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]
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

• 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

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