Introduction to Population Density

Students learn a formula for calculating population density. Then they explore U.S. Census data.

GRADES
9 - 12+

SUBJECTS
Geography, Human Geography

CONTENTS
2 Links

OVERVIEW

Students learn a formula for calculating population density. Then they explore U.S. Census data.

For the complete activity with media resources, visit:
http://www.nationalgeographic.org/activity/introduction-population-density/

DIRECTIONS

1. Build background about population density.

Explain to students that population density describes the number of individuals occupying an area in relation to the size of that area. Tell students that there is a formula for figuring out population density:

\[
\text{number of people} \div \text{the area they occupy} = \text{population density}
\]
Explain to students that geographers focus on the spatial distribution of population density at different levels of scale: local, state or province, national, and global. Ask: What is a reliable source of population data at the national level? (U.S. Census)

2. Discuss the U.S. Census and how the collected data is used.
Explain to students that the U.S. Constitution mandates a count of everyone living in the United States every 10 years. Ask: Why might it be helpful to have a reliable estimation of the U.S. population? Provide students with a real-world example, such as deciding where to build new roads and schools. Elicit from students that having a reliable estimation makes it possible to make decisions about what community services to provide. Tell students that it also helps to determine the number of seats each state has in Congress, and more.

3. Display the U.S. and World Population Clocks on the U.S. Census Bureau website.
Go to the U.S. Census Bureau website and display the U.S. and World Population Clocks. Tell students the numbers are updated once per minute. Ask: Are there more or less people in the United States than you thought? In the world? How many of them do you think live in your state?

4. Have students use the Data Finders section to calculate the population density for their state.
Remind students of the formula for figuring out population density:

\[
\text{number of people ÷ the area they occupy} = \text{population density}
\]

Have students use the Population Finder and Find an Area Profile on the U.S. Census Bureau website to choose their state and view its QuickFacts. Students should find the information they need to calculate the population density for their state:

- Population estimate = number of people
- Land area (in square miles) = the area they occupy

Have students compare answers.

Extending the Learning
Have students refer to a world map or atlas and list five countries that they think are the world’s most populated countries. Then have them list five countries that they think are the world’s least populated countries. Discuss answers as a class. Vote on the top 5 in each category. Then have students check their answers at the U.S. Census Bureau’s International Data Base.

OBJECTIVES

Subjects & Disciplines

Geography
- Human Geography

Learning Objectives

Students will:

- explain the formula for calculating population density
- describe what the U.S. Census does and how the data is used
- calculate the population density for their state

Teaching Approach

- Learning-for-use

Teaching Methods

- Discussions
- Hands-on learning

Skills Summary

This activity targets the following skills:

- Critical Thinking Skills
Remembering
Understanding
Geographic Skills
  * Acquiring Geographic Information

National Standards, Principles, and Practices

NATIONAL COUNCIL FOR SOCIAL STUDIES CURRICULUM STANDARDS

* Theme 3:
  People, Places, and Environments

NATIONAL GEOGRAPHY STANDARDS

* Standard 9:
The characteristics, distribution, and migration of human populations on Earth’s surface

Preparation

What You’ll Need

MATERIALS YOU PROVIDE

* Paper
* Pencils
* Pens

REQUIRED TECHNOLOGY

* Internet Access: Required
* Tech Setup: 1 computer per classroom, Projector

PHYSICAL SPACE

* Classroom

GROUPING
RESOURCES PROVIDED: WEBSITES

- U.S. Census Bureau: U.S. and World Population Clocks
- U.S. Census Bureau: Homepage

BACKGROUND & VOCABULARY

Background Information

Population density describes the number of individuals occupying an area in relation to the size of the area they occupy. The U.S. Census Bureau serves as the leading source of quality data about the nation's people and economy.

Prior Knowledge

- Calculating Population Density

Vocabulary

<table>
<thead>
<tr>
<th>Term</th>
<th>Part of Speech</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>area</td>
<td>noun</td>
<td>a geographic region.</td>
</tr>
<tr>
<td>census</td>
<td>noun</td>
<td>program of a nation, state, or other region that counts the population and usually gives its characteristics, such as age and gender.</td>
</tr>
<tr>
<td>global</td>
<td>adjective</td>
<td>worldwide.</td>
</tr>
<tr>
<td>local</td>
<td>adjective</td>
<td>having to do with the area around a specific place.</td>
</tr>
<tr>
<td>population</td>
<td>noun</td>
<td>total number of people or organisms in a particular area.</td>
</tr>
<tr>
<td>population density</td>
<td>noun</td>
<td>the number of people living in a set area, such as a square mile.</td>
</tr>
</tbody>
</table>
For Further Exploration

Articles & Profiles

- National Geographic Magazine: Population 7 Billion

Audio & Video

- National Geographic Video: 7 Billion

Websites

- U.S. Census Bureau: Homepage
- U.S. Census Bureau: International Data Base (IDB)
- Population Reference Bureau
- United Nations: Population Division

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