# Say What? People and Language on Maui

Lesson Overview

In this activity, learners will explore and analyze the relationships between population distribution, elevation, and the distribution of Hawaiian language speakers in Maui and throughout Hawaii.

Student Instructions

Start ArcExplorer and access the menu File→ Open to open the project "population_lesson.axl" from the folder that your instructor directs you to. You should see an image that looks like the image below:
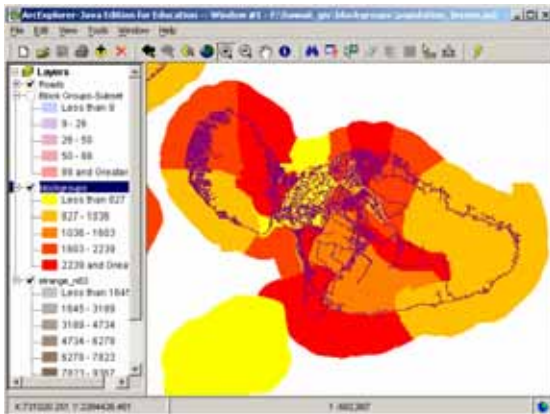
This map shows the population by block group (neighborhood, or district) in Maui. Use the zoom in tool 🔍 to draw a box around the areas you wish to examine more closely. You can always go back to the full extent of your map layers using the globe 🌐 tool.

1) Write three observations about the population distribution on Maui.

Geography Standards
• How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information from a spatial perspective.
• The physical & human characteristics of places.
• The process-patterns-functions of settlement.
• How physical systems affect human systems.

Science Standards
• Science in Social Perspectives: Types of Resources.
• Motions and Forces
• Populations and Ecosystems
• Change, Constancy, and Measurement
• Structure of the Earth System
• Environmental Quality
• Science and Technology in Local, National, and Global Challenges

Mathematics Standards
• Understand measurable attributes of objects and the units, systems, and processes of measurement.
• Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.
• Problem-solving, reasoning and proof, communication, and representation.

Environmental Studies Standards

Historical Thinking Standards
• Historical Analysis and Interpretation: Consider multiple perspectives
• Historical Issues-Analysis and Decision-Making: Formulate a position or course of action on an issue.

Technology Standards
• Students demonstrate sound understanding of the nature and operation of technology systems and are proficient in the use of technology.
• Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
• Students use technology to enhance learning, increase productivity, and promote creativity.
• Students use productivity tools to collaborate in constructing models, prepare publications, and produce other creative works.
• Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.
• Students use technology to locate, evaluate, and collect information from a variety of sources.
• Students use technology tools to process data and report results.
• Students use technology resources for solving problems and making informed decisions.
• Students employ technology in the development of strategies for solving problems in the real world.

2) Does the population distribution match what you thought it would look like? Why or why not?

3)   Turn off the blockgroups map layer to view the elevation layer underneath. Which island in Maui County has the highest elevation?

4) Use the measure tool [icon] and drag a line from one side of Maui to the other at its widest point. How wide is the island in kilometers? How does this compare to the Big Island?

5) Use the measure tool to measure the distance from the top of Haleakala to the coast. Use the vertical and horizontal distances to come up with the percent of slope. Show your work below.

6) Turn off and on the elevation layer and compare elevation to population distribution on Maui. What is the relationship of elevation to population?

Right click on the blockgroups map layer and select "properties." Change the mapping field to Hawn_PI, which indicates the number of people who indicated that they were Hawaiian or Pacific Islander on their Census questionnaire in 2000, as shown below:
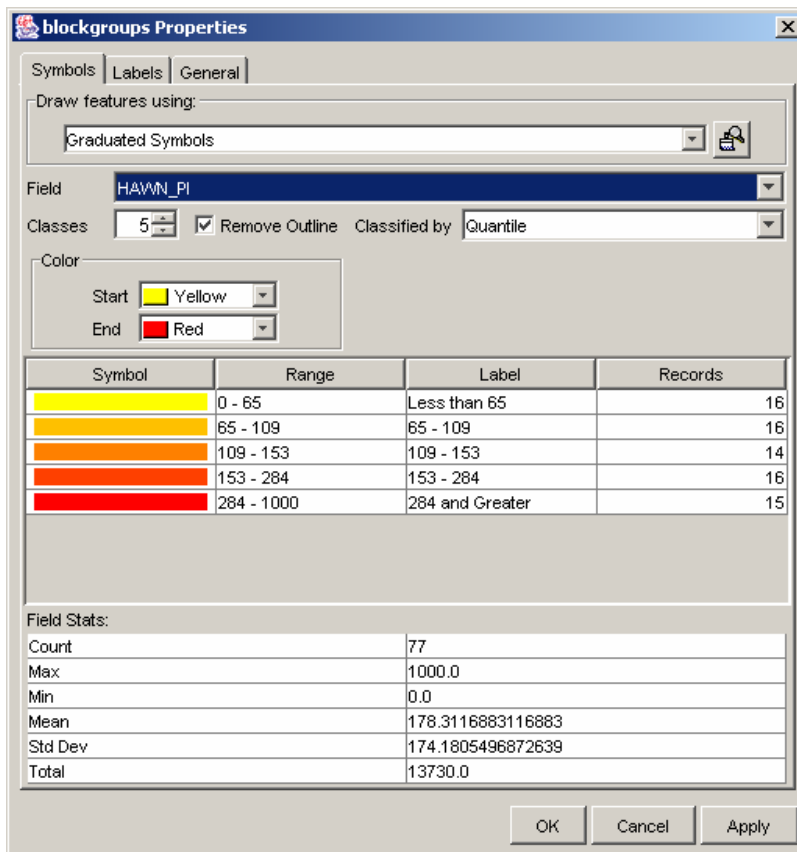
7) How does the Native Hawaiian population distribution compare to the total number of people in each block group?

8) Compare the Native Hawaiians on other islands to that on Maui. Which islands have the highest number of Native Hawaiians? Do these results surprise you? Why or why not?

Turn off the layer you have been examining and make the first one in the table of contents visible – blockgroups-subset. This map displays the variable AS_5_17: The total block group population aged 5 to 17 who speak an Asian and Pacific language at home.

9) Compare the distribution of Hawaiian language speakers to the total population of the block group.

Right click on the blockgroups-subset map layer and open the attribute table. Find the AS_5_17 field. Right click on the field and select "sort descending" to obtain a table with the highest number of Hawaiian language speakers at the top. Select the first record, and then hold the shift key down to select a total of 5 records in the table. Look on your map to find these block groups highlighted in yellow.

10) Where are the top 5 areas where the most school-age people speak Hawaiian? Do the results surprise you? Why or why not?

Change the variable mapped in this layer to AS_18_64 and to AS_65—the Hawaiian language speakers between 18 and 64 years old, and those over 65.

11) Compare the pattern of Hawaiian speakers at the three different age ranges. Are they concentrated in the same place, or in different places?

12) Are the Hawaiian speakers more numerous at the older ages or the younger ages? What does this tell you about the future health of the Hawaiian language?

13) Present the results of your investigations from this lesson to the class in a 5-minute oral report. Use the maps and data you have been studying in your presentation. Include in your presentation what you think we should do in the future with regard to preserving the Native Hawaiian language on Maui and where we should concentrate our efforts.

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