

Carbon Literacy Training



Session 1: Introduction
to Carbon Literacy and
the Science of Climate
Change

Introduction

- Training follows wide success in the television and film industry
- It all began in Manchester...



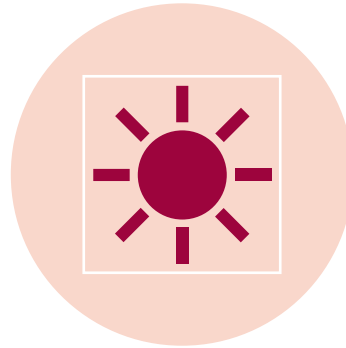
MediaCityUK



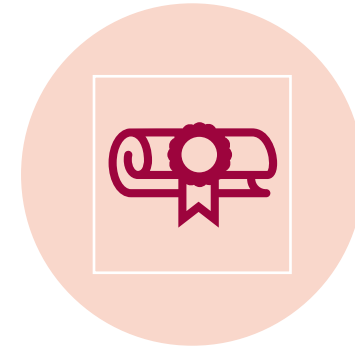
What is Carbon Literacy?



An awareness of the **carbon dioxide costs** and impacts of everyday activities and the ability and motivation to **reduce emissions** on an individual, community and organisational basis.



The focus of this course is **to empower you** to choose your own climate solutions.



To be awarded certification, you must complete eight hours of training and pass a short assessment to the required standard.



Certification

To apply for certification from the Carbon Literacy Project, you need to attend all four sessions (8 hours) and complete the assessment form.

More information about the assessment form will be provided throughout the sessions.

If you have any question regarding the training or assessment, please contact Jess at jessica.tasney@sanctuary.co.uk



Carbon Literacy Project

32,583
citizens
certified



71 certified
training
professionals




2,821
organisations
engaged



65,166
actions
pledged




340
courses
designed



92
Carbon
Literate
Organisations

117,387 t^{CO₂e}
carbon
saved



12 Sectors



15
nations
delivering

9 Toolkits



5-15% carbon
savings
per-person



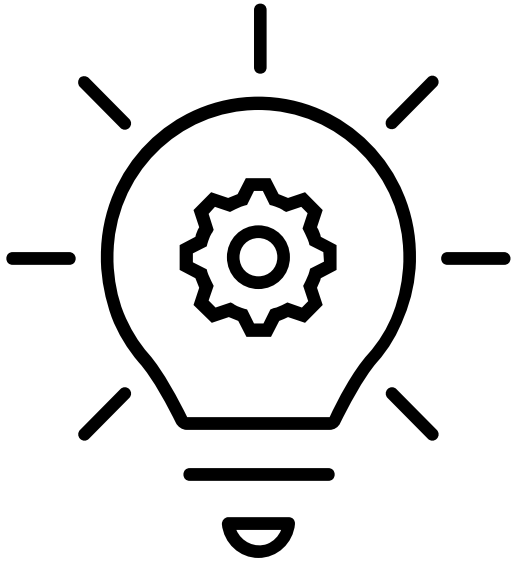
During the training you will:

	Session 1 - Science	Session 2 - Impacts
The Problem	<ul style="list-style-type: none">• Learn about the science of climate change• Your individual carbon footprint	<ul style="list-style-type: none">• Examine the impacts of climate change• Explore the distribution of impacts and reflect on climate justice• Consider possible future scenarios
	Session 3 – Action 1	Session 4 – Action 2
The Solutions	<ul style="list-style-type: none">• Learn about action on climate change (including mitigation and adaptation) at various scales• Compare high and low carbon footprint actions• Devise high impact individual strategies	<ul style="list-style-type: none">• Consider ‘multisolving’ climate solutions• Devise high impact group strategies



“Providing you with the tools to make a difference....”

Session one: learning outcomes



- Introduction to the training
- Introduction to the basics of climate science
- Calculating your individual / household carbon footprint
- Independent learning task

Introduction

This is an introductory video from July last year highlighting the immediacy of the climate emergency and the need for urgent action, the content of which will be built on further today and during other sessions.

Watch the video and consider your response. After the video, we will discuss in breakout rooms.

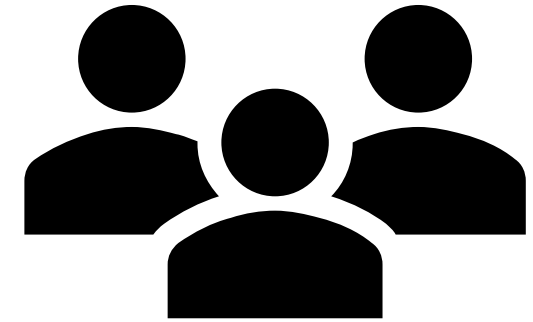


Link: <https://www.bbc.co.uk/news/av/world-57868135>

Activity: breakout rooms and feedback

In breakout rooms:

- a.) Introduce yourself to the group
- b.) Give one reason why you are attending the training
- c.) Highlight one thing from the video that stood out for you



When we return from the main room, one person from each breakout room will feed back to the group on your discussion.



What are the predicted impacts for UK?

Hotter, drier summers

What's the issue?

- Droughts and heatwaves
- Water security
- Health impacts on young and elderly citizens
- Invasive species e.g. mosquitoes
- Unstable food prices

Wetter, stormier, warmer winters

What's the issue?

- Wet winters could become up to x5 more likely
- More frequent intense downpours driving flash floods
- North of England and Scottish Borders are most impacted
- 2013-2014: we suffered the wettest winter for 250 years – 11,000 homes were flooded





What is happening locally?

- We saw from introductory video that the Earth's climate has changed and some of the global impacts.
- Climate change is affecting us all, **use the chat to give some local examples.**

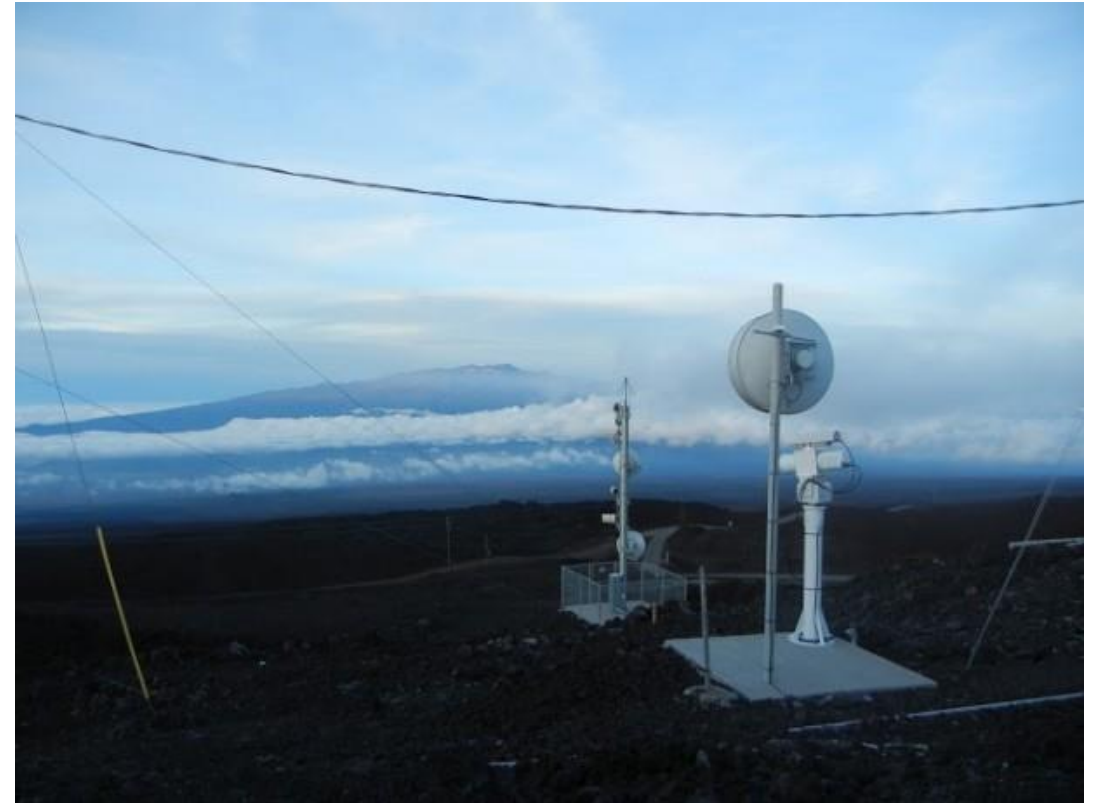
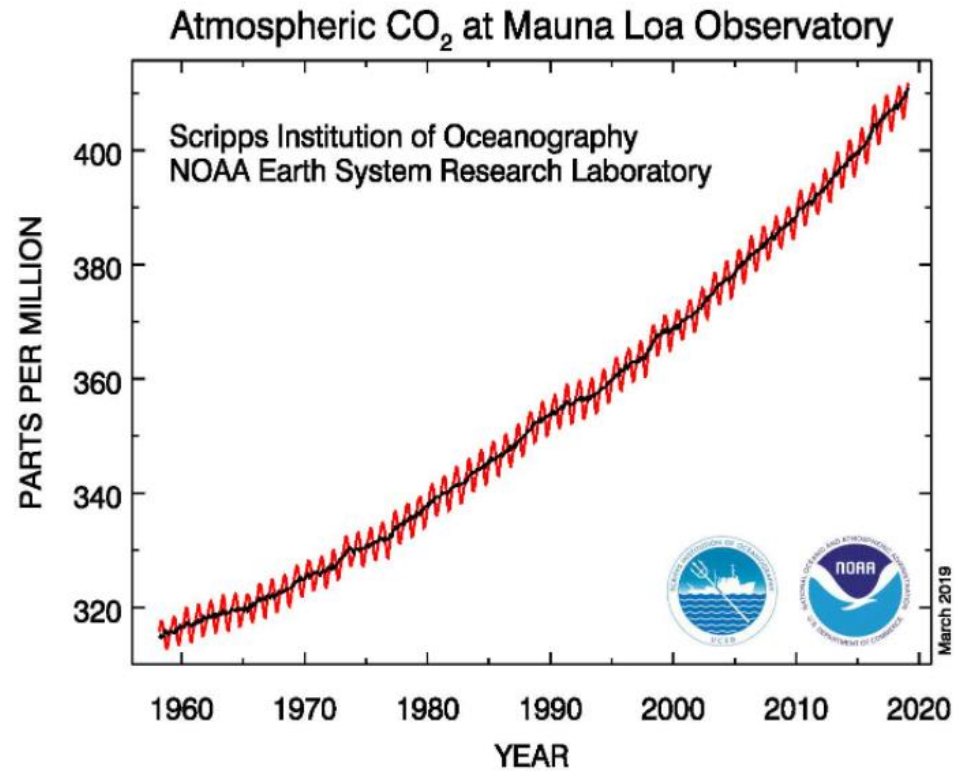


The carbon cycle

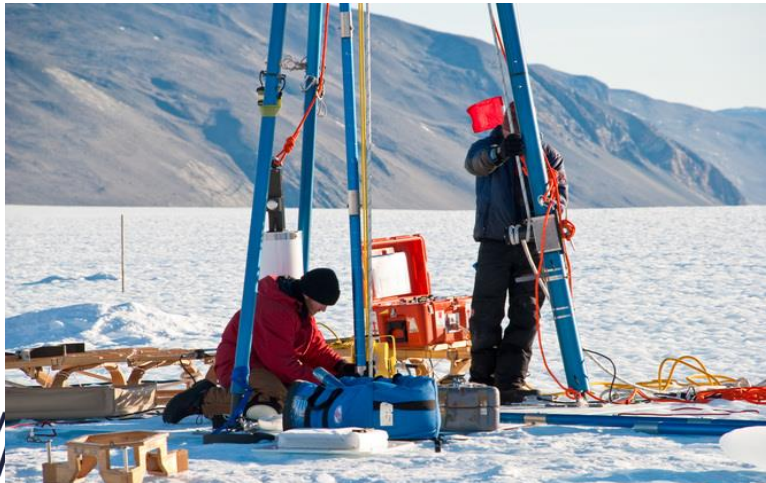
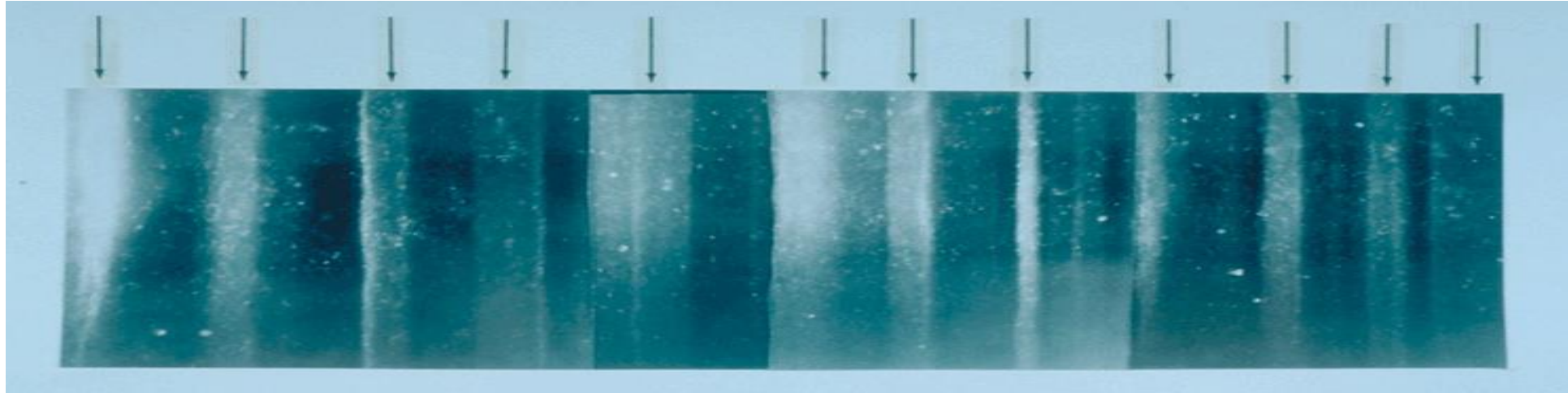


Link: https://www.youtube.com/watch?v=E8Y6L5TI_94

CO₂ levels are rising

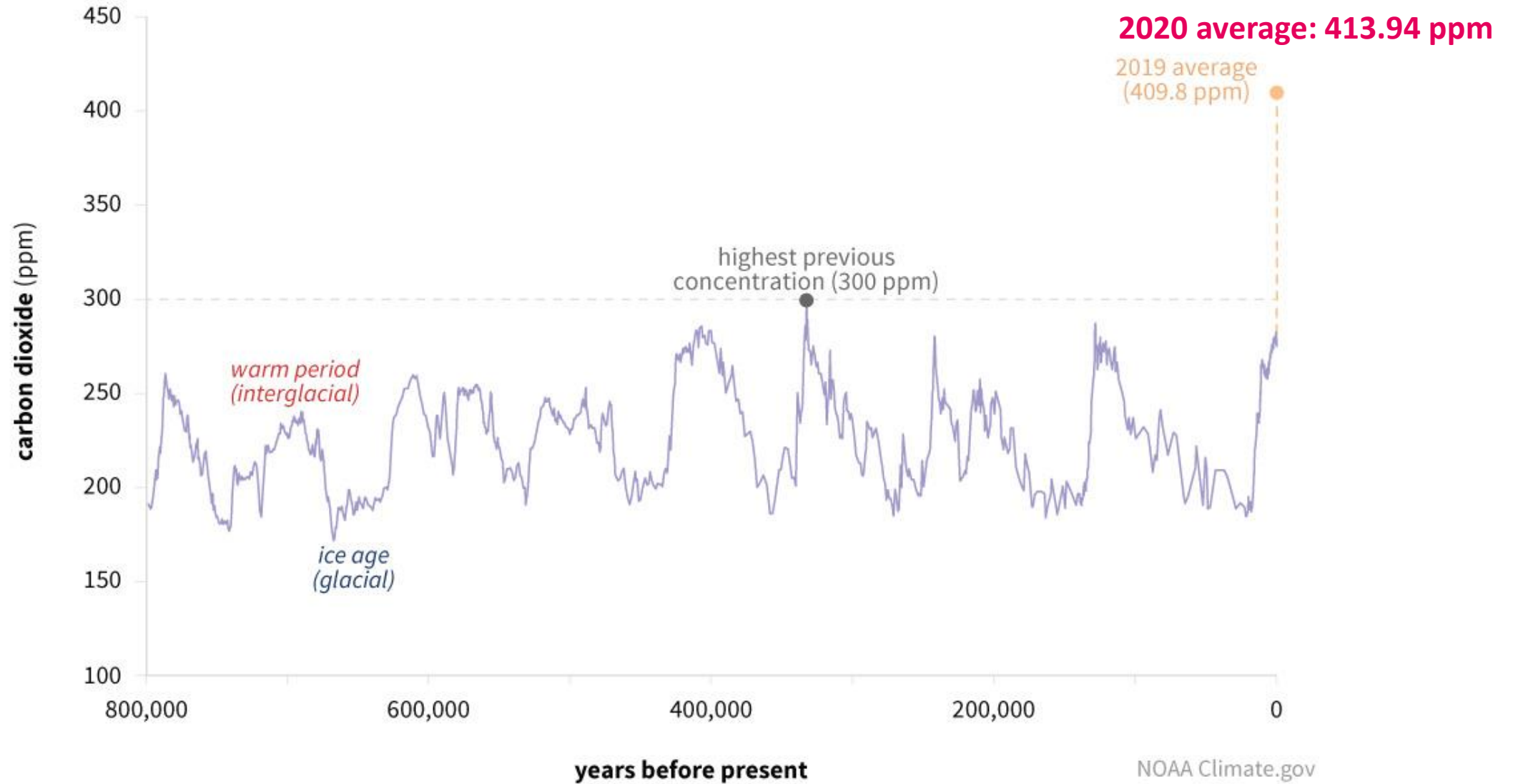


What do ice cores measure?



**Ice cores reveal historic
levels of CO₂**

CARBON DIOXIDE OVER 800,000 YEARS

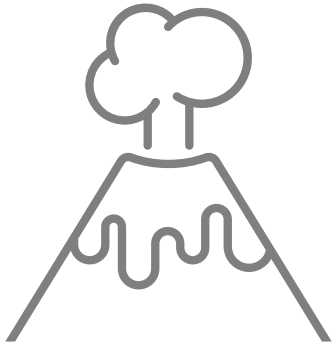


NOAA Climate.gov
Data: NCEI



Natural v anthropogenic (man-made) climate change

The causes of climate change can be considered in two broad categories: natural causes and anthropogenic causes.



Natural causes refer to natural phenomena that are not related to human activity which cause climate change, including volcanic and solar activity

Anthropogenic causes refer to human activities that cause climate change



Natural or anthropogenic?

Changes to
Earth's orbit

Burning gas to
generate energy

Intensive
agriculture

Deforestation

Using aerosols

Causes of climate change

Solar flares

Driving petrol/
diesel vehicles

The aviation
industry

Sending waste to
landfill

Volcanic
eruptions

How does human activity cause climate change?

Greenhouse gases are gases in the Earth's atmosphere that trap heat from the Sun in our atmosphere.

Greenhouse gases do occur naturally. However human activities such as intensive farming of livestock, and burning of fossil fuels like coal, gas and oil for energy release huge amount of greenhouse gases into the atmosphere.



Deforestation has also left the Earth with far fewer trees to absorb CO₂ from the atmosphere.



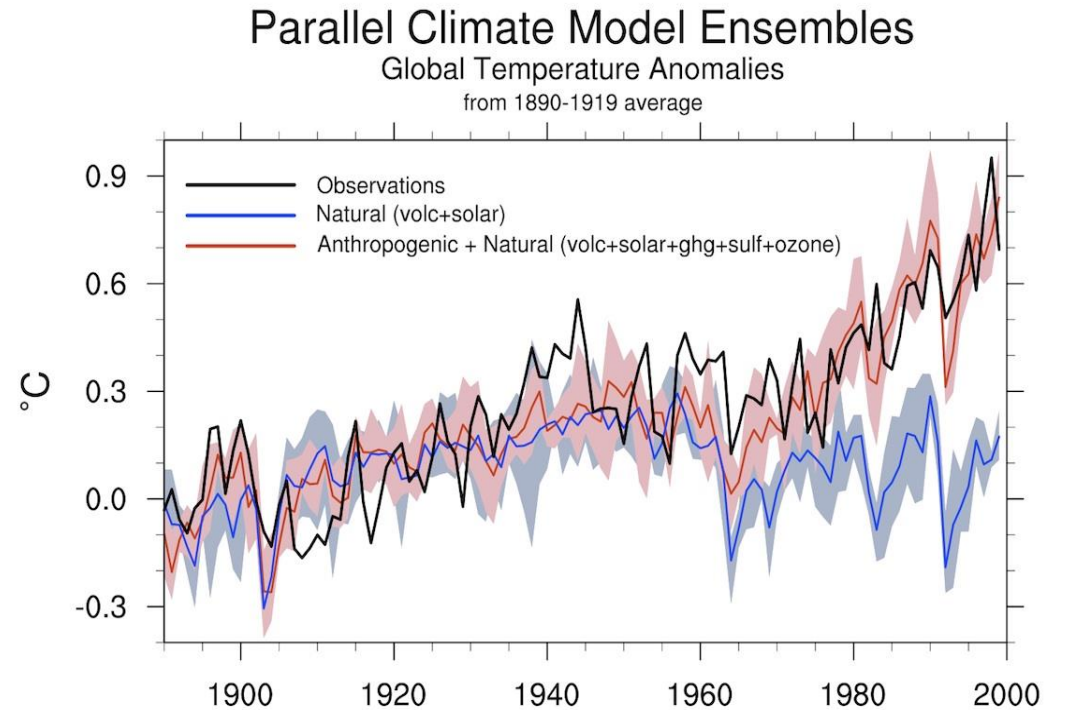
Anthropogenic climate change

In 2021, the Intergovernmental Panel on Climate Change said:

It is “unequivocal that human influence has warmed the atmosphere, ocean and land”.

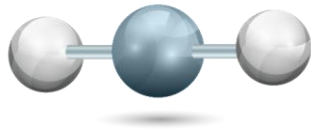
**Scientific consensus –
‘indisputable that climate change is
caused by human activities’**

Prof Ed Hawkins, 2021



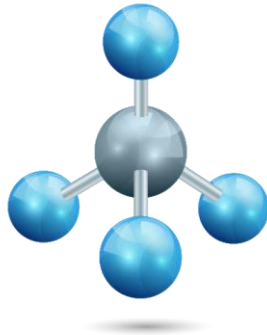
The greenhouse gases

Carbon Dioxide
(CO₂)



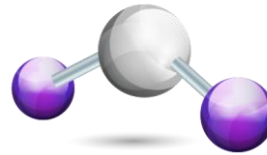
1

Methane (CH₄)



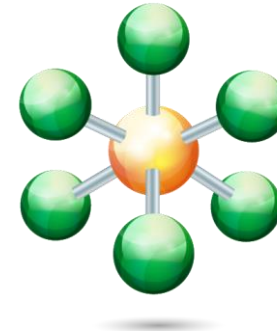
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Nitrous Oxide (N₂O)



298

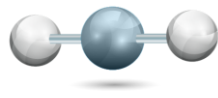
F Gases (various)



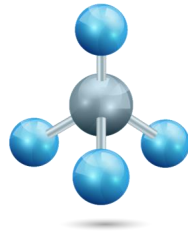
10s to 10,000s

Global warming potentials

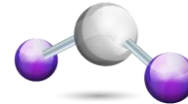
Activity: which activity releases which greenhouse gas?



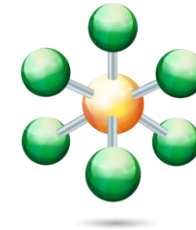
Carbon Dioxide



Methane



Nitrous Oxide



F Gases



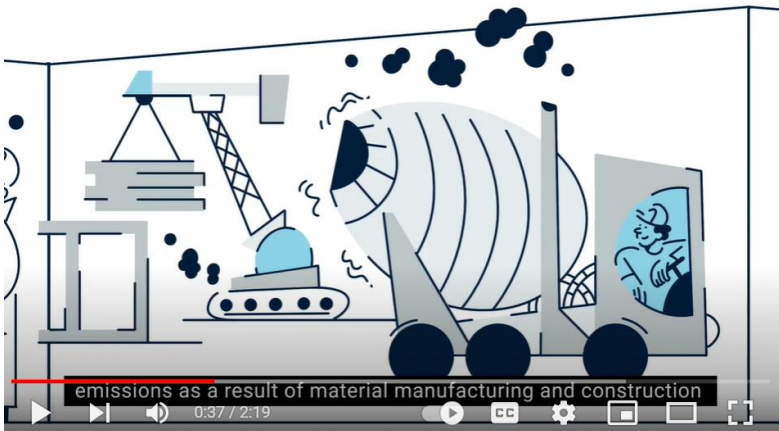
Match the greenhouse gases with their sources.

What about embodied carbon emissions?

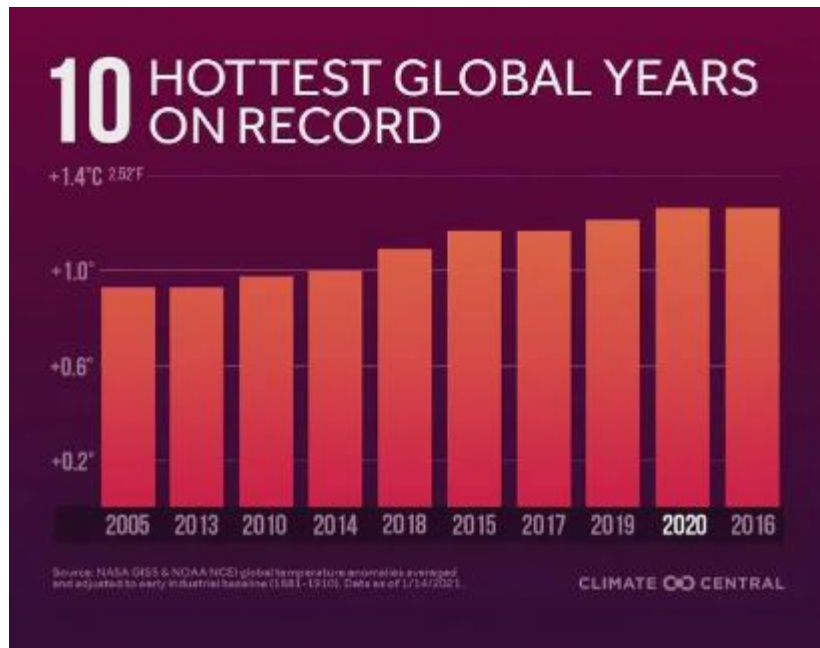
Embodied carbon means all the CO₂e emitted in producing goods and services from extraction to final disposal, or 'cradle to grave'.

For example, the embodied carbon of a building can include all the emissions from:

- **Extracting, transporting and manufacturing** construction materials
- The **building process** and **refurbishment**
- **Deconstructing** and final **disposal** of the building materials



Summary of climate science



- Emissions of greenhouse gases have risen since the industrial revolution
- These emissions have enhanced the greenhouse effect leading to rising average global temperatures
- As a result the 10 hottest global years on record have all occurred within the last 15 years
- The average global temperature in 2020 was about 1.2°C (± 0.1) above the pre-industrial (1850-1900) level (WMO, 2021)



**5-minute
break time!**

Climate change action and inaction



What is behind inaction?

Political preference

It's too complicated

It's too late!

Fake news

Confusing science



Time constraints

'They' will fix it

Financial constraints

I'm not sure how to act

It doesn't match my world view

It's not my responsibility

I'm just one person

‘But I’m only one person, I can’t make a difference’

IF YOU THINK YOU'RE
TOO SMALL TO MAKE
A DIFFERENCE, YOU
HAVEN'T SPENT A
NIGHT WITH A
MOSQUITO.



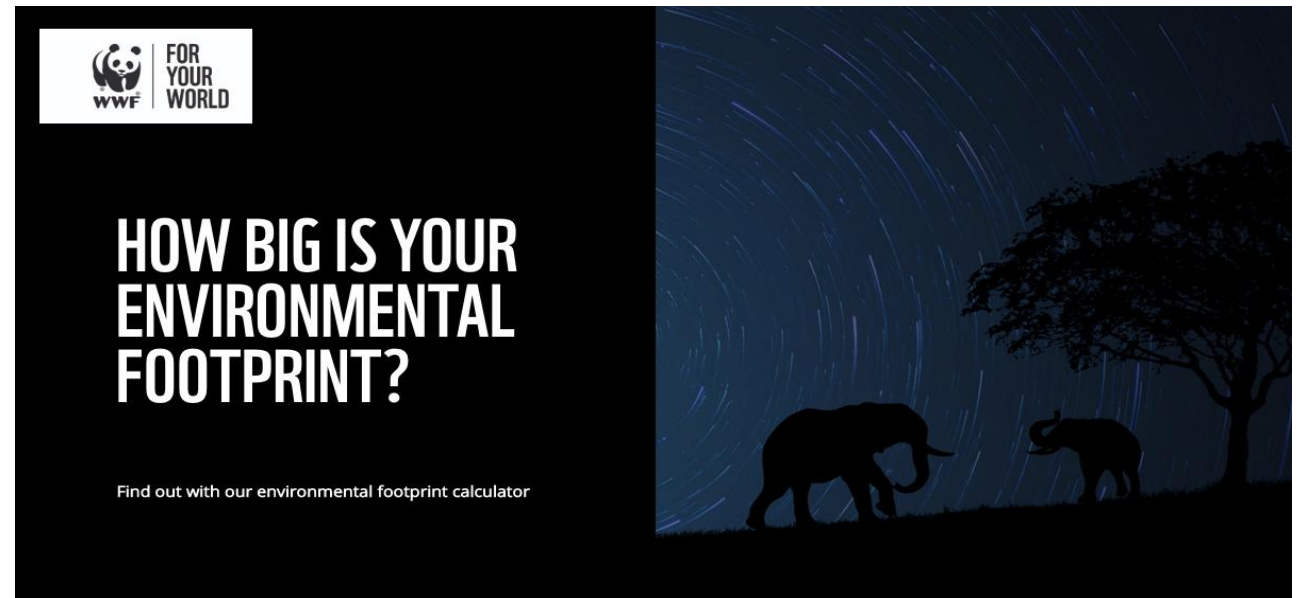
-African Proverb



Your own carbon footprint

Please work through the WWF carbon footprint calculator and reflect on your results.

Note: when calculating your footprint, please do so for a typical year (not affected by Covid-19 restrictions) e.g. 2019 - 2020

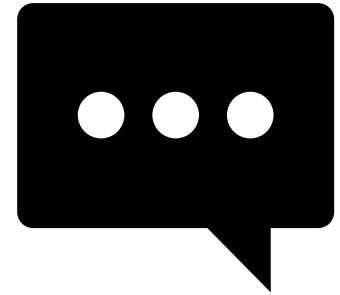


Link: <https://footprint.wwf.org.uk/>

Group discussion of carbon footprint results

If you are happy to share your results, feel free to pop them in the chat box.

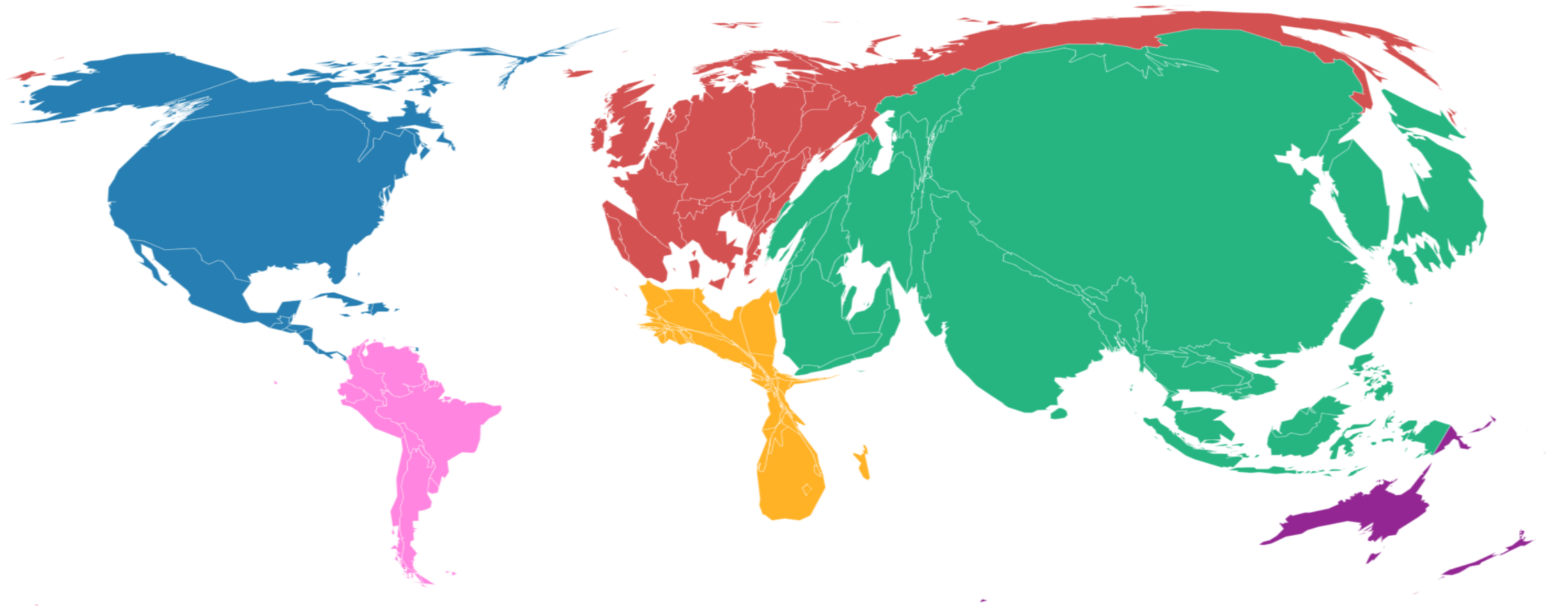
- Was your footprint larger or smaller than you expected?
- Was there any result that surprised you?
- Has this prompted you to make any immediate changes?



Considering the global picture

BACKGROUND RESPONSIBILITY VULNERABILITY

↻ Area Population Wealth Extraction **Emissions** Consumption Historical Reserves People at risk Sea level Poverty



Your assessment form

To gain certification from the Carbon Literacy Project, you will need to complete the assessment form.

You **do not** need to start the assessment form now - we recommend you don't begin the assessment until you have completed the first two sessions of the training.



Next session we will:

- Examine the impacts of climate change
- Explore the distribution of impacts and reflect on climate justice
- Consider possible future scenarios

If you have any questions about the course, you can contact Jess at jessica.tasney@sanctuary.co.uk



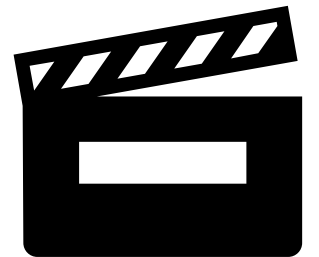
Homework

Before the next session, watch this video:

<https://www.youtube.com/watch?app=desktop&v=EOctluyVfnA>

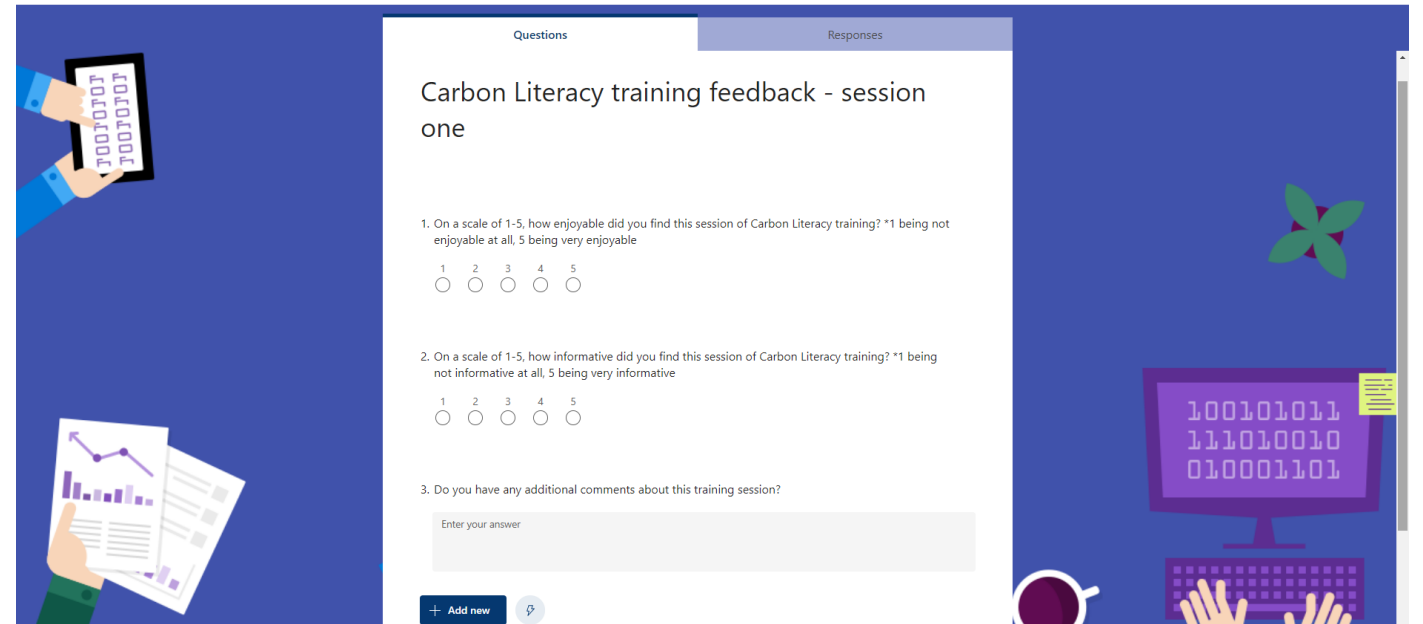
In the video, there is a discussion about communities that emit the least carbon emissions also being those that are most likely to suffer the most severe impacts of climate change.

- Can you list two countries that you think will be most impacted by climate change?
- Can you list two countries that you think will be least impacted by climate change?
- What does this reveal to you?



Feedback

We'd love to hear more about how you found this training session. Please use [the link](#) to answer three quick questions that will help with our continual improvement of the training.



The screenshot shows a feedback form with the following content:

Questions Responses

Carbon Literacy training feedback - session one

1. On a scale of 1-5, how enjoyable did you find this session of Carbon Literacy training? *1 being not enjoyable at all, 5 being very enjoyable

1 2 3 4 5

2. On a scale of 1-5, how informative did you find this session of Carbon Literacy training? *1 being not informative at all, 5 being very informative

1 2 3 4 5

3. Do you have any additional comments about this training session?

Enter your answer

+ Add new

