Reading Our World

The Geography-Literacy Task Force of the National Council for Geographic Education
Introduction by Elizabeth R. Hinde, Arizona State University
Lesson Plan by Dennis Rees, Arizona Geographic Alliance

Introduction

In past issues, this column has featured lesson plans based on quality children's books. While designing geographic lesson plans that feature a good book (and meet state and national standards) is vital in today’s crowded elementary curriculum, of equal importance is teaching children to be able to read and comprehend nonfiction, functional material as well. In keeping with the demographic theme, this installation of “Reading Our World” features a lesson plan complete with readings and activities concerning population pyramids.

The purpose of NCGE’s literacy task force is to help teachers make connections between geography and reading and writing. Although identifying geographic themes in quality children’s books is a useful and effective way to teach geography, it is important that students learn how to read material that helps them enhance their reading and writing of everyday materials that do not feature characters or a story line. That is, functional literacy. The lesson featured in this column, written by a sixth grade teacher from Arizona, focuses on population pyramids that can be found in the International Data Base of the www.census.gov. Through this lesson plan, students are given the opportunity to read informational text and draw conclusions about a country’s demographics and future implications for the country based on census information. Although this lesson focuses on countries, teachers can adapt it to focus on U.S. states or regions of the world as well.

“A Country’s Shape Is More Than Its Borders” Lesson Plan

According to the lesson’s author, Dennis Rees, demographics is the study of population characteristics. A population pyramid graphically displays the demographics of a country or region based on age and gender. Understanding how to read and interpret a population pyramid will give students the opportunity to examine a country’s past, present, and implications for the future. When taught how to read the graph, students will be able to determine the number of males and females in various age groups and extrapolate information concerning the future.

The following lesson plan includes a reading (written at approximately a fourth grade level) that explains population pyramids and how to read them. It also includes questions and a writing prompt that requires students to interpret a pyramid and predict future needs.

Lesson Plan Implications

Although censuses have been conducted throughout history and all over the world, the U.S. Census was the first one that was created for the purpose of empowering the people. The census gives the government the information it needs to make informed decisions concerning how to expend the vast resources of the country, prepare for future growth and stasis, and determine the impact demographic trends will have on the country's stability. Therefore, it is essential that students come to understand the importance of the census as well as its purpose. Census years are unique times in schools because civics and geography go hand-in-hand. This lesson plan provides foundational information about demographics, which opens the door to understanding the purposes and function of the census. In addition, it provides an opportunity to reinforce valuable functional literacy skills.

If you have comments or would like to contribute a lesson plan to this column for possible publication, please contact the author at elizabeth.hinde@asu.edu.
A Country’s Shape Is More Than Its Borders: Population Pyramids

Lesson plan by Dennis Rees
6th Grade Teacher, Peoria, Arizona and Teacher Consultant, Arizona Geographic Alliance

Grade Level and Subject Areas

Grades 4–6
Geography, reading, and writing

Duration

1–2 class periods

National Geography Standards

Element 1: The World in Spatial Terms

1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.
4. The physical and human characteristics of places.

Element 4: Human Systems

9. The characteristics, distribution, and migration of human population on Earth’s surface.

Element 6: The Uses of Geography

17. How to apply geography to interpret the past.
18. How to apply geography to interpret the present and plan for the future.

Lesson Overview

Demographics is the study of population characteristics. Population pyramids examine the age and gender characteristics of a country’s population. Understanding how to read and interpret a population pyramid will give students the opportunity to examine a country’s past, present, and implications for the future through its population.
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Objectives

- Students will be able to read population pyramids.
- Students will be able to analyze and interpret population pyramids, including writing a paragraph using this information.

Materials/Resources

- Student copies of “A Country’s Shape Is More Than Its Borders.”
- Writing prompt for paragraph.
- Population pyramids for countries and/or states (U.S. Census Bureau International Data Base; http://www.census.gov/ipc/www/idb/index.php).

Procedures

1. As a class, read and discuss “A Country’s Shape Is More Than Its Borders.”
2. Using India’s population pyramid, answer the following questions:
   - What demographics does this pyramid show?
   - What is the scale used?

More Information on Population Pyramid

What Is a Population Pyramid?

A population pyramid is one way to look at the demographics of a country. Demographics are population characteristics, such as age, gender, race, religion, or language. A population pyramid looks at only age and gender. It is constructed to show how many people in a particular age group are male or female. This is done using a horizontal bar graph. The result is a clear picture of how a country’s population breaks down according to gender and age, and where the most people occur according to those two pieces of information.

- How many years are contained in each age group?
- How many males are in the 25–29 age group?
- How many females are in the 45–49 age group?
- How many males and females are in the 60–64 age group?
- In what age groups are most of the population located?
- Does this pyramid show a country with slow, rapid, or negative growth?
- What services and programs would the government need to consider now?
- What services and programs would the government need to plan for in the future?

3. Answer similar questions using this or any other country’s U.S. population pyramid

Figure 1. Population pyramid for India, 2009 (Source: U.S. Census Bureau, International Database [2009]).

How To Read a Population Pyramid

The first step is to look at the scale across the bottom of the pyramid. It tells if the numbers represent thousands or millions. Next, look at the age groupings. These are usually going up the middle of the pyramid. Then notice that males are shown on the left side of the graph, females on the right. Lastly, to determine how many males or females are in a certain age group, find that age group in the center, go to the end of the horizontal bar either left or right, then go down to the scale to see how many.

Interpreting a Population Pyramid

Population pyramids can show if a country’s population growth is slow, rapid, or negative (little to none).
A country with rapid growth will have a wide base and narrow top. A country with slow growth will have almost equal numbers from top to bottom. A country with negative growth will have fewer at the bottom and top, and most of the population in the middle. Determining growth rate leads to questions of what kinds of services would a government expect to need to provide. Do more children mean there will be a need for more schools, daycare facilities, and the need for more teachers? Do more elderly mean more retirement centers, pension plans, and health care? Does a large number in the middle mean more jobs, job training programs, and universities? Why are so few at the bottom? Are more children due to economics (children provide farm labor or money from work they perform) or high mortality rates (many die before age 2 or 3)? What does a government need to do to change this—more jobs for adults, better health care? Using this information, a government can make plans and solve problems.

Another thing a population pyramid can show is differences in numbers of males and females in certain age groups. For instance, why would a certain age group have more females than males? Are there age groups where both males and females are less than the groups above and below them? Why? These questions can be answered by looking at the history of that country. Was there a war, natural disaster, or economic problem, which reduced the population at that time?

**Assessment**

**Writing Prompt for Paragraph**

Pretend you are a demographics expert hired by the government of India to interpret that country’s population pyramid. Using the population pyramid, write a paragraph explaining the type of growth that country is experiencing, and what type of programs and services the government should create to meet the needs of their population now and in the future.

**Student Writing Sample**

India is experiencing rapid growth. The leaders of this country should consider schooling, medical care, and housing for all of the millions of children. There should be plenty of playgrounds created and lots of after-school programs. Television shows should be directed at these children to help them learn. For the people who are twenty to forty years old, there should be jobs created, so they can afford to buy things for their families. They also need help with paying for homes and medical care for their families. For the older people, retirement homes need to be built. In the future, India might want to look at ways to grow more food so everyone will be fed. They might also encourage people not to have so many children.

Dennis Rees has taught Social Studies in Grades 6–8 for twenty-nine years in the Peoria Unified School District. He currently teaches at Oakwood Elementary School, where he maintains a geography lab. Dennis has been the recipient of several awards, including the National Council for Geographic Education’s Distinguished Teaching Award, the Arizona Council for the Social Studies Isidore Starr Award, Pride of Peoria, and the Grosvenor Teacher Fellowship Award. Dennis also contributed lessons to GeoLiteracy, GeoMath, and GeoHistory projects produced by the Arizona Geographic Alliance. In addition to his classroom duties, Dennis is an active Teacher-Consultant in the Arizona Geographic Alliance.