

TEACHING AND LEARNING WORLD GEOGRAPHY

POPULATION PYRAMIDS: HOW TO READ AND INTERPRET 'AGE-SEX' DIAGRAMS

Introduction:

This lesson will enable students to learn how to read and to construct population pyramids. It can be used as a stand-alone activity or a lead-in activity to the Mexico Population Pyramid activity included in the TALWG materials.

TEKS:

7A: construct and analyze population pyramids and use other data, graphics, and maps to describe the population characteristics of different societies and to predict future growth trends;

22A: design and draw appropriate maps and other graphics such as sketch maps, diagrams, tables, and graphs to present geographic information including geographic features, geographic distributions, and geographic relationships;

22B: apply appropriate vocabulary, geographic models, generalizations, theories, and skills to present geographic information;

22C: use geographic terminology correctly

Time:

35 - 40 minutes if used as a stand-alone lesson

Materials:

Notes A: Population pyramid information for instructor (Make a transparency or powerpoint slide)

Notes B: Examples of population pyramids for selected countries

Notes C: Population pyramid statistics information (Make a transparency or powerpoint slide)

Handout 1: Population pyramid blank graphic with analysis questions

Map pencils (2 colors)

Rulers (optional)

Learning Activities

Beginning the Activity

(10 minutes, longer if you have Internet access and the time to spend on a larger variety of graphics)

1. Introduce students to population pyramids by showing a classic pyramid such as India (see **Notes A**). Using **Notes A**, help students decipher the graphic: Male ages and percent of population are shown on one side of the graphic, female ages and percents are on the other.

Instructions To Students

A population pyramid is a type of bar graph. It shows the number or percentage of people that fall into specific age groups. It may also compare the distribution of age groups by sex, ethnic group, or some other category.

TEACHING AND LEARNING WORLD GEOGRAPHY

2. Have students speculate as to why demographers and geographers use population pyramids to analyze development and population trends--graphs deliver a 'whole picture' way of examining data, i.e., they deliver data in graphic form which can be analyzed quickly.

3. Show a series of population pyramids to students, either on an overhead (**Notes B**) transparency or if the Internet is available, go to the US Census website for population pyramids <<http://www.census.gov/ipc/www/idb/pyramids.html> > and select various pyramids and turn on/choose the 'dynamic' element so that the pyramids change over time. Suggested countries: India, China, Kenya, Italy, Russia, Japan, USA, Mexico. If possible, relate the shape of pyramids to economic development. Countries with delta shaped pyramids (broad on the bottom representing rapid population growth) tend to be in peripheral and semi-peripheral regions of the world and thus, less economically developed. Countries with columnar or bullet shaped pyramids (slow or no growth populations) tend to be found in the core regions of the world and thus, economically developed.

Developing the Activity (15-20 minutes)

4. Have students create their own population pyramid (**Handout 1**) using statistical data(**Notes C**) to demonstrate that they understand how a population pyramid is constructed. Use map pencils, rulers and the notes provided (**Notes C**) and the blank graphic (**Handout 1**) on which population pyramid will be drawn.

Instructions to Students

- *Today you will make your own population pyramid.*
 - *Use the graph paper given out in class.*
 - *You need 2 different map pencil colors.*
- *Draw in the percents for MALE and FEMALE on the pyramid handout.*
 - *Start at the bottom of your graph and work up.*
- *Color the 2 sides of your graph with 2 different colors.*

Concluding the Activity (5 minutes)

5. As a class, answer the questions related to the population pyramid the students constructed.

Instructions to students

Now that you have finished your population pyramid, analyze the population pyramid to answer the questions below it. Can you name the CITY that it represents?

Students should be able to surmise that this place has a lot of workers that contribute to the economy (see age cohort 20-40). Hints are provided on the student handout. The place is Houston, Texas.

Extension

6. Reexamine the original population pyramids to draw conclusions about the level of economic development if you have taught that concept previously. Relate the shape

TEACHING AND LEARNING WORLD GEOGRAPHY

of population pyramids to development: narrow tops = developing nations, narrow bottoms = nations with a lower birth rate, etc...

7. You may wish to follow this lesson with the Mexico population pyramids lesson and use that as a spiraled concept activity.

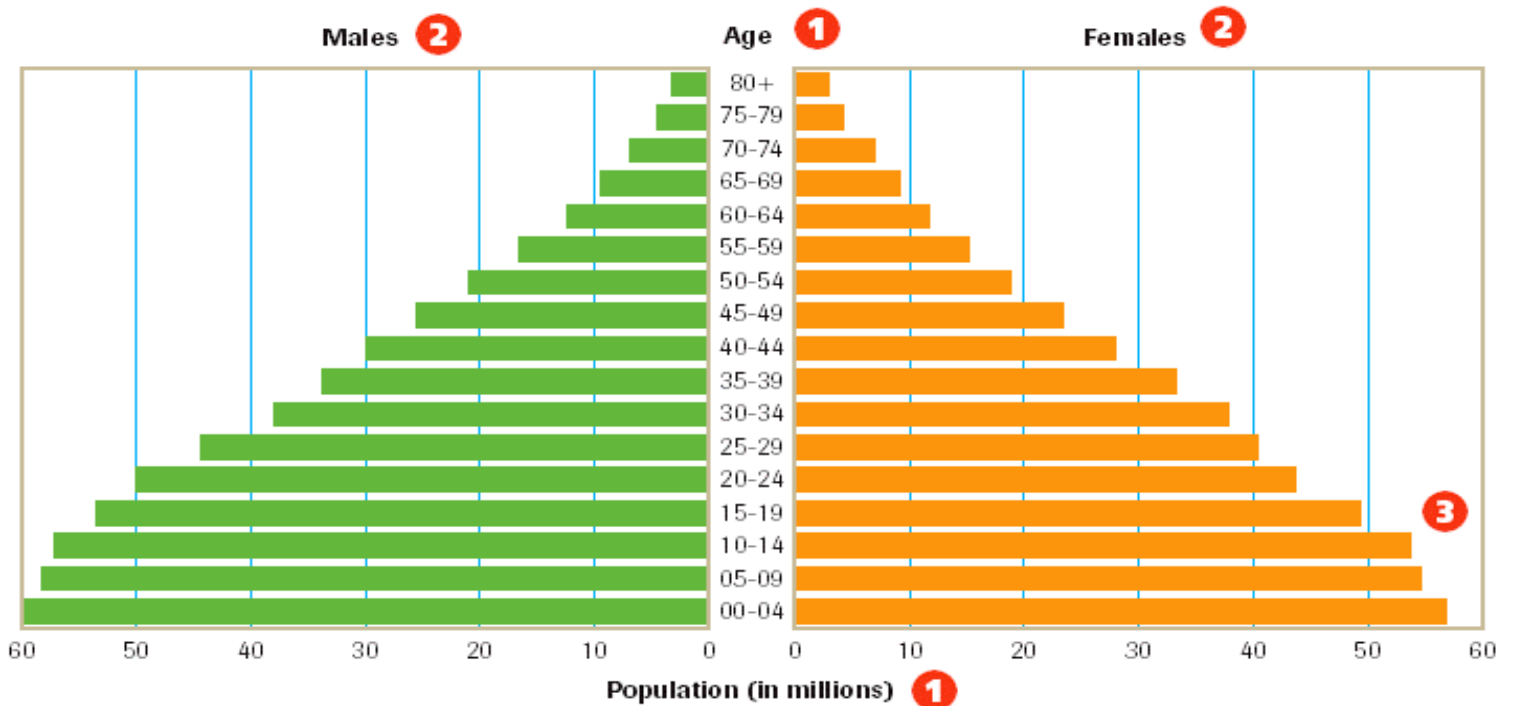
TEACHING AND LEARNING WORLD GEOGRAPHY

NOTES A

Reading a Population Pyramid

Every nation has a certain distribution of population by age group. India, for instance, has a young population; the majority of people are under the age of 30. To show how the population of a country is distributed by age, a population pyramid is a very useful tool.

Population of India, 2000



SOURCE: U.S. Census Bureau, International Data Base

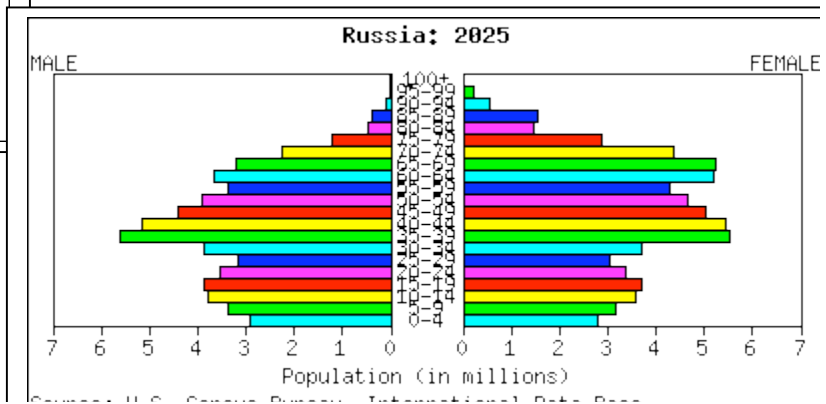
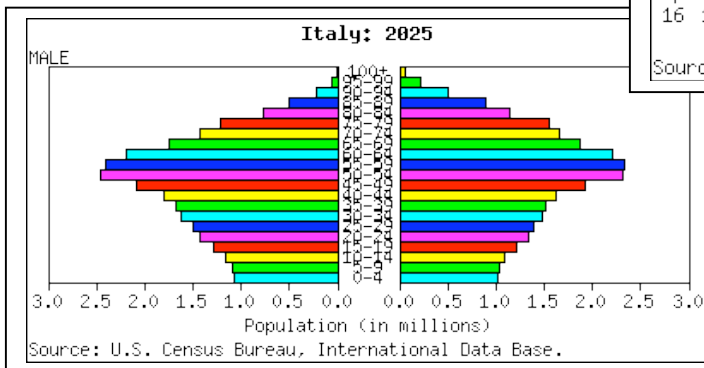
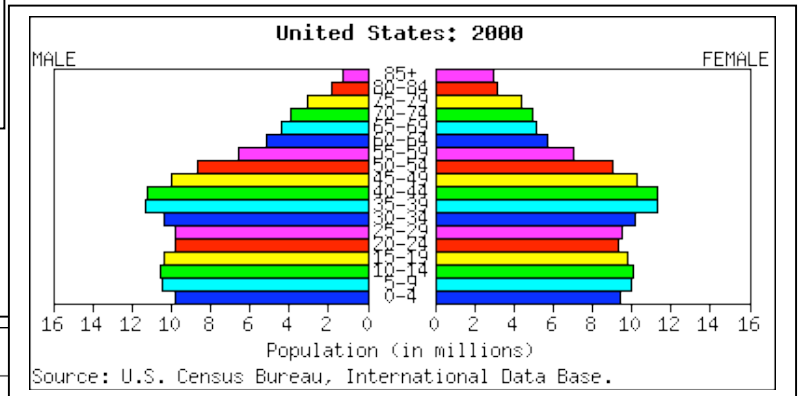
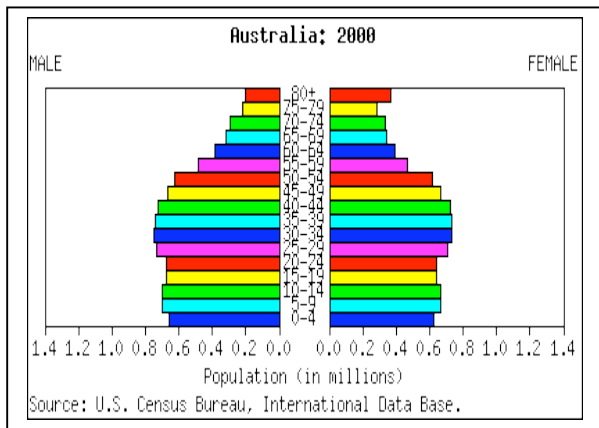
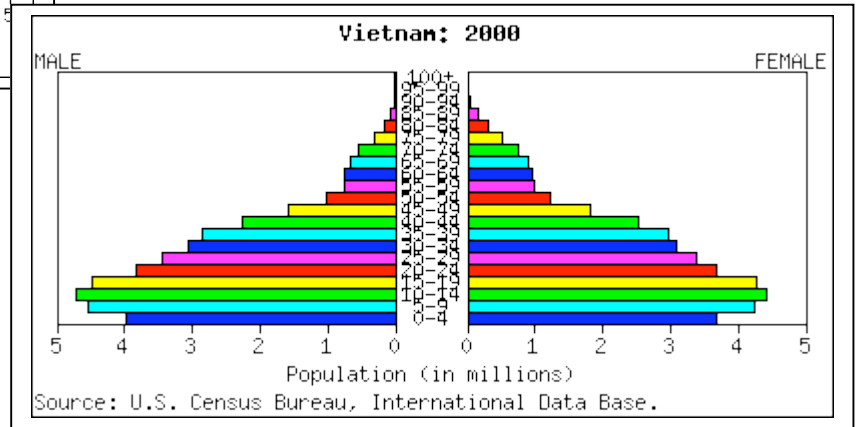
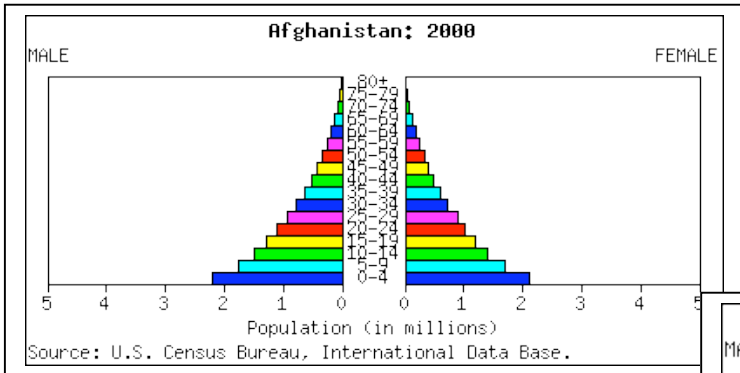
1 The horizontal axis shows population in millions. The vertical axis lists age groups.

2 The left side of the pyramid shows the population distribution of males in India. The right side shows females.

3 Notice that there is a steady drop in population as Indians reach their late teens. This indicates that the life expectancy of Indians is relatively short.

TEACHING AND LEARNING WORLD GEOGRAPHY

Notes B



TEACHING AND LEARNING WORLD GEOGRAPHY

Notes C

• AGE	MALE	FEMALE
• 70+	1.9	3.2
• 60-69	3.0	3.6
• 50-59	3.8	4.2
• 40-49	5.7	6.6
• 30-39	9.6	9.2
• 20-29	9.8	9.5
• 10-19	7.1	6.8
• 0-9	8.2	7.9

COLOR FROM THE BOTTOM TO THE TOP!!

TEACHING AND LEARNING WORLD GEOGRAPHY

Handout 1

Population Pyramid

In Years	MALES											FEMALES										
	70 +																					
	60-69																					
	50-59																					
	40-49																					
	30-39																					
	20-29																					
	10-19																					
	0-9																					
		11	10	9	8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8	9	10
In Thousands																						

ANALYSIS:

1. What age group is the largest? _____
2. What age group is the largest for MALES? _____
3. What age group is the largest for FEMALES? _____
4. What could account for these specific age groups being larger than the rest?

5. What city is represented in the pyramid? _____
 (Hints > 2 airports, space facility, world's largest rodeo)