NAME:

CONSCIOUS CONSUMERS

FOOD & FARMING DISCOVERY TRUST

YOUTH STEMM AWARD

LEAFEd LEAF Education

saw™ science art writing

The Food and Farming Discovery Trust coordinate and communicate existing food, farming and countryside educational activity in Norfolk.
They also develop new activity and support educators and providers to enhance the learning outcomes for all young people in Norfolk through food, farming and the countryside.

http://discoverytrust.org.uk/

The Science, Art and Writing (SAW) Trust is a science education charity (no.1113386) developed in 2005.
SAW takes a fresh approach to science education, using intriguing images to initiate exploration of scientific research through activities in practical science, creative writing and visual arts, aimed at as wide an audience as possible.

www.sawtrust.org

A skills award to support and inspire the next generation into Science, Technology, Engineering, Maths and Medicine (STEMM).

Students aged 13-19 can register through their school or at home and start working towards a bronze, silver or gold level award. Simply undertake STEMM-based activities, like learning a new skill or watching educational content and log hours on our e-portfolio. Completing the Conscious Consumers project is a great way to begin your journey or add more hours if you are already registered. Once you complete enough hours you will receive a medal and certificate.
Ask your teacher about how you can get involved or visit our website www.ysawards.co.uk to find out more.

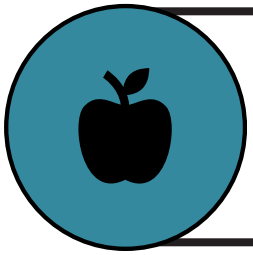
LEAF Education works with members and partners to promote visits to farms. LEAF Education also provides access to a range of high-quality educational resources and activities for school-based studies and outdoor visits.

www.leafuk.org/education
Twitter: @LEAF_ Education

CONSCIOUS CONSUMERS

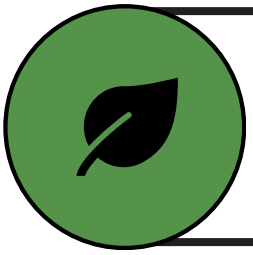
Food miles

The environmental cost of transporting food produce



Personalised nutrition

Eating for a healthy microbiome



Plant-based diet

Exploring the claims made about plant-based diets

A fresh look at agricultural science and food

This project aims to start conversations about topics of importance to society by looking at three overlapping topics of food miles, personalised nutrition and plant-based diets.

There is a lot of information on social media and in the news about these topics but it's often hard to know what to believe when stories seem to contradict each other. This workshop will give you an introduction to some of the key facts and encourages you to look more closely at sources of information available online to determine how reliable they are.

We all have to make choices, particularly around the food we eat and our choices as consumers really do have the power to shape the world we live in.

Following the workshop, we invite you to undertake further research and encourage others to become more Conscious Consumers! (more details on the last page).

Food Miles

What are food miles?

Food miles is the term used to describe the distance food is transported from the place it's produced to the end consumer (us).

The effect of food miles is measured by the amount of CO_2 emissions produced, this is usually measured per tonne of food per kilometre.

How is our food transported globally?

10%	10%	60%	20%
Sea	Rail	Road	Air

CO_2 Emissions

15 – 30 grammes of CO_2 per tonne of food per kilometre.

More emissions are created by consumers driving to the supermarket to buy air freighted goods than created by the air freighting.

570 – 1580 grammes of CO_2 per tonne of food per kilometre.

- figures acquired from www.alimentarium.org

What other miles could be involved?

Primary producer → ? ? ? → Consumer

Can you think of any other additional miles?

Eg. transport from supermarket to home

Factors affecting our food choices

Seasonal restrictions and availability

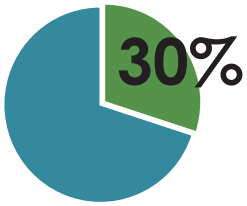
Pricing

Convenience and choice

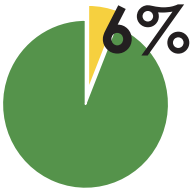
Ethics

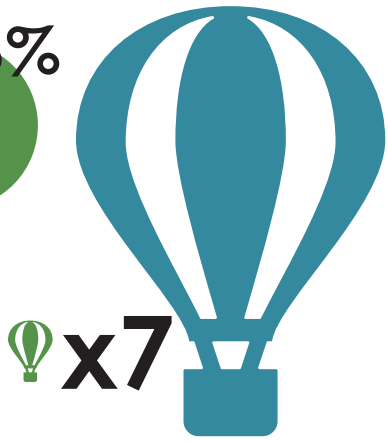
Putting food miles in context

The food sector is responsible for 30% of global green house gas (GHG) emissions.



transportation accounts for 6% of the food sector's GHG emissions





Kitchen appliances produce **7 times** more carbon emissions than transport within the food sector.

End consumers use most energy of all in the food sector.

What factors affect your food miles?

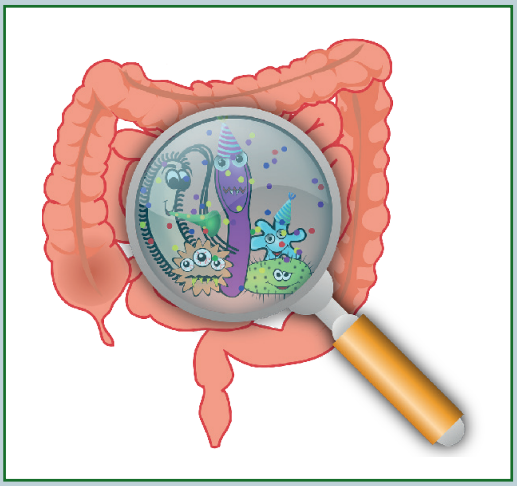
Useful resources

Department for Environment, Food and Rural Affairs (DEFRA) website and reports.
UK government department for environmental protection, food production and standards, agriculture, fisheries and rural communities.

Food association groups and websites.
For every food type, be it fruit, vegetable or meat, there is an association that knows all the ins and outs of its production and consumption - check them out for more detailed facts and figures.

The Food Climate Research Network (FCRN).
Works to inform and connect stakeholders with a common interest in understanding and building sustainable food systems.

Personalised Nutrition



How do we eat for a healthy microbiome?

Our personal microbiota, but more specifically the microbes in our gut, impact how we digest our food.

Microbes also help us fight disease and infection, by supporting our immune system, and potentially our mental health too.

What are microbes?

Microbes are tiny organisms, or microorganisms such as bacteria, fungi, protozoa, algae and viruses. They can be very simple, single-celled organisms (prokaryotic), or more complex, multi-celled organisms (eukaryotic).

90%

of microbes live underground or in the ocean, but they can be found everywhere; in soil, plants, insects and animals.

We are more microbe!

38 trillion : 30 trillion

We have around 38 trillion bacterial cells to every 30 trillion human cells in our body.

There are 'good' and 'bad' bacteria, most won't do us any harm. In fact, our health, and the health of the plants and animals we eat, depends on beneficial bacteria.

Microbes in the soil

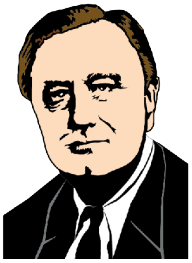
A teaspoon of healthy soil can contain up to **1 billion** microbes.

In the soil, organic matter such as leaves, dead insects and plant roots, are decomposed by microorganisms and turned into nutrients which plants use to grow.

Plants are eaten by insects, birds and animals, and become part of the human food chain. It is important for farmers to look after our soils, a healthy soil full of microorganisms can grow healthy food and store carbon from the atmosphere to help reduce climate change.

"A nation that destroys its soil, destroys itself."

- USA president Franklin Roosevelt, 1937.



Microbes in humans

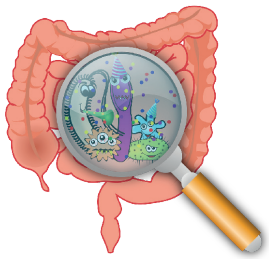
The human microbiome refers to all the microbes that reside on our skin and inside our bodies, with the highest population living in our gut. We need to look after our microbiome as if it were a group of tiny 'pets' that we carry around with us.

Eating for a healthy microbiome

For our good gut bacteria to thrive, we need to eat a variety of fruit, vegetables, pulses and wholegrains, which contain different kinds of protein, carbohydrate and fibre.

✗ Too much **salt**, **sugar** and **fat** encourages harmful bacteria to grow.

✓ **Probiotics** are live microorganisms that can be beneficial to your microbiome and occur naturally in certain foods including fermented foods like live yoghurts, kimchi and some cheeses.



✓ **Prebiotics** are compounds that can feed our gut microbes, increasing their growth and activity. They occur naturally in certain foods including garlic, onions, apples, oats, bananas and peas.

If we have a bacterial infection and take antibiotics to kill the bad bacteria, our good bacteria can be killed as well. After a course of antibiotics we should eat a healthy diet to build up the number of good bacteria in our microbiome.

The link between soil health and human health

There is increasing scientific knowledge about the importance of microbes in the soil, and in the plants and animals which humans eat.

The use of chemical fertilisers, pesticides, herbicides or fungicides to protect crops against harmful microbes can kill good microbes in soils and plants, reducing the health of the ecosystem as a whole. Many farmers in the UK are trying to reduce the amount of chemicals they use to help create more healthy ecosystems, both inside and outside our bodies.

What factors affect your gut microbiome?

Useful resources

British Nutrition Foundation (BNF)
BNF aim to generate and communicate clear, accurate, accessible information on nutrition, diet and lifestyle, which is impartial and relevant to the needs of diverse audiences

www.exploringnature.org
This website provides resources on a whole range of science topics, including nutrition and it has a selection of worksheets, activities and investigations to explore.

World Microbiome Day
World Microbiome Day website provides fun facts about the microbiome generally, ongoing microbiome research and a selection of microbiome themed activities

Plant-based diets

What is a plant-based diet?

A plant-based diet is a diet consisting mainly or solely of foods derived from plants, including vegetables, fruit, nuts, seeds, grains and legumes. Diets high in these have been linked to a range of health benefits.

A plant-based diet is not necessarily a vegetarian or vegan diet.

The UK plant-based market was worth

£443m

in 2018

In 2018 the UK launched

more **Vegan**

products than any other nation

Demand for **meat-free** food in the UK grew

987% in 2017

- according to the Vegan Society, 2020.

What information can we trust?

In this workshop you will look at some examples from a range of different sources including traditional news sites, wellness blogs and social media. You will develop skills in critical thinking to explore the claims you encounter, using evidence to evaluate them.

Common features of trusted sources:

- Claims backed up by links to scientific studies
- Author is named and relevant qualifications listed
- Uses moderate language, 'may have effect'
- Good use of grammar, limited use of exclamation marks, capital letters etc
- Minimal links to advertising/ independence of publication
- Review of topic with interviews from qualified experts

Common features from questionable sources:

- Exaggerated claims
- Qualifications of author unknown
- Little or no editorial control
- Mostly opinion based, potentially biased point of view
- Linked to advertising
- Emotional language used, commonly to guilt reader towards action
- Negative shaming of others viewpoints
- Scaremongering

Fake news is a form of news that deliberately spreads misinformation via traditional news media outlets and social media. It is usually written with the intent to damage an organisation or person and/or to gain financially or politically.

What else influences how we respond to claims made in the media?

Consequences for the environment

Advertising

Peer pressure

Affect on health

What we enjoy eating

Personal choice

Availability and convenience

Price

What factors influence your diet choices?

Useful resources

Food Ethics Council.
The Food Ethics Council are an independant charity that aims to help create a food system that is fair and healthy for people, animals and the environment.

National Health Service (NHS) UK.
The NHS website aims to provide objective and trustworthy information on all aspects of health and healthcare.

Harvard Summer school - 4 tips for spotting a fake news story.
Check out this blog which helps you to develop your critical thinking and identify fake news stories.

Food DATABANKS at QI
The home of the national food databank, which has information about nutritional values of foods eaten in the UK - they have a recent article about vegan diets.

Notes

What's next??

The activities in the workshop should have created lots of questions in your minds around the topics of food miles, personalised nutrition and plant-based diets. It also shows how confusing it can be to make informed choices as consumers.

The Challenge

We would like you to pick an area that was touched upon in the workshop to further research and then either;

- **Design communication materials** to; dispel common myths and help people gain a better understanding of the topic. This could be in the form of a blog, a poster, leaflets or a podcast for example.
- **Develop a campaign** to; collect real data and report your findings or to encourage people or companies to change behaviours. For example, you could collect data from your school canteen to measure the food miles of the ingredients used, or you could create recipe cards to feed your gut microbes.

We encourage you to be creative and consider who you are targeting in terms of your communication style. Will it be for other people your age, for younger children, adults, businesses, farmers, sports clubs?

To get you started, here are a few potential questions that your projects could investigate:

Food miles

- Does all locally produced food have a lower CO_2 footprint?
- Is fresh food always best?
- Is the 'origin' on food labelling a true reflection of food miles?

Personalised nutrition

- what could a weekly diet look like, that takes care of your microbial 'pets'?
- Should the NHS pay for everyone to have their gut microbiome tested so we can help to look after our own health?
- Can what you eat change your mood?

Plant-based diets

- How easy is it to survive on a plant-based diet?
- If everyone in the world ate a plant-based diet, would it be better for the planet? - would it reverse climate change?
- Are vegan snacks healthy?

Good luck and we hope this project will make you feel like more Conscious Consumers!

Conscious Consumers was kindly funded by the Chadacre Agricultural Trust.