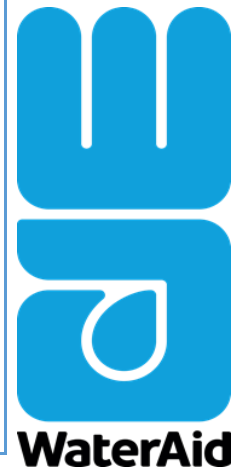


Primary School Lesson Plan — Key Stage 2 — (7-11 Years)

Lesson 1: What causes climate change?

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 three that explain the causes, impacts and ways of managing climate change. This lesson introduces the differences between weather and climate, describes the atmosphere and the greenhouse effect and explains 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 causes of climate change.
- I can identify activities which create climate change.

Key words:

- Greenhouse gases
- Climate change
- Carbon dioxide
- Methane

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

- **Science:** living things and their habitats;
- **Citizenship:** developing confidence & responsibility & making the most of their abilities; preparing to play an active role as citizens; developing good relationships and respecting the differences between people.
- **Geography:** human and physical geography

Resources:

- YouTube Video: What is climate change? - <https://youtu.be/y66KFJtmUuk>
- Resource 1 – Lesson Slides
- Resource 2 - Weather or Climate Paddles
- Resource 3 - Sources of greenhouse gases worksheet
- Resource 4 - Climate change card sort activity

Key Question	Activity	Resource	Timing
What is climate change?	<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 be able to fix it. ● Ask students if any of them have heard of the term 'climate change'. Ask the following questions: <ul style="list-style-type: none"> - Do they know what climate change is? - What is causing it? - What is it doing to our planet? ● Gather some responses to gauge prior understanding and to encourage a discussion between you and the class. ● Display slide 2 – Introduce the film “what is climate change?” 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 outlines the causes of climate change. ● Tell the students to listen and watch the film carefully, as they need to find out the difference between weather and climate. Play the film until 1:14. ● After stopping the video, ask the students to explain weather and climate using what they saw in the film. 	Resource 1 – Lesson Slides Film - https://youtu.be/y66KFJtmUuk	10 mins
Is it weather or climate?	<ul style="list-style-type: none"> ● Display slide 3 - Using slide 3, reiterate the differences between weather (short term) and climate (long term) to make the distinction clear to students. Emphasise that weather is short term and does not last a very long time - a few days or weeks and climate is long term and goes on for longer – yearly or monthly for example. ● Give one printed paddle to each student. One side of the paddle says 'climate', the other says 'weather'. Explain to students that you are going to read out a statement. They should raise the paddle to show whether they think statement describes the weather, or the climate. ● Display each statement from slides 7-14 and read them out one at a time. Pause after reading each statement to allow the students to raise their paddle to give their answer. ● It is possible to do this task rapidly if students appear to understand the definitions of weather and climate. However, if more time is needed to fully clarify the differences work through this task at a slower pace. 	Resource 2 - Weather and Climate Paddle	10 mins

Key Question	Activity	Resource	Timing
What is the greenhouse effect?	<ul style="list-style-type: none"> • Display slide 15 – This is a continuation of the “what is climate change?” film on slide 2. • Watch the film, starting from 3:33, and to pay close attention to the description of the greenhouse effect and why it can be a problem. • After watching the film, ask students to explain the greenhouse effect. Following a few responses ask if they can recall problem with the greenhouse effect from the film. Tell students that you are going to explain the greenhouse effect in a little more detail for them to gain a deeper understanding. • Display slide 16 - Read through the slide to explain the importance of the atmosphere in keeping us safe. Explain that that the atmosphere is very important as it protects us from the sun and space. Ask students what might happen if we didn't have the atmosphere to protect us and what could happen. • Display slide 17 which is a clickable step by step animation explaining the greenhouse effect. Read through each stage of the greenhouse effect displayed on screen and follow the arrows to show the journey the “heat” from the sun makes. Once you have finished explaining the animation, reiterate that this is a natural process that keeps us safe. Ask students what they think might happen if we made the “blanket” of the atmosphere thicker with greenhouse gases? • Display slide 18 and read through the slide. Explain that whilst we need the greenhouse effect to keep us safe from space, we need to stop “thickening” the atmosphere as it makes the earth heat up. • Ask students if they know what activities or objects produce greenhouse gases such as carbon dioxide and methane. Use their responses to help move onto slide 19 and the film about natural and human causes of climate change. 	Film - https://youtu.be/y66KFJtmUuk	10 mins

Key Question	Activity	Resource	Timing
Where do greenhouse gases come from?	<ul style="list-style-type: none"> • Display slide 19 – This film is a continuation of the “what is climate change?” film seen on slides 2 and 15. • Give each student a copy of the ‘sources of greenhouse gases’ worksheet (resource 3). Watch the film starting from 1:14 and finishing at 3:33. Split the class into two groups. One side of the class has to watch and listen for two natural causes of climate change, and the other side needs to watch and listen for two human causes. They should record their answers on their worksheets. After the film, ask a few students from each side to share what they have written. • Display slide 20 - Explain that you are going to show picture clues of some of the causes of climate change. From the clues, they need to try to work out what the activity is that produces greenhouse gases and causes climate change. • Work your way through the slides (21-27) displaying each image on the screen. Once they think they know what the image is showing, click to reveal the answer. • For each answer revealed, they should fill in their sheet with the activity that is creating greenhouse gases, and the name of the gas that is being produced. • By the end of the activity, students should have completed their sheet showing the sources of greenhouse gases. 	Resource 3 - Sources of greenhouse gases worksheet	15 mins
What can cause climate change?	<ul style="list-style-type: none"> • To save time during the lesson, you will need to cut the cards out (resource 4) ready for students to sort. • Display slide 28 – In pairs provide students with a set of cards. Explain that they need to sort them into two piles - actions that can cause climate change and actions that do not cause climate change. • Once students have sorted the cards into two piles, display slide 29 and go through the answers. Students should ensure that they have placed their cards into the correct piles. These can then be stuck onto large pieces of paper for display or can be copied into a table into the students books. 	Resource 4 - Card sort - climate change causes	10 mins

Key Question	Activity	Resource	Timing
<p>What can cause climate change? - continued</p>	<ul style="list-style-type: none"> • Reiterate that the activities on the cards only release a small amount of greenhouse gases, but it's important to be aware of them so that we can reduce these activities where possible. • End the lesson by briefly discussing ways to reduce the impact of greenhouse gases (use a bicycle, walk when you can, don't waste food or energy and protect plants). They should choose one that they can pledge to do themselves and write these up to create a display of pledges from the class showing how they will try to reduce their impact on the earths climate. 		