Mapping the Nation in the Classroom:
Educator Resources

ACTIVITY 1: INTRODUCING MAPS

This activity introduces students to different types of maps. If students are already comfortable with the maps or have used interactive maps before, then do a brief overview of what a heat map is [see glossary] and continue on to Activity 2. Refer to the overview for essential questions and objectives.

TIME REQUIRED: 10 – 15 minutes for High School or 45 minutes for Middle School (Extension activity runs an additional 30-45 minutes.

1. Review the basic features of a map, using this resource:
   https://www.teachervision.com/tv/printables/scottforesman/24269_I_039.pdf

   Discussion question: How would you define or explain what a map is? List some different types of maps. What do you want to learn about maps today? How can you use maps to make decisions?

   Review basic map vocabulary. Here is a printable list:
   http://www.saisd.net/admin/curric/sstudies/newstrat/Map%20Skills%20Vocabulary.doc

2. Then take students through a few examples, starting with the ones from the brainstormed list created earlier. With each map type, ask who can explain what that type of map shows and some key features.
   a. You may want to use this resource to review what a map is and the following types of maps:
      http://www.msnucleus.org/membership/html/jh/earth/mapstype/lesson2/mapstypes02a.html
         i. Topographic maps
         ii. Geologic maps
         iii. Biogeographic maps
         iv. Environmental maps
   b. Explain that not all maps are static or even geographical. Or pose as questions such as "What kinds of interactive maps do you use?" (e.g. Google earth, GPS on their phone, etc.) "Do you know of any non-geographic maps?" (e.g. website site maps, thinking maps, etc.) Additional maps to explore:
         i. Google maps/Google earth:
            http://maps.google.com/help/maps/education/resources.html
         ii. Subway/train/bus/road maps: http://web.mta.info/maps/submap.html
            http://transitmaps.tumblr.com/post/17423082388/london-bus
         iii. Mind map: http://en.wikipedia.org/wiki/Mind_map
         iv. Site Map: http://www.oecd.org/sitemap/ (or show one from your school or organizations webpage.

3. Next review a heat map: *A **heat map** is a visual representation of data where the individual values contained are represented as colors. Larger values tend to be represented by dark colors and smaller values by light colors.* (http://en.wikipedia.org/wiki/Heat_map)

    i. Show some examples of heat maps:
   1. Musical preferences: http://www.mymodernmet.com/profiles/blogs/regional-musical-preferences-heat-map
   2. Obesity trends: https://dabrownstein.files.wordpress.com/2013/07/obesity-2010.jpg
   3. Baseball fans: http://www.nytimes.com/interactive/2014/04/23/upshot/24-upshot-baseball.html?_r=0&abt=0002&abg=0
   4. Race in the United States: http://www.wired.com/2013/08/how-segregated-is-your-city-this-eye-opening-map-shows-you/

    ii. Then show Mappingthenation.net. Have students identify their state and county. Discussion question: What can you learn about your community using this map?

4. Check for understanding: (This can be an introductory activity instead based upon known knowledge and skills of the students.) Print out additional examples of the maps listed above. Print out the vocabulary list and cut out each word. Have students match the words to the correct map type.

5. **Extension Activity for Grades 6-8: Scavenger Hunt.** Divide students into groups and have each group create a map of the school or neighborhood. Each group can then hide a "treasure" in a spot and create coordinates, landmarks, or directions to find it (walk 30 paces west, then turn to the north and walk through the door, etc). Students can trade maps and complete each others scavenger hunt. Instead of hiding an item, students could also take photos of the landmarks at each stop on the hunt.

6. **Extension Activity for Grades 9 – 12:** Have students create a heat map. Go to city-data.com and chose your state and then a category. Find one data point for the cities you are interested in comparing. For example, under Neighborhoods, you could compare your neighborhood with one next to yours. Note the zip code for your neighborhood and the one you are comparing in an excel sheet with two columns:

Neighborhood Zip Code	Median Rent
54301	466
54303	478
54302	645

Students can either create/draw their own map and color in the areas with darker or lighter colors to represent the different data points or to create one online, have students visit: http://www.openheatmap.com
Here they can upload their excel files and automatically see their heat map created for them. They can adjust settings and labels as well.

Have students showcase their maps to the class and explain why their chosen topic was of interest, what they learned, and what additional questions the data sparks.

7. **Reflection:** Students should reflect on the discussion either in pairs or through journaling or an exit slip. What did they learn about maps? How can they better use different types of maps in their everyday lives?