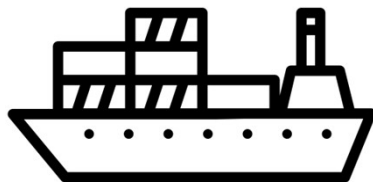
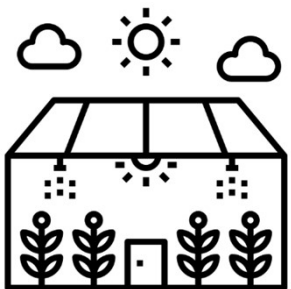
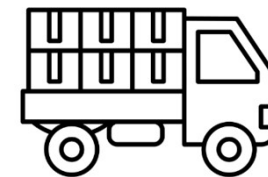
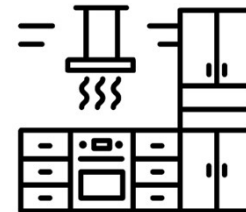
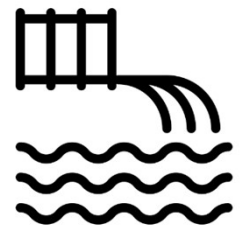
Are the items with the most food miles also the items with the most carbon emissions?

If you made graphs, how do the overall shapes compare?

# Discussion questions

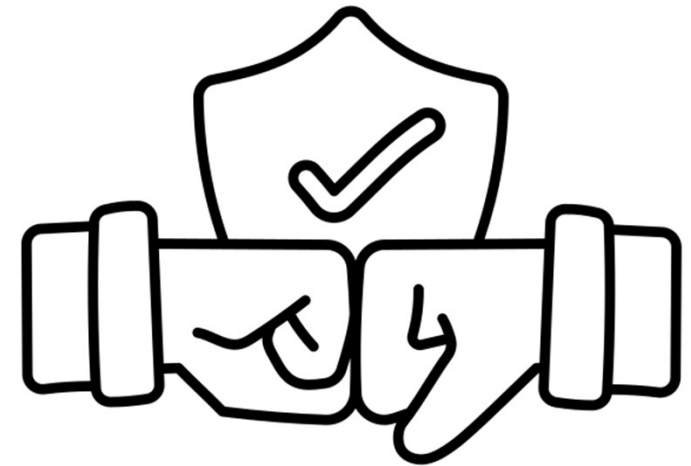
How do the different calculators measure carbon emissions?

What do they factor in?  
What is not factored in?



# Discussion questions

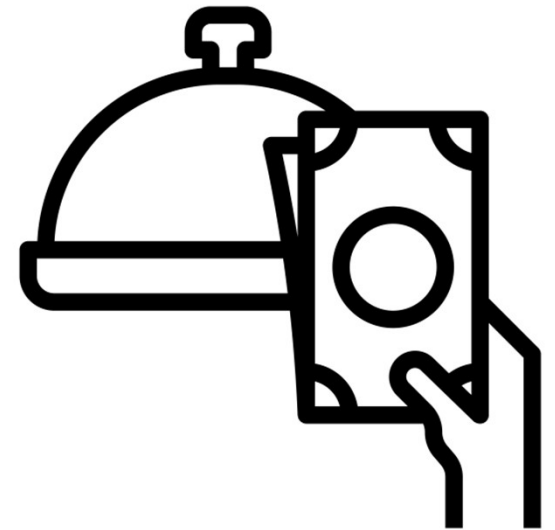
Who made each calculator?  
Do they have an agenda?  
How trustworthy are they?



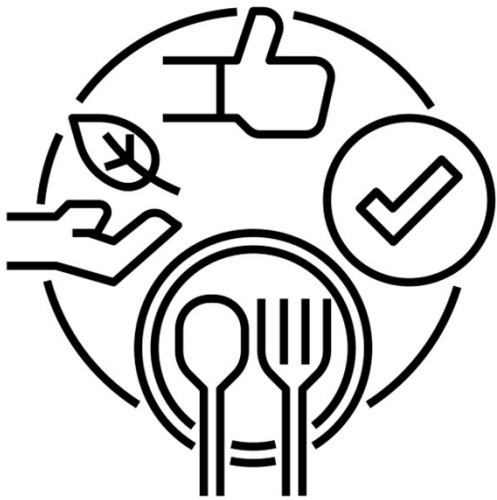


## Discussion questions

If you completed the bonus task, are the most expensive foods also the ones with the most food miles or carbon emissions? Should they be?



# Analysis & Discussion



Come up with a list of principles that would help us make more sustainable food choices.

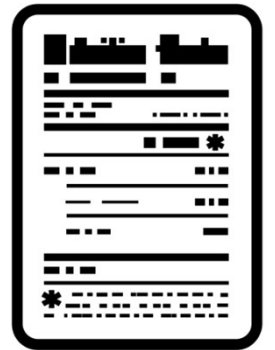
Based on the data, how should we rank these in terms of importance?

# Creative task: Design a food label



Many food labels tell us ingredients and the country of origin, but not the other contributing factors to carbon emissions.

**Design a food label** that shows the carbon emissions of the different foods we eat.



Well done!



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