



WHEN THE BORDER VANISHES



HIV/AIDS in Africa

Standard:

- II. Time, Continuity, and Change
- III. People, Places, and Environment
- V. Individuals, Groups, and Institutions
- VI. Power, Authority, and Governance
- VIII. Science, Technology, and Society
- IX. Global Connections

Grade Level: 9–12

Objectives:

The student will:

- Analyze population pyramids and data about selected African countries
- Determine the political, social, and economic effects of HIV/AIDS

Time:

1–2 class periods

Materials:

Access to population pyramids and data from the Census Bureau:

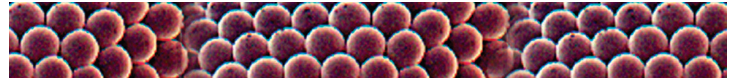
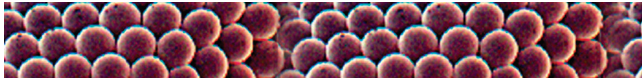
<http://www.census.gov/ipc/www/idb/pyramids.html>

Distribute copies of the data and population pyramids if site access is unavailable.

Map of Africa and/or the world for viewing by class.

Procedures:

1. Read article about HIV/AIDS at <http://www.prb.org/pdf07/62.3Highlights.pdf>. Using the information provided, have students determine which area(s) of the world have higher rates of HIV/AIDS.
2. Have students access the map, *Mapping Progress through Universal Access*, on the UNAIDS site. This interactive experience provides more specific information about the impact of HIV/AIDS worldwide.
<http://www.unaids.org/en/default.asp>
3. Focus on southern Africa. Have students locate Botswana, Zimbabwe, South Africa, and Swaziland on a map of Africa.
4. Distribute copies of the population pyramids of these countries.
5. Explain that a population pyramid is a bar graph that displays a country's population based on the characteristics of age and gender. Five-year interval age groups are represented by bars (cohorts), with the youngest group/cohort (0–4 years) at the base of the pyramid and the oldest group/cohort at the top. Males are on the left, females on the right. The crude birth rate (average annual number of births during a year per 1,000 persons; called crude because it does not take into account age or sex differences among the population) essentially determines the shape of the pyramid. When studying population pyramids, the dependency ratio is important. Dependency ratio is the number of dependent population—either too young (under age 15) or too old (65+)—to contribute to the economy.



6. Have students examine the population pyramids individually or in groups.

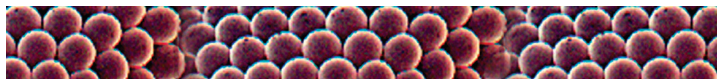
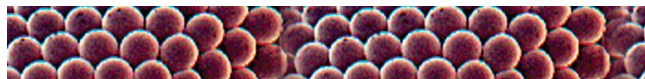
Questions for students:

- a.** Describe the makeup of each country's population in 2010. For example, are there more males or females? Are there more people in the younger or older cohort? Why are there so few elderly in the top cohorts?
- b.** Is there a dependency ratio with the young and/or old cohorts? Explain the needs generated by either a large younger population or a large aging population. Brainstorm the types of programs a government must have in place to deal with inordinately large dependent groups.
- c.** Factors that affect life expectancy in a country include: availability of health care, famine, poverty, lack of sanitation, disease, war, lack of education, political instability, etc. Which factors might affect living conditions in Botswana, South Africa, Swaziland, and Zimbabwe? For additional information, distribute the "Charts of Demographic Indicators" for these countries. Pair the charts with the population pyramids and continue analysis of factors affecting life expectancy.
- d.** Discuss the impact that a pandemic disease like HIV/AIDS would have on a country. What evidence of this disease is found in the population pyramids? Correlate the population pyramids and the "Charts of Demographic Indicators" to collect more evidence of the impact of HIV/AIDS.
- e.** Additional reading for teacher and/or students, *The Global Challenge of HIV and AIDS*:

<http://www.prb.org/Publications/PopulationBulletins/2006/TheGlobalChallengeofHIVandAIDSPDF107MB.aspx>

f. Definitions of Demographic Indicators:

- ⇒ *Demographic indicator* is the data collected to indicate patterns in the demographic or population studies of a country.
- ⇒ *Growth rate* is the number of people added to (or subtracted from) a population in a year due to natural increase and net migration expressed as a percentage of the population at the beginning of the time period. (Population Reference Bureau)
- ⇒ *Replacement-level fertility* is the level of fertility at which a couple has only enough children to replace themselves, or about two children per couple, indicating a "replacement" growth rate.
- ⇒ *Zero Population Growth (ZPG)* indicates that births equal deaths in a country. However, the replacement rate of 2.11 normally is applied to the ZPG.
- ⇒ *Total fertility rate* is the expected average number of children born to a woman during childbearing years.
- ⇒ *Life expectancy at birth* is the average number of years that a newborn could expect to live.
- ⇒ *Infant mortality rate* is the number of infant deaths (one year of age or younger) per 1000 live births.
- ⇒ *Crude birth rate and crude death rate* (Explanation above can be applied to these terms.)



7. Have students brainstorm the political, economic, and social effects that influence the spread of HIV/AIDS and the impact of the disease on a country. Possible effects could include:
- *Gender inequality*: In sub-Saharan Africa, women make up 57 percent of adults living with HIV. Inequality may result in mistreatment/abuse in a male dominant society and older men's preference for young women. Infidelity in marriage leads to transmission of disease by husbands to wives.
 - *Women have less access to education and income.*
 - *Military conflict* leads to rape of women, displacement of women and children (no home, income, and few personal belongings).
 - *Labor migration*: Husbands working for extended periods of time away from home and involved in extramarital sex will bring the infection home to wives.
 - Dramatic increase of *orphans*, especially in sub-Saharan Africa, in particular the southernmost countries. Mothers may have passed HIV to children prior to their deaths.
 - Children may serve as the primary *caretaker of parents* infected with HIV/AIDS.
 - Economic demands may force children into *commercial sex work* to obtain food, shelter, or money.
 - *Medicine* for HIV/AIDS is too expensive for many people and governments cannot afford to dispense medicines for all AIDS patients.
 - HIV/AIDS persons are more *susceptible to tuberculosis*. In sub-Saharan Africa, up to 70% of TB patients are infected with HIV/AIDS. TB contributes to more deaths of people with HIV/AIDS.
 - *Malaria* is a common disease in sub-Saharan Africa. Studies show that HIV reduces the effectiveness of antimalarial drugs.
 - AIDS affects most people in their *adolescent and young adult years* resulting in fewer workers for the *labor force and caretakers of the elderly*.
 - AIDS takes *funds from health services* that could treat other health problems.
 - AIDS has spread to *rural areas* whereas it was once more of an urban disease. Widespread AIDS means fewer farmers and production of foodstuffs.
 - Families must make *choices* between medicines for AIDS and other necessities.
 - HIV/AIDS diminishes a country's *leadership* talent pool.

(Information from "The Global Challenge of HIV and AIDS,"
by Peter R. Lamphey, Jami L. Johnson, and Marya Khan,
Population Bulletin, Vol. 61, No. 1, March 2006, Population Reference Bureau)

8. Discuss the findings of students.

Extension Activities:

1. Have student explore more population pyramids at the Census Bureau site.
2. Compare Botswana, South Africa, Swaziland, and Zimbabwe with other countries. Click "Dynamic" under "Type of output" to see the projected population growth of selected countries. ■