Activity Two

Graphing Aging in the United States — National Patterns

Introduction:

Population pyramids help us observe the distribution of age groups within a population. The relative size of one age group compared to another can have important social, economic, and political consequences. This activity involves construction and analysis of a series of population pyramids for the United States, past, present, and anticipated future.
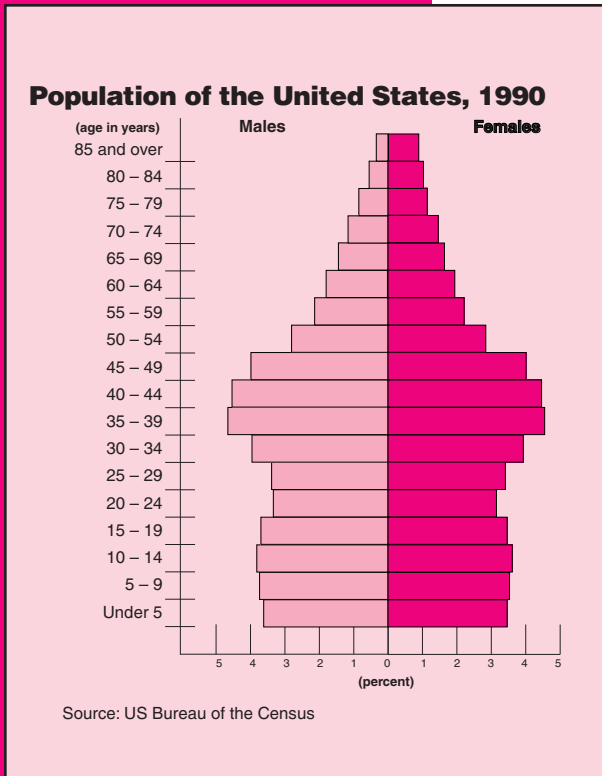
Reading Population Pyramids:

A population pyramid graphically displays a population's age and sex composition. By showing numbers or proportions of males and females in each age group, the pyramid creates a "picture" of a population's basic characteristics. Pyramids based on proportions or percent of population in each age-sex group (called cohorts) are best for comparing populations of different sizes. The sum of all the age-sex cohorts in the population pyramid equals 100 percent of the population.

A population pyramid is a simple bar graph constructed around a central axis, with bars to the left most commonly representing males, and those to the right, females. Each horizontal bar represents the size of an age-sex cohort as a percent of the total population. In the graph to the left, the bottom bar shows the percent of males and females who were under five years of age in 1990; the bar located at ages 30–34 on the pyramid represents all those alive and living in the United States in 1990 who were in that age cohort; and so forth up to the pyramid's top. Each year a new cohort is born and "appears" at the bottom of the pyramid, while the cohorts above it move up. As cohorts age, they inevitably lose members because of death, and may gain or lose because of migration.

Constructing Population Pyramids:

A simplified population pyramid can be constructed using age-sex data in ten-year cohorts. Working individually or in groups (as instructed), use data for 1940, 1960, 1980, 2000, or 2020 and the blank pyramid grid, provided on Activity Two Worksheet, to construct time-series population pyramids for the United States. For example, for 1940, in the grid section at the bottom of the pyramid blank, labeled "under 10 years" shade the left side of the grid to reflect the percent of the population that was male, and the right side of the grid, the percent female, using different colors for males and females. Then repeat this step for each ten-year cohort, maintaining the same colors for all males and all females.

Population of the United States, 1990

Source: US Bureau of the Census

Materials:
- Activity Two Worksheet
- Colored pencils

Vocabulary:
- Population pyramid
- Cohort
- Aging population

Objectives:
This activity involves...
▲ construction of population pyramids
▲ interpretation of population pyramids
▲ evaluation of aging trends in the U.S. over time
▲ speculation about the socio-economic implications of aging for the United States

over

Interpreting Population Pyramids:

A population pyramid can tell a great deal about a population at a glance. Its shape can give significant clues to a population's past and future. For example, the pyramid on the front of this page reveals a slight majority of males at the very youngest ages. This is because there are about 105 males born for every 100 females. But the top of the pyramid shows that females comprise a majority. This is because females typically outlive males. Pyramids may reveal a postwar "baby boom," as well as an "echo" effect as baby boomers start to have kids of their own. Pyramids also show the relationship between the "dependent" population (under 20 and over 64 years) and the "economically productive" population (between 20–64 years). As the U.S. population becomes older, there will be an imbalance between the "dependent" and "productive" populations, which could have serious implications in the coming years, particularly for retirement and health care systems.

In summary …

Analyze pyramids for the United States from 1940–2020. Then discuss the following questions.

▲ What patterns can be observed in this series of pyramids?

▲ When is the "baby boom" first observed?

▲ Trace the movement of the "baby boom" generation through the pyramids. What effects — social, economic, political — has this generation had on the country over the years?

▲ When will the "baby boom" generation reach retirement age? How will this affect the "dependency ratio"?

▲ What are some social, economic, and political issues that are likely to emerge as the U.S. population ages?