Exploring Africa with GIS

In this activity, you will access ArcGIS Online through http://www.arcgis.com/home to explore Africa and look at the relationship between population density and bodies of water. ArcGIS Online is free and only requires a Web browser and an Internet connection.

1. With ArcGIS Online opened, click on Map at the top of the page to open the map viewer.

2. Let's focus on the continent of Africa. You can drag with your mouse to get to Africa.

3. Explore the map of Africa by either using the scroll wheel on your mouse, or placing your cursor at the bottom left-hand side of the page to view a larger version of the navigation bar. You can also pan around the map by clicking (holding down the left key on your mouse) and dragging over to the location of your choice.

4. While exploring your map, take notice of where rivers and lakes are located. You may need to zoom in more to view some of the rivers on the map.

What are the names of four large lakes? _____

_____

What are the names of two large rivers? _____

_____

Note: If you zoom in too far, you may receive a message saying 'Map Data Not Available'. Scroll back out until the map is visible.

5. From the Basemap menu, click and select the Terrain with Labels basemap. This will change your view from the Topographic basemap to a shaded relief basemap.

What are two differences you see when comparing the topographic map and the shaded relief map?

_____

_____

6. Now you will add new content to your map. Click on the Add button. Then, Search for Layers.

7. Type in ESRI_Population_World in the search window and hit Enter on your keyboard.

8. In the search results window, click Add to include ESRI_Population_World in your map. Click Done Adding Layers.

9. Explore the map and look for the areas with high population density. Name two countries in Africa that have very high populations.

_____

10. Look at your list of layers. (If it has disappeared, click details.) Click on the small arrow to the right of the ESRI_Population_World layer.

11. Now you will change the opacity (transparency) of the ESRI_Population_World layer. Click on the Opacity button and drag it half way to change the transparency to 50%. How did this change your map? Leave the transparency at 50%

_____

12. Change your basemap back to topographic. Now, look at your map, specifically at Africa. Think back to our questions about rivers and lakes. What is the relationship population density and bodies of water?

_____

_____

Why do you think this is?

_____

_____

13. Find these three cities on the map. Hint, you can use the search in the upper right. Check off each city after you find it.

1. Lagos, Nigeria _____
2. Cairo, Egypt _____
3. Kinshasa, Democratic Republic of Congo _____

Based on the location of each of the cities, what similarities do you notice between all three of them?

_____

_____

Do you think the relationship between population density and water is only true for humans? Give some examples of some other species that require water.

_____

_____

Extra credit:

You can also enter latitude/longitude pairs in the search window. Enter the following coordinates exactly as written and answer the questions. Hint: Change your basemap to one that is imagery.

-77.037, 38.89746 Who lives here? _____

2.2946, 48.8583 What's the name of this structure? _____

Adapted from: http://edcommunity.esri.com/arclessons/lesson.cfm?id=578