

**Critical Issues - Lesson Plan**

**“Footprints From Around the World”**

<b>Unit:</b> Resources and Wealth	<b>Specific Topic:</b> Environmental Sustainability
<b>URL (**Note - Lesson Plan Procedure Found Here):</b> <a href="http://www.chf-partners.ca/global-education-program/education/lessons-7-10/ecological-footprints-from-around-the-world.html">http://www.chf-partners.ca/global-education-program/education/lessons-7-10/ecological-footprints-from-around-the-world.html</a>	
<b>Lesson Description:</b> In this lesson, students will discover their own ecological footprint and will be able to compare it to that of people in various developing countries. They will also explore how their actions can impact the earth.	
<b>Curriculum Outcomes:</b> <u>Grade 8</u> Outcome - RW8.3: Critique the approaches of Canada and Canadians to environmental stewardship and sustainability. (a, b, c)	
<b>Additional Cross-Curricular Connections: Science</b>	
<b>Assessment:</b> - Rubric (see pg. 8 of this document)	<b>Materials:</b> - Computer access for each student - Student Handout (BLM5.1) information on Ecological Footprints from around the world - (see pg. 4 of this document) - Student Worksheet (BLM5.2) for students to calculate their own Ecological Footprints - (see pg. 6 of this document) - Note: French BLMs/Student sheets can be accessed

## Procedure:

In this activity, students determine their ecological footprint using an online Ecological Footprint Calculator. They also explore how their actions impact the earth through class discussion and independent work. Students compare the lives of Canadians with the lives of people in developing countries, and analyze how lifestyles and resources in different countries affect the size of each person's ecological footprint.

1. Distribute the handout on Ecological Footprints from Around the World (BLM 5.1) to each student. As a class, discuss the concept of an Ecological Footprint using the handout as a guide, and determine students' knowledge about this concept.
2. Students then complete the worksheet (BLM 5.2) individually. Each student will need to use a computer and the internet to determine their ecological footprint. This should take approximately 10 minutes per student. Students then answer the questions on the worksheet. (See sample answers below).
3. The teacher concludes the class with a reflection period on what was learned during the lesson through a brief class discussion. Students can have the opportunity to share and compare their Ecological Footprints and answers to BLM 5.2 with others in the class either in pairs or as a larger group.

## Sample Answers for BLM 5.2 - Calculating Your Ecological Footprint:

- How does your footprint compare to the average Canadian?
  - Answers will vary based on students' ecological footprint calculation
  - The average Canadian ecological footprint is 83.03 global hectares per person.
- List three things you do currently that help to minimize your footprint.
  - Answer will vary - walking to school; eat few animal products (meat, cheese, eggs); eat locally grown food; eat unprocessed food; don't travel on airplanes; use energy efficient products in the home such as energy efficient light bulbs; turn off lights, computers and electronics when not in the room; minimize wasting water (e.g., turn off the tap when brushing teeth, have short showers).
- List three things you do that increase your ecological footprint.
  - Answers will vary - drive instead of walk to school; leave computers and electronics turned on when not in use; eat meat products with every or most meals; eat processed foods or food that are not locally grown (e.g. fruit from Chile rather than Canada).
- What are three things that you could do differently now to reduce the size of your ecological footprint?
  - Answers will vary - walk or take public transit more instead of driving; eat more locally produced food; eat fewer animal products (e.g., meat, eggs, cheese); use energy saving products such as energy efficient light bulbs.
- How does the size of your footprint compare to the average person living in Ghana?
  - The students' ecological footprints will be larger than the average person living in Ghana.
  - The exact difference (in hectares) can be calculated by each student by taking his/her ecological footprint size and subtracting the average Ghanaian ecological footprint of 3.23 global hectares per person.
- How many Ethiopians would use the same amount of resources as found in your individual Ecological Footprint?
  - To find the answer, divide your ecological footprint by the average Ethiopian footprint size (1.56 global hectares per person).
  - For example, the average Canadian ecological footprint of 83.03 divided by 1.56 equals 53.2. Therefore, 53 people living in Ethiopia on an average lifestyle for that country would use the same amount of resources as one Canadian living an average Canadian lifestyle.
- What are some of the factors that may contribute to Canadians having larger Ecological Footprints than people in developing countries, such as Ghana or Vietnam? Explain how those factors would affect the size

**Extension Resource:** For further information on Global Citizenship Education (GCE) and additional resources, see [SCIC's Global Citizenship Education Modules](#).

## **BLM 5.1 - Ecological Footprints From Around the World**

### **Ecological Footprints From Around the World – Where Do You Fit In?**

#### **How Much Land Do You Need to Live?**

If you had to get everything you use from your own land – how much land area would you need? This land would have to provide you with all of your food, water, energy and everything else that you use. The amount of land you would need to support your lifestyle is called your **Ecological Footprint**. The ecological footprint is a way of measuring the impact a person has on the environment.

#### **Is the World Big Enough for All of Our BIG Feet?**

The size of a person's footprint will depend on many factors. Do you grow your own food? Do you walk or drive to places? Do you use renewable or non-renewable energy sources? All of these factors affect your ecological footprint. Everyone has an ecological footprint. We all need to use the earth's resources to survive. But how much is too much? We must make sure we don't take more resources than the earth can provide.

Different people in the same country will have different sized ecological footprints. You can compare your ecological footprint with someone else in your class after completing the activity.

Different countries have different average sized ecological footprints. For example, a person with the average Canadian lifestyle has an ecological footprint of 83.03 hectares. A person living in Ethiopia, Africa, living an average lifestyle in that country has an ecological footprint of 1.56 hectares. Examine Table 1 below to see Ecological Footprints for the average person from many different countries of the world. What patterns do you see?

**Table 1: Ecological Footprints of People from Around the World**

<i>Country</i>	<i>Ecological Footprint (hectares per person)</i>
United States	108.95

Canada	83.03
France	65.82
United Kingdom	62.56
El Salvador	7.57
Ghana	3.23
Zimbabwe	9.03
Vietnam	4.12
Ethiopia	1.56

Source: *Ecological Footprint of Nations, 2005.*

Table 2 compares some country information for Canada, Ghana, Vietnam and Ethiopia. How would factors such as population density, electricity consumption, and percentage of the population living below the poverty line affect the size of a person's ecological footprint?

**Table 2: Country Comparison Statistics**

	<i>Canada</i>	<i>Ghana</i>	<i>Vietnam</i>	<i>Ethiopia</i>
Country Size (km <sup>2</sup> )	9,985,000	239,000	330,000	1,127,000
Population (million)	33.5	23.8	86.9	85.2
Population Density (people/km <sup>2</sup> )	3.4	99.5	263.9	75.6
% Population Living Below \$1/day (%)*	-	44.8%	-	23.0%
Electricity Consumption (billion kilowatt-hours)	530.0	6.8	48.1	2.9
Oil Consumption (barrels/day)	2,371,000	49,300	271,100	30,450
Roads (km)	1,042,300	62,221	222,179	30,450
GDP per capita	\$39,300	\$1,500	\$2,800	\$800

Source: *The World Factbook, 2009.* [www.cia.gov](http://www.cia.gov) for all figures except those marked \*  
Source for data marked \*: *United Nations Development Report, 2008.* <http://hdr.undp.org/statistics/data/>

## BLM 5.2 - Ecological Footprints From Around the World

### Calculating Your Ecological Footprint

One method of calculating your ecological footprint is the Ecological Footprint Calculator hosted by Mountain Equipment Co-op. This calculator has 13 simple questions that are used to calculate your ecological footprint.

Go to [www.mec.ca](http://www.mec.ca). Click on **Sustainability** and select **Greening Our Operations** from the list on the left and then select **Ecological Footprint** from the list on the left again.

Complete the online survey for the ecological footprint calculations and then answer the questions below.

How does your footprint compare to the average Canadian?

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List three things you do currently that help to minimize your footprint.

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List three things you do that increase your ecological footprint.

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What are three things that you could do differently now to reduce the size of your ecological footprint?

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How does the size of your footprint compare to the average person living in Ghana?

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How many Ethiopians would use the same amount of resources as found in your Ecological Footprint?

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What are some of the factors that may contribute to Canadians having larger Ecological Footprints than people in developing countries, such as Ghana or Vietnam? Explain how those factors would affect the size of the ecological footprint.

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**Assessment**

Students’ contributions to the class and small group discussions can be observed and recorded anecdotally by the teacher. A rubric is provided on the next page that can be used for assessment/evaluation purposes for the responses to the Ecological Footprints from around the World Questions (BLM 5.1), using either written responses or through oral discussion.

**Ecological Footprints From Around the World**

Student’s Name: \_\_\_\_\_

Evaluator: Teacher: \_\_\_\_ Peer: \_\_\_\_ Self: \_\_\_\_

Criteria	Level 1	Level 2	Level 3	Level 4
<b>Knowledge/ Understanding</b>	Answers show limited knowledge and understanding of the facts and concepts.	Answers show some knowledge and understanding of the facts and concepts.	Answers show considerable knowledge and understanding of the facts and concepts.	Answers show thorough knowledge and understanding of the facts and concepts.
<b>Thinking</b>	Analysis and problem-solving skills are applied with limited effectiveness.	Analysis and problem-solving skills are applied with some effectiveness.	Analysis and problem-solving skills are applied with considerable effectiveness.	Analysis and problem-solving skills are applied with a high degree of effectiveness.

<b>Communication</b>	Information is communicated with limited effectiveness.	Information is communicated with some effectiveness.	Information is communicated with considerable effectiveness.	Information is communicated with a high degree of effectiveness.
<b>Application</b>	Conclusions and connections are made with limited effectiveness.	Conclusions and connections made with moderate effectiveness.	Conclusions and connections made with considerable effectiveness.	Conclusions and connections made with a high degree of effectiveness.

### Country Information

For further information on **Vietnam**, please see the following resources:

- World Atlas Website [www.worldatlas.com](http://www.worldatlas.com) - click on Asia and then Vietnam
- CIA Vietnam Profile [www.cia.gov](http://www.cia.gov) - click on World Factbook and then choose Vietnam
- CIDA Vietnam Profile [www.acdi-cida.gc.ca/vietnam-e](http://www.acdi-cida.gc.ca/vietnam-e)
- Vietnam Government Website [www.chinhphu.vn](http://www.chinhphu.vn)
- CHF Vietnam Project Description [www.chf-partners.ca](http://www.chf-partners.ca) - click on Our Projects, Asia, Vietnam

For further information on **Ghana**, please see the following resources:

- World Atlas Website [www.worldatlas.com](http://www.worldatlas.com) - click on Africa and then Ghana
- CIA Ghana Profile [www.cia.gov](http://www.cia.gov) - click on World Factbook and then choose Ghana from the dropdown menu
- CIDA Ghana Profile - [www.acdi-cida.gc.ca/ghana-e](http://www.acdi-cida.gc.ca/ghana-e)
- Ghana Government Website [www.ghana.gov.gh/](http://www.ghana.gov.gh/)
- CHF Ghana Project Description [www.chf-partners.ca](http://www.chf-partners.ca) - click on Our Projects, Africa, Ghana

For further information on **Zimbabwe**, please see the following resources:

- World Atlas Website [www.worldatlas.com](http://www.worldatlas.com) - click on Africa and then Zimbabwe
- CIA Zimbabwe Profile [www.cia.gov](http://www.cia.gov) - click on World Factbook and then choose Zimbabwe from the dropdown menu
- CIDA Zimbabwe Profile [www.acdi-cida.gc.ca/zimbabwe-e](http://www.acdi-cida.gc.ca/zimbabwe-e)
- Zimbabwe Government Website [www.gta.gov.zw/](http://www.gta.gov.zw/)
- CHF Zimbabwe Project Description [www.chf-partners.ca](http://www.chf-partners.ca) - click on Our Projects, Africa, Zimbabwe

For further information on countries in the **Caribbean**, please see the following resources:

- World Atlas Website [www.worldatlas.com](http://www.worldatlas.com) - click on Caribbean
- CIA Profiles of various countries within the Caribbean [www.cia.gov](http://www.cia.gov) - click on World Factbook and then choose a country from the dropdown menu

- CIDA Profiles of various countries within the Caribbean (select country name from map) [www.acdi-cida.gc.ca/Americas](http://www.acdi-cida.gc.ca/Americas)
- CHF Guyana Project Description [www.chf-partners.ca](http://www.chf-partners.ca) - click on Our Projects, Americas, Guyana

For further information on **Ethiopia**, please see the following resources:

- World Atlas Website [www.worldatlas.com](http://www.worldatlas.com) - click on Africa and then Ethiopia
- CIA Ethiopia Profile - [www.cia.gov](http://www.cia.gov) - click on World Factbook and then choose Ethiopia from the dropdown menu
- CIDA Ethiopia Profile [www.acdi-cida.gc.ca/ethiopia](http://www.acdi-cida.gc.ca/ethiopia)
- Ethiopia Government Website [www.mfa.gov.et/](http://www.mfa.gov.et/)
- CHF Ethiopia Project Description [www.chf-partners.ca](http://www.chf-partners.ca) - click on Our Projects, Africa, Ethiopia

For further information on **Kenya**, please see the following resources:

- World Atlas Website [www.worldatlas.com](http://www.worldatlas.com) - click on Africa and then Kenya
- CIA Kenya Profile [www.cia.gov](http://www.cia.gov) - click on World Factbook and then choose Kenya from the dropdown menu
- CIDA Kenya Profile [www.acdi-cida.gc.ca/kenya-e](http://www.acdi-cida.gc.ca/kenya-e)
- Kenya Government Website [www.kenya.go.ke/](http://www.kenya.go.ke/)
- CHF Kenya Project Description [www.chf-partners.ca](http://www.chf-partners.ca) - click on Our Projects, Africa, Kenya

## Glossary

**Canadian International Development Agency (CIDA):** The federal agency charged with planning and implementing most of Canada's development cooperation program in order to reduce poverty and to contribute to a more secure, equitable and prosperous world.

**Deforestation:** The loss of forests due to over-cutting of trees.

**Developed Country:** A basic classification of countries with a high level of per capital income, industrialization and modernization. Such countries usually have lower levels of population growth.

**Developing Country:** A basic classification of low-and middle-income countries in which most people have a lower standard of living with access to fewer goods and services than do most people in developed countries.

**Ecological Footprint:** A measure of how much land and water is needed to produce the resources we consume and to dispose of the waste we produce.

**Environmental Degradation:** The decline of environmental conditions to a lower condition, quality or level.

**Fair Trade:** A trading method committed to social justice in which employees and farmers are treated and paid fairly, sustainable environmental practices are followed and long-term trade relationships are fostered.

**Food Security:** A state where all people, at all times, have enough food to eat and the food meets their overall nutritional requirements.

**Gender:** Culturally defined roles and responsibilities for females and males that are learned, may change over time, and vary among societies.

**Global Citizenship:** Awareness of the world as a global community and recognizing the rights and responsibilities of citizens to take action with a global consciousness.

**Globalization:** The idea, popularized in the 1960s, that the entire world and its inhabitants are becoming one large community with interconnected needs and services.

**Gross Domestic Product (GDP):** The value of all goods and services produced within a nation in a given year.

**Human Development Index:** An annual ranking of countries in which the health, education and wealth of each nation's citizens is examined. Life expectancy, educational achievement and standard of living are measured.

**International Development:** Efforts to assist nations, and their citizens and institutions, to develop a higher quality of living. This is often done through social or economic programs.

**Millennium Development Goals:** The eight goals that all 191 United Nations member states have agreed to try to achieve by the year 2015.

**Non-Governmental Organization (NGO):** An organization that is not part of the local, state or federal government.

**North American Free Trade Agreement (NAFTA):** An agreement implemented in 1994 committing Canada, the US and Mexico to the elimination of all tariffs, quotas and other trade barriers between them before 2009.

**Poverty:** The state of being without, often associated with need, hardship and lack of resources across a wide range of circumstances.

**Subsistence Agriculture:** A type of farming in which livestock is raised and crops are cultivated for local food and energy requirements rather than for sale.

**Sustainable Development:** Development that meets the needs of the present generation without compromising the ability of future generations to meet their needs.

**Sustainable Livelihood:** The capabilities, assets (including both material and social resources) and activities required for a means of living that can be maintained into the future, recover from shocks and does not compromise natural resources.

**United Nations:** An international organization formed in 1945 to promote peace and economic development

## Resources

### Reference Books:

- Hammond World Atlas 3e, by Hammond, 1999
- Worldmark Chronologies, Vol. 1: Chronology of Africa, by Karen Christensen, 1997

### Web Sites

- CHF: [www.chf-partners.ca](http://www.chf-partners.ca)
- Gifts That Matter campaign: [www.giftsthatmatter.ca](http://www.giftsthatmatter.ca)
- Canadian International Development Agency (See Teacher Zone): [www.acdi-cida.gc.ca](http://www.acdi-cida.gc.ca)
- Earth Day Network (Quiz): [www.earthday.net/footprint/index.html](http://www.earthday.net/footprint/index.html)
- Footprint of Nations: [www.ecologicalfootprint.org](http://www.ecologicalfootprint.org)
- Global Footprint Network: [www.ecofoot.net](http://www.ecofoot.net)
- Transfair Canada Website: [www.transfair.ca](http://www.transfair.ca)
- Make Poverty History Website: [www.makepovertyhistory.ca/](http://www.makepovertyhistory.ca/)
- World Bank Poverty Net: [www.worldbank.org](http://www.worldbank.org) - click on “Topics” and then “Poverty”
- National Anti-Poverty Organization: [www.napo-onap.ca/](http://www.napo-onap.ca/)
- The Assembly of First Nations Website: Making Poverty History Article - [www.afn.ca/article.asp?id=2903](http://www.afn.ca/article.asp?id=2903)
- United Nations Development Programme: Poverty Reduction - [www.undp.org/poverty/](http://www.undp.org/poverty/)
- United Nations Development Report Website: <http://hdr.undp.org>

- Food and Agriculture Organization of the United Nations (Forestry Information): [www.fao.org/forestry/en/](http://www.fao.org/forestry/en/)
- Campaign 2000 Website: [www.campaign2000.ca/rc/](http://www.campaign2000.ca/rc/)
- UN Millennium Development Goals: [www.un.org/millenniumgoals/](http://www.un.org/millenniumgoals/)
- UN Millennium Project: [www.unmillenniumproject.org/](http://www.unmillenniumproject.org/)
- Millennium Campaign Website: <http://endpoverty2015.org/>
- World Bank Student/Teacher Website: <http://youthink.worldbank.org/>
- Global Education Network: [www.global-ed.org](http://www.global-ed.org)
- Water Resources Commission of Ghana: [www.wrc-gh.org](http://www.wrc-gh.org)
- Updated Currency Conversion: [www.oanda.com/convert/classic](http://www.oanda.com/convert/classic)

### Summary & Next Steps

The first step in reducing poverty and injustice in developing countries is to **look deeper** and understand the realities faced and the connections between people around the world. This is an important step in creating empathy for the rural poor in the next generation of leaders – today’s students!

This guide was developed to help children understand rural communities in developing countries and some of the forces that perpetuate their cycles of poverty. More importantly, this guide is to give students hope that change is possible. Everyone can contribute to empowering communities to have the resources to be self-sufficient and break their cycle of poverty. (Please see the Head, Heart and Hand Approach on page 4 which highlights the importance of action.)

The second step is to move informed students to action. Students will see how their actions will lead to healthier children, families and communities. Their support will enable families to earn better incomes so they can afford school fees for their children as well as meet other needs. Families will feel empowered and will have more hope for their future.

Your students can help CHF improve the lives of people in rural communities in developing countries by engaging in one of CHF’s activities or fundraising events. CHF has many successful stories of schools that are supporting our projects in various developing countries. Visit our web site at [www.chf-partners.ca](http://www.chf-partners.ca) and click on **Teachers** for the latest school success story.

**CHF encourages your school to get involved!**

Sign up for our Gifts That Matter campaign today! (See page 5 for further information on this campaign).

**For more information please contact:**

Global Education Coordinator  
CHF  
323 Chapel Street  
Ottawa, Ontario K1N 7Z2  
[gloaled@chf-partners.ca](mailto:gloaled@chf-partners.ca)  
Phone: (613) 237-0180 ext. 229 or 1-866-242-4243

