

## AP ENVIRONMENTAL SCIENCE

### AGE PYRAMID ACTIVITY

Population growth is affected by age structure - the number of individuals in different age groups - as well as by the numbers of births and deaths. Age structure is usually illustrated by an age pyramid, a graph in which horizontal bars represent the percentage of the population in each age group. Males are shown on the left and females on the right. The ages (or in some cases, the years of birth) for each bar are listed along the vertical axis of the graph, usually in five-year intervals. Each age group is called a cohort. The longer a bar is, the greater the proportion of individuals in that age group.

Age pyramids are useful for tracing the history of a population and for projecting future population trends. In this activity you and your classmates will collect data on your families and pool the data to produce an age pyramid diagram. This will help you to interpret age pyramids and understand the relationship between age structure and population growth.

#### PROCEDURE:

1. Collect information to complete the "Family Population Form". Find out the birth date and sex of each member of your family, beginning with your grandparents. Include all of the brothers and sisters of your parents and all of the people in your generation, i.e., your brothers and sisters and cousins. If you are not aware of your family background, feel free to construct one or to use that of a friend outside of the class.
2. Pool your data with that of your classmates. Construct an age pyramid diagram for the class data using the instructions in the "How-To Construct an Age Pyramid Using Microsoft Excel"

#### ANALYSIS:

1. What is the percentage of people under 20? over 60? Is the population a young, growing one; an older, declining one; or a stable one?
2. Is there evidence in the diagram of the baby boom that followed World War II (1946-1964)? If so, is there evidence of the effect of this baby boom in more recent years?
3. From the class data, determine the average number of children per couple for each generation and compare the averages to the replacement level of 2.1 children per couple. Describe any changes that have occurred in family size over the generations.
4. How does the pyramid for the class compare to that for the United States? If the United States is now at, or slightly below, the replacement level, why is the population of the country still growing?

Individual Family Data				Pooled Class Data			
Date of Birth	Age Range	Males	Females	Date of Birth	Age Range	Males	Females
2000-2004				2000-2004			
1995-1999				1995-1999			
1990-1994				1990-1994			
1985-1989				1985-1989			
1980-1984				1980-1984			
1975-1979				1975-1979			
1970-1974				1970-1974			
1965-1969				1965-1969			
1960-1964				1960-1964			
1955-1959				1955-1959			
1950-1954				1950-1954			
1945-1949				1945-1949			
1940-1944				1940-1944			
1935-1939				1935-1939			
1930-1934				1930-1934			
1925-1929				1925-1929			
1920-1924				1920-1924			
1915-1919				1915-1919			
1910-1914				1910-1914			
1905-1909				1905-1909			
1900-1904				1900-1904			