

Climate Change

Topic: Climate change

Aims:

- To develop reading and speaking skills
- To introduce language to talk about the environment

Level: Intermediate and above

Introduction

This lesson is about climate change – and encourages students to think about their attitudes towards the environment. (Interesting fact you could use in the intro – according to Friends of the Earth the UK has 1% of the world’s population, yet produces 2.3% of the world’s carbon dioxide) This lesson could be linked nicely with the lesson plan on the weather:

<http://www.teachingenglish.org.uk/try/lesson-plans/the-weather>

Procedure

Tip:

Why not do a mini class project on climate change? It’s a topic that touches every country around the world. Students could do some research on the internet and then present a poster or a power point presentation to the class to show their findings.

These links would be good starting points for your students to research.

<http://www.newscientist.com/hottopics/climate/> – The New Scientist website with some interesting articles and quizzes.

http://newsvote.bbc.co.uk/2/hi/in_depth/sci_tech/2004/climate_change/default.stm — BBC site with some great links on to quizzes and articles.

<http://www.bbc.co.uk/climate/> – BBC weather page on climate change.

<http://www.foe.co.uk/campaigns/climate/> – Friends of the Earth. Clear layout and lots of facts and figures.

<http://www.climateark.org/> – Climate Ark will link you to interesting articles and blogs about climate change.

What’s the weather like today?

- For lower levels, brainstorm different types of weather. Draw a cloud on the board and around it write weather vocabulary. For higher levels, give clues to elicit more difficult words like hail stones, thunder, lightening, flood, drought etc.
- Ask students some general questions about the weather and if you can get any pictures of extreme weather conditions (hurricanes, floods, tornados etc,) this will help to introduce the vocabulary.
 - What’s your favourite type of weather?
 - Do you think the weather is changing? If so, why do you think this is?
 - Which countries have suffered extreme weather conditions recently?
- For higher levels, ask students what they think the biggest threats to the

world are at the moment? Students may offer a variety of suggestions including terrorism and the environment. Encourage discussion on which one they think is the biggest danger to the planet to get them on track to thinking about the environment and climate change.

Climate change – the evidence

- This task is to help provide higher levels with the language they will need to discuss climate change effectively. Give students a copy of **Worksheet A**. Students should first read the questions and see if they know the answers. Then read the answers and match them to the appropriate questions.

Answers: 1 – c, 2- d, 3 – a, 4 – e, 5 - b

Worksheet A - Climate change – the evidence

Match the questions to the answers about climate change.

1. What is climate change?
2. What is the 'greenhouse effect'?
3. What is the evidence of global warming?
4. How will the weather change?
5. What is the international community doing?

- A. Sea levels have risen by 10 – 20 cm. This is due to the expansion of warming oceans. Temperature records show that the average temperature has increased by about 0.6°C in the 20th century.
- B. The Kyoto Protocol (1997) commits industrialised countries to reduce their greenhouse gas emissions. It suffered a huge set back in 2001 when the USA, responsible for a quarter of global emissions, pulled out.
- C. The planet's climate is constantly changing but now scientists believe that the extreme changes taking place today are a result of human activity. The changes we see today may affect the stability of the climate on which much life on the planet depends.
- D. The term refers to the role played by the layer of gases, including carbon dioxide, methane and nitrous oxide, which trap the heat from the sun in the earth's atmosphere. We need the layer to keep in some of the heat but now the concentration of gases, especially CO₂ is increasing and retaining more heat.
- E. It is difficult to predict, but we can expect more extreme weather conditions like floods, storms and heat waves. Scientists believe there will be more rain but also a higher risk of drought in inland areas

How green are you?

- Before you start, make sure students understand the use of the word 'green' in its environmentally friendly sense.
- Information from the quiz is adapted from a BBC quiz and a quiz on the New Scientist website.
- Give students a copy of the quiz on **Worksheet B**. Students go through the questions in pairs or groups. Encourage discussion as they go through it and help with vocabulary. At the end, ask the class how many points they got and to what extent they consider themselves to be 'green' or environmentally aware.
Localise the discussion by focusing on their own town and how easy (or not) it is to be environmentally friendly.

Answers and extra information:

- 1) a) is the greener option. Just having the lights off for 3 seconds saves the energy it takes to switch them on again.
- 2) b) a microwave consumes a third of the energy of an electric oven.
- 3) b) depending on where you are, most bottled mineral water has to be transported a long way to reach the consumer. All transportation emits CO₂. Polystyrene no longer contains CFCs that damaged the ozone layer.
- 4) b) Intensively grown cotton is one of the world's most polluting crops. It needs lots of chemicals to grow and maybe even 10 pesticide treatments every season. It also needs large amounts of water.
- 5) If you leave the tap on when you brush your teeth you waste between 25 and 45 litres of water every time, enough for a 100 litre bath every other day.
- 6) a) Tobacco needs really rich soil for it to grow and developing countries often replace food crops with tobacco crops as it is more profitable. Most tobacco is dried by burning wood. Every 300 cigarettes use the equivalent of one tree to cure them.
- 7) a) When washing clothes it's the heating of the water that uses up most of the energy. It is best to wash in cool or cold water and always fill up the machine.
- 8) a) Although cars are massive polluters. planes give out 0.5 kilograms of CO₂ for every 1.6kilometres. To give an idea, the CO₂ omitted on one trip from the UK to India would take 2 trees 99 years to absorb! Extra quote for students to discuss, "One person flying in an airplane for one hour is responsible for the same greenhouse gas emissions as a typical Bangladeshi in a whole year," – Beatrice Schell, European federation for Transport and Environment, November 2001.
- 9) b) It is much better not to take plastic carrier bags from the supermarket. If you do use them, try to re-use them.
- 10) b) It is more likely that glass bottles are returned and re-used by the manufacturers. If they are recycled, glass uses less energy than metal to recycle.

Worksheet B – How green are you?

Do the following quiz to find out how 'green' you are. Check the answers with your teacher afterwards. One point for every correct answer.

- 1) You are busy in your house tidying up going from room to room spending 5 to 10 minutes in each. Which is the best way to save energy?
 - a) Switch the lights on and off every time you move from room to room
 - b) Keep the lights on as you move about the house
- 2) You are hungry and want to bake a potato. Which method is 'greener'?
 - a) Put it in an electric oven for an hour
 - b) Quickly zap it in the microwave
- 3) You are thirsty so you go to a café to buy a drink. What do you choose?
 - a) A bottle of mineral water
 - b) A cup of coffee in a polystyrene cup
- 4) You need a new shirt / blouse and there are two that you like in the shop. You look at the label and see that one is made of 100% pure natural cotton and the other is 50% polyester. You want to be as environmentally friendly as you can.
Which one do you choose?
 - a) The 100% cotton shirt
 - b) The 50% polyester shirt
- 5) Do you leave the tap on when you brush your teeth?
 - a) Yes
 - b) No
- 6) As well as putting their health and the health of those around them in danger, smokers also put the environment in danger.
 - a) True
 - b) False
- 7) Which is the 'greenest' way to wash your clothes?
 - a) Machine wash in cold water
 - b) Hand wash in hot water
- 8) Which form of transport is better for the environment?
 - a) Driving by car
 - b) Flying by plane
- 9) When you go to the supermarket how do you take your shopping home?
 - a) In plastic carrier bags from the supermarket
 - b) In your own bag or basket
- 10) If you have the choice, how do you prefer to buy a cold drink in a café?
 - a) In a can
 - b) In a glass bottle

How many did you get right?

1-3	4-6	7-10
You have a lot of changes to make if you want to be greener.	Not bad! You know about how you can help the planet. You are quite green.	Well done! You have a very green head on your shoulders!

Recycling Race

- Draw a recycling symbol (usually 3 arrows in a circle or triangle shape) on the board or draw a picture of a recycling container. Discuss the topic of recycling as a group before you begin. Ask students some general questions about recycling such as, What do you recycle?, How does the system work?, Do you think it's a good idea to recycle?, What types of materials can be recycled?
- For very low levels hold up objects (pens, pencils, paper, can of drink etc.) and ask students, 'What's it made of?' then 'can it be recycled?' When you have elicited the different materials, draw the five columns on the board and put the headings paper / wood, glass, metal, plastic, organic and put students in teams of three or four. Give a letter and in their groups students think of one item made of the material in each column that begins with the given letter. (See example below) When they have one word for each column they all put hands up and shout 'stop' and you check through their answers with the whole class and award a point. Note: consonants are generally easier than vowels! To make it easier for lower levels, let students say 'stop' with only 3 or 4 of the columns completed. To save paper simply draw the chart on the board and get students to copy one chart per group.

Worksheet C – Recycling Race

Work in teams to think of things to put in the recycling columns. The words must all begin with the letter your teacher gives you.

	Paper / Wood	Plastic	Metal	Glass	Organic
B	Book	Bin	Bicycle	Bulb	Banana

Global warming message board

- The idea for this activity was from a real message board on a website about the weather. Most of the views are adaptations of what real people think. This activity offers the students a look at the other side of the coin; some of the potential advantages of global warming! It should be used to provoke students' own ideas and thoughts on the subject and may trigger some strong reactions. Give each student a copy of **Worksheet D**.

Worksheet D – Global warming message board

A message board on a weather website asked its readers to write in with their views on global warming and climate change. Here is a selection of their messages.

Gonzalo – I'm all in favour of global warming. I grow tropical plants so for me the warmer the weather is the better!

Tanya – In 20 years time the traditional British weather will be a thing of the past. We'll have a climate like the south of France. People will be healthier as they'll spend more time outdoors. Just think, dining al fresco in the summer months. It'll be great!

Luis – no one can tell me that global warming isn't happening. We've just had the hottest year on record! My sister lives in the north of Spain and she said that it is beach weather there and it's November. I mean it's not normal is it?

Kevin – When I was a boy we used to have heavy snow most years. Since the early 90s all we've had is a light dusting of snow. It must be due to global warming.

Ruth – You only have to switch on the news to see the crazy things the weather is doing. There are so many floods, hurricanes and droughts. It's the extreme weather conditions caused by global warming.

Oliver – There's no such thing as global warming. It's all media hype to brainwash people. If they told us the moon was made of cheese often enough people would believe it!

Mark – The world will never be the same again, but that's how it has always been. It changes constantly and nature and man can adapt to these changes. If we couldn't, human life on the planet would have finished years ago.

- Who do you agree with most?
- Who do you disagree with?
- What would you write to the message board? Put your message here.

- Share your message with the class. Does anyone have the same view as you?

Climate Change – Discussion Statements

- Copy and cut up one set of the discussion statements on **Worksheet E**. Put students into small groups and give each group one statement to discuss for a set time.
- Then rotate the statements around the groups and when each group has talked about each statement have some general feedback with the whole class.

Worksheet E – Climate Change – Discussion Statements

Climate change is the most serious threat to our planet at the moment.
All countries should be forced to apply serious regulations to reduce carbon emissions.
Normal people can't do much to stop global warming.
Everybody should do whatever they can to save energy.
I am worried about climate change.
Climate change isn't as serious as people say. People like to worry about something!
There are simply too many people living on planet earth!
We are going to lose many animal species and areas of low land in the very near future because of global warming.