

SESSION 3: CLIMATE CHANGE IMPACTS

Age range: 11–14 years

Outline Learners will investigate what is being affected by climate change. They will use a ‘consequence wheel’ and a ‘mystery’ to explore our global interconnectedness and think critically about some of the potential impacts of climate change on people and our planet.		
Learning objectives <ul style="list-style-type: none">• To identify some of the current and potential impacts of climate change on people and our planet.• To think critically about the impacts of climate change.• To recognise our global interconnectedness and the potential consequences of our collective actions.	Learning outcomes <ul style="list-style-type: none">• Learners will use secondary sources of information to investigate some impacts of climate change.• Learners will use a consequence wheel to consider some potential consequences of climate change.• Learners will work together to solve a ‘mystery’ to show how a series of actions collectively can have a significant impact on others.	
Key questions <ul style="list-style-type: none">• What is and could be affected by climate change?• How is this being affected by climate change?• Who is and could be affected by climate change?• How can the collective actions of people in one country impact on people in other parts of the world?	Resources <ul style="list-style-type: none">• Climate challenge A slideshow: slides 17–26• Resource sheet 1: Climate change impacts• Activity sheets:<ul style="list-style-type: none">1. Climate change consequences.2. Why did Runa’s stall close down? Mystery cards	
Curriculum links		
England KS3 Science Biology: Interactions and interdependencies Relationships in an ecosystem <ul style="list-style-type: none">• Pupils should be taught about how organisms affect, and are affected by, their environment, including the accumulation of toxic materials. KS3 Geography Human and physical geography <ul style="list-style-type: none">• Pupils should be taught to understand how human and physical processes interact to influence, and change landscapes, environments and the climate; and how human activity relies on effective functioning of natural systems.	Wales KS3 Science Interdependence of organisms: <ul style="list-style-type: none">• How human activity affects the global environment, e.g. acid rain, greenhouse effect, and the measures taken to minimise any negative effects and monitor them, e.g. by Earth observation satellites. KS3 Geography Understanding places, environments and processes <ul style="list-style-type: none">• Explain the causes and effects of physical and human processes and how the processes interrelate, e.g. causes and consequences of tectonic activity, impacts of migration in Europe.• Explain how and why places and environments change and identify trends and future implications, e.g. population increase, climate change, globalisation. ESDGC: Climate Change, Choices and Decisions	Scotland Social Studies <ul style="list-style-type: none">• I can investigate the relationship between climate and weather to be able to understand the causes of weather patterns within a selected climate zone. SOC 3-12a• I can identify threats facing the main climate zones, including climate change, and analyse how these threats impact on the way of life. SOC 4-12a Biodiversity and Interdependence <ul style="list-style-type: none">• Learners develop their understanding of how species depend on one another and on the environment for survival.

Activity 3.1 (20 min)

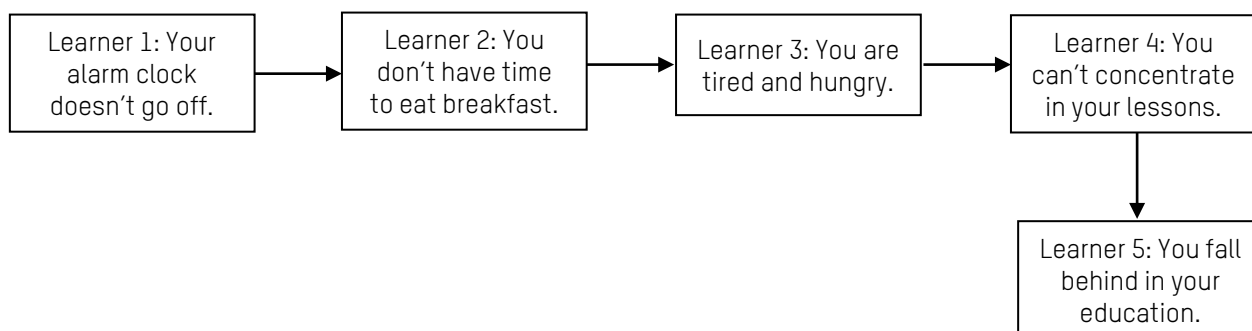
Climate change impacts

- Show slide 18. Explain that many things that are important in our lives and the lives of others could be changed forever by climate change. Briefly discuss learners' ideas about what is being or could be affected by climate change.
- Organise learners into pairs or groups of three. Give each group copies of Climate change impacts (Resource sheet 1). Allow time for learners to read the resource sheets and discuss these examples of ways in which people around the world are being impacted by climate change and might be affected in the future. Note that this information is also provided in slides 19 to 24.

Activity 3.2 (40 min)

Climate change consequences

- Stand in a circle holding a ball. Ask learners if they have ever had a day where everything just seems to go wrong. Then ask for an example of a little thing which may go wrong.
- Repeat one of these suggestions and ask learners to put their hand up if they can think of something bad that may follow as a result.
- Pass the ball to a learner with their hand up and ask them to give an example of what might happen next. Keep repeating this with learners passing the ball to each other. Carry on until they cannot think of any more consequences.



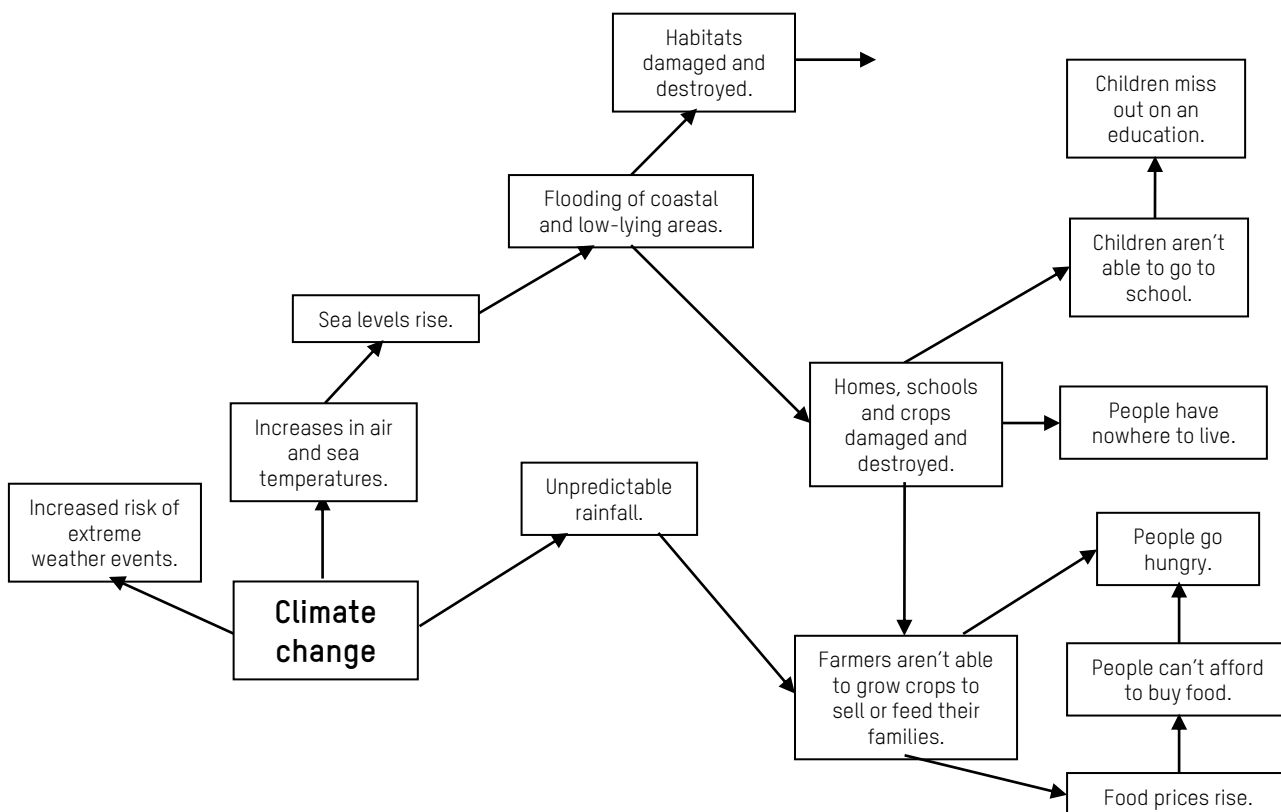
- Repeat the game but starting with the words: Climate change. Ask learners to put their hand up if they can think of a potential impact of climate change. Pass the ball to a learner with their hand up and ask them to give their impact.
- Now ask learners to put their hand up if they can think of something that may follow as a result of this impact. Keep repeating this with learners passing the ball to others with their hands up. Carry on until the class cannot think of anymore.
- Organise learners into groups of three or four and provide each group with a large sheet of plain paper.
- Ask learners to write Climate change inside a circle or box in the middle of their sheet of paper.
- Learners should think of any direct consequences of climate change, for example increased risk of extreme weather events. They should write each direct consequence inside another circle or box which is linked to the main Climate change circle.

- Learners should then consider the consequences of these consequences. These should be written inside circles or boxes, linked to the direct consequences, and so on. An example of a possible climate change consequence wheel is provided below and on slide 25.
- For more guidance on using consequences wheels, see page 14 of Oxfam's Global Citizenship in the Classroom: A guide for teachers:
www.oxfam.org.uk/education/global-citizenship/global-citizenship-guides
- Allow time for learners to circulate to look at the consequences webs for other groups. Discuss with learners how they could find out more about the impacts of climate change.
- At the end of the activity, explain that in real life things don't inevitably spiral downwards into awful situations. Many of the communities impacted by climate change are adapting to it different ways and so changing the consequences. Learners will learn about more about this in session 5.

Differentiation

- Make it easier: Give students A3 copies of Climate change consequences (Activity sheet 1) and ask them to complete the partly completed consequence wheel. This template is also provided on slide 26.

An example of a climate change consequence web



Activity 3.3: (40 min)

Why did Runa's stall close down?

Source: 'Lessons in Sustainability' Tide – Global Learning 2003



Credit: Liz Newbon/Oxfam

- This activity is called a 'mystery' because learners piece together clues written on separate cards to solve a problem. Mysteries are an excellent tool for developing critical thinking skills, and this one enables learners to explore global interconnectedness.
- Organise learners into groups of three or four. Explain that the learners' task is to solve a mystery by answering a central question: 'Why did Runa's stall close down?'. Runa used to sell fruits and vegetables to tourists, commuters and truck drivers travelling in and out of Cox's Bazaar, a resort on the south-eastern coast of Bangladesh.
- Give each group a copy of the Mystery cards (Activity sheet 2). The cards contain a set of clues, some of which may be more useful than others. Learners should cut out the cards and then work as a group to consider their response to the question: Why did Runa's stall close down?
- The task is not simply for students to solve the mystery by placing the cards in a logical sequence, but also to explain the thinking behind their solutions to the rest of the class. They may omit some cards and you may provide them with blank cards to add extra points of their own.
- When learners have completed the task, allow time for each group to feed back their response to the rest of the class.
- Depending on the outcome of the discussion aim to review the following points:
 - Is the closure of Runa's fruit and vegetable stall anyone's 'fault'? Who do you think was responsible? What factors caused it to close?
 - Which factors originate in the UK and which factors originate in Bangladesh? Is it possible to separate factors in this way?
 - What solutions are there to prevent events such as this happening in the future? Which solutions should take place in the UK and which solutions should take place in Bangladesh?
 - Which solutions are individuals responsible for and which solutions require intervention by the

government or other institutions?

- What can you learn from this activity about the impact of climate change on the world's poor people?
- Note that this activity personalises 'Shafraz' and 'Runa' to illustrate global interconnectedness and to emphasise the idea that a series of small actions can accumulate to have a big impact (harmful or helpful) on others. However, make it clear to learners that Shafraz's actions have not individually and directly led to the closure of Runa's stall.

Further ideas

- Learners could investigate one of the consequences of climate change in more detail. This might be one of the impacts mentioned in the session or something else. Learners could use secondary sources of information such as the internet to find scientific evidence for this climate change consequence.

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Climate change impacts

Resource sheet 1a

Water

Although it isn't yet possible to say that any single weather event has been caused by climate change, the likelihood of extreme climate-related disasters, such as droughts, floods and storms is increasing. For example, in countries such as Ethiopia and Somalia, droughts are becoming more frequent and more severe due to climate change.

Climate change is likely to have an increasing impact on freshwater supplies in many parts of the world. For example, in some areas, rising sea levels could cause underground and surface fresh water sources to be contaminated by salt water.



Image info: A woman collects water in Somalia. Somalia has been suffering from a drought since 2016. Oxfam is working with local partners to support communities affected, for example, by installing desalination plants activated by solar energy.

Credit: Pablo Tosco/Oxfam

Homes



Image info: A woman walks through flooded land in Bangladesh to get back to her home.

Credit: Peter Caton/Oxfam

As surface air temperatures increase, the sea absorbs more heat from the atmosphere and becomes hotter. This causes it to expand and sea levels to rise. Melting glaciers and ice sheets on land, for example in Greenland and Antarctica, also contribute to increasing sea levels.

Many places in the world are at risk from rising sea levels. Bangladesh is particularly vulnerable. It regularly experiences severe tropical storms and large areas of the country are low-lying.

Some communities will continue to try and adapt to the effects of climate change, others may be forced to leave their homes and move elsewhere.

Food

Today one person in nine around the world goes to bed hungry. Climate change is one of the leading causes of hunger. Extreme climate-related disasters such as droughts, floods and storms, as well as long-term changes in temperatures and rainfall, are affecting the availability of food.

The number of hungry people worldwide has recently grown to 821 million and this number is expected to continue to rise if countries fail to tackle climate change and support people to adapt to its impacts.¹



Image info: A young boy eats rice at home in the Pouh Town area of Grand Gedeh county, Liberia.

Credit: Kieran Doherty/Oxfam

¹ www.fao.org/state-of-food-security-nutrition/en/

Climate change impacts

Resource sheet 1b

Farmers

The millions of small-scale farmers around the world are particularly at risk from climate change. Rising temperatures and changes in rainfall patterns are forcing farmers to change what crops they grow, and leave them guessing about when to plant. Extreme weather events, such as heat waves, drought and floods, are occurring more frequently and are becoming more severe.

As well as affecting the production and quality of crops, these extreme events can also damage or destroy systems for transporting and distributing food. This in turn impacts on the supply and availability of food and increases food prices. Soon climate change will affect what all of us eat.



Image info: A rice farmer in Vietnam.
Credit: Nguyen Quoc Thuan/Oxfam

Fishing



Image info: Joel used to be a fisherman. He lost his home, boat and fishing equipment to Typhoon Haiyan. Now he earns a living selling scrap metal that he finds along the shore.
Credit: Eleanor Farmer/Oxfam

Fishing communities are particularly vulnerable to the impacts of climate change and the risk of disasters. On 8th November 2013, Typhoon Haiyan hit the Philippines. Strong winds, heavy rains, floods and tidal waves caused widespread damage across much of central Philippines.

More than 8,000 people were killed and four million were forced from their homes. Nearly three quarters of fishing communities were severely affected, with 30,000 boats damaged or destroyed. The typhoon also damaged mangrove forests and coral reefs which are important fish spawning grounds.

The Philippines are regularly hit by typhoons but government records suggest that these storms are getting stronger. Increasing evidence suggests that with climate change, super-storms such as Typhoon Haiyan will become more frequent.

Beaches

Many of the world's beaches and the communities who live there are being threatened by coastal erosion and rising sea levels. Coastal erosion is a natural process where the coastline is worn away by wind, waves and tides, causing it to retreat. An increase in extreme weather events will cause the rates of coastal damage to rise.

In the Pacific, entire islands are having to evacuate, as sea levels rise and contaminate the soil with salt. Two of the islands that make up Kiribati (one of the Pacific island nations) have already been lost to the waves. Many of the world's major cities are near the coast; around 10% of the world's population live in coastal areas that are less than 10 metres above sea level.²

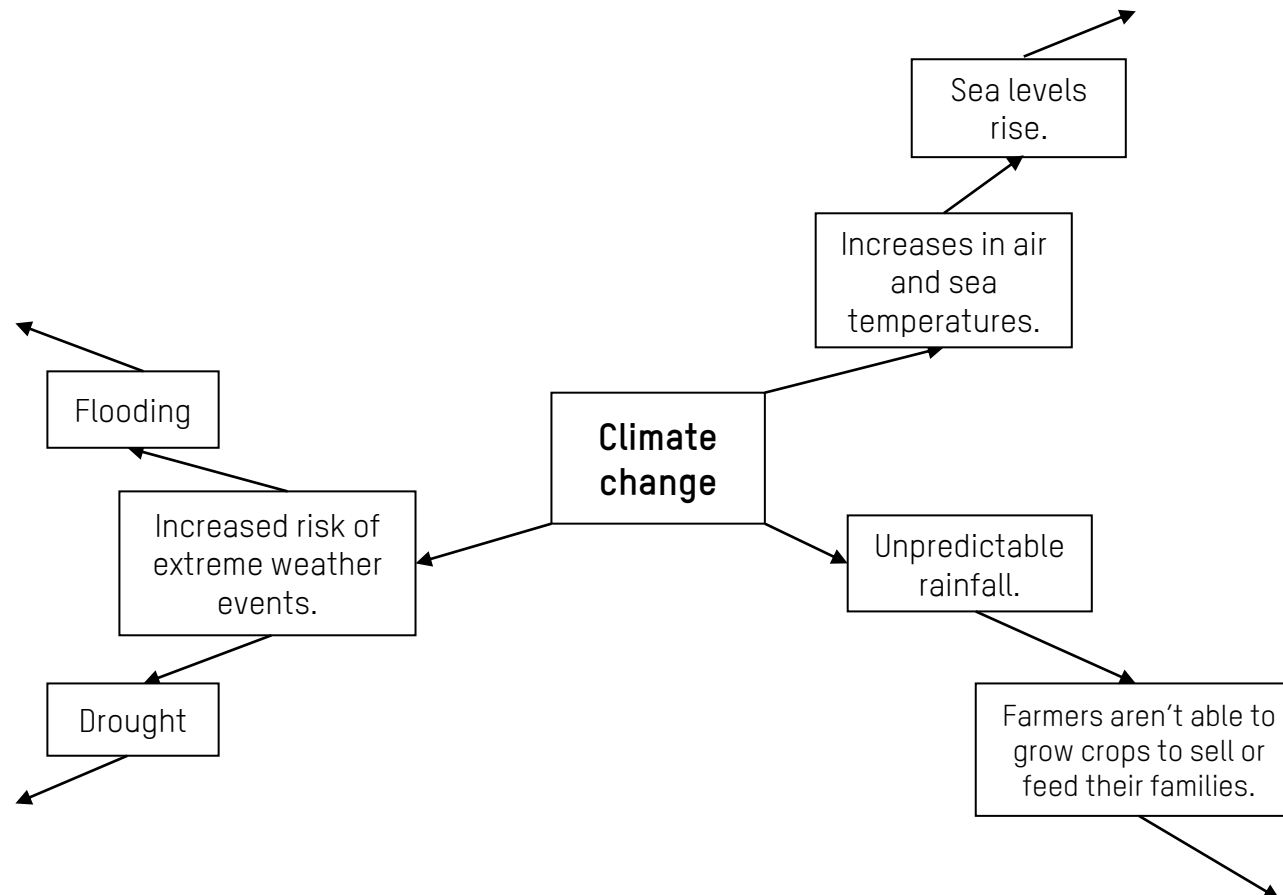


Image info: Boys play on the beach at Barra de Sirinhaém, Pernambuco, Brazil
Credit: Tatiana Cardeal

² www.un.org/sustainabledevelopment/wp-content/uploads/2017/05/Ocean-fact-sheet-package.pdf

Climate change consequences

Activity sheet 1



Why did Runa's stall close down? Mystery cards

Activity sheet 2a

Shafraz is driven to school each day in his parents' car.

Runa's stall is on a main road leading into Cox's Bazaar. The road is less than 0.5m above sea-level.

Cox's Bazaar is a resort on the southeastern coast of Bangladesh.

Cars produce carbon dioxide from the burning of petrol.

Shafraz's parents say the traffic in Sparkbrook makes it too dangerous to walk or cycle to school.

Climate change is believed to increase the risk of extreme weather.

Tourists come to Cox's Bazaar for the sandy beaches.

Bangladesh is in South Asia. It is one of ten countries most at risk from sea levels rising.

Bad storms and rain have been damaging the road leading into Cox's Bazaar.

Why did Runa's stall close down? Mystery cards

Activity sheet 2b

Shafraz lives two kilometres from his school in Sparkbrook, Birmingham.

Last week, Runa's stall was flooded for the second time.

Carbon dioxide is a greenhouse gas which contributes to climate change.

The morning bus to Shafraz's school is often held up in heavy traffic.

Birmingham's traffic is mostly made up of cars.

Recent stormy weather has made it harder for cars, buses and trucks to come into Cox's Bazaar.

Sea levels are rising as a result of climate change.

Runa sells fruit and vegetables to tourists, commuters and truck drivers travelling in and out of Cox's Bazar.

Runa's stall has had to close down.