CLIMATE CHANGE

BIG IDEAS
& LEARNING OUTCOMES

REFLECTION TOOLS

GET UP AND GOALS!
Global Education Time

curated by
CISP
COMITATO INTERNAZIONALE PER LO SVILUPPO DEI POPOLI
in collaboration with Leeds DEC

Big Ideas & Learning Outcomes

CLIMATE CHANGE

WHAT IT IS

Today's climate change is a long-term, large-scale rise in Earth's global average temperature, causing shifts in weather patterns. Some models predict rises in global temperature of 4 degrees Celsius by the end of the 21st Century, which could make advanced civilisation unsustainable, lead to a major reduction in the human population, and cause extinction for many other species. The UN aims to keep temperature rise to between 1.5 – 2 °C.

"*The Earth's climate is changing at a rate that has exceeded most scientific forecasts*"
UNHCR 2018.

"*Our greatest threat in thousands of years – climate change*"
Sir David Attenborough, UN Climate Change Conference, Dec 2018

Students can explain the significance of the threat that Climate Change potentially poses to life-forms on earth. They are aware that the speed of change is exceeding most scientific forecasts, and that 1.5 degree would be a prudent target.

HUMAN ROLE

97% Climate scientists agree that humans are the main cause of the climate change we see today. Earth's climate is always changing and a handful of climate scientists still think what we are seeing is natural. However, temperature rises are accelerating far beyond anything in history.

The "*collapse of our civilizations and the extinction of much of the natural world is on the horizons*".
Sir David Attenborough, Dec 2018

Students understand that the **scientific consensus** is that humans burning fossil fuels is causing today's climate change. They are aware that there are alternative points of view.

HOW IT WORKS

Greenhouse gases in the atmosphere (like CO_2) soak up the sun's radiation and trap it as heat. **Human consumption** relies on a lot on energy from burning fossil fuels for energy (agriculture, factories, cooking, construction, heating, computer data-storage/streaming, cars, planes and other transport).

Students are able to make the link between patterns of **human consumption** and Climate Change. They can explain the processes that cause climate change, name some of the activities that are responsible and make the connection between these and things that they consume.

INDUSTRIAL ECONOMIES

Most of the greenhouse gases humans have added to the atmosphere come from supplying energy and goods to wealthy **Minority World 'industrial economies'**. This activity is the result of a global economic system that encourages consumption. Most of the people in the world consume little and use very little energy.

Students can describe the link between past industrial development and current Climate Change.
They understand there is a link between the global economy and levels of consumption.

THE IMPACT ON THE NATURAL ENVIRONMENT

The **impact on the natural environment** of climate change can be seen in global temperatures, warming oceans, rise in sea-levels and extreme weather events. "*Global sea levels rose about 8 inches in the last century. The rate in the last two decades, however, is nearly double that of the last century*" – NASA, 2018.
Impact on people, animals and plants. These changes could have extreme consequences for humanity and other life-forms. The greatest initial impact is currently on millions of people especially in hotter **majority world** countries, coastal communities, low-lying countries, and wildlife (especially in the artic); but Climate Change will increasingly affect us all. Millions of poor farmers in the majority world, who were not responsible for creating the problem, are trying **to adapt** to challenges like hotter climate and different rainfall patterns. As crops fail, many people are already forced to migrate, creating a new phenomenon of **Climate Refugees**. There has been "*an average of 22.5 million people displaced by climate- or weather-related events since 2008*" UNHCR 2018

Students can name some different consequences of climate change and how these affect people, animals and plants.
Students can explain how and why Climate Change effects some places and communities more than others e.g. people in the majority world. They can describe in simple terms the connection between climate change and migration.
Students can explain the difference between **mitigating** and **adapting to** Climate Change.

DISCUSSION ABOUT FUTURES

Climate change is accelerating. The global consensus is that we are just seeing the initial phase of Climate Change, with relatively small effects. Most scientific models predict more drastic changes. We can expect to see some of these in all our life-

times. Addressing the problem of Climate Change has stimulated discussion of how to address the underlying cause – human consumption. The relationship between the prevalent model of economic growth and consumption is now being examined. Some experts say a 'Zero Carbon future' is the only way to slow Climate Change sufficiently.

"*A matter of life and death.. (the world is) nowhere near where it needs to be (in the transition to a low-carbon economy).*"[1]

Antonio Guterres, UN Secretary-General, Dec, 2018

1. https://www.bbc.co.uk/news/science-environment-46398057

Students understand that Climate Change will have an effect on the future of their and the lives of everyone in the world. They know that there are a number of different possible futures, and what individuals and the global community as a whole do now, will determine the probable future in terms of life on Earth.

They can name consequences for civilisations that did not take care of the environment (e.g. Easter Island) and understand Climate Change is an environmental threat to human civilisation on a planetary scale.

ADDRESSING CLIMATE CHANGE

Because of the potentially catastrophic consequences of climate change, scientists have encouraged world leaders to adopt a 'precautionary principle' to avoid **tipping points** and address the main causes – over-consumption and use of fossil fuels - before it's too late. This means changing our behaviour.

Climate Change is being addressed at different levels: by **individuals**, by **people acting together** (collectively) and by **governments**. Governments are acting both individually, and, collectively as the United Nations. To avoid the worst scenarios predicted by scientific models, **multiple solutions** will have to be put into action. Governments are being forced to consider laws that help stop the worst scenarios materialising. One solution is **lifestyle change**; this may mean addressing the **contradiction between people's awareness** about the issue and individual **people changing how they act**.

Students understand that action on Climate Change is taking place at 3 levels across the world. They can explain why action on all of these levels is important to address Climate Change.

They can explain the importance of the role that individuals can play.

Students understand that there frequently a disjuncture between people's awareness of the problem and people actually changing their behaviour.

CAPTURING CO_2 AND REDUCING EMISSIONS

As the evidence points to burning fossil fuels as a cause of climate change, countries have moved towards renewable energy and protecting / renewing natural carbon sinks (e.g. plants, soil, oceans) which take carbon out of the atmosphere. Renewable energy derives from natural resources (e.g. water, wind and sun) which do not run out. Wind turbines and solar panels produce energy which can power entire communities or your own home. Reducing consumption is also important in reducing the production of CO_2.

Students can explain why developing forms of renewable energy and the protection & renewal of carbon sinks are essential strategies to slow Climate Change, and name some different types.
They know that reducing consumption is another important strategy to reduce the production of CO_2.

ACTIONS

195 **Governments** worldwide have come together to combat "*our greatest threat in thousands of years*"[2] - climate change - signing the 2015 **Paris Climate Agreement**. This aims to strengthen the ability of countries to deal with the impacts of climate change and emphasises the need for collective action to limit overall temperature rises.
The 2018 UN Intergovernmental Panel on Climate Change[3] report states that global CO_2 emissions need to **decline 45% by 2030** to keep the temperature rise to 1.5°C.[4]

Students can name the most recent prominent agreement signed to address climate change and can describe the main aims of the agreement. They understand that international agreements take place are strengthened by individual and collective actions and are unlikely to solve the issue on their own.

Many **individuals** are looking at their **Carbon Footprint** and reducing their consumption – using and buying less e.g. reducing their food waste & the amount of clothes they buy, buying renewable energy and electric cars, nurturing carbon sinks by planting trees or forests.
"*Defence of our resources is just as important as defence abroad. Otherwise what is there to defend?*" Robert Redford.

Students can explain what a Carbon Footprint is and describe practical things people can do to reduce their footprint. They are aware that people in wealthy Minority World countries have much bigger footprints – and that individual people reducing their footprint is an important part of the collective effort to slow Climate Change.

Collective responses. There are many collective groups taking action. People join campaigning groups, or lobby organisations they are already members of. Farmers' organisations across the world are taking action. Businesses are responding to this 'demand' by providing more environmentally-friendly products and services (e.g. power). These collective and individual actions can help governments to make policy changes.

2. https://nypost.com/2018/12/03/un-chief-calls-climate-change-most-important-issue-we-face/ "*Even as we witness devastating climate impacts causing havoc across the world, we are still not doing enough, nor moving fast enough, to prevent irreversible and catastrophic climate disruption*" UN Secretary General, 2018
3. https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/
4. https://www.theguardian.com/environment/2018/oct/08/global-warming-must-not-exceed-15c-warns-landmark-un-report

Students can explain the importance of people participating in Collective action on Climate Change and give examples of successful collective actions (e.g. the replanting of forests in Kenya, the lobbying of governments).

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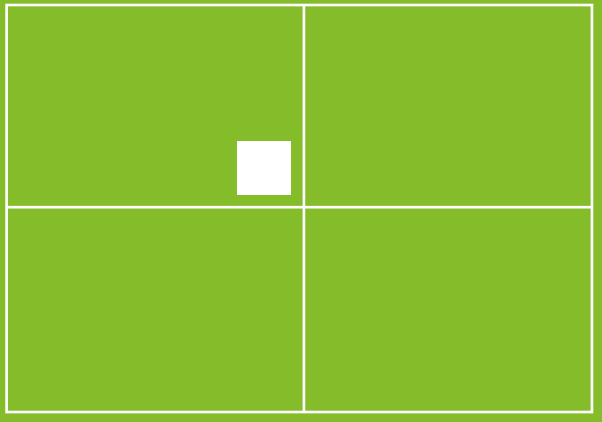
Write your notes here

WHAT
CLIMATE
CHANGE
WHY

REFLECTION TOOL
CLIMATE CHANGE

NAME

SURNAME



WHAT

WHAT IS CLIMATE CHANGE?

Climate Change is .....

.....

.....

Temperatures rise above 4 degrees will:
(Tick ones you agree with)

- ◯ make advanced civilisation unsustainable
- ◯ lead to a major reduction in the human population
- ◯ cause extinction for many other species
- ◯ bring no substantial change in human lives

Please, give a reason.....

WHAT ARE THE CONSEQUENCES OF CLIMATE CHANGE?

How are these connected to Climate Change?
(Number from 1 to 6 to make a sequence)

◯ migrants	◯ crop failure	◯ hotter weather
◯ food shortage	◯ hunger	◯ flooding

It is easy for farmers in poor countries to adapt to Climate Change?

◯ yes ◯ no ◯ unsure ◯ don't know

Because.....

Which life-forms will be affected by climate change?
(Tick as appropriate)

◯ people ◯ animals ◯ plants

WHY

WHY IS CLIMATE CHANGING?

Is Earth's climate always changing?

◯ yes ◯ no

Are temperature rises accelerating, far beyond anything in history?

◯ yes ◯ no

97% Scientists think Climate Change is caused by:
(Tick ones you agree with)

- ◯ humans burning fossil fuels
- ◯ cars driving dangerously
- ◯ burning fossil fuels in the past
- ◯ the ice-caps melting
- ◯ the sun getting hotter

WHAT ARE THE CAUSES OF CLIMATE CHANGE?

What traps in the sun's radiation as heat in the atmosphere?

.....

What increases or decreases Climate Change?
+ increase − decrease = neither

◯ agriculture	◯ forests	◯ cars
◯ planes	◯ factories	◯ cooking
◯ constructions	◯ soil	◯ heating
◯ plants	◯ computer data storage/ straming	◯ solar power
◯ Oceans		

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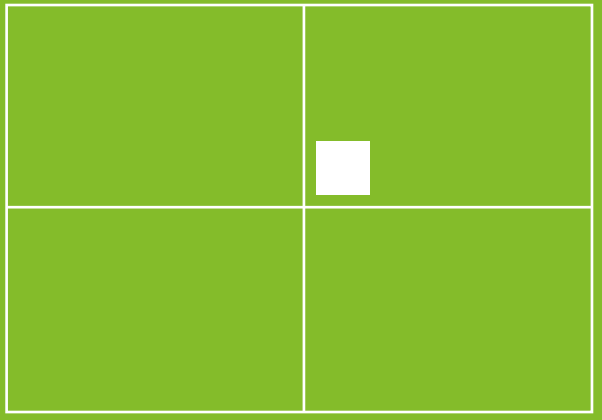
WHERE CLIMATE CHANGE WHERE

REFLECTION TOOL
CLIMATE CHANGE

NAME

SURNAME



WHERE

WHICH CONTINENTS AND COUNTRIES ARE MOSTLY RESPONSIBLE FOR CLIMATE CHANGE?

The biggest consumers are:

- ◯ Europe
- ◯ Africa
- ◯ South Asia
- ◯ North America

Is there a link between past industrial development and current Climate Change?

- ◯ yes
- ◯ no
- ◯ unsure
- ◯ don't know

Is there a link between the global economy and levels of consumption?

- ◯ yes
- ◯ no
- ◯ unsure
- ◯ don't know

Color on continents and countries that you think are mostly responsible for Climate Change

Circle the correct Carbon emission (tonnes a year per person) in:

Kenya	Britain	Mali
◯ 0.3	◯ 0.3	◯ 0.1
◯ 1.4	◯ 3.5	◯ 0.3
◯ 3.5	◯ 6.5	◯ 3.5

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WHO
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HOW

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CLIMATE CHANGE

NAME .....

SURNAME .....

WHO

WHICH COLLECTIVE AND INDIVIDUAL RESPONSES CAN HELP ADDRESS CLIMATE CHANGE?

A Carbon Footprint is:

- ◯ a kind of fossil
- ◯ the CO_2 a person uses
- ◯ a BBQ gone wrong

The best way to reduce your footprint is:

- ◯ eating less
- ◯ using less
- ◯ buying smart

Give an example .....

.....

.....

Please name a successful Climate Change collective action:

Locally	Internationally
.....	.....
.....	.....
.....	.....

Do you actually do things to stop Climate Change?

- ◯ yes
- ◯ no

Please, give some examples .....

.....

HOW

HOW CAN CLIMATE CHANGE BE ADDRESSED?

How important are they in tackling Climate Change?

Score each 0 - 100

- ◯ Groups & Organisations
- ◯ Governments
- ◯ Individuals

Do these reduce Climate Change?

Draw your choice ☺ yes ☹ no

- ◯ carbon sinks
- ◯ plants
- ◯ solar power
- ◯ consuming a little more
- ◯ natural gas
- ◯ consuming less

Which agreement was signed by Governments worldwide to combat Climate Change, in 2015?

.....

.....

To address Climate Change:

- ◯ I can make a difference
- ◯ I can't make a difference
- ◯ I'm not too worried
- ◯ I don't know!

Draw your Action to address Climate Change:

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HOW CLIMATE CHANGE HOW

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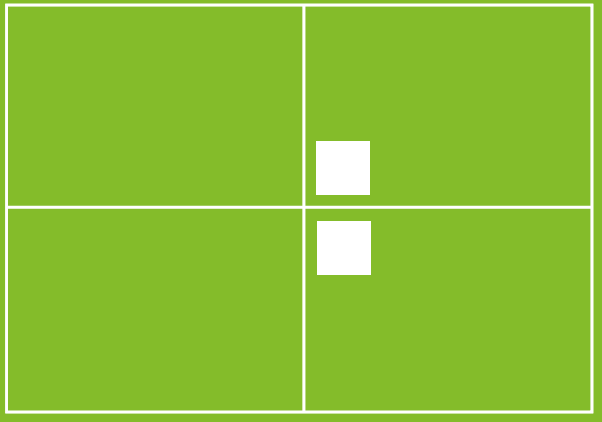

HOW

CAN WE DO SOMETHING TO SLOW DOWN CLIMATE CHANGE?

Will Climate Change have an effect on your life?

○ yes ○ no ○ unsure ○ don't know

Give an example .....

.....

.....

.....

.....

Should governments do something about Climate Change?

○ Yes, the governments of the most-affected countries should take action
○ Yes, all governments must do something
○ No, nothing can be done
○ Unsure
○ Don't know

Why?

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IDEAS, EMOTIONS, CONCERNS, SOLUTIONS

You can fill the boxes below with words, drawings, colors, photos, collages, songs, musics, memories, ...