



Climate Change Presentation Guidance Notes

Time: 45 minutes.

Age: 9-13 years.

Lesson aim:

The aim of this lesson is to understand climate change, its causes, its impact and what actions can be taken to address the problem.

Outcome:

By the end of this lessons, students will have learnt what climate change is and what is causing it through use of the presentation and associated interactive activities. Also, they will have learnt what everyday actions can be done to help the environment and will make a pledge as part of a class pledge tree.

Materials:

This document acts as a guidance document for presentation of the slides on climate change named: *Climate Presentation Age 9-13 – Presentation*.

The procedure:

Slide 2:

Guidance: Before delving into the core content of the lesson, it's important to get the students thinking about climate change and what they already know about the topic. Ask them questions such as: Have you heard of climate change? Is anyone brave enough to say what they know about climate change?

Slide 3:

Guidance: This slide introduces climate change and how we know it is happening. Talk through the images one by one, using the notes below.

1. The first picture is an image of the sun. Have you noticed summers have been warmer recently? This is because global temperatures are rising, and its seen all across the globe, even in places like the Arctic!
2. This next picture shows the ocean, and just like its getting warmer on land, it is also getting warmer in the ocean. As our planet gets warmer, a lot of this extra heat is actually taken in by the oceans!
3. Can you see what this next picture is showing? It shows flooding! This happens as our sea levels rise, and this is as a result of climate change! What do you think causes our sea levels to rise? Do you have any ideas?
4. One of the causes of rising sea levels is melting ice caps, as you can see in the next picture. This is happening in both the Arctic and Antarctic, and is also threatening the animals living in those areas.
5. Does anybody know what the next picture is? (see what answers they give). It's a picture of wildfires, which have been happening all over the world, particularly in Australia earlier this year. This is just one example of some of the extreme events occurring as a result of climate change.
6. Ocean life is also being harmed! Animals in the sea are suffering due to the changing conditions. What's in the picture? It's called coral! Its dying because the water temperatures are changing.

Slide 4:

Guidance: This slide introduces what factors are contributing to climate change.

1. More people: To make room for a growing population, we are losing 40 football fields worth of forests every minute. To sustain the amount of people we will have by 2030 we will need two earths.
2. Buying more stuff: What do we do with the rubbish? Only 9% of plastic is recycled – the rest ends up in landfills or oceans. Single use plastics are thrown away after one use. 50 million tonnes of electronic waste are thrown away each year (that's equivalent to 125000 jumbo jets).
3. Food: If you ate one less burger per week it would be like not driving your car 320 miles. There are 1.5 billion cows on this earth – these produce methane!!

These factors all lead to an increase in harmful gases into our atmosphere, called greenhouse gases.

Slide 5:

Guidance: The aim of this slide is to introduce students to where these harmful greenhouse gases come from.

One of the most obvious and most spoke about sources is the burning of fossil fuels for electricity. Burning coal, oil and natural gas releases energy which is most commonly turned into heat, electricity or power for transportation.

Have you heard of deforestation? All across the world trees are being chopped down for a number of reasons. Trees actually take in some of these harmful gases and make the air cleaner, so when we cut them down these gases are released back!

Cows and other grazers host microbes in their stomachs, gut-filling hitchhikers that help them break down and absorb the nutrients from tough grasses. Those microbes produce a gas called methane as their waste, which wafts out of both ends of cows (in their farts!). Since we have increased our demand for beef and dairy, there are more cows to release more methane!

Microbes in landfills and sewage treatment centres chomp through the waste we leave behind and in the process pump out tons of harmful gases each year. The huge amounts of waste that are buried in landfill sites can mean that methane is produced for years after the site is closed, due to the waste slowly decaying under the ground.

Slide 6:

Guidance: Ask the students to think about what the world would look like if we continue as we are now? What would happen if sea levels continue to rise? What happens if temperature continues to rise? What will happen to the animals on land and in our oceans? Let the students discuss some of their thoughts.

Slide 7:

Guidance: This slide introduces the concept of a carbon footprint and how it is useful in allow us individually to take action on climate change.

We may not realise it, but we ALL emit carbon dioxide through our day-to-day activities.

Your carbon footprint is the amount of carbon dioxide released into the air because of your own energy needs. You need transportation, electricity, food, clothing, and other goods as part of your daily life, but your choices can make a difference.

Slide 8:

Guidance: This activity allows the students to calculate an approximate carbon footprint by answering some simple questions and obtaining a score. Ready each question and ask the students to award points dependent on their answers.

Transportation:

How do you get to school? 2 points if walk or bike, 4 points if bus/train or share car, 6 points if driven on own.

Holidays? 2 points if you have been on a plane in the last year

Home and electricity:

Do you leave lights on? 2 points if don't turn lights off when you leave the room

Hot or cold? 2 points if you use heating in winter, 2 points if you use air conditioning in summer

House or apartment? 4 points for apartment, 6 points for house

Personal choices:

Food? 4 points if eat meat, 2 points if vegetarian

Waste? 2 points if recycle when you can, 4 points if don't recycle at all

Running water? 2 points if you leave the tap running when you brush your teeth or washing hands

Paper? 2 points if reuse paper, 4 points if throw away after one use

Charging devices? 2 points if you leave electronics plugged in even if they don't need to be

Minus one point if you have ever planted a tree!

Ask the students to add up the points, and that is their approximate footprint!

Slide 9:

Guidance: Now that the students have thought about the causes of climate change and have approximated their footprint, it's time to think about potential solutions and ways to reduce our impact on climate change. This begins with looking at how we produce energy.

Non-renewable energies come from resources that are not replaced or are replaced only very slowly by natural processes, these include fossil fuels such as coal, oil and natural gas.

On the other hand, renewable energy is energy generated from natural sources that can be replaced over a relatively short time scale. Examples of renewable energies include solar, wind, hydro, geothermal and biomass. Here at Sonnedix, we produce solar energy!

A large majority of ghg emissions come from the burning of fossil fuels (coal, oil and natural gas) for energy use – the non-renewable sources of energy.

Rapidly shifting the world away from the consumption of fossil fuels causing climate change toward cleaner, renewable forms of energy is key if the world is to reach the agreed-upon climate goals.

Slide 10:

Guidance:

1. How can you use less electricity? Turn off lights, unplug chargers, turn off the tv, or switch to a renewable source – ask your mum or dad!
2. How can you use the car less? Ride a bike and walk
3. Who eats meat? Do you eat meat every day? Can you try a meat-free Monday? 75% of our planet's agricultural land is used for livestock. Livestock production creates more GHG than all of the cars, trains, trucks and planes in the world. 1800 gallons of water are used to make 1 pound of beef. 80% of deforestation can be attributed to agriculture between 2000-2010

Slide 11:

Guidance: Tree's are incredibly important in the fight towards climate change. But not only that, they are important in a number of other ways.

- They house lots of animals
- They also provide medicines – forests provide key ingredients in 25% of our medicines. Who has taken medicine before? Can you imagine having none?
- They also help the climate – just like we breath in oxygen from the air, trees breath too! Trees produce the clean air that we breath, by sucking up harmful pollutants and releasing oxygen!

Slide 12:

Guidance: Ask the students if they recognise the girl on the screen? It's Greta Thunberg. She is a student from Sweden who spoke up about climate change. She promotes share ideas and working together to make a difference. Slide 13 shows a video from one of Greta's speeches, share this with the students.

Closing Activity:

Slide 14: Make a pledge!

sk the children to right down something they are going to do to protect the planet. It can be as big or as small as they would like. Ask them to share this with the class, and collect all pledges in to make a pledge tree for the children to look at in their classroom.

We hope you found this presentation useful and your class enjoyed it. We would love to hear from you and would greatly appreciate it if you could email us at ESG@sonnedix with your feedback.