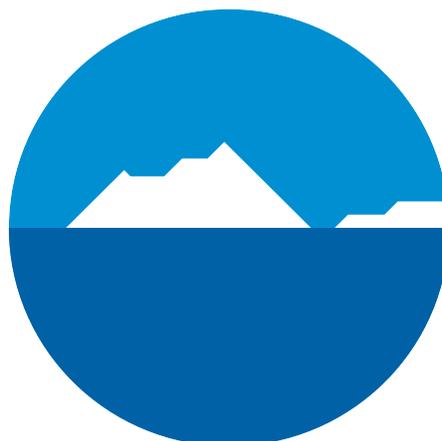
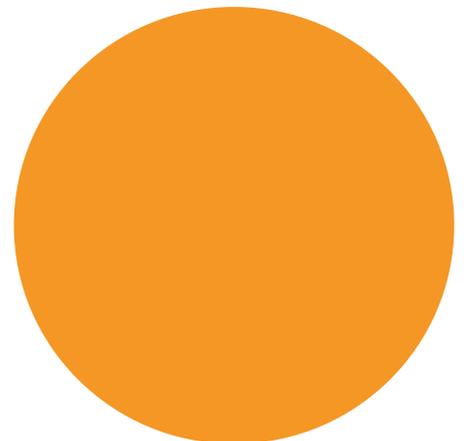
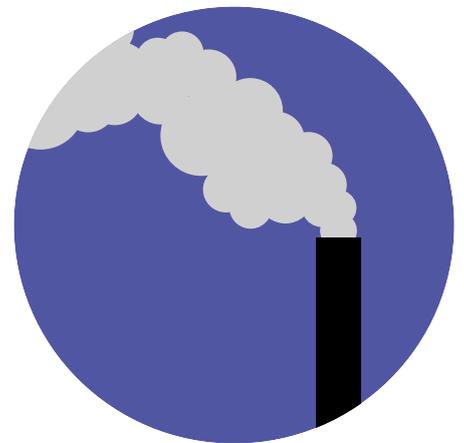


ENVISAGING THE FUTURE



KS2 LESSON 2 - TEACHER GUIDE

CONTENTS

PAGE 3

INTRODUCTION

An overview of the lesson including the learning objectives, curriculum links and lesson plan.

PAGES 4-8

TEACHER NOTES TO SUPPORT LESSON SLIDES

Notes to accompany slides including an outline of 'The Big Debate' activity on pages 6-7.

PAGE 8

BACKGROUND INFORMATION AND RESOURCES

Useful websites with more information on the effects of climate change and an animated video summarising steps taken to try and reduce climate change so far.

PAGES 10-18

LESSON RESOURCE: DEBATE CARDS

Debate cards to support the debate activity outlined in this guide.



KS2 LESSON 2 - TEACHER GUIDE

ENVISAGING THE FUTURE

Learning objective:

Understand the UK's commitments to tackling climate change, and recognise what will happen if we don't meet our targets for reducing emissions.

Curriculum links:

English and Geography

Lesson plan:

Students discuss the actions countries and international governments are taking to reduce the impacts of climate change. They then explore a range of different perspectives on climate change in a debate format.



SLIDES 1-2



WHAT'S THE PROBLEM?

Introduce the focus of the session by revealing and discussing each bullet point on the slide.

- **The problem is the way we live**
 How does the way we live impact the climate and our environment? Encourage pupils to think about how they get to school, how much they recycle, or where our food comes from.
- **The problem is we use more than we need**
 Encourage pupils to think about food waste, wasted energy, or replacing electronic items/buying a new mobile phone more regularly than needed.
- **The problem is we only have ONE planet and we are using up its resources and polluting it faster than it can cope with**
 Encourage pupils to think about chopping down trees, overfishing, where our energy comes from or polluting rivers and oceans.

SLIDES 3-5



INTERNATIONAL CLIMATE AGREEMENT

Show the clip on the slide, which is a 2 minute animation introducing the agreement signed in Paris in December 2015, by 195 countries, including the UK:

<https://www.youtube.com/watch?v=I-4F5MJEqS>

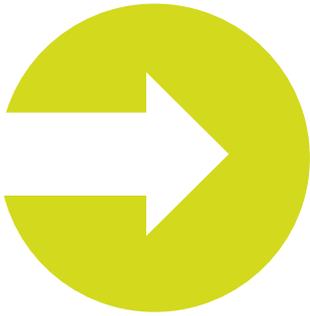
Another useful clip on the Paris Agreement can be watched here:

<https://www.youtube.com/watch?v=mgzT2uP-CeM>

More information can be found in the **Resource Overview** document.

SLIDES 6-7

A COMMON GOAL



Use the slide to discuss how people form opinion and beliefs. The class will be participating in The Big Debate – exploring different peoples’ perspectives on climate change to respond to some key questions. Each team will receive a perspective card featuring key information about one of the points of view below. You could research real life examples of each of the perspectives using the suggestions below. A brief biography is given for each of the perspectives for you to introduce to your class.



- **International climate leader**

(e.g. chair of climate change talks and conferences)

I chair a group of world politicians and government officials in developing a global strategy to tackle climate change. I need to make sure all countries are putting the same priority on reducing emissions and taking steps to be greener.



- **Head of a renewable energy company** (e.g. Good Energy or Ecotricity)

I set up a company that provides energy for homes and business using only renewable sources, like wind, solar and wave power. I believe this is how we will create a sustainable future, away from fossil fuels.



- **Person affected by extreme weather**

I live in a small village on the coast of Bangladesh. Two cyclones in two years have hit my village, with severe flooding destroying buildings and crops, and poisoning the drinking water. In the past, we have had flooding and heavy rain, but climate change has made this much more frequent and severe.



- **Head of an oil and gas company**

I am in charge of an international company that finds and extracts oil and gas wherever it may be in the world to be able to provide reliable energy for millions of people to run their cars, heat their homes, and meet their energy needs.



- **UK Prime Minister**

I am the head of the government, and am ultimately responsible for all the decisions and policies of the government. That includes responsibility for the UK’s commitments to tackle climate change. At the same time, I must also make sure that business and the UK economy is successful. We need to be advancing technology, with policies in place to help individuals and businesses change the way they consume energy to reduce CO2 emissions, whilst also saving money.



- **Head of a large international company**

(e.g. a supermarket or fashion company)

I own and run a chain of supermarkets with shops across the world. I need to make sure my customers are put first, giving them plenty of choice and keeping these affordable. Producing and transporting food in certain ways can damage the environment, so our company looks at ways that we can become greener, whilst keeping our customers happy.



- **Green school ambassador** (e.g. pupil of the year)

Being a green school ambassador means that I am part of a team of pupils that work to make our school 'greener'. We are responsible for setting up environmental projects in school, encouraging behaviours that reduce our carbon footprint, and communicating the message about tackling climate change to pupils, staff and parents.



- **Climate scientist** (e.g. James Hansen at NASA)

I study changes to the weather and climate and analyse data to explain how CO₂ emissions are impacting our environment. I work in a lab but also travel around the world to see what is happening first hand, and speak to people who are affected. I use my evidence to make predictions which can help us understand how to reduce our impact in the future.

SLIDE 8

THE BIG DEBATE



The purpose of the debate is to open discussion around climate change, and help pupils understand that there are lots of different opinions and information to consider. It is not a formal question and answer session or structured session with right or wrong outcomes. The activity should inspire pupils and give them an opportunity to see the situation from different angles whilst sharing ideas and opinions.

Step by step guide to a classroom debate:

1. Split the class into eight groups and give one perspective card to each.
2. Before you refer to the questions on the slide, give each group a few minutes to familiarise themselves with their person and what their perspective is, using the information on the card and researching a real-life example online if you have time.
3. Set clear debate ground rules, for example: anyone can contribute and everyone should have the chance to do so, sit in a circle to allow face to face discussion, all relevant suggestions, ideas and opinions should be listened to and respected.
4. Start by asking pupils to introduce their character to the rest of the class using the information on their card to help them.

5. Choose a warm up question to help them get into role e.g. What do you think about climate change?
 6. Work through the questions, making sure groups stay in their roles and present the perspective they have been given. As ideas and opinions are put forward, address opposing views and concerns to build on the ideas of others and move the discussion forward.
 7. Encourage groups to use appropriate topic vocabulary and explain and record unfamiliar terms.
 8. Encourage paired/group chat between questions to help pupils formulate ideas and responses.
 9. Make shared notes on key ideas and thinking for future reference or to inform follow up.
-

The debate questions are displayed on the slide:

1. Should we spend money on new technologies to replace fossil fuels with renewable energy sources?
 2. How can we transport people locally and globally in an environmentally friendly way?
 3. What will climate change do to our food supplies? How do we deal with this?
 4. How will tackling climate change affect jobs, how much money we have and how we live?
 5. How can we support people, animals and nature that are affected by climate change?
-

SLIDE 9

YOUR CHOICE

End the debate once all of the perspectives have had a chance to be considered, and the questions addressed. Bring the class back together to look at whether what they have learnt has influenced how they might make decisions around climate change.

Show the buttons on the slide. Allow some thinking and discussion time before asking pupils to express their own opinion by voting to 'take action now' or 'wait and see'.

Click either button to reveal the corresponding consequence in images.

Take action now!

I pledge to reduce my carbon footprint and to help others to do the same.

Wait and see

I'm not ready to make the change right now. It's not really down to me anyway.

To display both sets of consequences, you could approach the question using one of the perspectives from the debate whom they expect may have an opposing view.

SLIDE 10



© HARTMUT JUNGIUS / WWF

WHAT MIGHT LIFE BE LIKE IF WE MEET OUR TARGET?

This slide contains images of what life in the future might look like if we meet our greenhouse gas emission reduction targets by tackling climate change effectively.

SLIDE 11



© GLOBAL WARMING IMAGES / WWF

WHAT MIGHT LIFE BE LIKE IF WE DON'T MEET OUR TARGET?

This slide contains images of what life in the future might look like if we fail to meet our greenhouse gas emission reduction targets and climate change continues to impact our world.

SLIDES 12-13

IT'S TIME TO ACT

The statements on the slide should empower pupils to take action. Finish the session by asking what small changes they can make to their own lifestyles to help reduce their impact e.g. walking to school, recycling more and reducing waste. Allow pupils time to reflect upon and share what they have learned about and what we need to do to tackle climate change. Keep this discussion brief as it will be returned to in more detail in Lesson 3.

As a plenary, show the clip on this slide, narrated by Morgan Freeman, which presents a hopeful look at why we need to tackle climate change.

<https://www.youtube.com/watch?v=8YQIaOldDU8>

BACKGROUND AND FURTHER INFORMATION

- Climate change and its impacts
<http://wwf.org.uk/climatechange>
- Interactive map of climate change impacts
<http://www.climatehotmap.org/>
- An animated recap on achievements so far
https://www.youtube.com/watch?v=kA2tA1h_BOs





DO IT
FOR YOUR
PLANET

DEBATE CARDS

BIG DEBATE CARD 1

In your group, discuss the information provided about your perspective, and think about how you could represent their view to respond to the 'Big Debate' questions displayed on the board.

Rules

- there are no right and wrong answers
- anyone can contribute their ideas
- listen carefully to each other
- take turns to speak

INTERNATIONAL CLIMATE LEADER

Who am I? I chair a group of world politicians and government officials in developing a global strategy to tackle climate change. I need to make sure all countries are putting the same priority on reducing emissions and taking steps to be greener.



Energy

- We need to move quickly away from fossil fuels to renewable energy to avoid dangerous climate change. Each country needs to find a way to use more of the resources they have; for example wind, sun, or waves, to produce energy.
 - Countries need to make sure they spend money on developing renewable energy immediately. Poorer countries need help from richer countries to move to renewable energy.
-
-

Transport

- Transport causes a lot of greenhouse gas emissions. Public transport is a good way to help people move around their town and cities – it means less cars and pollution.
 - It is difficult to travel longer distances in an environmentally friendly way. We need to develop planes that run on clean energy.
-
-

Food and water

- We need to feed a growing population, but climate change will reduce how much food we can produce.
 - Farmers need help, particularly in developing countries, to adapt to climate change so they can grow the food that everyone needs.
-

Money, jobs and quality of life

- Switching to clean energy is going to cost money, but not as much as if we have to pay for the damage that climate change causes.
 - Jobs created in producing renewable energy can provide jobs to millions of people around the world.
-
-

Effects of climate change

- People around the world, particularly in poorer countries, will be badly affected by climate change. We will need to provide them with help and support to cope.
 - Protecting nature is a way to reduce the impact of climate change. For example, making sure that forests are not chopped down helps reduce emissions and provides homes for animals that are threatened by climate change.
-
-

BIG DEBATE CARD 2

In your group, discuss the information provided about your perspective, and think about how you could represent their view to respond to the 'Big Debate' questions displayed.

Rules

- there are no right and wrong answers
- anyone can contribute their ideas
- listen carefully to each other
- take turns to speak

HEAD OF RENEWABLE ENERGY COMPANY

Who am I? I set up a company that provides energy for homes and business using only renewable sources, like wind, solar and wave power. I believe this is how we will create a sustainable future, away from fossil fuels.



Energy

- The future of energy is renewable energy. If we are to tackle climate change, we need to move to 100% renewable energy.
 - We are working hard to keep the costs of renewable energy down, but support from governments can help us increase the availability of renewable energy.
-
-

Transport

- Renewable energy can be used to cleanly power electric cars, buses and trains.
 - The big problem is with long distance travel – planes and ships need to become more environmentally friendly. We are trying to find ways to do this.
-
-

Food and water

- Many farmers struggle to make money, particularly when their crops are affected by extreme weather, and this puts them at risk of going out of business.
 - By giving farmers a chance to produce renewable energy on their farms e.g. solar, biogas, we can help them stay in business and provide food to all of us.
-

Money, jobs and quality of life

- We can provide millions of jobs around the world by developing more renewable energy.
 - Although there can be a high initial cost of moving to renewable energy, it will save money in the long term.
-
-

Effects of climate change

- At our solar power farms, we have set up protected areas where nature can thrive.
 - After extreme weather events, people often do not have power because power lines are damaged. Solar power can provide reliable energy to people who are often affected by bad weather.
-
-

BIG DEBATE CARD 3

In your group, discuss the information provided about your perspective, and think about how you could represent their view to respond to the 'Big Debate' questions displayed.

Rules

- there are no right and wrong answers
- anyone can contribute their ideas
- listen carefully to each other
- take turns to speak

PERSON AFFECTED BY EXTREME WEATHER



Who am I? I live in a small village on the coast of Bangladesh. Two cyclones in two years have hit my village, with severe flooding destroying buildings and crops, and poisoning the drinking water. In the past, we have had flooding and heavy rain, but climate change has made this much more frequent and severe.

Energy

- Many people in my country do not have access to electricity. We need access to clean and cheap electricity to help make people's lives better.
 - Having seen what extreme weather has done to my country, I want to see the world move to renewable energy quickly.
-
-

Transport

- Many people in my country have their own cars now – this is causing a lot of air pollution and badly affecting people's health.
 - We need better public transport so people don't have to use cars.
-
-

Food and water

- When my village was flooded, our drinking water became contaminated with sewage and our crops were destroyed. We needed help to get enough food and water after the flooding.
 - It takes a long time to repair the damage of the floods. If the severe flooding continues, our village may have to move so we can keep growing crops.
-

Money, jobs and quality of life

- My country does not have a lot of money and making the changes needed to tackle climate change will cost us money.
 - If we don't tackle climate change, I think a lot of people in my country will struggle and suffer.
-
-

Effects of climate change

- I have seen the devastation caused by climate change first hand, when my village was washed away. Support from richer countries can help us cope better with the effects of climate change.
 - After the flooding, we needed help with food, water and repairing our houses.
-
-

BIG DEBATE CARD 4

In your group, discuss the information provided about your perspective, and think about how you could represent their view to respond to the 'Big Debate' questions displayed.

Rules

- there are no right and wrong answers
- anyone can contribute their ideas
- listen carefully to each other
- take turns to speak

HEAD OF AN OIL AND GAS COMPANY

Who am I? I am in charge of an international company that finds and extracts oil and gas wherever it may be in the world to be able to provide reliable energy for millions of people to run their cars, heat their homes, and meet their energy needs.



Energy

- Fossil fuels (coal, oil and gas) provide a reliable and cheap source of energy and without them we will not be able to meet the energy demands of a growing population.
 - If businesses and the public use the energy we produce more efficiently, this is the cheapest way to reduce emissions in the short term. In the long term, we should make steady progress towards using cleaner energy sources that don't cause so much pollution or contribute so much to climate change. -Gas is a much cleaner fossil fuel than coal or oil, and renewables have a place too.
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Transport

- Oil, which is used to make petrol and diesel, is a cheap fuel for powering cars, buses, trains and planes. It's currently the only way to power planes cheaply.
 - We have spent a long time finding ways to make fuels more efficient, so people can travel further on less fuel, save money and create less pollution.
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-

Food and water

- Climate change will affect our food and water supplies, but we can adapt to this.
 - Making sure that farmers (particularly in developing countries) have access to energy (provided by fossil fuels) will help them to continue to produce the food everyone needs.
-
-

Money, jobs and quality of life

- Millions of people have jobs in the fossil fuel industry - these jobs need to be protected.
 - The availability of cheap energy (due to fossil fuels) means people can spend more money on other things. We need to make sure that tackling climate change does not raise the cost of energy.
-
-

Effects of climate change

- Making sure people have access to cheap energy (primarily from fossil fuels) in the short term can help reduce poverty, which could help people cope with the negative effects of climate change in the long term.
-
-

BIG DEBATE CARD 5

In your group, discuss the information provided about your perspective, and think about how you could represent their view to respond to the 'Big Debate' questions displayed.

Rules

- there are no right and wrong answers
- anyone can contribute their ideas
- listen carefully to each other
- take turns to speak

UK PRIME MINISTER



Who am I? I am the head of the government, and am ultimately responsible for all the decisions and policies of the government. That includes responsibility for the UK's commitments to tackle climate change. At the same time, I must also make sure that business and the UK economy is successful. We need to be advancing technology, with policies in place to help individuals and businesses change the way they consume energy to reduce CO₂ emissions, whilst also saving money.

Energy

- Governments have to find a balance between three things; that energy is affordable for everyone, that we have sufficient supplies of energy and that we reduce our greenhouse gas emissions.
 - As we steadily move to renewable energy, I would prefer it if this does not cost the government too much money.
-
-

Money, jobs and quality of life

- We are working hard to ensure that tackling climate change doesn't cost too much money. In the long term, if we don't tackle climate change, the costs of the damage caused by climate change could be huge.
 - We don't want to lose jobs in the fossil fuel industry, but renewable energy seems like an area where lots of new jobs will be created.
-
-

Transport

- A good transport system is important for a strong economy and society. We are trying to make sure that public transport is reliable and affordable.
 - Switching to electric cars will require money to be spent on setting up charging stations, but this could really reduce greenhouse gas emissions.
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Effects of climate change

- We are spending money on flood defences to protect people from floods and storms.
 - The natural environment is important and we provide protected areas to help nature and animals thrive despite a changing climate.
-
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Food and water

- Climate change is bad for farmers because it means both droughts and flooding, which affects food supplies.
 - Farmers need support to adapt to climate change – research into new technology or different farming techniques could help this.
-
-

BIG DEBATE CARD 6

In your group, discuss the information provided about your perspective, and think about how you could represent their view to respond to the 'Big Debate' questions displayed.

Rules

- there are no right and wrong answers
- anyone can contribute their ideas
- listen carefully to each other
- take turns to speak

HEAD OF A LARGE INTERNATIONAL COMPANY



Who am I? I own and run a chain of supermarkets with shops across the world. I need to make sure my customers are put first, giving them plenty of choice and keeping these affordable. Producing and transporting food in certain ways can damage the environment, so our company looks at ways that we can become greener, whilst keeping our customers happy.

Energy

- We want a cheap supply of energy to help keep our costs down.
 - Using renewable energy can help us improve our reputation with our customers.
-
-

Transport

- We want to be able to transport our goods around as cheaply and quickly as possible.
 - Fuel is an expensive cost for our business, so we are looking into sourcing our products more locally to keep our transport miles, costs and emissions down.
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Food and water

- Climate change is predicted to severely affect water access and food production around the world – this is likely to mean our food products are more expensive for our customers.
 - We don't want food prices to rise, so we need to help farmers adapt to climate change, so that their food production is not affected.
-

Money, jobs and quality of life

- The more money people have, the better it is for our business – customers will spend more money in our stores.
 - Tackling climate change can be a way of creating new jobs, for example, in renewable energy.
-
-

Effects of climate change

- Extreme weather events can make it difficult for our products to reach our stores – we have had lorries stuck in floods.
 - Wildlife has a vital role in food production; for example, bees pollinate food crops. As we source food from many farms, we can encourage them to help protect nature on their farms.
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BIG DEBATE CARD 7

In your group, discuss the information provided about your perspective, and think about how you could represent their view to respond to the 'Big Debate' questions displayed.

Rules

- there are no right and wrong answers
- anyone can contribute their ideas
- listen carefully to each other
- take turns to speak

GREEN SCHOOL AMBASSADOR



Who am I? Being a green school ambassador means that I am part of a team of pupils that work to make our school 'greener'. We are responsible for setting up environmental projects in school, encouraging behaviours that reduce our carbon footprint, and communicating the message about tackling climate change to pupils, staff and parents.

Energy

- I have encouraged our school to put solar panels on its roof – it's a great way for our school to generate its own energy.
 - It would be great if people all over the world can use renewable energy – my generation will feel the worst effects of climate change if we don't switch to renewable energy soon.
-

Transport

- We have encouraged lots of pupils at our schools to cycle or walk to school. This has been an excellent way for our pupils to get some more exercise and stay healthy.
 - The area around my school used to be quite polluted because of all the cars dropping children off. Since we have started walking and cycling more, it is much better.
-

Food and water

- At my school we have been learning how modern, intensive ways of growing our food and the energy it takes to process, store and transport it makes a big contribution to climate change
 - We've also found out that it's healthier for us and the planet to eat more fruit, vegetables and starchy foods and less meat and dairy. That's because meat and dairy cows produce a lot of methane. What's more important rainforests are cut down for cattle grazing or to grow food to feed to livestock.
 - That's why at my school, we have been growing our own vegetables.
 - We should encourage more people to grow their own food.
-

Money, jobs and quality of life

- There are so many ways we can tackle climate change – I think this means there are lots of opportunities for jobs in this area.
 - Tackling climate change needs people to change the way they do things and to live more sustainably.
-
-

Effects of climate change

- People all over the world are affected by climate change – we should help people who are affected by extreme weather events.
 - Our school has set up a wildflower garden to help nature in our area thrive. Areas like this could be made all over the country.
-
-

BIG DEBATE CARD 8

In your group, discuss the information provided about your perspective, and think about how you could represent their view to respond to the 'Big Debate' questions displayed.

Rules

- there are no right and wrong answers
- anyone can contribute their ideas
- listen carefully to each other
- take turns to speak

CLIMATE SCIENTIST

Who am I? I study changes to the weather and climate and analyse data to explain how CO₂ emissions are impacting our environment. I work in a lab but also travel around the world to see what is happening first hand, and speak to people who are effected. I use my evidence to make predictions which can help us understand how to reduce our impact in the future.



Energy

- The science says that we need to reduce our greenhouse gas emissions as soon as possible. This means we need to shift from fossil fuels to renewable energy.
 - Scientists across the globe are coming up with new ways of generating clean energy – these scientists need more money to help develop these technologies.
-
-

Transport

- We need to start using environmentally friendly transport in order to tackle climate change – more electric vehicles and public transport are what we need, as well as cycling and walking more.
 - Scientists are trying to develop ways to transport people long distances without producing pollution, for example, solar powered planes. This research needs more funding, so that this technology can start to be used by the public sooner.
-
-

Food and water

- Climate change is predicted to reduce food production around the world and also affect water supply.
 - Scientists can support farmers by researching ways to make farming more adaptable to extreme weather.
-
-

Money, jobs and quality of life

- In the future, there will be lots of jobs in industries that are tackling climate change, like renewable energy.
 - Everyone needs to make lifestyle changes to help tackle climate change, but these changes can in fact improve your quality of life; for example, cycling more will help keep you healthy.
-
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Effects of climate change

- Richer countries are responsible for most emissions, so they should help poorer countries that are badly affected by climate change.
 - We need to make sure we protect natural environments to give wildlife the best chance to adapt to a changing climate.
-
-