



## ECOLOGICAL FOOTPRINT, SEVEN (7) COUNTRY BLOCK DIAGRAM

**Suggested time: 30 minutes**

**What's important in this lesson:**

This lesson helps you to create a block diagram that will help you compare the ecological footprints of seven (7) countries, one of which is Canada. You will be able to clearly tell which of the countries are “**have**” countries and which of the countries are “**have not**” countries by the size of their ecological footprints.

**Complete these steps:**

1. Fill in the “**have/have not**” section of the table. (Hint: those countries with larger ecological footprints are “have” countries and can afford to purchase luxuries. Those countries with small ecological footprints are “have not” countries and they do not have the resources to purchase all of the resources that they need, including the necessities of life.)
2. Calculate the number of boxes that you will need to colour in for each of the countries by multiplying the size of the ecological footprint by 9 boxes (each hectare = 9 boxes on the graph paper).
3. Draw the ecological footprints of all seven countries. Try to make each of the block diagrams look like a foot. **DO NOT** use partial boxes, except for the decimal place in the size. Colour each country a different colour, and label each with the name of the country and the size of the ecological footprint (not the number of boxes).
4. Don't forget to include all of the graph conventions.

**Hand-in the following to your teacher:**

1. The completed block diagram.

**Questions for the teacher:**



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### **EARTH PULSE** **WE LEAVE MORE THAN FOOTPRINTS –** **TRACKING THE GLOBAL IMPACT OF THE HAVES AND HAVE-NOTS** (National Geographic – July 2001)

The human race hurtled past another milestone in 1999, when world population exceeded the six-billion mark, doubling in less than 40 years. Earth's population is growing at an annual rate of 1.2 percent – 77 million new mouths to feed each year. Large numbers of women are now reaching childbearing age. By 2050, the United Nations estimates that the global population will number between **7.0 billion and 10.0 billion**.

Of the 6.5 billion people sharing the planet now, one-fifth (1/5) live in relatively rich regions, including Europe, Japan, North America, and Australia (developed countries). How much of the Earth do they use and pollute compared with developing countries? With less than 2.0 hectares of productive land and water available, per person, worldwide, we are exceeding Earth's capacity.

#### **DEFINITION: Ecological Footprint**

Representing the productive area of the Earth required to support the lifestyle of **one individual** in a given population, the footprint estimates land used for crops, grazing, forest products, housing, and ocean area exploited for food. It also includes forests needed to absorb carbon dioxide from fossil fuel use. A footprint in industrialized countries is, on average, four times as big as in developing countries. Humankind now uses one-third more resources than nature can replenish.

#### **YOUR ASSIGNMENT**

A comparison of the ecological footprints of the seven different nations shows how per-capita (per person) consumption in the US, Germany, and Canada overshadows that of Brazil, Indonesia, Nigeria and India. In fact, the footprint of a person in the US is more than ten times as big as that of a person in India.

Your assignment is to create a block diagram that compares the size of the ecological footprint for each of the countries in the following table. Before creating the block diagram, you need to determine whether or not each of the countries is a **“have”** or **“have not”** country (hint: developed countries with large ecological footprints are “have” countries, developing countries with small ecological footprints are “have not” countries), and write that in the table.

## Student Handout: Unit 3 Lesson 2



Next, you need to calculate how big each of the footprints will be. Using the scale of nine (9) graph boxes = 1 hectare, calculate how many boxes each of the countries in the block diagram is going to be (you will need a calculator for this function). Write that information in the table.

Now, create a block diagram of the Ecological Footprint of each of the countries listed below on graph paper. Remember to try and make each country the shape of a foot. Use a ruler. DO NOT use partial boxes except for the decimal places.

COUNTRY	HAVE/ HAVE NOT COUNTRY	SIZE OF ECOLOGICAL FOOTPRINT (in hectares)	CONVERSION (each ha = 9 boxes)	TOTAL # BOXES
<b>BRAZIL</b>	Have not	2.6 ha	X 9 =	23.4
<b>CANADA</b>		7.8 ha	X 9 =	
<b>GERMANY</b>		6.3 ha	X 9 =	
<b>INDIA</b>		1.1 ha	X 9 =	
<b>INDONESIA</b>		1.5 ha	X 9 =	
<b>NIGERIA</b>		1.3 ha	X 9 =	
<b>USA</b>		12.2 ha	X 9 =	

Create a footprint shape when creating the block diagram. Each country should be a different colour. Name each country that the block diagram represents, and write the size of the footprint in hectares (**NOT** in the number of blocks), and remember, don't use partial boxes except for the decimal places.



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1. Can “have” countries continue to use the world’s resources at the speed that they are now?    Yes     No

2. Why or why not? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Is it fair that “have” countries use so much more of the world’s resources compared to “have not” countries?    Yes     No

4. Why or why not? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_