

Title: World Cities of 5 Million or More

Sub-Strand F—Spatial Organization

Standard: The student will be able to analyze the patterns of location, functions, structure, and characteristics of local to global settlement patterns and the processes that affect the location of cities.

Benchmark 1: Students will describe the contemporary patterns of large cities.

Grade Level: 9-12 only for the high school course.

Overview: Students will learn where the world's largest cities (5 million or more) and metropolitan areas (5 million or more) are located. In addition, students will map these locations. Students will analyze the settlement patterns and make predictions for the future.

Time: This lesson will take about four 55-minute class periods.

Subjects: Human Geography.

Required Materials:

1. A recent, decent world atlas. (Goode's is good)
2. Access to the Internet.
3. At least three Blank world maps for each student.
4. **Attachments 1-3.**

Optional Technologies:

PowerPoint to put together a slide show from the slides found at the Graphic Bank of the Population Reference Bureau (<http://www.prb.org/>)

Arc View (or other GIS program) to create maps from data sets.

Objectives:

1. Students will locate world cities of 5 million or more people on a blank world map.
2. Students will locate metropolitan areas of 5 million or more people on a blank world map.
3. Students will look at various rates, CBR (Crude Birth Rate), DT (Doubling Time), and NIR (Natural Increase Rate) as a means of comparison.
4. Students will predict future growth of urban areas.

Suggested Procedure:

Day One – Open the lesson by accessing prior knowledge about where the students think large numbers of people live. This can be done individually by giving students two minutes to list what they think in their notebooks and then sharing with the whole group.

Or, it can be done by breaking the class into groups of 4-6 students and giving them four minutes to devise their lists. On the board/overhead you can make a group list of the Top 25 Most Populated *Cities in the World.

***NOTE** – *The issue of “City” versus “Agglomeration” (synonymous with metropolitan area) needs to be dealt with at some point. I’d suggest the sooner, the better.*

Keep this list handy for reference later on. Move the discussion into the investigation stage. Use a world atlas to look at population distribution by City or Metropolitan Area. In the Goode’s Atlas, they use Metropolitan Area and have a good choropleth map on pp. 30-31. Most, if not all, human geography texts and world atlases have a good global population map. Either dot distribution or choropleth by local unit are the best. The difficulty in this lesson is accessing city (or metropolitan) data as compared to country data. With the students referencing a global population map, check out their predictions against the facts.

Day Two (Mapping Day) - Have students make two maps, one showing World Cities with 5 (or more) Million Population, and the other showing World Metropolitan Areas with 5 (or more) Million Population. You have several choices here regarding which data to map and how you want the students to access it.

1. First decide if you want to provide the students with the data (**See Attachment 1 & 2**) or point them to it on the Internet (<http://www.world-gazetteer.com/home.htm>.)
2. Next, decide if you want them to map **all** the data of cities and metropolitan areas (remember they are making two maps) or just the Top 20 ... Top 25 ... etc. of each. **Note: There are 57 global metropolitan areas of 5 (or more) million people, and 27 global cities of 5 (or more) million people.**
3. Finally, decide how you want to label the maps. Again, because the space is limited on a world map that fits on an 8 _ x 11 sheet of paper, I’d suggest using a numbering system that corresponds to the key. For example, if doing “Cities,” I’d place a “1” on the map where Mumbai (Bombay) is located, and write “Mumbai” next to the number in the key.
4. In addition to numbering the location of the data on the map, place a dot of color (highlighter pens work well) to help the reader note where these places are located more easily.

Day Three (Analyze the Maps Day) – Take a few moments at the beginning of class for students to inspect each others’ maps. Hopefully, they all look fairly similar. With the completed maps for reference, have the students answer some basic questions about the pattern/distribution of the data. They can do this individually or in small groups.

Here are some sample discussion questions to use:

1. Categorize the data by region (continent.) Which continent has the largest representation? . . . Which has the smallest? Speculate as to why you think the distribution pattern is as it appears.
2. Look at the data in terms of *LDCs vs. *MDCs ***NOTE** – *LDC (less developed country) and MDC (more developed country) are terms found in most, if not all, human geography texts. Make sure your students recognize the LDC and MDC regions of the world.* How would you characterize where the data is found in

- terms of LDC/MDC regions of the world? . . . Where are most of the largest urban concentrations of people found? . . . Where are the fewest? Again, speculate as to why you think so.
3. Are there any surprises, or “abnormalities” that you can’t account for in the distribution? Relate what you know about global population.
 4. Choose several additional demographic variables (CBR, TFR, NIR, etc.) and have the students compare their maps with maps showing these different variables. This may be easiest to do in small groups, assigning each group a different variable; who, in turn, will report back to the whole class. Again, any human geography text or world atlas will have these thematic maps available. Is there any correlation? . . . How do you know?
 5. What additional data would be helpful to further analyze these maps? . . . Rural vs. Urban population data by country? . . . Global population data by country?
 6. Finally, if you were going to predict city/metropolitan growth for the future, how would you describe the trends? What additional data would be helpful to make those predictions?

Day Four – Assessment (see below)

Suggested Assessment: Map test where students need to accurately identify the largest city or metropolitan areas of the world; including one or more essay questions where they relate some other demographic variable to the urban data.

RESOURCES

National Geography Standards:

HUMAN SYSTEMS:

STANDARD 9: The characteristics, distribution, and migration of human populations on Earth's surface.

STANDARD 12: The process, patterns, and functions of human settlement.

Supplemental Web Links for Teachers and Students:

<http://www.world-gazetteer.com/home.htm> This is the homepage of the “World Gazetteer.” It has the best global city/metropolitan data that I could find. Although the Census Bureau, <http://www.census.gov/>, and the Population Reference Bureau, <http://www.prb.org/>, are great sites – their data is by country, not by city. While searching the Internet at “Information Please” <http://www.infoplease.com/>, they linked me to “World Gazetteer.”

<http://www.prb.org/> As mentioned above, this is the homepage of the Population Reference Bureau. From here you can access their “Graphics Bank” with several ready-made PowerPoint slides for you to incorporate into any discussion on world population growth.

<http://www.census.gov/> Homepage of the Census Bureau which has terrific International data, but by country only, not global city data.

<http://www.cia.gov/cia/publications/factbook/index.html> Homepage of the CIA World Fact book. Great country information. The newest additions include “rank order” pages which has some useful demographic data rankings. Again, this data is by country, not city-specific.

Extension Activities - Access city data from a different source (**See Attachment 3**) and use it to compare to existing data. The example provided in **Attachment 3** comes from the United Nations (reputable source) but it is older (1996.) I have removed the weblink, because it is no longer free. Have students highlight the metropolitan areas of 5 million (or more) people from this data set and compare it to the World Gazetteer data.

Credits

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