



Puerto Rico Pyramid Scheme

Summary:

A population pyramid is a means for graphically representing the composition of a citizenry by age and gender. A population pyramid can be useful in displaying certain trends in a population.

Background information:

Calculating the percentage of a country's population by age groups and gender, it is possible to create a graph profile that indicates a growing, stable, or declining population situation.

Materials:

- Lesson: *The Power of the Pyramids*, from Multiplying People, Dividing Resources...
- *World Population Data Sheet* posters from the Population Reference Bureau.
- Internet access to print out census data from the website cited in the reference section at the end of this lesson.
- A classroom set of:
 - Centimeter graph paper
 - Rulers
 - Pencils
 - Calculators
 - Printout of the census data from the website

Set-up:

- Gather materials.
- Preview the *Power of Pyramids* lesson.
- Create a population pyramid model for Puerto Rico ahead of time (for teacher familiarity and for a reference when checking student work).
- Arrange students into partner pairs.

Procedure:

Introduction:

A country's population can be grouped into groups by age ranges and gender. By classifying people in this way it is possible to build models that show the distribution of these groups toward certain population trends.

Activity 1:

Have student pairs work through the *Power of Pyramids*

Grade Level: 7-12

Goals:

- Understand how to read and create a population pyramid.
- Apply math skills to construct an original population pyramid.
- Use a population pyramid to project population trends in the near future.
- Make connections between different means of presenting data.
- Use the above skills to get a sense of Puerto Rico's population trends.

Key concepts:

Population data can be arranged into a population pyramid graph, which can then be used to forecast general population trends.

Objectives:

By the end of this lesson, students will:

- 1.) Be able to read and understand how data presented in a population pyramid provides indications of trends.
- 2.) Be able to create a population pyramid.
- 3.) Compare population pyramids.
- 4.) Relate population pyramids to other data presented in tabular form.
- 5.) Be able to examine a population pyramid for an analysis of Puerto Rico's population trends.
- 6.) Make connections between a Puerto Rico population pyramid and tabular data.

Teaching location:

Classroom

lesson to gain understanding of population pyramids and experience in how to construct them. Be sure to work through the discussion questions together.

Activity 2:

Have student pairs take the Puerto Rico census data, combine the individual years into the same groupings as in activity 1 (calculators can be used to move this along). Then have students create a population pyramid for Puerto Rico.

Relate the final product to relevant questions in activity 1. Compare the Puerto Rico population pyramid with population pyramids for the countries in activity 1. In particular, how do Puerto Rico and the continental United States compare?

Activity 3:

Relate the population pyramids to data presented on the *World Population Data Sheet...* noted in the reference section below. How well do the population pyramid trends reflect projections on the data sheet poster?

For Puerto Rico, have students note how well they think the projected population change on the *Population Reference Bureau* data sheet poster correlates with the population pyramids students created.

Assessment:

Activity 1: Note participation by students in the process of the lesson. Examine the population pyramids that students construct.

Activity 2: Have students evaluate population pyramids as a tool for examining countries around the world.

Activity 3: Have students write how well they think the projected population change for Puerto Rico, noted on the *PRB* data sheet poster, correlates with the population pyramids they created for Puerto Rico.

Lesson time:

Part 1: 60 minutes
Part 2: 60 minutes
Part 3: 30 minutes

Subject areas for infusion:

Math
Science
Social studies

Standards:

Math
A.8.1
A.8.2
A.8.3
A.8.4
A.12.1
A.12.3
A.12.4
A.12.5
B.8.3
B.8.4
B.8.7
B.12.2
B.12.5

Social Studies
C.8.7
C.12.8
E.8.4
E.12.14

Vocabulary:

Population pyramid: a graphic representation of the percentages that comprise age groups, within genders, of a given total population.

Age group, by gender: in this lesson, organization of age groups in 5-year spans, separated by gender.

References:

Activity 3: Power of the Pyramids, in Multiplying People, Dividing Resources -- Global Math Activities. Copyright 2002. Published by Population Connection, 1400 16th Street, NW, Suite 320, Washington DC 20036. www.populationeducation.org

World Population Data Sheet of the Population Reference Bureau -- Demographic Data and Estimates for the Countries and Regions of the World. Available through the Population Reference Bureau, Customer Service Department, 1875 Connecticut Ave., NW, Suite 520, Washington, DC 2000905728, USA. Phone 1-800/877-9881. www.prb.org

Puerto Rico census data: http://factfinder.census.gov/servlet/DTable?_lang=en&-ds_name=DEC_2000_SF1_U&-mt_name=DEC_2000_SF1_U_PCT012