**ArcGIS First Lesson**

**Activity 1: Explore Variables by State: access http://www.esri.com**   
  
A) Search for “USA Demographics for Schools” (include the quotes)  
Click on Fun with GIS 119: Five Faves of USA  
Click on USA Demographics for Schools (should be the first choice)  
In the left-hand margin click on - **Open this map in:** [ArcGIS Explorer Online](http://www.arcgis.com/explorer/?open=a59da1645fad4014b961234eb363e7b5)  
  
Note: the left hand box has three icons – Layers, Add Features, and Legend. Also note that you are viewing population density.   
  
B) Show the legend (by clicking on it):  
What do the colors mean on the map?  How does population density differ from total population?  How is population density calculated?  
  
C) Use the left slider bar, use your mouse wheel, double-click on the mouse, or hold down the shift key while dragging a rectangle on the map to zoom in or out until you see the map at the scale in which entire states have one base color.  Click on individual states to see the exact population density.  Which state has the highest population density? Which state has the lowest?  
 **Activity 2: Explore Variables by County**  
  
A) Looking at the toolbar at the top of the map, change the basemap to “Terrain with Labels” so you can see features underneath the data.  Zoom in on a state with a high population density.   
  
B) Start with Georgia. As you zoom in, you will see population density by county.  
Which parts of Georgia have the highest population density? (check the legend)  Which parts of Georgia have the lowest population density?  Examine the cities in Georgia. What influence do cities have on population density? Why?  
 **Activity 3: Examine Population Change:**   
  
A) Zoom back out to the United States and change the variable to population change, 2000-2010.  
What pattern do you see of the fast-growth states versus the slow-growth states? (check the legend)  Think about what factors would influence why people move, and hence, why population changes.  
  
B) Zoom to your county, and then to your community.    
Do you notice any pattern?  Why do you think this is?  
 **Activity 4: Experiment on your own:**  
  
A) Under Layers, check USA Median Age.  You may check other variables. List what these variable are.  
  
B) Looking at the toolbar at the top of the map, select Add Content, type “USA Historical Tornadoes” in the space provided.  Click Add.  You can check it off under Layers at any time.  
  
C) Experiment on your own.  Type in other layers that you can think of … historical hurricanes, USA territory acquisitions, earthquakes, elevation, climate, World Bank age and population, and any others you can think of … (be sure to look within the folders in the Layers pane to find even more interesting layers and data).