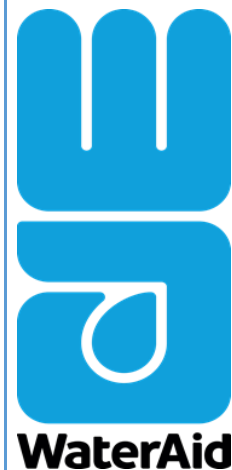


Secondary School Lesson Plan — Key Stage 3 — (11-14 Years)

Lesson 1: Climate change and its causes

Background:

WaterAid is an international not-for-profit organisation, determined to make clean water, decent toilets and good hygiene normal for everyone, everywhere within a generation. As our climate changes we feel the effects more and more through extreme weather, rising temperatures and ice melting leading to issues around too much or too little water. This makes the climate crisis a water crisis, as hundreds of millions of people across the world struggle to get clean water, pushing them further into disease and poverty.



Context:

This is the first lesson in a series of four that explain the causes, impacts and ways of managing climate change. This lesson introduces the topic of weather and climate and how we differentiate between them, describes the atmosphere and the greenhouse effect and teaches the sources of greenhouse gases in daily activities.

Notes for teachers / educators

The activity timings should act as a guide only. Teachers should adjust timings and adapt activities according to the lesson time available and the ability of the learners.

Learning Question:

- What is climate change?

Learning Objectives:

- I can explain the greenhouse effect.
- I can judge the evidence of natural climate change.

Key words:

- Climate change
- Methane
- Carbon dioxide
- Solar radiation

Curriculum link: The curriculum links are not exhaustive but offer a guide

- **Science:** Genetics and evolution; earth and the atmosphere
- **Citizenship:** the roles played by public institutions & voluntary groups in society, & the ways in which citizens work together to improve their communities, including opportunities to participate in school-based activities.
- **Geography:** human and physical geography

Resources:

- YouTube Video: What is climate change? – <https://youtu.be/y66KFJtmUuk>
- Resource 1 – Lesson Slides
- Resource 2 – Fill in the gap activity sheet
- Resource 3 – Information sheets

Key Question	Activity	Resource	Timing
How does climate change impact people?	<ul style="list-style-type: none"> • Display slide 1 and explain to students that you are beginning a series of lessons on climate change. These lessons will help them understand what climate change is, what is causing it, what it means for our world and how we might fix it. • Ask students if they have heard of climate change? Do they know what it is? What is causing it? What might it mean for our planet? Gather some responses to gauge prior understanding and encourage a class discussion. • Display slide 2 - Ask students to look at the image on the slide and consider the answers the following questions: <ul style="list-style-type: none"> - Who is in the photo? - What is happening in the photo? - When was the photo taken? - Where was the photo taken? - Why are they doing what they are doing? • Ask some of the students for their answers to the questions. Analyse the answers as a class to gauge what they think about the image. Once there has been a good discussion of all the questions reveal slide 3. • Display slide 3 - Explain what is happening in the image by reading out the information on the slide. Ask the students for their thoughts now they know what is happening. 	Resource 1 - Lesson Slides	5 mins
What is climate change?	<ul style="list-style-type: none"> • Display slide 4 - Introduce the “what is climate change” film embedded on slide 2 (or follow the link in the notes section). This film outlines the differences between climate and weather, explains the greenhouse effect and the causes of climate change. Encourage students to watch and listen to find the difference between weather and climate. • Once you’ve watched the film, ask students to give you a definition of weather and climate. • Display slide 5 - Using the explanation on the slide, compare the answers that were given for matches with the definitions given by the students. Reiterate the differences between weather (short term) and climate (long term). • Display slide 6 — Provide each student with a copy of the fill in the gap sheets. They should complete the sheet so that they have the definitions of weather and climate. • Following the completion of the task use the slide animations to reveal the answers. 	Film - https://youtu.be/y66kFJtmUuk Resource 2 - Fill in the gap sheet	20 mins

Key Question	Activity	Resource	Timing
What is the greenhouse effect?	<ul style="list-style-type: none"> • Thinking back to the film, ask students what is meant by 'the greenhouse effect'. Following a few responses ask why the greenhouse effect is problematic. Explain that you'll be looking at the greenhouse effect in more detail. • Display Slide 7 - Read to the class the slides information as an overview of the greenhouse effect and it's importance. • Display slide 8 - This is a clickable step by step animation that explains the greenhouse effect. Read through each stage of the greenhouse effect displayed on screen and follow the arrows to show the journey "heat" from the sun makes. Once you have finished explaining the animation reiterate this is a natural process we need to stay safe. • Finish by asking students what they think might happen if we made the "blanket" of the atmosphere thicker with greenhouse gases. Would it be a good or a bad thing? Why? 		10 mins
What are the causes of climate change?	<ul style="list-style-type: none"> • Slide 9 - Provide students with a copy of both sets of information sheets (Natural and Human causes). Ask students to draw a line down the centre of their page and copy the table displayed on slide 9. • Students should read through the information sheets to gain an understanding of the main causes of climate change. Students should summarise the eight causes of climate change on their table. For each cause they should make sure to include statistics and draw a picture that symbolises that cause. The information sheets are available on slides 10 and 11 to be displayed to make the task easier. 	Resource 3 - Information sheets	20 mins
Plenary	<ul style="list-style-type: none"> • Display slide 12 - Organise the students into teams. Recap the causes of climate change as a class and play Pictionary. Do this by selecting one student from each team to be responsible for drawing. They need to choose one of the causes of climate change and draw a picture representing it. Their team should attempt to guess the cause being drawn. Students should take it in turns to draw. Continue playing until time runs out or students run out of causes. 		10 mins