

Due Tuesday April 14 for class.

BIRTH RATE MAP INSTRUCTIONS - Read through before beginning.

This assignment will introduce thematic map construction and how to show demographic data on a map. Each student will make a map showing birth rates of the world. This map is required for in-class work and may be used for the midterm. Prepare it carefully. **See page 66** in the text for an example of what your map result should resemble. Neatness and completeness count.

Step 1A: Gather materials needed: This document of instructions (moodle) birthrate data by country (moodle); a blank 8.5x11 inch world map (moodle); colored pencils; a ruler; blank lined paper for ranking data.

Step 1B: You will turn in your map **and** ranked and categorized raw data sheets for this assignment –don't throw calculation etc. away!

Step 2: Rank birth rates. To **"rank"** means to list all numbers from highest to lowest in one column on paper. Each country has a birth-rate associated with it and has been calculated as the number of live births with at least a 23 week pregnancy per 1000 people. Rank the birthrate of each country. You may use any spreadsheet to rank numbers or do it manually. You *may* round to the nearest hundredth (13.12645 to 13.13) or tenth of a percent 13.12645 to 13.1 *but no less*.

This is a critical step that must be shown in your assignment. I don't care how "neat" it is but it must be accurate.

In doing this ranking, do NOT write the country name along side of the numbers. You can go back to the alphabetized list and easily find it. Writing the country name next to the ranked numbers is a lot of unnecessary work.

Step 3: a. Create 5 to 6 Categories within the ranked column of numbers. This takes a bit of counting, basic math and thinking about the data. To start, it's good to find the *mean, median and mode* to make sense of your data.

The mean is the average of your list of numbers. You can calculate or find it on the CIA factbook site if you are not using a spreadsheet. <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2054rank.html>

The median is the number in the middle number of the column (say you have 120 numbers in your list; 60th on your list would have half above or below it).

The mode is the number most often repeated in the list. The mean, mode median are all objective characteristics of data.

a. Make sensible decisions about your categories. *Geographers use subjective knowledge since we are trying to make categories of "like birth-rate" countries. When making categories, look to see which country(s) sits near the cutoff mark. Do I include country X? Does that change make the map more accurate? For instance I want to make cuts where there are wider gaps between numbers: 15.34 15.35 15.36 15.37 15.48 15.49 15.50 . In this list of numbers there are 1/100th of a difference except one area there is 1/10th (0.01 v 0.11) use the largest gap in finding category differences.*

b. Important MAPPING HINT: 5 to 6 categories make the most readable maps. Too many categories (7 or more) are confusing and the reader can't make sense of the map. Each *category must have a range that includes at least 4 countries and preferably more.* Check out the maps in the text. Think in terms for your categories as *extreme high, moderate high, middle, moderate low and extreme low.*

c. Check! There should be **no gaps or overlaps** in category range (**Example of a gap:** First Category = 100-80; Second category = 75-55; *note the gap between 80 and 75*; **Example of an overlap:** First category = 100-80 Second category = 80-55 *80 is in both categories (A and B)- a no-no.*

Step 4: Design the Map Layout –Legend -Map Title -Source of data. At this point you begin working on the map itself.

Draw a legend box with a ruler or use a computer to design it. You can cut/paste and photocopy the map before you color. Make sure the color boxes are large enough to show the colors accurately and each box has the number range printed next to it.

Step 5: Choose Colors to Represent Categories. Even though it sounds trivial it is **very important**. Good cartographers and designers (like Apple Inc.) look for intuitive ways to have the product (your map) convey information.

Think about dark to light colors or warm to cool colors. The most active or highest birthrate category may be "intense or deep colors and the lowest category will have the least intense colors and others graded between. Review how the maps in Chapter 3 use colors to convey information. They do it in several ways. One safe way is to choose monochromatic colors or patterns; heaviest, deepest patterns/color with highest numbers and lightest most sparse pattern for the low numbers. Be sure that your colors are not too close in value or they won't show differences. The goal is make the map easy on the reader. If someone has to "work" at reading a map it is **NOT a good map** (going back and forth between the legend and the map to understand the pattern).

Step 6: NOW is the time to color in your map and the legend colors. The legend must be **ON** the face of the map; not on the back or a different sheet. **Use the original alphabetized data sheet** to color each country with the corresponding legend color. Some people like to checkmark each country name with the associated color on the data sheet in order to finish one color at a time. Maps do not have the names of the countries written in; countries are represented by color only, not name.

Step 7: Every map in this class will be different, but most likely show similar overall information patterns. Have a friend look at your map to see if they can read and understand it. Ask for feedback. We will share these maps and data categories in class on Tuesday.