

Analyzing Ecological Footprints

Your individual ecological footprint is an estimate of the total area of land or sea required to produce the food, materials, and energy necessary to maintain your level of resource consumption. Ecological footprints can be determined for and compared among entire areas or countries. How large a footprint do you leave on Earth's resources? In this activity, you will compare the ecological footprints of people living in other countries and research the differences in lifestyle of two countries—one with a large footprint, one with a small footprint—to discover the important factors in calculating an ecological footprint. You will also learn how the ecological footprint of the average U.S. citizen compares with that of people worldwide, and you will consider what you might do to reduce the size of your ecological footprint.

OBJECTIVES

Graph the average ecological footprints of several countries.

Select two countries with different sized footprints and research the lifestyles of the citizens of the countries you selected.

Evaluate what aspects of lifestyle are most important in calculating an ecological footprint.

Decide whether any lifestyle changes should or could be made to alter the value of the ecological footprint of the average person in the United States.

MATERIALS

- colored markers or pencils
- graphing paper
- pen or pencil
- reference books

Procedure

1. Examine the table of the ecological footprints of different countries. Order the countries from the largest footprint to the smallest. On a separate sheet of paper, graph the value for each country in a different color, ranging from largest to smallest in order.
2. Select two countries from the table with widely different ecological foot prints. Record the names of the countries you selected.

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Analyzing Ecological Footprints *continued*

- Using the Internet, if available, and reference books from the library, research the lifestyles of the average citizens in the two countries you chose. Include information about diet, housing, transportation, types of energy used, average yearly income, cost of living, and, if possible, level of recycling and composting of waste. Also look up the area of the country (in acres) and the total population.

ECOLOGICAL FOOTPRINT BY COUNTRY

Country	Ecological Footprint (acres)	Country	Ecological Footprint (acres)
Australia	19	Mexico	7
Brazil	6	Nigeria	3.7
Canada	19	Pakistan	2
China	4	Peru	3
Ethiopia	2	Philippines	3.3
France	13	Russia	11
Germany	13	United Kingdom	13
India	2	United States	24
Japan	11	World Average	5.8

- On a separate piece of paper, create a table comparing the lifestyle information you found for the countries you selected. Include another column for your own lifestyle information.

Analysis

- Examining Data** What differences did you find in the typical lifestyles in the two countries you chose to research?

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Analyzing Ecological Footprints *continued*

- Analyzing Data** What differences in the typical lifestyles in the two countries you selected seem to have the most impact on the size of their ecological footprints?

- Analyzing Results** Determine the actual number of acres per person in the countries you selected by dividing the total area of the country (in acres) by the total population. How does this number compare with the ecological footprint of the countries you selected?

- Identifying Patterns** Look at the column in your table with the information about your lifestyle. How does your lifestyle compare with those of the people in the countries you selected to research?

Conclusions

- Analyzing Graphs** Examine the graph of the ecological footprints by country. Which nation has the largest ecological footprint? Which nation has the smallest?

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Analyzing Ecological Footprints *continued*

6. **Drawing Conclusions** Examine the graph again. Can you make any conclusions about how the differences between the standard of living and population density in developing and developed countries affects the ecological footprint value?

7. **Drawing Conclusions** Do you think your ecological footprint is smaller or larger than the 24 acres that is average for the United States? Explain.

8. **Applying Conclusions** How could you reduce the value of your personal ecological footprint? Name at least three ways you could accomplish this through lifestyle changes.

Extension

1. **Research and Communications** Imagine how different your life would be if you lived in a developing country. Write a story about a typical day in your life, including information about your lifestyle and your impact on the environment.