USA demographics

from the Esri GeoInquiries™ collection for Human Geography

Audience – Human geography	Time required – 15 minutes

Activity	Explore U.S. census data to investigate the spatial differences in the United States' population.
APHG Benchmarks	APHG: II.A1. Geographical analysis of population (density, distribute and scale) APHG: II.A3. Geographical analysis of population (composition: age, sex, income, education and ethnicity) APHG:II.A4. Geographical analysis of population (patterns of fertility, mortality and health)
Learning Outcomes	• Students will be able to identify U.S. population data and certain spatial patterns.

Map URL: http://esriurl.com/humanGeoInquiry4

❓ Ask

How does population density vary?

➜ Click the link above to launch the map.
❓ Which part of the United states is the most heavily populated? Zoom into the most heavily populated areas. *[the east, specifically, the northeast]*
❓ What happens when you zoom in? *[Smaller areas appear, e.g., county, census tract, etc.]*
➜ Slowly zoom in on New York City or another urban area.
❓ What pattern do you observe? *[Smaller areas show more spatial variation]*

Acquire

Why does population density vary?

➜ With the Details button underlined, click the button, Show Contents of Map (Content).
➜ Check the box to the left of the layer, USA Topo Maps.
➜ Make the USA Population Density layer 40 percent transparent (see the Transparency ToolTip).
➜ Zoom and pan the map.
❓ How does physical geography affect population density? *[Higher population density along the coasts and rivers; lower population density in mountains and deserts.]*

🔍 Explore

How does income vary across the United States?

➜ Turn on the two layers, Median Household Income and USA Major Cities.
➜ Turn off all other layers.
➜ Click the button, Show Map Legend (Legend).
➜ How are median household income and cities related? *[Median household incomes tend to the higher adjacent to urban areas]*

more ▶

📋 Analyze

How does age differ across the United States?

- ➡ Click the button, Show Contents (Content).
- ➡ Turn on the layer, Median Age. Turn off other layers. Choose the bookmark, State.
- ❓ Which state has the highest median age? *[Maine]*
- ❓ What could account for the high median age there? *[out-migration of the young]*
- ❓ Which states show young populations? *[Idaho, Utah, Texas, California, and Alaska]*
- ➡ Click the button, Bookmarks. Select County.
- ❓ How did the pattern change? *[More states have more blue areas showing higher median ages]*
- ➡ Turn on the layer, Median Age-UT & FL Tracts. Zoom to Florida.
- ❓ Are all residents of Florida elderly? *[No]*
- ❓ What could account for the many elderly in Florida? *[In-migration of retirees]*

✅ Act

How does scale influence the interpretation of data?

- ❓ Utah has the lowest median age in the United States.
- ❓ Click the button, Bookmarks. Select Utah tracts.
- ❓ At this scale, which bordering state shows the sharpest contrast? *[Colorado]*
- ❓ What is surprising about Idaho? *[Idaho is a low median age state, but many higher median age areas are evident at the county level.]*
- ❓ Click the button, Bookmarks. Select Oklahoma City.
- ❓ What age patterns do you observe? *[Young people are concentrated in the city center.]*

BOOKMARKS

- Click the button, Bookmarks.
- Click bookmark of interest to zoom to a map location and scale.

TRANSPARENCY

- To view two layers simultaneously, make one "see-through."
- In the Contents pane, click the three dots beneath the layer name.
- Select Transparency, and adjust it to 50 percent.

Next Steps

DID YOU KNOW? ArcGIS Online is a mapping platform freely available to public, private, and home schools. A school subscription provides additional security, privacy, and content features. Learn more about ArcGIS Online and how to get a school subscription at http://www.esri.com/schools.

THEN TRY THIS...
- Create an online story map using demographic data to highlight certain demographic trends in the United States or a particular region.
- Load state-specific demographic data to your organizational account home page.

🖵 TEXT REFERENCES

This GIS map has been cross-referenced to material in sections of chapters from these texts.

- *Human Geography: A Short Introduction by Oxford University Press – Chapter 3*
- *The Cultural Landscape by Pearson – Chapters 5, 6*
- *Human Geography: People Place and Culture by Wiley Press – Chapters 5, 6*