

Programme 4

A CLIMATE OF CHANGE



Unit 4: A Climate Of Change

Teaching Point

Climate change has local causes but global consequences.

Outcomes: Having completed this unit the student should be able to

- ✍ Outline the main causes of Climate Change.
- ✍ Identify the main contributions to the problem in Ireland.
- ✍ Identify the main strategies to solve these problems.
- ✍ Suggest local action strategies to deal with the issue.

Aonad 4: Athrú Aeráide

Pointe Teagaisc

Tá cúiseanna áitiúla le hathrú aeráide ach bíonn iarmhairtí domhanda i gceist leis.

Torthaí: Tar éis an aonaid seo a fhreagairt ba chóir go mbeadh daltaí ábalta.

- ✍ Na príomhchúiseanna atá le hAthrú Aeráide a leagan amach.
- ✍ Na príomhnithe a chuireann leis an bhfadhb in Éirinn a aithint.
- ✍ Na príomhstraitéisí chun na fadhbanna seo a réiteach a aithint.
- ✍ Straitéisí áitiúla gníomhartha chun tabhairt faoin gceist a mholadh.

Activities

1. Brainstorming

Following the viewing of the tape and the completion of the worksheets the class should identify and clarify their understanding of the problem both in written and graphic form. Using questions the teacher should ask the class to:

- ✎ Outline the global processes involved including the atmosphere, the filtering and reflection of some of the sun's energy.
- ✎ Outline the main global impacts. Try to explore the reality of climate change for people in different areas of the globe, e.g. Bangladesh, The Maldives, The Netherlands and the Mediterranean countries.
- ✎ Focus the questions on how people in Ireland contribute to the problem and the consequences for this country over the next 50 years. Ask the students what age they will be in 50 years!

2. Group work

Divide the class into two sections to draw diagrams and create posters.

- ✎ Section 1 will deal with the problem and its causes.
- ✎ Section 2 will deal with awareness of the problem and solutions.

Provide students with A3 sheets of paper, markers, colouring pencils etc.

Section 1 students should each produce posters which are designed to educate people about the Greenhouse Effect and its main causes. Students should produce posters relating to the heat exchange process, the sources of carbon, burning fossil fuels and the impact of farming activities.

Section 2 students should produce posters on the immediate impacts of global warming and climate change. Topics could include issues like sea level rise, climate change, desertification and the local impacts on agriculture and water supply.

These posters could be used as a local information campaign in the school or local library or civic offices

3. Individual research: A Sustainable Lifestyle Audit

Students are asked to focus on their own or their family's lifestyle in relation to sustainable living. Students should complete a questionnaire at home. See enclosed sample questionnaire.

Analysis of Results

When the questionnaires are completed analyse the results in class.

Using the chalkboard go through the responses to each question individually.

For example Question 1: Yes answers = 13 No Answers = 12.

Work out the percentage: Yes = 52% No = 48%

Repeat this process for each of the questions with set answers.

For the open-ended questions you must first get the class to list all the possible answers and then classify similar or related answers into groups. Total each of the groups and present as a percentage of the total.

Results and conclusions:

Students should now present a short written report showing all the results of the audit and then draw the most important conclusions.

They should ask

- ✎ "What are these results telling us about our lifestyles"?
- ✎ "What are the key areas which are unsustainable and contributing to global warming and climate change"?
- ✎ "What are the areas that can be changed which might help the situation"?

Action:

Now take action.

Options.

- ✎ Display your findings in school or in the community.
- ✎ Build a website to highlight the situation or post these results on the school website.
- ✎ Extend the project to a much wider investigation in the community.

4. Fieldwork Investigation

Sustainable Living: A Community Audit.

Pick a scientific sample using the Register of Electors and complete 200 questionnaires.

Remember the steps!

Step 1: Identify key aims or formulate a hypothesis.

Step 2: Identify and get the background material required.

Step 3: Identify the main methods of gathering your information.

Step 4: Identify the main results and draw a conclusion.

Step 5: Identify some achievable actions that may help the situation.

Investigation Title: Sustainable living: A Community Audit.

Step 1: Aims:

1. To assess the extent to which the principles of sustainable living apply to the households of your community.
2. To examine the modes of transport used by the population of the community.
3. To look at the sustainability of the activities organised by the local authority for the community.

Step 2: Preparation and Background Materials.

Use the video, pick a sample, prepare a questionnaire. Extend the household questionnaire to include the local authority. Most of the preparation has been already completed if the class have already completed activities 1, 2 and 3.

1. View the videotape and complete the worksheets of questions.
2. Prepare the questionnaire and extend it to include questions relating to the local authority. Complete a pilot survey to test the effectiveness of the questionnaire. If the class has already completed the individual survey, this will act as a good test of the questionnaire. Make any changes to the questionnaire as required.
3. Pick a sample of the population to survey. To pick a sample of 200 residents follow the following steps.
 - ✎ Get a copy of the recent Register of Electors from the local authority offices.
 - ✎ Highlight the housing areas that you want to include in your survey and work out a total population for this study area.
 - ✎ Select 400 respondents to achieve a completed survey of 200.
 - ✎ Divide 400 into the total population. For example if the population is 8500, divide 8500 by 400 = 21.25. Now select every 21st person on the register. Select your starting point by using a random number between 1 and 21. In this way you will select your list of respondents. Now select every second respondent as a substitute. This will allow you to get 200 representative interviews using a scientific sample.
 - ✎ Now divide the list up between the class members and stress that these listed people are the only people that can answer the questions. If the first person cannot be found or refuses they must go to the substitute.

Step 3: Methods of Gathering.

1. Each student must then interview the listed respondent on the doorstep and return to school with the completed questionnaires.

Step 4: Results and conclusions.

1. The results and conclusions are then completed in the same way as the household audit.

Step 5: Action.

1. Make a display of your results and exhibit them in school or in a public building.
2. Send your results to the local authority with your suggestions for change.
3. Write a report for the newspaper highlighting your findings and recommendations.
4. Invite a local representative of some environmental groups to your class to discuss the issue.



Programme 4

A CLIMATE OF CHANGE

Look at the videotape once. Look, Listen, Concentrate and Enjoy! 26 minutes approximately.

How closely did you look?

Now take a second look. Stop, Start and Rewind the tape to identify clearly what you think Duncan is now telling us about climate change in Ireland.

The programme is divided roughly between understanding the problem of global warming and its consequences for Ireland and how we can help solve these problems.

How closely did you look and listen. Now complete the following worksheet questions.

1. Describe the opening images that are presented by the programme.

2. Global Warming? What does it sound like from the description that we get from Duncan sitting on his deck chair? How bad can it be?

3. What would a few degrees rise in temperature mean for global climates?

4. What was the average rise in global temperature over the last 100 years?

5. What was the figure given for sea level rise since 1900?



Clár 4

Athrú Aeráide

Féach uair amháin ar an bhfistéip . Féach, Éist, Dírigh d'intinn air agus Bain Sult As! Timpeall 26 nóiméad. Cé chomh grinn is a d'fhéach tú?

Anois féach in athuair. Stop, Tosaigh agus Cuir Siar an téip chun a aithint go soiléir cad a cheapann tusa atá á rá ag Duncan linn faoi athrú aeráide in Éirinn.

Tá an clár roinnte go garbh idir tuiscint ar an bhfadhb a bhaineann le téamh domhanda agus a iarmhairtí d'Éirinn agus conas mar is féidir linn cuidiú chun na fadhbanna sin a réiteach.

Cé chomh grinn a d'fhéach tú agus a d'éist tú? Anois freagair ceisteanna na bileoige oibre seo a leanas:

1. Déan cur síos ar na híomhánna tosaigh a chuirtear i láthair sa chlár.

2. Téamh Domhanda? Cad leis is cosúil é ón gcur síos a thugann Duncan agus é ina shuí ar a chathaoir taobh amuigh? Cé chomh dona agus is féidir leis a bheith?

3. Cad a chiallódh ardú de chúpla céim i dteocht d'aeráidí an domhain?

4. Cad é an t-ardú ar an meán a tháinig ar theocht domhanda le céad bliain anuas?

5. Cén figiúr a tugadh d'ardú leibhéal na farraige ó 1900?



6. What will be the impact of this climate change on different regions of the world?

7. Where will the effects of climate change in Ireland come from?

8. What is the Gulf Stream and what will happen if it changes direction?

9. What do the Met Éireann records show about climate change in Ireland?

10. How is climate change showing itself at present in Ireland?

11. What would the effects of warmer summers be?



6. Cén tionchar a bheidh ag an athrú aeráide sin ar réigiúin éagsúla an domhain?

7. Cá as a dtiocfaidh tionchair ar athrú aeráide in Éirinn?

8. Cad é Sruth na Murascaile agus cad a tharlóidh má athraíonn sé treo?

9. Cad a thaispeánann taifid Met Éireann faoi athrú aeráide in Éirinn?

10. Conas mar atá athrú aeráide le feiceáil faoi láthair in Éirinn?

11. Cé na héifeachtaí a bheadh ag samhraí níos teo?



12. How would our peat bogs be affected?

13. How will the coastline be affected?

14. What is the estimated cost of defending the coast against climate change?



12. Cén tionchar a bheadh ar ár bportaigh?

13. Cén tionchar a bheadh aige ar líne an chósta?

14. Cad é an costas measta a bheadh i gceist chun an cósta a chosaint ó athrú aeráide?



Now the emphasis of the programme changes to look at who is responsible and what can be done. Duncan firstly suggests who is responsible.

1. What was agreed at the Kyoto Summit and how did Ireland fare in the agreement?

2. 2012 was the deadline set at Kyoto for the conditions of the agreement to be reached. How much higher will fossil fuel use be by 2012?

3. What did the Minister for the Environment & Local Government announce in 2000?

4. Who are our worst offenders in relation to breaching the Kyoto limits on greenhouse gases?

5. How do cattle (and other ruminant animals) contribute up to 33% of our greenhouse gases?

6. What activity on the farm generates Nitrous Oxide?



Athraíonn béim an chláir chun féachaint ar cé atá freagrach agus cad is féidir a dhéanamh. Insíonn Duncan ar dtús cé is dóigh leis atá freagrach.

1. Cad a aontaíodh ag Cruinniú Mullaigh Kyoto agus conas mar a d’éirigh le hÉirinn sa gcomhaontú?

2. Ba é 2012 an sprioc a leagadh amach ag Kyoto chun coinníollacha an chomhaontaithe a bhaint amach. Cén méadú a bheidh tagtha ar úsáid bhreosla iontaisigh faoi 2012?

3. Cad a d’fhógair an tAire Comhshaoil agus Rialtais Áitiúil i 2000?

4. Cé is measa ó thaobh sárú teorainneacha Kyoto ar gháis cheaptha teasa de?

5. Conas mar a chuireann eallach (agus ainmhithe athchogantacha eile) le 33% dár ngáis cheaptha teasa?

6. Cén ghníomhaíocht ar an bhfeirm a ghineann Ocsaíd Nítriúil?



7. How can we control methane emissions from farms and what are the implications for farmers?

8. Forests can also help the situation. How can planting forests be helpful?

9. How do cars contribute to the problem?

10. What can the government do to control the impact of cars on greenhouse gas emissions? Do you think these strategies would be popular?

11. How is most of our energy generated? What are the fuels we burn to generate this energy?

12. How can we minimise our greenhouse gas emissions without causing an energy crisis?



7. Conas gur féidir astuithe meataín ó fheirmeacha a rialú agus cad iad na himpleachtaí d'fheirmeoirí?

8. Tá foraoiseacha freisin in ann cuidiú leis an réiteach. Conas a chuidíonn cur foraoiseacha?

9. Conas mar a chuireann carranna leis an bhfadhb?

10. Cad atá an rialtas in ann a dhéanamh chun tionchar na gcarranna ar astuithe gáis cheaptha teasa a rialú? An gceapann tú go mbeadh tóir ar na straitéisí seo?

11. Conas mar a ghintear an chuid is mó dár gcuid fuinnimh? Cad iad na breoslaí a dhóinn muid chun an fuinneamh seo a ghinneadh?

12. Conas gur féidir linn astuithe gáis cheaptha teasa a laghdú chomh mór agus is féidir gan géarchéim fuinnimh a chruthú?



What are our alternatives?

13. What changes are planned for Moneypoint Power Station?

14. What are our options for renewable energy sources?

15. What is our best clean energy alternative?

16. How does poor quality housing contribute to the problem?

17. What will informed consumers do to help?



Cad iad na roghanna atá againn?

13. Cad iad na hathruithe atá beartaithe do Stáisiún Cumhachta Moneypoint?

14. Cad iad na roghanna atá ar fáil dúinn i dtaobh foinsí fuinnimh inathnuaite?

15. Cad é an rogha fuinnimh ghlan is fearr atá againn?

16. Conas mar a chuireann drochchaighdeán tithíochta leis an bhfadhb?

17. Cad a dhéanfaidh tomhaltóirí atá ar an eolas chun cuidiú?

Sustainable Living: A Household Audit.

Please answer the following Questions.

The House:

1. Are the walls and attic of the home insulated? Y ☐ or N ☐
2. Are the windows double-glazed? Y ☐ or N ☐
3. What is the main fuel used to heat the home?

4. Do you have "ECO Friendly" settings on the washing machine / dishwasher and do you use them? _____
5. Is any of the waste from the household sorted and recycled? Y ☐ or N ☐
If Yes, What happens to
waste glass? _____
waste paper? _____

The Garden:

6. Does the house have a garden? Y ☐ or N ☐
7. If Yes, what happens to the garden waste? _____
8. Do you compost any material? Y ☐ or N ☐
If Yes, what materials are composted?

9. What is used to cut the grass? _____ What fuel is used? _____

Travel:

10. Does the household have a car? Y ☐ or N ☐
11. If Yes, How many? _____
12. How do you travel to school? _____
13. What proportion of your family journey's is by public transport? _____
14. How would you rate the quality and availability of public transport in your area?
Good ☐ Very Good ☐ Poor ☐ Very Poor ☐

Shopping:

15. What kind of shopping bags do you use? _____
16. Can you name three products, which you buy regularly, that contain recycled materials,
(i) _____ (ii) _____ (iii) _____
17. What do you do with the packaging of products after you use them?

18. Could you suggest any ways that shops could reduce the amount of waste materials generated? _____

19. Could you suggest any ways that consumers could reduce the amount of waste generated?

SAMPLE QUESTIONNAIRE

