



# LESSON PLANS FOR YOUTH WORKERS

**Project number: 2020-3-R001-KA205-094853**

**MODULE 6: CLIMATE CHANGE**

**EMPHASYS CENTRE**



## Project Information

**PROJECT:** greenACT

**PROJECT TITLE:** Youth 'agents of change' on Climate Action and Environmental Sustainability

**ACRONYM:** greenACT

**PROJECT WEBSITE:** <https://greenactproject.eu/>

**PROJECT NO.:** 2020-3-R001-KA205-094853

**PROJECT COORDINATOR:** ASOCIATIA D.G.T



## Module 6: Climate change

### Topic 1: Climate Change: the biggest health threat

#### Lesson Plan 1

Duration: 45 minutes

<b>Short Description of the Lesson</b>	Climate change is arguably the greatest public health threat in a myriad of ways. Yet these impacts on health are still not well recognized and this topic aims to take a deep dive into these effects. Climate change-related weather extremes, such as heatwaves, storms, and floods, lead to increased health issues, from mental ones to food-, water- and vector-borne diseases. Air pollution is undoubtedly closely related to climate change, as both can influence each other through complex interactions in the atmosphere. However, it is often that people are not aware of how noise pollution can be hazardous to our health in various ways as well.
<b>Learning Goals</b>	<ul style="list-style-type: none"> <li>• To understand how climate change can impact human health</li> <li>• To know how noise pollution can impact human health</li> <li>• To relate human health with climate change</li> <li>• To explain how air and noise pollution is related to health issues for human             <ul style="list-style-type: none"> <li>• To propose an initiative/campaign to raise awareness about air pollution and ways to reduce it</li> <li>• To create a visual model that depicts the relationships between climate change and human health</li> </ul> </li> </ul>
<b>Target Group</b>	Young people aged 16-25
<b>Educational Approach</b>	This lesson plan will help young people learn how environmental issues can lead to human health problems.
<b>Link to School Curricula (if applicable)</b>	Environmental education
<b>Facility/ Equipment</b>	<ul style="list-style-type: none"> <li>• Classroom</li> <li>• Internet access</li> <li>• Projector</li> <li>• Pencils/Pens/Colour pencils</li> </ul>
<b>Tools/ Materials</b>	<ul style="list-style-type: none"> <li>• Handbook</li> <li>• Template 1</li> <li>• Canva links</li> </ul>
<b>Main tasks</b>	<ol style="list-style-type: none"> <li>1. Start with watching the following video (3 minutes): <a href="https://www.youtube.com/watch?v=G4H1N_yXBIA">https://www.youtube.com/watch?v=G4H1N_yXBIA</a> <ol style="list-style-type: none"> <li>1.1. Short discussion about the video (7 minutes)</li> </ol> </li> </ol>

- *What causes climate change?*
- *What are the effects of climate change?*
- *What is the human impact and what are the consequences of climate change for the environment, and our lives?*

2. Present the following video that explains the potential impact of climate change on disease vectors and the spread of diseases, and consequently, on human health outcomes (5 minutes):

<https://www.youtube.com/watch?v=jDueuwB3Tcs>

**Use the Handbook from pages 7 – 11 for the following tasks:**

3. After having watched the above video, open the link below and start a discussion about the world distribution of malaria from 2000 to 2019 (5 minutes):

<https://malariaatlas.org/explorer/#/>

4. Start introducing air pollution and how it can be linked to human health problems by showing the following video (1 minute):

<https://www.youtube.com/watch?v=GVBey1jSG9Y>

4.1. Short discussion about the video and human health problems caused by air pollution (9 minutes):

- *What is particulate matter?*
- *Why is it dangerous?*
- *What are possible diseases associated with air pollution?*

5.2. Open the following canva link and ask your students to create a poster that they would use as a campaign to raise awareness about air pollution and its causes on human health (35 minutes):

<https://www.canva.com/create/campaign-posters/>

5. Finish the theoretical part of the lesson with noise pollution (see Handbook for more information) and a small discussion about it (10 minutes)

- *What are the main sources of noise pollution?*
- *How can noise pollution cause human health problems?*
- *Can it affect wildlife? How?*

6. Conduct the following activity to sum up everything they learned (25 minutes):

6.1. Use Template 1, in order to create a visual model that demonstrates an understanding of the complexities of the climate change-health effect system.

6.2. Make groups of students (3-4) and have them assigned a particular climate effect (e.g., extreme heat) and create a visual model that depicts the climate change (driver), environmental conditions, and health outcomes. Students consider relevant vulnerable populations.



- 6.3. Give this template either printed (not highly suggested) or present it on a projector.
- 6.4. Asked them to create the model on a paper on their laptop.
- 6.5. Bring all the models of all groups together to create a larger visual model.

## Module 6: Climate change

### Topic 2: Natural Catastrophes

#### Lesson Plan 2

**Duration: 60 minutes**

#### Short Description of the Lesson

The key driver of climate change is the greenhouse effect, where heat-trapping pollutants became a blanket wrapped around Earth, resulting in global warming. Global warming has devastating effects, such as droughts, floods, wildfires, and other disasters, which can collectively be referred to as Climate Change. The current topic's goal is to address the differences between climate change, weather, and global warming and how these can lead to natural catastrophes.

#### Learning Goals

- To distinguish the difference between climate change, global warming, and weather
- To understand how natural disasters are related to climate change
- To explain the differences between climate change, weather, and global warming.
- To describe how human activities can lead to climate change
- To propose an experiment in order to identify the reasons for the sea-level rise
- To build on strengths in working with others on team activities/experiments

#### Target Group

Young people aged 16-25

#### Educational Approach

This lesson plan will differentiate climate and weather. Through this lesson, young people will be able to understand how climate change and global warming have led, are leading, and will be leading to natural catastrophes, if humans continue contributing to this.

#### Link to School Curricula (if applicable)

Environmental education

#### Facility/ Equipment

- Classroom
- Internet access
- Projector
- Pencils/Pens/Colour pencils

#### Tools/ Materials

- Handbook
- Template 1
- Canva links
- Materials for the experiment (+Worksheet)

**Main tasks**

1. Ask students to share their knowledge about natural catastrophes in order to get them engaged in the subject (5mins):

- *What are examples of natural disasters they know?* Floods, droughts, wildfires, droughts, earthquakes, volcanoes, tsunamis, snowstorms, etc.

- After that, they should define natural disasters.

- *Which of these natural disasters are related to weather?* (See more questions and possible answers on the Handbook page 18)

2. Watch the following video (2mins):

**Droughts by Nat Geo**

<https://www.youtube.com/watch?v=gV66U4tnO3M>

2.1. Start an **8 min**-discussion asking the following:

- What are droughts?

- Do they happen naturally?

- Does climate change contribute to the droughts occurring more often?

3. Present the following photo on the projector:



3.1. Ask them how they think wild animals can be affected by wildfires.

3.2. If the classroom is equipped with computers/laptops give them **10 minutes** to do research on the following:

*Can they list the types of animals that would be affected by drought and wildfire if both occurred in their local community?*

*What would happen to their habitats?*

*How would their food source be impacted?*

*What else could happen to the animals?*

4. The following activity is about the sea level rise caused by climate change (**35minutes**):

They can propose an experiment to identify the reasons for the sea-level rise OR follow the instructions below to do a suggested experiment. The importance of the existence of the ice should also be discussed (reflects a good amount of percentage of the Sun's radiative force back into space/ Sea ice is crucial for bears' lives, as they use the ice to travel long distances to new areas and look for their prey).

4.1. See the Worksheet for this lesson plan



<https://www.jpl.nasa.gov/edu/learn/project/how-melting-ice-causes-sea-level-rise/>

4.2. Discussion of the experiment results:

- *In which container did the water level rise more?*
- *How does this compare to their prediction?*
- *Why do they think this occurred?*
- *In what way is this related to global sea-level rise?*
- *Does the melting of Earth's glaciers contribute to sea-level rise? How about the melting of icebergs?*



## Module 6: Climate change

### Topic 3: European/International Agreements to fight climate change

#### Lesson Plan 3

**Duration: 90 minutes**

**Short Description of the Lesson** United Nations Framework Convention on Climate Change (UNFCCC) is the parent agreement of the 2015 Paris Agreement, which mainly aims at climate-neutrality before the end of the century. In order to not exhaust what the planet can supply, climate action should be strongly linked with sustainability. One of the main aims of the 2030 Agenda is to ensure that the planet and its natural resources will be ensured for the current and next generations. Hence, this topic will focus on explaining and describing the European and International agreements and how they seek to fight climate change.

**Learning Goals**

- To outline the EU and International Agreements
- To know the idea behind these agreements and why they should be implemented nationally and internationally
- To differentiate what factors can shape and support more sustainable choices
- To explain the social and economic externalities of climate change
- To describe the benefits and drawbacks of current and projected climate policies, as well as the political dynamics that influence proposed changes
- To verify greenhouse gas emissions reported by other countries
- To develop a project or organization's complete emission reduction plan, in order to meet the agreements' standards
- To create appropriate national and international standards to track and report greenhouse gas emissions

**Target Group** Young people aged 16-25

**Educational Approach** This lesson plan will state some agreements set to fight and combat climate change on a European and international level. Young people will learn about the policies and agreements and check if they are in line with them.

**Link to School Curricula (if applicable)** Environmental education

**Facility/ Equipment**

- Classroom
- Internet access
- Projector
- Pencils/Pens/Colour pencils

**Tools/ Materials**

- Handbook
- A3 paper

**Main tasks**

1. Start by watching the following video "UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE" (1min, 44sec)  
[https://www.youtube.com/embed/CRT3T\\_VPcKA?feature=oembed](https://www.youtube.com/embed/CRT3T_VPcKA?feature=oembed)
  - 1.1. Start a discussion about UNFCCC (5 minutes)
    - *What is the UNFCCC?*
    - *Why was it important to come to this convention?*
    - *What is its goal?*
    - *How are climate change activities being supported?*  
(see Handbook pages 19 and 20 for possible answers)
  2. Continue with the following video "What is the Kyoto Protocol?" (2min, 7sec)  
<https://www.youtube.com/embed/DFhuNKNDrLg?feature=oembed> and then proceed with the following "Ever wondered: What is the 'Paris Agreement', and how does it work?" (1min, 39sec)  
<https://www.youtube.com/embed/WiGD0OgK2ug?feature=oembed>
    - 2.1. Start a discussion about the above videos (10 minutes)
      - *What is the Kyoto Protocol?*
      - *What is the Paris Agreement?*
      - *What are the differences between these two?*  
(see pages 21 and 22 of the Handbook for possible answers)
    3. Calculate your carbon footprint! (20 minutes)
      - 3.1. Go to this website: <https://www.footprintcalculator.org/home/en>
      - 3.2. Students should answer the 13 questions and based on their answers they will get their Carbon footprint.
  5. Students will proceed by comparing the annual emissions of China, India, Italy, UK and the United States of America in 1910, 1950, 1990, 2016. (25 minutes)  
Use the following links:
    - a. <https://ourworldindata.org/grapher/annual-co2-emissions-per-country?time=1751..2016>
    - b. <https://ourworldindata.org/grapher/cumulative-co-emissions>
    - *What accounts for the differences between the emissions of these countries?*
    - *Who emits the most CO2 today?*
    - *Who has contributed most to global CO2 emissions?*
    - *Which are the two nations that emit the most CO2?*
    - *If all nations would have to contribute to a "climate fund" equivalent to the CO2 they have emitted so far, which countries would end up paying most to the fund?*
  6. For the following activity an A3 paper is needed for every group of 3 people.
    - 6.1. Every group should write on paper ways that an organization or a household can cut emissions and propose an emission reduction plan. Travelings, Working hours at the office and remotely (if any), Summertime and wintertime for a/c and central heating should be considered too. (25 minutes)

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## Module 6: Climate change

### Topic 4: Get inspired and innovate!

#### Lesson Plan 4

**Duration: 80 minutes (indoors) 3hours (outdoors)**

**Short Description of the Lesson** As the need for climate action arose, the fourth topic of this module will provide good practices and initiatives carried out on both European and international levels, in order to raise awareness. This will be the tool to inspire learners to find innovative solutions to climate change. It is aimed to state good practices of different fields so that the interrelation of the impacts of climate change on different sectors of society is addressed, therefore, everyone needs to start taking action.

**Learning Goals**

- To know different good practices related to climate action
- To understand how different fields can be affected by climate change
- To attempt solving a real-world problem
- To structure a methodology of a good case
- To develop their own ideas about rights and responsibilities now and in the future.
- To propose a sustainable and innovative case to combat climate change

**Target Group** Young people aged 16-25

**Educational Approach** This lesson plan will provide the learner with some good examples and initiatives to combat climate change and start taking action.

**Link to School Curricula (if applicable)** Environmental education

**Facility/ Equipment**

- Classroom
- Internet access
- Projector
- Pencils/Pens/Colour pencils

**Tools/ Materials**

- Handbook
- Worksheet

**Main tasks**

1. Begin the lesson by starting a discussion on the good practices of famous companies and how they try to mitigate climate change. Use the Handbook on page 23. (20 minutes)
  - *What do they think about these actions?*
  - *How can they be improved?*
2. Proceed with giving the worksheet of this lesson plan per a group of 3 persons. The current activity is for students to brainstorm (10 minutes) and come up with an innovative product (20 minutes)

that will use to fight climate change. Encourage them to **think of the following aspects when brainstorming:**

- Innovation
- Design
- Environmental impact
- How it can help the mitigation of climate change
- The weakness and the strengths of the product

Presentation of the product and discussion regarding the above-mentioned aspects shall follow (30 minutes)

### Outdoor activity

### Beach clean-up (3 hours)

#### Equipment:

- Gloves
- Buckets/bags
- Floor mat (or something else to put on the ground) to categorise and record the litter
- Clean-up Protocol

#### Method:

1. Pick a stretch of beach of around 100 metres
2. Let people spread out and start collecting
3. Continue collection
4. Come back together and empty out collected litter
5. Categorise collected litter and note down amounts on protocol
6. Discuss solutions to reduce humans' impact