Have you ever stopped to think about the impact that your lifestyle has on the environment around you? The impact that humans have on the environment is an issue that is currently receiving a great deal of attention, and is something that should be a concern for all of us. In order to live we must consume the natural resources around us, but we must be careful not to use resources faster than the world can renew them. With our current lifestyle we must ask ourselves, are we taking too much? During this webquest you will investigate what the term 'ecological footprint' means, and will examine the impact that your life has on the environment. You will also examine the impact that fellow Canadians have on the earth, as compared to other countries around the world. You will then learn several strategies that you and your friends and family can use to reduce your footprint on the earth.

Tasks
You have been asked by the mayor of your town to research the current impact that the average citizen has on the environment around them, and to come up with a plan that will make your home and neighbourhood more eco-friendly that you will present at a town meeting. You and your group of fellow environmental researchers must find out what an environmental footprint is, and why it is important to understand. You must also examine the current footprint that the human population has on the earth, and compare it to your own footprint. Through this research you will examine the various daily activities that we do that has a large impact on the environment, and find alternative ways for us to live that will reduce that impact. Each group member must calculate their own environmental footprint, and research various questions regarding the current environmental footprint that we have on the planet and then report back to the group. Together you must create a plan, from the knowledge that you have gained through your research, that presents various strategies and tips in which we can all reduce our footprint on the earth. Good Luck!

Process
You need to do some research before you can attempt to make your city green! Part 1: You will need to find some basic background information first. You must each research what the term "ecological footprint" means and why it is important. Use the links below to answer the following questions: What is an ecological footprint? What is the purpose of measuring an ecological footprint? What unit of measurement is the ecological footprint measured in? What do the terms 'biocapacity' and 'sustainability' mean? http://www.footprintnetwork.org/gfn_sub.php?content=faq&gen1 http://www.footprintnetwork.org/gfn_sub.php?content=footprint_overview http://www.progress.org/ecological_footprint/footprint_FAQs.htm http://www.sustainablescale.org/ConceptualFramework/UnderstandingScale/MeasuringScale/EcologicalFootprint.aspx Part 2: Next, are you up to the challenge? You must calculate your own ecological footprint using the online test link provided below. Be sure to pay attention to the types of questions you are asked during the test to answer the questions below. Stop at the final results page so that you can record your test results on the attached sheet. Take The Ecological Footprint Test: http://www.myfootprint.org/ How many planets would we need to survive if everyone in the world lived like you do? Was your footprint higher or lower than Canada's average footprint? Explain why you think it was higher or lower using specific examples. Compare your ecological footprint results to the footprints of the other members of your group? Do you notice any differences? Any similarities? Part 3: Now that you have examined your ecological footprint, you will examine the footprint of different countries around the world. Below are links to two maps of the world. The first map is an accurate physical representation of the planet. The second map has been created by the Global Footprint Network as a representation of the global ecological footprint that countries around the world have. The countries have been stretched to represent their consumption of resources and productions of waste. Analyze and compare both maps, and examine the tables on the attached Global Comparisons sheet to answer the questions below. Physical World Map: (change the zoom to 30%) http://www.lib.utexas.edu/maps/world_maps/world_physical_2007.pdf Ecological Footprint World Map http://phbbs.org/natural/footprint/img/cartogram.gif What were your reactions to the map comparisons? Explain what you noticed. How do you think population density, electricity use, and oil consumption impact the size of a person's ecological footprint? Why do you think countries such as Vietnam or Ethiopia have such a smaller footprint compared to countries such as The United States or Canada? Is it unfair that some countries use larger amounts of the earth's resources and others do not? Validate your answer. Part 4: The last step of your challenge is to use what you have learned about human's ecological footprints and design a plan of action that will reduce our impact on the natural world. Read through the following links and develop a realistic plan of ideas and tips that will help people in your family, community, and worldwide to decrease their ecological footprint.
footprint.http://www.wisegeek.com/how-can-i-reduce-my-ecological-footprint.htmlhttp://www.theage.com.au/articles/2004/07/13/1089694361601.htmlhttp://www.lightfootcycles.com/footprint.htmlhttp://www.bayside.vic.gov.au/Documents/reducing_your_ecological_footprint_march_2003.pdfhttp://genoa.ecovillage.org/genoceania/newsletter/archive/articles/pages/eco_footprint.htmlhttp://www.calgary.ca/docgallery/bu/environmental_management/ecological_footprint/footprint_a_calgary_approach.pdfIn your plan be sure to include changes that can be made in the following categories: transportation, food, housing, water, and waste.&nbsp;Develop some ideas for individuals, businesses, communities, and countries on a more global scale. Once you and your team have developed a written plan, prepare a 5-10 minute presentation that could be presented at a town meeting. Be sure to present what you have learned so far about the average Canadian's ecological footprint and create a strong argument about why it is important for us to put your plan for change into action!

### Evaluation

<table>
<thead>
<tr>
<th>Category and Score</th>
<th>Beginning 1</th>
<th>Developing 2</th>
<th>Very Good 3</th>
<th>Exemplary 4</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Questions</td>
<td>Questions are not complete, with few answers supported by the websites, little demonstration of higher level thinking skills</td>
<td>All questions are complete, with answers somewhat supported by the websites, some demonstration of higher level thinking skills</td>
<td>All questions are complete, with answers that are supported by the websites, good demonstration of higher level thinking skills</td>
<td>All questions are complete, with answers that are fully supported by the websites, excellent and thorough demonstration of higher level thinking skills</td>
<td>%35</td>
</tr>
<tr>
<td>Ecological Footprint Reduction Plan</td>
<td>Plan does not demonstrate use of background knowledge, with only a few strategies given in one or two categories</td>
<td>Plan demonstrates some use of background knowledge, with strategies present in most categories</td>
<td>Plan demonstrates use of background knowledge, with a variety of strategies present in all categories</td>
<td>Plan demonstrates thorough use of background knowledge, with creative, realistic and varied strategies present in all categories</td>
<td>%40</td>
</tr>
<tr>
<td>Presentation of Ecological Footprint Reduction Plan</td>
<td>Presentation does not engage the audience or present enough relevant information, and there is no argument of importance</td>
<td>Presentation is somewhat engaging and informative for the audience, and presents an argument towards the importance of putting your plan into action</td>
<td>Presentation is engaging and informative for the audience, and presents a good argument towards the importance of putting your plan into action</td>
<td>Presentation is very engaging and informative for the audience, and presents a strong argument towards the importance of putting your plan into action</td>
<td>%25</td>
</tr>
</tbody>
</table>

Total Score %100

### Conclusion

Congratulations! You have become an expert on the many ways that human activities impact the environment and create an ecological footprint.&nbsp;You have been able to develop a realistic plan for us to take steps towards reducing our harmful environmental impact, and become more aware and considerate citizens of the earth.&nbsp;But your job is not done yet! Now that you are aware of the many ways that we can reduce our ecological footprint you must spread the word. Try implementing some of&nbsp;the strategies into your own daily routine, and talk to friends and family about different ways that they can make a difference too. Getting this information out there to others is the best way to promote change, so go on and&nbsp;spread the news, and remember.....tread lightly!&nbsp;Interested in&nbsp;learning more about&nbsp;ecological footprints....check out these sites:http://www.iisd.ca/consume/mwfoot.htmlhttp://www.sustain.ubc.ca/eco-survey/http://www.stanleyparkecology.ca/programs/activities/howbigft.phphttp://www.gpiatlantic.org/clippings/footprintclips.htm

### Teacher Page

Focus: The focus of this webquest is to introduce students to the concept of an ecological footprint. It focuses on the impact that humans have on the environment around them and the changes that can be made to reduce that harmful impact. Objectives/Goals: I would recommend using this webquest at any point during a science ecology unit. It would work particularly well at the end of the unit, with the final project being to create a plan to reduce their ecological footprint and present it to the class. Students will develop their ability to: Analyze the roles of organisms as part of interconnected food webs, populations, communities, and ecosystems, Assess the requirements for sustaining healthy local ecosystems, Evaluate human impact on local ecosystems, and creatively develop problem solving skills and plan a set of procedures. Resources: Students must have a moderate level of comfort using computers. One lesson would be required to complete the research questions, another lesson is required to develop a plan, and a third lesson is needed to present the plan. Each student should have access to a computer, or they can share with group members if necessary. Credits: The resources and web links included on this webquest are external websites, and it is greatly appreciated that we can use and learn from them during this quest.

### Standards