The Human Development Index
from the Esri GeoInquiries™ collection for Human Geography

**Audience** – Human geography  
**Time required** – 15 minutes

**Activity**
Explore the spatial patterns of the Human Development Index (HDI) to identify regional patterns and causal factors in the data.

**APHG Benchmarks**
APHG: VI:B1 Explain social and economic measures of development – HDI, Gender Inequality Index (GII), Total Fertility Rate (TRF).  
APHG: VI:B6 Social and economic measures of development — Changes in fertility and mortality

**Learning Outcomes**
- Students will analyze and use development statistics to identify and explain correlations between development and other APHG topics (for example, fertility and mortality).

**Map URL:** http://esriurl.com/humanGeolnquiry12

### Ask

**What is development?**
- “Development” is a complicated word.
- What are some characteristics of a developed or less developed society?
- Click the link above to launch the map.
- The UN creates an index from health, education, and wealth indicators to assess a country’s level of development.
- What statistics do you think could be used as indicators?  
  - Health: life expectancy; education: years of schooling; wealth: per capita income.

### Acquire

**How does development compare around the world?**
- Click on the United States and examine the pop-up. Repeat for Brazil and Pakistan.
- How does the index vary for these countries?  
  - The United States has the highest 2017 HDI (0.92), Brazil has an HDI of 0.75, and Pakistan has an HDI of 0.56.
- Which regions are the most and least developed in the world?  
  - The most developed regions are Europe and North America, whereas the least developed are Africa and Southeast Asia.

### Explore

**How does crime affect development?**
- With the Details button underlined, click the button, Show Contents of Map (Content).
- Uncheck the box to the left of the layer name, Human Development Index, 2017.
- Turn on the layer, Murder Rates per 100,000.
- Click the button, Bookmarks. Select Central America.
- Which country has the highest 2015 murder rate?  
  - El Salvador
- What correlation is there between development and crime?  
  - A higher murder rate correlates with lower development index scores.
**Analyze**

What effect does birth rate have on development?

- Show only the layer, Total Fertility Rate.
- Filter the data to find regions with the highest fertility rates. (See Filter Tooltip below.)
- From the Contents pane, click the button, Filter.
- Build this query: Total Fertility Rate 2016 Is Greater Than 3 (value).

? How does this statistic correlate with development? [Higher fertility rates correlate with lower levels of development.]
- Turn off the layer, Total Fertility Rate.

**Act**

How does gender inequality affect development?

- Turn on the two layers: Gender Inequality Index and the GNI Per Capita.
- Compare the two layers by turning them on and off.

? What is the general relationship between these two layers? [Wealthier countries have less gender inequality.]
- Explore the regions of the world, visually.

? Is there a region that has very high per capita income but also experiences high levels of gender inequality? [The Middle East, and the Persian Gulf oil states more specifically.]
- How do income and gender inequality affect a country’s HDI ranking? [Income raises the rank, but gender inequality lowers the rank of human development.]

**FILTER**

- Filter is only available for certain map layers.
- In the Content pane, hover over the map layer name.
- Under the map layer name, click the button, Filter.
- Set the filter parameters.
- Be sure to press the apply button.

**TABLE SORT**

- Filter is only available for certain map layers.
- In the Content pane, hover over the map layer name.
- Under the map layer name, click the button, Show Table.
- Click the field name (column header).
- Choose Sort Ascending or Descending.

**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**...
- Use Enrich Data (in the Analysis tools) to add additional demographic, population, or economic data to the existing HDI dataset for targeted geographies.
- Create a story map using demographic data to highlight the metrics that are a part of the HDI composite statistic.

**REFERENCES**

- Human Geography: A Short Introduction by Oxford University Press – Chapter 10
- The Cultural Landscape by Pearson – Chapter 9