

Climate Change: Step 1 Part 2: Introducing the Topic

Students will watch the starter clip, which is based mainly on a personal way of dealing with climate change. Students will thereby learn more about the topic, and reflect on the research question. This will stimulate their interest in the topic and will help them to start identifying the different options for dealing with climate change.

Introduction

This part has the objective of introducing the topic and motivating students.

Lesson objectives

- Students will watch a video based on an individual strategy for fighting climate change.
- Students will start reflecting on the topic 'climate change', their own knowledge of it, and their opinion of its importance.
- Students will learn more about the significance of climate change, also learning to distinguish between fake news and scientific news.
- Students will make relations between the causes and effects of climate change.
- Students will start thinking about the research question - how should we deal with climate change - as actors who can deal with the climate crisis in different ways. This will stimulate their interest in the topic and it will get them started in identifying the different options for dealing with it.

Preparation and materials

- Climate change starter clip
- Handout about climate change news for students ([handout 1: climate change news](#))
- Handout about climate change cause-effect for students ([handout 2: climate change cause-effect](#)) /

Planning grid

1) Motivation to the lesson

a) Watch the starter clip and comment on it as a whole class. If necessary, briefly explain the topic and the different options for fighting against it, and focus on the topic of the question.

b) Some possible questions you could ask your students:

1. Comprehension

- What is shown in the clip?
- Who are the people in the clip?
- How are the protagonists dealing with climate change?

2. Discussion

- Why do some people try to fight against climate change as individuals? Do you think this has any positive consequence?
- What is your own perspective on this theme? How do you think we should deal with climate change?
- Do you know some examples in your family, town or country of dealing with climate change?

2) Introduction of the topic

a) Students should reflect on the following:

- What is climate change?
- What are the causes of climate change?
- What are the consequences of climate change?
- Do you think this topic is important? Why?
- What perspective(s) might different people have about it?

b) To learn more about the topic, the contemporary situation and causes and effects, tell students to do the following activities in pairs:

1. Tell students to work with this list of fake news and scientist news about climate change. They should recognise the scientific news in order to realise the characteristic of Climate Change. (handout 1: climate change news)

Climate Change: Step 1, Part 2 - Students handout 1

FAKE NEWS AND SCIENTIFIC NEWS ABOUT CLIMATE CHANGE

Choose which of the statements of each pair is the scientific news, like in the example below.

FAKE NEWS OR SCIENTIFIC NEWS?			
Globally about 1% of coral is dying out each year	√	Corals are resilient to bleaching	
Volcanoes emit more CO ₂ than humans		Humans emit 100 times more CO ₂ than volcanoes	
500 scientist refute the consensus about climate change		97% of climate experts agree that humans are causing global warming	
The natural cycle adds and removes CO ₂ to keep a balance; humans add extra CO ₂ without removing any		Human CO ₂ is a tiny % of CO ₂ emissions	
Polar bear numbers are increasing		Polar bears are in danger of extinction along with many other species.	
There is increasing evidence that hurricanes are getting stronger due to global warming		Hurricanes are not linked to global warming	
The last decade (2010-2019) was the hottest on record		The planet has cooled down during the last decade	
Renewable energy is too expensive		All of the costs associated with burning fossil fuels (air pollution and health effects) are significantly higher than renewable energy sources	
The 20 warmest years on record all occurred in the past 22 years		The 20 warmest years on record occurred around the last 500 years	
Human CO ₂ emissions are the most important source of greenhouse gas emission nowadays		Humans CO ₂ emissions are too insignificant to affect global climate	
Most man-made emissions of CO ₂ come from burning fossil fuel		Most man-made emissions of CO ₂ come from the agriculture industry	
Since the industrial revolution began around 1750, CO ₂ levels have risen 10%		Since the industrial revolution began around 1750, CO ₂ levels have risen over 30%	
Glaciers are growing in both poles		Glaciers are retreating, and that is becoming a serious problem for millions who rely on glaciers for water	
Extreme weather events occur more frequently and are worsened by global warming		Extreme weather is not caused by global warming	
Climate change does not affect animals and plants		Vegetation and land animals are suffering from climate changes as habitats change faster than species can adapt	
CO ₂ presents a danger to public health and welfare		CO ₂ is not a pollutant	

These are the answers:

FAKE NEWS OR SCIENTIFIC NEWS?			
Globally about 1% of coral is dying out each year	✓	Corals are resilient to bleaching	
Volcanoes emit more CO2 than humans		Humans emit 100 times more CO2 than volcanoes	✓
500 scientist refute the consensus about climate change		97% of climate experts agree that humans are causing global warming	✓
The natural cycle adds and removes CO2 to keep a balance; humans add extra CO2 without removing any		Human CO2 is a tiny % of CO2 emissions	✓
Polar bear numbers are increasing		Polar bears are in danger of extinction along with many other species	✓
There is increasing evidence that hurricanes are getting stronger due to global warming	✓	Hurricanes are not linked to global warming	
The last decade (2010-2019) was the hottest on record	✓	The planet has cooled down during the last decade	
Renewable energy is too expensive		All of the costs associated with burning fossil fuels (air pollution and health effects) are significantly higher than renewable energy sources	✓
The 20 warmest years on record all occurred in the past 22 years	✓	The 20 warmest years on record occurred around the last 500 years	
Human CO2 emissions are the most important source of greenhouse gas emission nowadays	✓	Humans CO2 emissions are too insignificant to affect global climate	
Most man-made emissions of CO2 come from burning fossil fuel	✓	Most man-made emissions of CO2 come from the agriculture industry	
Since the industrial revolution began around 1750, CO2 levels have risen 10%		Since the industrial revolution began around 1750, CO2 levels have risen over 30%	✓
Glaciers are growing in both poles		Glaciers are retreating, and that is becoming a serious problem for millions who rely on glaciers for water	✓
Extreme weather events occur more frequently and are worsened by global warming	✓	Extreme weather is not caused by global warming	
Climate change does not affect animals and plants		Vegetation and land animals are suffering from climate change as habitats change faster than species can adapt	✓
CO2 presents a danger to public health and welfare	✓	CO2 is not a pollutant	

2. Students have to create Climate Change cause-effect chains using the given statements (handout 2: climate change cause-effect). Here are some examples of the chains students can write:

- Need fossil fuel for industry production - Fossil fuels produce great quantities of CO₂ - Greenhouse gas emission - Increases Earth's temperature – Desertification – Less land for agriculture - Less food for population // animals and plants have to migrate
- Earth temperature is increasing – Heavy precipitation occurs more frequently - Flooding occurs more frequently
- Need of land for agriculture – Trees are cut down – Less trees to absorb CO₂ - Many species move to new locations
- Diet based on meat - Need of land for feeding cattle – Trees are cut down
- Need of food for population – Need of land for agriculture – Trees are cut down
- Increase of greenhouse emission – Increase of oceanic temperatures – Glaciers are melting - Sea levels rise
- Sea water becomes more acidic – Sea animals and plants are perishing
- Need of fossil fuel for transportation – Increase of greenhouse gas emissions
- High temperature extremes - Large wildfires occur more frequently – Desertification - Shortages of water and food - Regions become uninhabitable

c) Students could then discuss in small groups and draw some conclusions about the real situation of Climate Change, using these questions as a guideline:

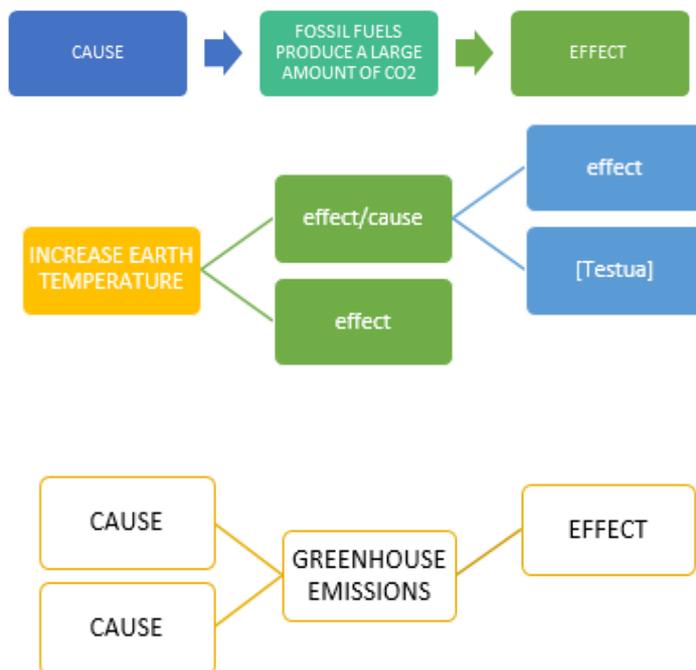
1. Do you think climate change is real? Why?
2. What do you think are the main causes for it?

* In you find yourself stretched for time, or if you think your students have enough knowledge about Climate Change, you could skip activity B (where they learn more about the topic).

Climate Change Step 1, Part 2 – Students handout 2

CLIMATE CHANGE: CAUSE & EFFECTS

The main cause of climate change is the emission of greenhouse gases, especially CO₂ and methane. The (increased) emission of these gases is caused mainly by human actions during the last centuries. Such gases cause a variety of effects that, at the same time, are the cause of different effects. It is also possible that an effect is triggered by different causes, or that a cause creates different effects. To dive deeper into this cause-effect relationship and the option of multi-causality, please choose from these flow charts and use them to create cause-effect chains including some of the provided statements.



- ANIMALS AND PLANTS HAVE TO MIGRATE
- DESERTIFICATION
- DIET BASED ON MEAT
- EARTH TEMPERATURE IS INCREASING
- FLOODING IS BECOMING MORE FREQUENT
- FOSSIL FUELS PRODUCE A LARGE AMOUNT OF CO₂
- GLACIERS ARE MELTING
- GREENHOUSE EMISSIONS
- HEAVY PRECIPITATION IS MORE FREQUENT
- HIGH TEMPERATURE EXTREMES
- INCREASE OF EARTH TEMPERATURE
- INCREASE OF OCEANIC TEMPERATURE
- INCREASE OF GREENHOUSE GAS EMISSION
- LARGE WILDFIRES OCCUR MORE FREQUENTLY
- LESS FOOD FOR POPULATION
- LESS LAND FOR AGRICULTURE
- LESS TREES TO ABSORB CO₂
- MANY SPECIES MOVE TO NEW LOCATIONS
- NEED FOSSIL FUEL FOR INDUSTRY PRODUCTION
- NEED OF FOOD FOR POPULATION
- NEED OF FOSSIL FUEL FOR

3) Introduction of the research question: how do you think we should deal with climate change?

a) Ask students to individually write down their reflections on the research question.

* At the end of the project, students will come back to the enquiry question and write down reflections on it for a second time, comparing their responses to see if they have modified/developed ideas on the topic. It would be a good idea to take a picture of the ideas written on the blackboard.

* More information about **birth strike** (for teachers):

<https://www.theguardian.com/lifeandstyle/2019/mar/12/birthstrikers-meet-the-women-who-refuse-to-have-children-until-climate-change-ends>