



Ark Globe  
Academy

**Year 8 Geography  
Ark Globe Academy  
Remote Learning Pack  
Spring Term 1  
Pack 2**



Session	Title	Work to be completed	Resource provided	Outcome	On-Line Support
<b>Week starting Monday 18<sup>th</sup> January</b>					
1	Social effects of climate change	Session 1: Complete tasks 1-4 (p.3-5)	Work pack	Tasks completed in full sentences. All questions attempted.	<a href="mailto:f.barrie@arkglobe.org">f.barrie@arkglobe.org</a> <a href="mailto:g.rogers@arkglobe.org">g.rogers@arkglobe.org</a> <a href="mailto:s.delacave@arkglobe.org">s.delacave@arkglobe.org</a> <a href="mailto:a.mcgregor@arkglobe.org">a.mcgregor@arkglobe.org</a>
2	Economic effects of climate change	Session2: Complete tasks 1-5 (p.6-8)  Complete MS Forms questions <a href="https://forms.office.com/Pages/ResponsePage.aspx?id=dBTLADSljUaCn2NuzjLCTPUNp5ndmKxHknbAOwID99xUM1pNQVI4M1NBSIQ4TEVRWDVNUEgzRjJROS4u">https://forms.office.com/Pages/ResponsePage.aspx?id=dBTLADSljUaCn2NuzjLCTPUNp5ndmKxHknbAOwID99xUM1pNQVI4M1NBSIQ4TEVRWDVNUEgzRjJROS4u</a>	Work pack  Microsoft Forms link	Tasks completed in full sentences. All questions attempted. MS Forms quiz.	<a href="mailto:f.barrie@arkglobe.org">f.barrie@arkglobe.org</a> <a href="mailto:g.rogers@arkglobe.org">g.rogers@arkglobe.org</a> <a href="mailto:s.delacave@arkglobe.org">s.delacave@arkglobe.org</a> <a href="mailto:a.mcgregor@arkglobe.org">a.mcgregor@arkglobe.org</a>
<b>Week starting Monday 25<sup>th</sup> January</b>					
3	Environmental effects of climate change	Complete tasks 1-4 (p.10-12)	Work pack	Tasks completed in full sentences. All questions attempted.	<a href="mailto:f.barrie@arkglobe.org">f.barrie@arkglobe.org</a> <a href="mailto:g.rogers@arkglobe.org">g.rogers@arkglobe.org</a> <a href="mailto:s.delacave@arkglobe.org">s.delacave@arkglobe.org</a> <a href="mailto:a.mcgregor@arkglobe.org">a.mcgregor@arkglobe.org</a>
4	Sea level rise	Complete tasks 1-5 (p.13-16)  Complete MS Forms questions <a href="https://forms.office.com/Pages/ResponsePage.aspx?id=dBTLADSljUaCn2NuzjLCTPUNp5ndmKxHknbAOwID99xUQ1lMMDBWQjhTUTRSRUNUSoI1RElIRUxYMi4u">https://forms.office.com/Pages/ResponsePage.aspx?id=dBTLADSljUaCn2NuzjLCTPUNp5ndmKxHknbAOwID99xUQ1lMMDBWQjhTUTRSRUNUSoI1RElIRUxYMi4u</a>	Work pack  Microsoft Forms link	Tasks completed in full sentences. All questions attempted.	<a href="mailto:f.barrie@arkglobe.org">f.barrie@arkglobe.org</a> <a href="mailto:g.rogers@arkglobe.org">g.rogers@arkglobe.org</a> <a href="mailto:s.delacave@arkglobe.org">s.delacave@arkglobe.org</a> <a href="mailto:a.mcgregor@arkglobe.org">a.mcgregor@arkglobe.org</a>



## **Session 1: What are the social effects of climate change?**

**Learning Objective: To explain the social effects of climate change.**

**Key words:**

*Social = to do with people*

*Greenhouse gas = trap the heat, e.g. carbon dioxide, methane*

*Climate change = long term shift in the planet's weather pattern and average temperatures*

### **Task 1: Do Now**

**Read through the news article and answer the questions in full sentences.**

## **Deaths spiked during UK heatwave**

© 17 September 2018



UK heatwave



***A heatwave- a period when temperatures are well above average***

1. What happened at the start of the 2018 heatwave in England?
2. How many more people died on 25<sup>th</sup> and 26<sup>th</sup> June compared to the average?
3. Which groups are more vulnerable to the heatwave?

***Stretch: Suggest why climate change may be beneficial for the UK.***

**There was a spike in deaths in England at the start of this summer's heatwave, new data reveals.**

But statisticians say it is too early to tell how many of them can be attributed directly to the heat.

On 25 and 26 June, when temperatures soared, there were 259 more deaths than the five-year average of 2,146 for those two days.

It coincided with temperatures rising above the level at which experts say heat-related deaths can occur.

The Office for National Statistics, which released the data, says it still needs to look at figures for July and August, as well as more information about registered causes of death, before assessing the reasons behind the rise.

The summer was the joint-hottest on record for the UK as a whole and the hottest ever in England, with the temperature peaking at 35.3C (95.5F) in Faversham, Kent, on 26 July.

A heatwave can affect anyone, but the most vulnerable are older people, babies and young children and people with pre-existing health problems.



## Task 2: Exposition

**Read the information, then summarise why climate change is an issue for the UK and the world.**

*To 'summarise' means to state the key points briefly.*

Evidence has shown that Earth's temperature is rising due to an increase in greenhouse gases. This has created and will continue to create, a number of negative effects. For example:

### Impacts of climate change in the UK

- sea levels could rise, covering low lying areas, in particular east England
- Scottish ski resorts may have to close due to lack of snow
- droughts and floods become more likely as extreme weather increases
- increased demand for water in hotter summers puts pressure on water supplies

### Impacts of climate change around the world

- sea level rise will affect 80 million people
- tropical storms will increase in magnitude (strength)
- species in affected areas (e.g. Arctic) may become extinct
- diseases such as malaria increase, an additional 280 million people may be affected

## Task 3: Comprehension

**Read through the information and answer the questions on your lined paper**

Reduced rainfall increases the risk of wildfires which can destroy people's homes and put lives at risk. In 2018 wildfires swept through California and destroyed many people homes in the rich area of Malibu. Many film stars lost their homes in this fire which took place only a year after another wildfire caused \$18 billion of damage	1. What impact can the increased risk of wildfires have?
Some areas may become so hot and dry that they become impossible to live in. This may cause increased migration from these countries to cooler areas. This migration may put pressure on other countries and leads to changes in how they are governed.	2. What might happen in areas that become too hot to live in?
In areas with reduced rainfall fewer crops might grow, this could result in malnutrition, ill health and death from starvation. In Central America the amount of maize grown is expected to fall by 12%	3. What might happen as a result of fewer crops growing?



In the UK deaths from cold related illnesses might decline, however heat related illnesses such as heat stroke and skin cancer might put further strain on health services.	4. What might the impact of climate change be on health?
Shorter and warmer winters will shorten ski seasons in Scotland and in the Alps affecting where people will go on holiday and causing unemployment in these areas. It is predicted that there will be 70% less snow in the Alps by 2099.	5. What effect will climate change have on holiday destinations?
Drier summers in the UK could affect water availability in areas that need it most. In particular the south east of England. This is made worse by these areas having increasing population densities	6. What will the effect of climate change be on water availability?
Low lying areas by the coast could be permanently lost to flooding as sea levels rise. This could lead to migration and overcrowding in other areas.	7. What would the effect of flooding be in coastal areas?

## Task 4: Plenary

Copy out the question. Answer it in your book using your knowledge from this session.

*Need to include the figure in your answer* → **'Using Figure 1 and your own understanding, explain the social effects of climate change (4 marks)'** → *Give reasons why*

**Structure:**  
**Figure**  
**Point**  
**Explain**

*Need 2 separate paragraphs containing Point, Explain*

*E.g. families cannot go on holiday to Lapland*

**Figure 1: An article from Sky News 21/11/18**  
 "Exceptional" weather in Lapland means no snow has fallen on Santa's homeland this year. Unseasonably mild conditions, which are likely to become more common as climate changes causes global temperatures to rise, has **left many families crestfallen by dream holidays that failed to crystallise.**  
 At a time when northern Lapland would normally have 20-30cm of snow on the ground, there are now no more than a couple of centimetres in isolated patches, and the majority of the area has no snow at all.  
 Kym Baker, who is due to take her four-year-old daughter on a holiday at the beginning of December, told Sky News the lack of snow means the activities she booked - such as husky sledding and skiing - will be impossible.

### Sentence starters:

*Figure 1 states... This is a social effect of climate change because... This means that...*

*Figure 1 also states... This is a social effect of climate change because... This means that...*

## **Session 2: What are the economic effects of climate change?**

**Learning Objective: To explain the economic effects of climate change.**

**Key words:**

*Economic = to do with money*

*Agriculture = farming*

*Water stress = not enough good quality water available for the population*

*Crop yields = how much food is grown from crops*

*Permafrost = top layer of soil that is always frozen*

### **Task 1: Do Now**

**How might climate change impact spending and people's incomes? Write 3 bullet points using the pictures as clues.**



### **Task 2: Exposition**

**Read through the information and identify 3 economic effects of climate change (3 bullet points)**

“Climate change is also likely to affect global water availability in the future.

Hotter temperatures and changes in rainfall patterns will have an impact on global water supplies. This will have an effect on global food production as there may be less water available for **agricultural** purposes.

This scenario is already being played out in **water stressed** parts of the world like Africa and Asia.

**Crop yields** are expected to decrease for all major world crops.

Crops could be wiped out in low-lying areas, suffering from flooding. With less crops available on the world market, prices are likely to increase.

There will also be a need for an additional use of energy resources for cooling needs.

Insurance costs may increase as insurers pay out more claims resulting from increasingly large or common disasters.

Tourism problems are set to increase. There will be less snow in some mountain resorts. Economies that rely on skiing as a form of income may suffer as the skiing season is reduced or disappears through lack of snow.

More heat in other areas, such as the Mediterranean could result in desertification and increased pressure on water supplies. This may put off some tourists from visiting and lead to increased costs.”

### Task 3: Comprehension

**Task:** Watch the video and answer the questions below in full sentences on your lined paper

<https://www.bbc.co.uk/news/av/business-26681165/global-food-prices-set-to-rise-due-to-severe-weather>

1. What is the economic effect of climate change according to the video?
2. What caused the coffee price to increase?
3. What cause the fruit and vegetable price to increase in California?

**Task:**

- a) Read through this interview between a climate change expert and a news reporter.
- b) List any economic effects of climate change that are revealed (at least 5 bullet points)

*E.g. more people holiday in the UK due to warmer weather, which means that spending would increase at seaside towns, increasing GDP.*

**Reporter:** Thanks for joining me Professor, I know how busy you are, but it's great that you can share with us some of your findings into the economic effects of climate change.

**Professor:** Not a problem, happy to clear a few things up.

**Reporter:** Great, to begin with could you explain what the economic effects may be on the UK?

**Professor :** Certainly, one effect will be that since the weather might become warmer some people may choose to have their holidays in Britain rather than abroad, this would lead to the economies of seaside towns improving. In fact the hot weather of 2018 led to an estimated extra £31 billion for the British economy

**Reporter;** That sounds fantastic, what are people worried about then, climate change will be a good thing surely!

**Professor:** I am afraid not, that is just one side of the debate. Warmer weather might mean that we can grow different crops such as grapes in the UK, which we can't really at the minute but there may be less water resulting in droughts and fewer crops in the long term.

**Reporter:** Less good, what about the increased number of storms that we are experiencing, what will the effect on the UK be?

**Professor:** I am glad you asked about this, bigger and more frequent storms could damage fishing infrastructure, damaging fisherman's livelihoods. Additionally warmer seas might mean less fish meaning fisherman are making less money.

**Reporter:** Thank you for that Professor, would you mind explaining what the impact would be on the rest of the world? Is it more severe?

**Professor:** The answer depends on where in the world you are talking about, some areas will suffer worse than others, however unfortunately it seems to be the poorest regions that will suffer the most, such as the countries in sub-Saharan Africa.



**Reporter:** That's awful, could you perhaps elaborate?

**Professor:** No problem, once possible effect is that warmer temperatures have reduced the size of the maize crops, this is a staple food for many people and will result in the price going up.

**Reporter:** anything else?

**Professor:** Yes, that is just the beginning, more extreme weather events mean more money has to be spend on predicting events and reducing their impact, the US has pledged to spend \$3 billion on tackling the effects of climate change.

**Reporter:** I heard that buildings in some areas might be at risk of collapse is that true?

**Professor:** Yes, indeed, I areas where there has been **permafrost**, this is now melting causing buildings to collapse and repairs to be needed. In Russia last year there were huge landslides when permafrost melted.

**Reporter:** Thank you for all this professor, one final question. What will the final cost be of climate change?

**Professor:** That's very difficult to tell and depends on how much we do now to reduce it's effects. However estimates for the total economic impact of climate change range from \$7 trillion - \$90 trillion.

**Reporter:** \$90 trillion! Wow, that's bigger than the entire world's GDP!

**Task: Answer the following questions based on the interview**

1. What effect will warmer temperatures have on people taking holidays?
2. How much did the heatwave in 2018 earn the UK economy?
3. What crops might be able to be grown in the UK due to warmer temperatures?
4. What might droughts lead to though?
5. What would bigger storms cause to the fishing industry?
6. Which regions in the world would suffer the most economically?
7. Which crop has been affected by climate change in this area?
8. How much has the US pledged to tackle climate change?
9. Which country suffered from landslides due to melting permafrost?
10. What is the total cost of climate change estimated to be?

**Task 4: Plenary**

Copy out the question. Answer it in your book using your knowledge from this session (sentence starters on next page)

*Look at both sides of the argument and give an overall opinion*

**'Assess the economic impact of climate change on the UK (6 marks)'**



*Need 3 separate paragraphs containing  
Point, Explain*

Sentence starters:

*Climate change will economically help the UK because.... This means that...*

*Climate change will also economically help the UK because.... This means that...*

*However, climate change will economically hinder (harm) the UK because.... This means that...*

*In conclusion, I believe that climate change will help / hinder the UK because...*

### **Task 5 : Microsoft forms questions**

<https://forms.office.com/Pages/ResponsePage.aspx?id=dBTLADSljUaCn2NuzjLCTPUNp5ndmKxHknbAOwID99xUM1pNQVI4M1NBSIQ4TEVRWDVNUEgzRjJROS4u>



### **Session 3: What are the environmental effects of climate change?**

**Learning Objective:** To explain the environmental effects of climate change.

*Key words:*

*Environmental = To do with nature*

*Drought = a period of little to no rainfall*

*Evaporation = when liquid turns to a gas by being heated*

**Task 1: Do Now** Suggest what the effects of climate change will be on nature. Use the pictures below to help (write in full sentences, at least 2 points).



### **Task 2: Exposition**

**a) Read** the information and study the map below

**b) Summarise** into 5 bullet points.

#### **Rising temperatures**

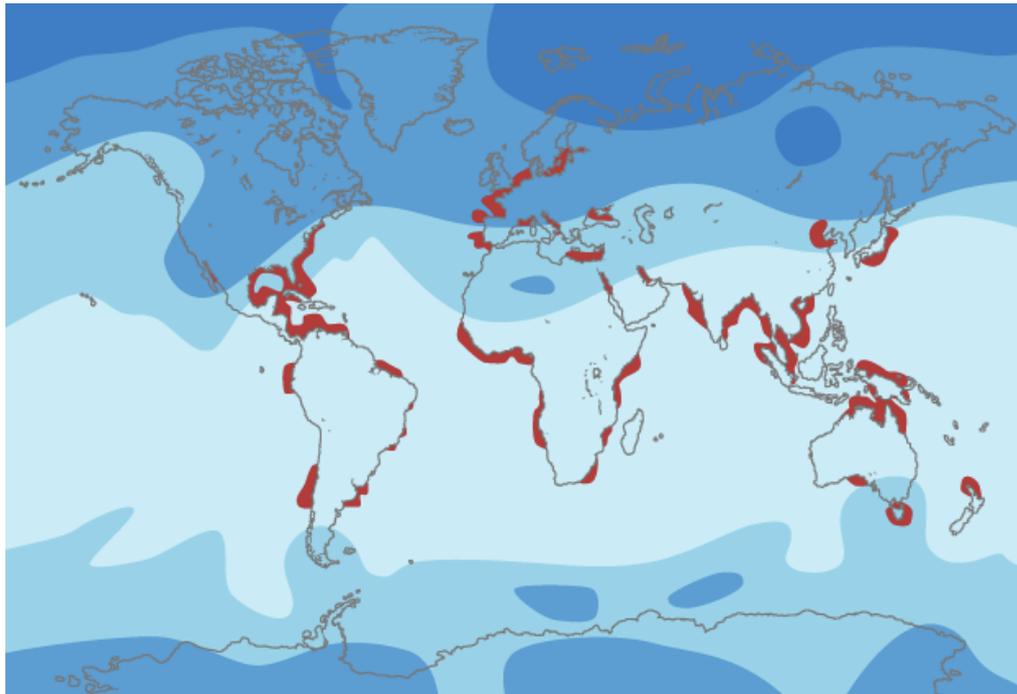
Future studies show that global temperatures may rise by the end of the 21st century.

Global warming on this scale would lead to many negative effects at a global and local level.

Ice is melting worldwide, especially at the Earth's poles. This includes mountain glaciers, ice sheets covering west Antarctica and Greenland, and Arctic sea ice.

Sea levels may rise by as much as between 18 and 59 centimetres by the end of the century and continued melting at the poles could add between 10 to 20 centimetres to already rising waters.

The diagram below shows the likely increase of temperatures from the current levels and the areas at risk of flood.



### Task 3: Comprehension

Read the information and answer the **questions** on your paper as you go along.

#### Extreme weather conditions

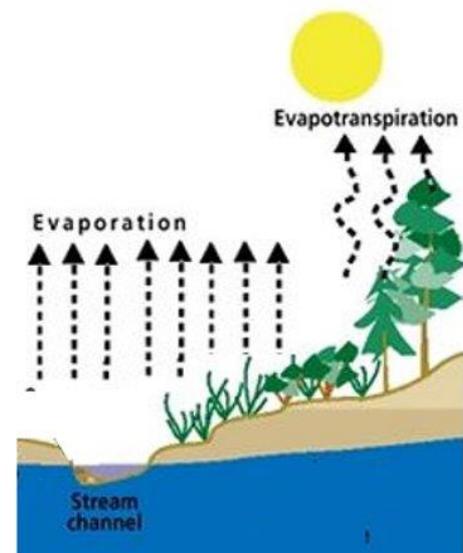
Floods and droughts will become more common. Rainfall in Ethiopia where droughts are already common, could decline by 10 per cent over the next 50 years.

It is predicted that climate change will cause some places around the world to get hotter, which will increase evaporation and some areas to receive less rainfall - both increasing the risk of drought.

- 1. Suggest how increased temperatures causes water in the soil, lakes and rivers to decrease.**

A lack of clean and reliable water can cause animals in developing countries to drink contaminated water which could cause a range of diseases.

Animals find it difficult to survive in droughts. This is because they lack the water they need for drinking, and there isn't enough water to grow plants they need to eat.





With less rainfall, wildfires can become common, damaging crops, buildings and even causing death to people and animals.

## 2. Explain the impacts of droughts on animals.

### Changing habitats

Climate change also affects animals and plants as the world experiences further changes in rainfall and temperature.

Forecasts show that 30 per cent of land-based bird species could become extinct (disappear completely) if temperatures continue to rise. Climate change will also have a negative impact on plants, insect species and on parts of the world's rainforests.

Some butterflies, foxes, and alpine plants have migrated (moved) to colder climates or to higher, cooler areas.

Wildlife researchers have found that since the mid-1980s, with less ice on which to live and less fish for food, polar bears have become considerably skinnier. They fear that if sea ice disappears, polar bears could become extinct in the wild.



## 3. Explain how changing rainfall and temperature affects animals.

## 4. Explain how global warming is impacting polar bears.

### Task 4: Plenary

Copy out the question. Answer it in your book using your knowledge from this session.

Look at both sides of the argument and give an overall opinion

Need to look at environmental, and social and economic

**'To what extent are environmental effects of climate change worse than social and economic effects? [9 marks]'**

Need 3 separate well developed paragraphs containing Point, Explain

### Structure:

Explain one negative environmental effect (point, explain)

Explain one negative social effect (point, explain)

Explain one negative economic effect (point, explain)

Conclude – which are the worst effects in your opinion?

E.g. A negative environmental effect of climate change is drought, where there is a period of little rainfall. This is bad because animals will die from dehydration, and crops will die from a lack of water.



## **Session 4: Sea Level Rise**

**Learning Objective: To explain the causes and impacts of sea level rise**

Key words:

*Global warming = increase in Earth's surface temperature*

*Thermal expansion = increase in size of ocean's particles due to being heated*

*Evaporation = when liquid turns to a gas by being heated*

### **Task 1: Do Now**

- a) **Read the article**
- b) **Answer the questions below on your paper**

Climate change: Sea level rise to affect 'three times more people'



Millions more people will be at risk of coastal flooding from climate-driven sea-level rise later this century.

That's the conclusion of new research conducted by **Climate Central**, a US-based non-profit news organisation. It finds that 390 million people will be living in areas that are projected to be below high-tide lines come 2100.

Today, the group calculates roughly 110 million are presently occupying these lands, protected by sea walls and barriers costing billions of pounds. London needs to spend another \$500 million to build a new flood barrier in the River Thames

Scientists believe that global sea levels could rise far more than predicted, due to accelerating melting in Greenland and Antarctica.

The long-held view has been that the world's seas would rise by a maximum of just under a metre by 2100. London is one of the world's developed cities significantly at risk. Other poor low-lying nations such as Bangladesh are already at risk now and flood regularly.

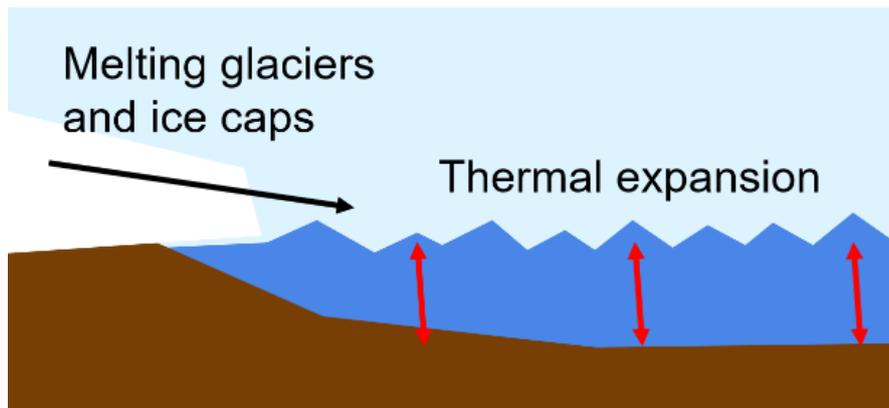
This could lead to the displacement of hundreds of millions of people, the authors say.

1. What is causing the sea level rise?
2. How many people's homes will be flooded by 2100?
3. Is London at risk?
4. Why is Bangladesh at risk already?
5. What is 'accelerating' faster than expected?
6. How much money does London need to spend to stay safe?

### **Task 2: Exposition**

- a) **Read** and note take from the information on the causes of sea level rise,
- b) **Answer** the question. - **Question: Explain the causes of sea level rise**

The change in sea levels is linked to three primary factors, all helped along by ongoing global climate change:



- **Thermal expansion:** When water heats up, it expands. About half of the sea-level rise over the past 25 years is due to warmer oceans simply occupying more space.
- **Melting glaciers:** Large ice formations such as mountain glaciers naturally melt a bit each summer. Recently, though, higher temperatures caused by global warming have led to greater-than-average summer melting.
- **Loss of Greenland and Antarctica's ice sheets:** As with mountain glaciers, increased heat is causing the massive ice sheets that cover Greenland and Antarctica to melt more quickly.

### Task 3: Comprehension

**Task:** Watch the video on the Maldives and answer the questions below in full sentences on your lined paper

<https://www.bbc.co.uk/bitesize/clips/zqmb4wx>

1. What percentage of the land is above sea level?
2. What will have happened in 50 years?
3. What is the biggest industry in the Maldives?
4. What has been put in place to try and hold the waters back?
5. How do the people feel in the Maldives?

**Task:**

- a) Look up 'Kiribati' on Google Maps to see where it is located.
- b) read the article
- c) answer the questions below.

### *Impacts of sea level rise on Kiribati*

[Besieged by the rising tides of climate change, Kiribati buys land in Fiji](#)

The government of Kiribati Island has purchased land on Vanua Island to home the 100,000 who are now homeless due to climate change. Their home islands of Kiribati are now under water due to sea level rise caused by climate change. The new island is 2,000km away, but it may be just the first of many seeking refuge



Kiribati has a population of about 110,000 scattered over 33 small, low-lying islands extending over a total area of 3.5m sq km.

Within a few decades, small islands in the Pacific and Indian oceans risk being completely submerged. In places the sea level is rising by 1.2cm a year, four times faster than the global average.

The people of Kiribati, a group of islands in the Pacific Ocean particularly exposed to climate change, now own a possible refuge elsewhere. President Anote Tong has recently finalised the purchase of 20 sq km on Vanua Levu, one of the Fiji islands, about 2,000km away to move all his people to.

In the immediate future, the land purchased by Kiribati will above all be used to for agricultural and fish-farming projects to guarantee the nation's food security. Sea water flooding Kiribati means the farms are covered in salt water and crops won't grow. The animals such as cattle have no grass to graze and are dying. There is a real shortage of food for all the people.

### **Questions:**

1. What happened to the islands of Kiribati?
2. How many people needed to be evacuated from Kiribati?
3. How fast is the sea level rising per year?
4. How much faster than the global average is this?
5. How far away will their new home island be?

**Task:** If possible, watch the video on Kiribati and note the effects of climate change (at least 3 bullet points)

[https://www.youtube.com/watch?reload=0&v=IB\\_r\\_Un67-U](https://www.youtube.com/watch?reload=0&v=IB_r_Un67-U)

*Stretch: Suggest how Kiribati could manage the impacts of sea level rise*

### **Task 4: Plenary**

Copy out the question. Answer it in your book using your knowledge from this session.

*Give reasons* → **'Explain how climate change is affecting Kiribati (4 marks)'** → *Focus on Kiribati*

*Need 2 paragraphs with point, explain*

### Sentence starters:

*Climate change is causing sea level rise in Kiribati by...*

*One effect of sea level rise in Kiribati is... This means that...*



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● ● ● ●  
*Another effect of sea level rise in Kiribati is... This means that...*

### **Task 5: Microsoft Forms**

<https://forms.office.com/Pages/ResponsePage.aspx?id=dBTLADSljUaCn2NuzjLCTPUNp5ndmKxHknbAOwID99xUQ1lMMDBWQjhTUTRSRUNUSoI1RElIRUxYMi4u>