Now You See Them . . . Now You Don't: The Movement of People In and Out of Arizona

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Grade Level	5
Duration	2 class periods

National Standards	AZ Standards	Arizona Social Science Standards
GEOGRAPHY **Element 4: Human Systems** **9.** The characteristics, distribution, and migration of human population on Earth's surface.	**Math** **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. **Standards for Mathematical Practice** 5.MP.4. Model with mathematics.	**GEOGRAPHY** **The use of geographic representations and tools help individuals understand their world.** 5.G1.1 Use and construct maps and graphs to represent changes in the United States. **Global interconnections and spatial patterns are a necessary part of geographic reasoning.** 5.G4.1 Describe how economic activities, natural phenomena, and human-made events in one place or region are impacted by interactions with nearby and distant places or regions.

Overview

The census, taken every 10 years, gives us insight into patterns of migration. The increase or decrease of population determines representation in Congress and often federal funding for our states. Looking at the patterns of growth also helps our state government(s) to make decisions on how to expand services and infrastructure.

Purpose

In this lesson, students learn the purpose of the census and why it is important to complete one. It is also designed for the students to construct and analyze geographic information contained in a graph.

Materials

- Arizona Population by Year (between 1990 – 2018)
- Questionnaire for Families
- Chart paper/whiteboard
- Markers/colored pencils/rulers
- Scoring Guide for Graphs
- Graph or blank paper
- Calculators (optional)

Objectives

The student will be able to:

1. Define the term "census"
2. Explain why the census is important.
3. Analyze census data.
4. Create a graph showing geographic information.

Procedures

SESSION ONE

1. Introduce the students to the term "census." Start by telling them that the Emperor of Rome in approximately 5 A.D. wanted to know how many people were in his kingdom so he ordered all the people that lived in his kingdom to return to the

towns in which they were born so they could be counted. This was one of the first recorded censuses in history.
2. Tell students that their families may have taken the census in the year 2010 and 2020. Ask them why they think this information was collected. Possible answers can include:

- Mandated by the Constitution (every 10 years)
- Determines our representation in Congress
- Determines our share of federal funds to the state and local communities
- Gives us information on where people live (growing or decreasing population)
- Gives us information on how old and the ethnicities of our population
- Gives us information about our standard of living (perhaps income level, quality of housing, number of people in a household, birth rates, death rates, etc.)

3. Now ask students what types of questions they think are included in a census to get this kind of information. Write their responses on the board.
4. Read some of the actual questions that are found on the census questionnaire. For 2010 https://www.census.gov/history/www/through_the_decades/index_of_questions/2010.html
5. Discuss why these questions are asked. How do you think this information is used to help provide for our needs? Add these responses to the board.
6. Project or distribute the table showing the census results for Arizona for the years 1990–2018. Ask the following questions:

- What patterns do you see over the years? (Keep track of student responses.)
- Why do you think people move? Why would they move to Arizona? (pull factors)
- Why would people move out of Arizona? (push factors)
- Do the births and deaths have an impact on the number of people in Arizona?

7. Model how to calculate the growth from one year to the next year. (Subtract 1990 from 1991 and the answer is a +123,237.
8. Have students analyze the data.

- Which years had the greatest growth?
- Which years had the least growth?
- Why do you think this is so?

9. Explain the Questionnaire for Families and distribute copies to the students to complete as homework with the assistance of their parent/guardian. This may be a good time to discuss with them that missing information happens in the real census.

SESSION TWO
Prior to the session, have the questions from the Family Questionnaire written on chart paper or on the board. When there is "down time," have students will place their information on the chart paper or board.

1. After the students have recorded their family responses, talk to the class about what they see. Look for patterns.
2. Talk about how they might organize the information to communicate better to the reader. Discuss that sometimes outliers may be grouped as "Other." Help students see how to label the information.
3. Split the class into groups. Depending on the ability of your students, you can assign each group a question to graph or have each group select the question they would like to graph. Remind students about bar, circle, and line graphs.
4. Share the Scoring Guide with the students so they are aware of what is expected. Distribute graph paper or blank paper, markers, and rulers to groups. Allow groups time to graph.
5. Post the graphs on the wall so students can see their work.
6. Ticket Out the Door: Have students define "census" and give at least 3 reasons why the census is important.

Assessment

Mathematics and Geography
Use the Scoring Guide for Graphs to score the group graphs. A score of 32 points or higher is considered mastery.

Arizona Population by Year (between 1990 – 2018) worksheet can be graded for accuracy. A score of 80% or higher is considered mastery.

Geography
The Ticket Out the Door can be graded giving the definition 10 points and each of the 3 reasons 10 points. A score of 32 points or higher is considered mastery.

Extensions

Have the students graph Arizona's Population by Year or answer questions about the highest 3 years or the lowest 3 years.

Now You See Them…Now You Don't

Have the students conduct a school wide or grade level census.

Have students design posters or public service announcements to encourage people to complete the census.

Sources

U.S. Census Bureau http://www.census.gov/

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