

Using Graphs to Compare Data

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Purpose:

The purpose of this lesson is to introduce fifth and sixth grade math intervention students to East Asia. Using The CIA Factbook online students will complete a data table comparing population, GDP, and Land Area of East Asian countries to the United States. Then students will have to create graphs to display the data.

State of Ohio Mathematics Content Standards (6th Grade)

Data Analysis and Probability Standard

01. Read construct and interpret line graphs, circle graphs and histograms.
02. Select, create and use graphical representations that are appropriate for the type of data collected.
03. Compare representation of the same data in different types of graphs, such as a bar graph and circle graph.

Materials:

1. Access to the Internet to complete the data table using facts from the CIA Factbook
2. Blank Data Table
3. Directions on how to complete graphs
4. Questions to answer analyzing the data graphed
5. Access to Microsoft Excel to complete graphs

References:

The 2008 World Fact Book (Rev Ed edition ed.). (2008, February 21). Potomac Books Inc. Retrieved April 6, 2008, from <https://www.cia.gov/library/publications/the-world-factbook/index.html>

Day 1

- 1.) Place students into pairs. To modify the assignment, require that all students work independently to increase difficulty or have groups of 4-5 students working together to decrease difficulty.
- 2.) Instruct students to go to <https://www.cia.gov/library/publications/the-world-factbook/index.html> to find information to complete data table.
- 3.) Have students complete blank data table in Excel.

Day 2

- 1.) Have students complete 3 Bar Graphs in excel.
- 2.) Have students follow directions

Day 3

- 1.) Have students with their partner analyze and interpret the data by answering the questions on the questionnaire sheet. This could be modified to be more difficult by not handing out the questionnaire sheet and have students write several paragraphs interpretations from the graphs.

Day 4

- 1.) Hold a class discussion on the Data Analysis Questions.

Assessment:

Assess student/pair data table for accuracy. Assess Bar Graphs for accuracy of data, along with correct labels and spelling. Group participation and discussion can also be evaluated

Data Table					
	United States	China	Japan	North Korea	South Korea
Total Population (July 2007 estimate)					
Area (In Square Kilometers)					
GDP (*The average income people make)					

** Please note this definition is being used so 5th and 6th grade students understand the concept.*

MUST SEE EXCEL SPREAD SHEET FOR COMPLETED VERSION UNTIL THIS DOCUMENT IS PUT INTO A PDF FORMAT

Directions to Create Graphs in Excel

How to gather information for the Data Table

- 1.) Go to Mrs. Raddish's Website and Download the blank Data table I have created in Excel.
- 2.) Complete this data table using the following link:
<https://www.cia.gov/library/publications/the-world-factbook/index.html>
- 3.) Go to "Select a Country or Location" pull down menu and select one of the five countries above. Scroll through the information on the page until you've answered all 3 parts
- 4.) Repeat for the remaining 4 countries

How to Create the Three Graphs

Population Graph

- 1.) Highlight the first row, which will become the x-axis. Then press and hold down Ctrl while highlighting the entire second row with all the countries population data.
- 2.) Press the Chart Wizard button at top of screen.
- 3.) Hit the next option twice
- 4.) Create appropriate Labels for both the x-axis and y-axis along with a title for the graph (**Be sure to capitalize and spell correctly*)

Area Graph

- 1.) Highlight the first row, which will become the x-axis. Then press and hold down Ctrl while highlighting the entire third row with all the countries Area (in square miles) data.
- 2.) Press the Chart Wizard button at top of screen.
- 3.) Hit the next option twice
- 4.) Create appropriate Labels for both the x-axis and y-axis along with a title for the graph (**Be sure to capitalize and spell correctly*)

GDP Graph

- 1.) Highlight the first row, which will become the x-axis. Then press and hold down Ctrl while highlighting the entire fourth row with all the countries GDP data.
- 2.) Press the Chart Wizard button at top of screen.
- 3.) Hit the next option twice
- 4.) Create appropriate Labels for both the x-axis and y-axis along with a title for the graph (**Be sure to capitalize and spell correctly*)

When you are finished you should have the completed data table along with 3 bar graphs on the same Excel spreadsheet. Mrs. Raddish will check and give you permission to print. You will then use this to answer the Data Analysis questions.

Data Analysis **Questionnaire Sheet**

1. **State any observations and conclusions you made about the Population Graph.**
2. **State any observations and conclusions you made about the Area Graph.**
**This graph is comparing the amount of land each country has.*
3. **State any observations and conclusions you made about the GDP Graph.**
**This graph is comparing the average income people in each country make.*
4. **What inferences can you make comparing the population and land area of China to the United States?**

