



Ecological Footprint lesson ideas and Teaching Resources

Ideas for KS3, KS4 and KS5

Geography, Citizenship and Science

ACTIVITY - What is an ecological footprint?

Look at the images in Resource 1. Decide where you would place each picture on the Venn diagram, depending on whether you think the image represents food/drink, materials/waste, transport/energy or a combination of each category.

The Ecological Footprint (EF) is a measure of how much productive land and sea is needed to provide the resources, such as energy, water and raw materials, we use in our everyday lives. It also calculates the emissions generated from the oil, coal and gas we burn, and it determines how much land is required to absorb our waste. Since we use resources from all over the world, our footprint is the sum of these areas, wherever they are on the planet. It is measured in global hectares per person (gha/capita). An ecological footprint can be calculated for an individual, a group or even a product. (Reference www.wwf-uk.org.uk)

In the world the average ecological footprint is 2.2 hectares per person, while in the UK the average ecological footprint is 5.4 hectares per person. This means that if everyone in the world were to live like people in the UK, we would need three planets to survive.

Questions for discussion and written work

Why are figures for a UK citizen more than double those for the world average?

What does this say about our lifestyle, our consumption of resources and our attitude to waste?

What problems do you think this might cause in the future?

Resources

Copies of resource 1



ACTIVITY - What makes up the ecological footprint of people in the UK?

Study Resource 2 which shows the different components of the ecological footprint of the average person in the UK. Type this data into an Excel spreadsheet and represent the information in a pie chart.

Questions for discussion and written work

Which aspect of our daily lives has the biggest impact on our ecological footprint?

In which areas of your life do you think you could make a contribution to reducing your own ecological footprint?

Homework ideas

Obtain a copy of a recent electricity bill from home. Compare your family and their usage with other members of the class.

Keep a food and drink diary for a week. Note where the food comes from and how it is packaged. Note what happens to the waste - is it thrown away, reused or recycled?

Resources

ICT facilities, copy of Resource 2



ACTIVITY - How does the ecological footprint vary across the world? - A global view

Use an atlas to locate and shade in the countries mentioned in Resource 3 - The Ecological Footprint of selected countries.

Use **red** for countries that have an ecological footprint of 5.0 or more

Use **orange** for countries that have an ecological footprint of between 1.9 and 4.9

Use **yellow** for countries that have an ecological footprint of 1.8 or less

Give your map a title

Add a key to your map

Questions

Look carefully at the map. Can you see any patterns? What might explain any patterns you see?

The earth can support an average ecological footprint of 1.8 global hectares per person. From this activity, what can you conclude about the earth's ability to support world population and our desire for resource consumption?

Resources

Outline world map - download one for free from www.eduplace.com/ss/maps

Resource 3, Atlas, colouring pencils



ACTIVITY - How does the ecological footprint vary within the UK? - A regional view

Study Resource 4a which shows the ecological footprint for different regions within the UK. See resource 4b for a map of the regions of the UK. Draw a bar graph to compare the ecological footprint of each region.

Use the x axis to represent the 12 regions of the UK.

Use the y axis to show the ecological footprint in global hectares per person

Make sure you use a ruler to draw the graph.

Questions

Which region of the UK has the biggest ecological footprint per person?

Why do you think this region has a larger than average footprint per person in the UK?

Which region has the smallest ecological footprint per person?

Why do you think this region has a smaller than average footprint per person in the UK?

Would it be fair to give each person in the UK a maximum footprint that they were not allowed to exceed? Explain your reasoning.

Resources

Ruler, graph paper, Resource 4a and 4b



ACTIVITY - Calculating your own ecological footprint

Visit the two websites given below and follow the instructions to find out your own ecological footprint.

www.bestfootforward.com/footprintlife.htm

<http://footprint.wwf.org.uk/>

Questions

What is your ecological footprint according to Best Foot Forward's Footprint Tool?

What different aspects of your ecological footprint were included in this tool? Give an example of a question you were asked to determine your footprint and how this makes a contribution to your footprint.

What was your footprint according to the WWF Footprint calculator? Give an example of a question you were asked to determine your footprint and how this makes a contribution to your footprint.

Which footprint tool do you think is better? Why?



ACTIVITY - Assessing the ecological footprint of the Fuchs Foundation

Antarctic Expedition 2007

The information in Resource 5 indicates the different components of the ecological footprint for the Fuchs Foundation Antarctic Expedition 2007. The expedition involved four teachers, three expedition guides and a cameraman. The total ecological footprint for the expedition was 21.26 global hectares. This is a footprint of 0.078 gha per person per day.

Study Resource 5 (A summary of the information is included below). The ecological footprint is made up of transport, air freight, equipment, food and fuel. Represent this information as a pie chart.

OVERALL TOTALS		
	³ EF (gha)	% EF
Passenger transport (air travel)	17.14	80.6%
Air Freight	3.44	16.2%
Equipment	0.14	0.7%
Food	0.49	2.3%
Fuel	0.05	0.2%
TOTAL	21.26	100.0%

Questions

Which aspect of the expedition had the biggest impact on the overall footprint?

Compare the expedition data with the different aspects of the ecological footprint for the average UK resident. What are the similarities and differences between these two sets of data?

Should people go to Antarctica to do scientific research if it has such a large environmental impact? Explain your reasoning.

Suggest three ways that future expeditions to the Polar Regions (the Arctic and the Antarctic) could reduce their ecological footprint?



Resources

ICT facilities, Resource 5

ACTIVITY - Travelling to Antarctica - Good or Bad?

The ecological footprint per person per day of the expedition was 0.078 global hectares. The ecological footprint for the average UK resident per day is 0.015. The sustainable 'earthshare' per person is 0.005 global hectares per person per day. This suggests that we are living beyond the earth's limits. Study Resource 6 which shows different views on travelling to Antarctica. Arrange the views in a continuum or line with 'views I strongly agree with' at one end to 'views I strongly disagree with' at the other.

Questions

Pick the view that you most strongly agree with and the view that you most strongly disagree with. Write a paragraph to explain why you feel most strongly about each view.

Use resource 7 as a template. What could *you* do to reduce your own ecological footprint, what could you do to encourage others in *your family* to reduce their footprint, what could you do to encourage *other people in the UK* to reduce their footprint and what could you do to encourage others *around the world* to reduce their footprint?

Resources

Resource 6 & 7

With thanks to

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