

Get a Life: The Haves and the Have-Nots

Students learn about the imbalances of life expectancies between rich and poor nations.

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Grade Level	5-7
Duration	2-3 class periods

National Geography Standards

ELEMENT FOUR: HUMAN SYSTEMS

9. The characteristics, distribution, and migration of human populations on Earth's surface.

ESSENTIAL ELEMENT SIX: THE USES OF GEOGRAPHY

18. How to apply geography to interpret the present and plan for the future.

Arizona Geography Strand

CONCEPT 1

World in Spatial Terms GRADE 6 and 7

PO 3 Interpret maps, charts and geographic databases using geographic information.

CONCEPT 4

Human Systems GRADE 7

PO 1 Discuss the implications of the demographic structure of places and regions.
PO 6 Describe the distributions and patterns of cultural characteristics (e.g., religions, language, standard of living) over time.

Concept 6: Geographic Applications

GRADE 5, 6, and 7

PO 3. Use geography concepts and skills (e.g., recognizing patterns, mapping, graphing) to find solutions for local, state or national problems (e.g., shortage or abundance of natural resources).

Other Arizona Standards

Mathematics Common Core Standards Geometry

5.G.A.2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.

Statistics and Probability

6.SP.A.2. Understand that a set of data collected to answer a statistical question has a distribution which can be described by its center, spread, and overall shape.

7.SP.A.3. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.

Standards for Mathematical Practice

5.MP.2., 6.MP.2. and 7.MP.2. Reason abstractly and quantitatively.

5.MP.4., 6.MP.4. and 7.MP.4. Model with mathematics.

Overview

The world is divided between people in developed countries (the haves) who consume much salt and fat, and people in developing countries (the have-nots) who are starved for basic nutrients. The life expectancy of a person is shortened depending upon if he or she lives in a developed or developing nation.

Purpose

In this lesson students will gain a better understanding of the differences between developing and developed nations by studying graphs of the disability-adjusted life year, or DALY, as published in the World Health Organization's yearly report on life expectancy.

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Students will also formulate interventions, that could increase longevity for people in both developed and developing countries.

Materials

- Handout 1 Get a Life: 2014 Life Expectancy
- Handout 2 Developed and Developing Countries Notes and Answer Key
- Handout 3 Disability-Adjusted Life Years
- Handout 4 DALY Graph and Questions based on the DALY graph and Answer Key
- Handout 5 What Would You Do? Assessment
- Graph paper

Objectives

The student will be able to:

1. Describe what is a developed and a developing country and state some examples of each kind of country.
2. Interpret data on charts and graphs from the World Health Organization about life expectancy and disability-adjusted life year.
3. Construct a graph from organized data.
4. Identify trends in the data.
5. Argue for ways to increase life expectancies in both developed and developing countries.

Procedures

Students should have basic knowledge of double bar graphs, both interpreting and constructing them.

SESSION ONE

1. Brainstorm with the class about some of the reasons for death in the United States. Ask students for causes of deaths of family members, neighbors, and famous people. How old were these people? What is the life expectancy of people living in the United States? (79 years) Compare this average to students' first-hand knowledge.

2. Look at life expectancies for several countries, Handout 1, some from developed and some from developing nations.
3. Ask students to speculate what the terms "developed and developing" mean. Students should complete the blanks on Handout 2 as the teacher leads a discussion on the differences. Look back at Handout 1 and decide which countries are developed and which are developing, noting the differences between the life expectancies.

SESSION TWO

4. Conduct guided reading with the class: Give students a copy of the text of the Handout 3: Disability-Adjusted Life Years. Make sure that students understand the terms mortality rate, DALY (Disability-Adjusted Life Year - to the loss of one healthy year of life), life expectancy, and The World Health Organization (WHO). The World Health Organization is the United Nations' specialized agency for health. Its objective is the attainment by all peoples of the highest possible level of health. WHO classified nations into three categories for their study on DALY's: developing countries with high mortality (includes sub-Saharan Africa, Western Africa, India, South Asia, and portions of Central America); developing countries with lower mortality (includes China, North Korea, and Indonesia); and developed countries (includes countries in North America, most of South America, Australia, and Russia).
5. Students should use the bar graph from the USA Today article (Handout 3) to answer questions (Handout 4) pertaining to DALY and compare three health risks between developing and developed nations.
6. Conclude the lesson with the assessment, Handout 5: What Would You Do?

Assessment

Math Assessment:

The graph can be graded for accuracy. Mastery will be considered 80% or higher. Handout 4

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can be graded for math concepts using the following:

Question 1 = 5 pts

Question 2a = 5 pts

Question 3a = 5 pts

Question 4 = 5 pts

Question 5 = 5 pts (Total 25 pts).

Mastery is considered 20 pts or higher.

CIA World Fact Book

<https://www.cia.gov/library/publications/the-world-factbook/>

For more information on DALY go to

https://en.wikipedia.org/wiki/Disability-adjusted_life_year

Geography Assessment:

Handout 4 can be graded for geographic concepts using the following:

Question 2b = 5 pts

Question 2c = 5 pts

Question 3b = 5 pts

Question 4 = 5 pts

Question 5 = 5 pts

Question 6 = 5 pts (Total 30 pts).

Mastery is considered 24 pts or higher.

Extensions

Students can read the National Geographic Society book called *The Human Body Fighting Disease* by Kate Boehm Jerome, 2003, ISBN 0-7922-8865-3

Students can use the information from the life expectancy chart, Handout 1, to create graphs. Which type of graph will be the best display of the information?

Ask students to speculate about what other types of graphs would work to display the WHO DALY data? Have them make those types of graphs.

Have students construct a histogram from the WHO data, focusing on the percentages of premature death causes in developing countries, for example. Another could be based on the percentages of premature causes of death in developed countries.

Sources

USA Today, October 31, 2001.