

Britannica Lesson Plan: Climate Change



Subject: Citizenship
(Geography, Science)

Date:

Length of Session:
2 days at 45 minutes each

Prior Learning: This lesson could be part of a larger unit on sustainability, including in the local community.

Learning Objective: Students will discover scientific proof about the changing climate, as well as practice interpreting graphs. They will also evaluate their own impact on climate change and propose ways they can positively affect the environment.

Success Criteria: Students will prepare and hold a mock debate about the most effective ways to reduce their own carbon footprint.

Suitable for the 2014 NC's KS4 requirement for students to learn about the different ways in which a citizen can contribute to the improvement of his or her community.

Resources: Students will need PCs (with internet connection) and other resources for research. They will also need pens, paper and notecards as necessary.

Vocabulary:

Climate
Climate Change
Greenhouse Effect
Temperature
Stewardship
Interdependence
Biodiversity

Organisation: Grouping students will ensure that everyone gets to participate in the debate and making these groups mixed ability will also help all students get the most out of the activities.

Support Staff

Activities:

Support staff could help students hone their arguments as well as practice saying them aloud for those students who might be nervous about public speaking.

Britannica School and Image Quest resources/links:

Climate article: <http://school.eb.co.uk/levels/intermediate/article/273703>

Climate change article: <http://school.eb.co.uk/levels/intermediate/article/384741>

Global warming article: <http://school.eb.co.uk/levels/intermediate/article/311438>

Greenhouse gas article: <http://school.eb.co.uk/levels/intermediate/article/274657>

Temperature graph: <http://school.eb.co.uk/levels/intermediate/article/384741/media?assemblyId=85038>

Temperature and sea level graph: <http://school.eb.co.uk/levels/intermediate/article/384741/media?assemblyId=108209>

Greenhouse gas changes graph: <http://school.eb.co.uk/levels/intermediate/article/20249/media?assemblyId=108207>

Keeling Curve graph: http://quest.eb.com/images/309_2916003

Global CO2 variations (2008) graph: http://quest.eb.com/images/132_1229385

Temperature projections graph: <http://school.eb.co.uk/levels/intermediate/article/37044/media?assemblyId=158417>

Time:	Teacher's Activity:	Students' Activities:
Day 1		
5-10 minutes	Pass out the Guardian article on the Arctic sea ice found at: http://www.theguardian.com/environment/2012/aug/23/arctic-sea-ice-record-low	Read article about the Arctic sea melting.
5-10 minutes	Share Britannica resources with students for them to review.	Students should look at the Britannica information on climate and draw a graph of how the global temperature has changed over the past 150 years. They should then compare this with the graph found in Britannica (titled "Temperature graph" above).
5-10 minutes	Make sure that groups are highlighting practices that impact the environment.	Discuss the graphs in groups and then create a mind map on the ways that individuals can impact the environment. It might be good to present both helpful and harmful practices.
10-25 minutes	Assist students as necessary. When considering helpful practices, prompt them to consider the ease of implementation, the evidence of success in helping the environment and the likelihood that the facilities (and other necessary means) would be available in the local community.	Research the listed ideas further, using Britannica and other resources.
5 minutes	List ideas on the board and collate votes.	As a full class, nominate 5-6 helpful ideas to debate.

Time:	Teacher's Activity:	Students' Activities:
Day 2		
5 minutes	Recap the ideas from the previous lesson and ask students to share some of the information they learned while researching.	Share researched information.
10-15 minutes	Assist students with their arguments and help where necessary.	In groups, plan arguments remembering to think of what weaknesses the other groups' ideas may have and also how you might counter their criticisms of your idea.
25-35 minutes	Lead the debate, ensuring equal speaking time for everyone and general order.	Students should debate, allowing time for everyone to join in the discussion.

Plenary: Create a list of student pledges for the ways they will reduce their negative impact on the environment. Students could then be further asked to work with local businesses and other groups in order to implement these changes as part of the school's community service work.

Differentiation: Researching in pairs will assist those students who need support. Mixed groups are also important to ensure that students can help each other throughout the process.

Extension Activity: Have students draft a letter to a local business suggesting how that business might change one of their practices in order to lessen the company's impact on the environment. Students should consider the negative effects on the business and also how to try to mitigate these as much as possible. Additionally, an alternative should be suggested.

Assessment Opportunities: This would be a great opportunity for peer assessment and students should be guided using a marking criteria that includes the evidence of research in the initial arguments and their ability to clearly explain these arguments to the audience. Students could also mark the success of groups in preparing for counterarguments and the clarity of the rebuttal.