



Junior Cycle Geography Lesson Plan

Climate Change

Curriculum link

SECTION A: Human habitat – processes and change. Unit A2 - the restless atmosphere, the heat engine, introduction to climate change.

Key idea

Climate change has local causes but global consequences.

Learning outcomes

Students should be able to:

- Explain the main causes of climate change.
- Identify the main contributions to the problem in Ireland.
- Identify the local and global consequences of climate change.
- Identify how we as individuals and as a nation can reduce greenhouse gas emissions.

Eco Eye Clips – Climate change

Climate change and Ireland – an introduction

This clip introduces the topic of climate change, causes, effects and how Ireland plans to tackle the issue.

Global effects of climate change

Here we look at the effects of climate change in different parts of the world and the countries most severely affected like Bangladesh. It becomes clear that the poorer countries responsible for least emissions will suffer most because of climate change.





Local effects of climate change - Protecting Dublin from flood risk

In this clip we hear about how climate change is effecting Irish weather, we look at the consequences on a local level in Dublin(flooding in East Wall and Ringsend) and hear about measures being taken to protect the City from flooding in the future.

Watch the clips and complete the comprehension exercises.





Comprehension

Clip 1 - Climate change and Ireland - an introduction

1. How many tonnes of greenhouse gases do we produce each year in Ireland?

2. How many balloons would that fill for each person?

3. Name five ways we produce these gases?

1. _____
2. _____
3. _____
4. _____
5. _____

4. Why is there no avoiding climate change?

5. What did the Intergovernmental Panel's report tell the world?





6. What was the central message of the Stern Report?

7. List the effects of global warming mentioned by Duncan:

1. Water shortages

2. _____

3. _____

4. _____

5. _____

8. If we do nothing to slow down climate change we can expect temperatures to rise by _____ by the end of this century.

9. In your own words explain how we got to this situation. What mistake did we make?

10. How is Ireland performing when it comes to greenhouse gas emissions?



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11. Name the three areas mentioned where significant reductions in greenhouse gases could be made.

1. _____
2. _____
3. _____

12. What natural resources should we be developing to reduce our greenhouse gas emissions?





Comprehension

Clip 2 – Global effects of climate change

1. What is the “global tipping point”?

2. What factors mentioned in the video are feeding extra gases into the atmosphere?

3. The Arctic ice is melting. What are the effects of the retreating ice?

4. Why should we worry about the melting Tundra permafrost?





5. Complete the sentence. If the permafrost gases are released it ...

6. The ocean holds a big store of carbon. What is happening to the ocean's chemistry and how is it affecting wildlife?

7. What possible effect will global warming have on the Amazon Rainforest?

8. Climate change is not something in the future, it's here. How will we be affected by global warming?





9. Climate change in the Developing World will mean ...

10. How is the Developing World already paying the price for our lifestyle? Give examples:

11. What will happen to the World's population if we allow temperatures to get too high?





Comprehension

Clip 3 – Local effects of climate change

Protecting Dublin from flood risks

1. Ireland has experienced devastating flooding in recent years (Dublin 2002 and the South and West 2009). How has our rainfall pattern changed?

2. How have the oceans changed?

3. A storm surge combined with a high tide and heavy rainfall resulted in the Perfect S_____

4. Describe the damage done to the East Wall area of Dublin.





5. What early warning systems are in now in place?

6. Why do we need to re-think where we build and live in the future?

7. Dublin is located in the floodplain of three major rivers. Can you name the rivers?

1. _____
2. _____
3. _____

8. What is “monster rain”?





9. How can we limit the effects of “monster rain”?

10. Describe the role played by the Civil Defence:





Extension Activities

IT work

- Log on to the internet to calculate your carbon footprint on <http://cmt.epa.ie/en/calculator/> or simply Google carbon footprint.
- Identify five ways that you could reduce your carbon footprint.
- Identify five ways that Ireland as a country could reduce our carbon footprint

Group work 1- Mindmap

The theme of the lesson, Climate Change, is written in the centre of a large sheet of paper and students Mindmap what they have learned by adding other information. They then classify the information and identifying sub-categories on each 'stem' on the Mindmap e.g. causes, consequences and solutions to climate change.

Group work 2

Pairs of students either agree on five things they have learned during the lesson or generate five questions they now want answered or which would test their understanding of the topic.

Individual work

You need to write a letter to yourself in the present day, explaining the impact that climate change has had on your life in the future. You need to write one paragraph for each of the areas below. You should brainstorm your thinking below before you begin writing your letter.

A letter from the future...

- Weather and climate
- Income





- Home
- Food
- International events
- Wider environmental impacts
- Health

Map work

Working in pairs:

- Log on to <http://maps.scoilnet.ie/>
- Open the 1830 historic map and the OSI 1:50,000 map and locate the areas of Dublin that were flooded e.g. East Wall and Ringsend.
- Compare the development in the 1830s and the current aerial photograph and 1:50,000 OSI map. Try to identify the height above sea using the contour lines.

Classification

Students reflect on the lesson and write down the main things they have learned on 'post-its'. These are displayed collectively and then classified.

