

# Instructional Guide for the use of: Gapminder in the Educational Setting



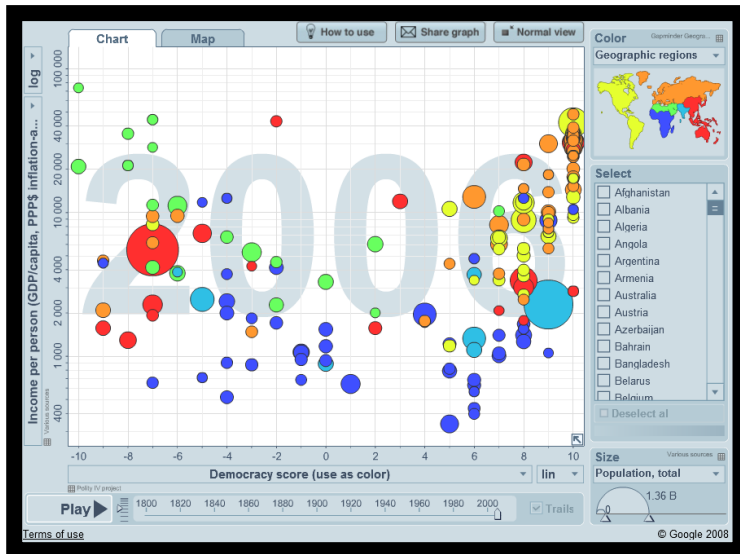
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## Introduction:

This document serves as an instructional guide to aid teachers in instructing a lesson that allows students to use the Gapminder.org data collection/comparison tool to compare a set of data.

## Key Content Message:

This instructional guide will focus on comparing the average income per person in countries around the world to the democracy score of those same nations. Students should be able to recognize major world powers and be able to identify the government classifications of those countries. Students should further be able to justify the reasoning behind why a particular countries received the democracy score that it did in relation to the different types of governments.



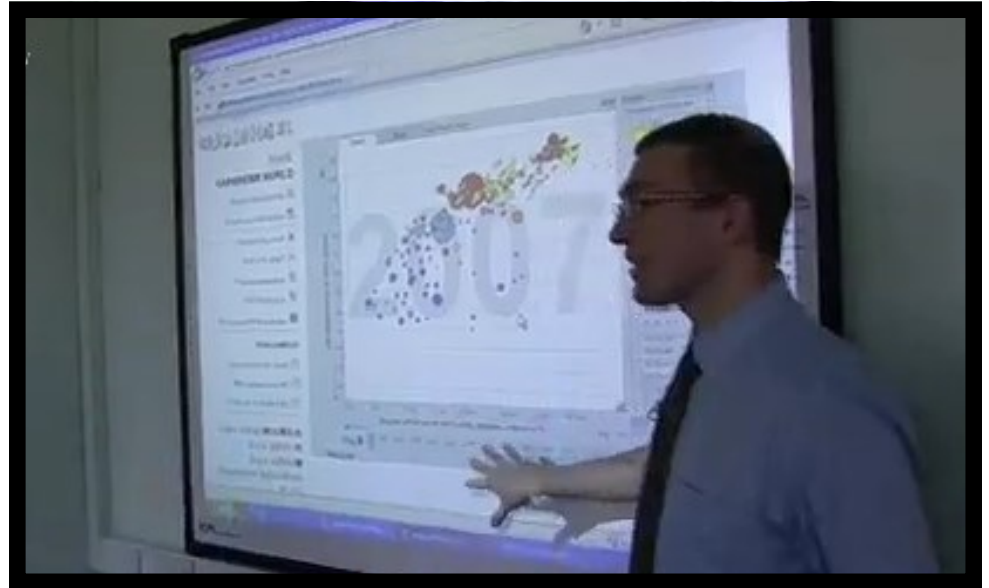
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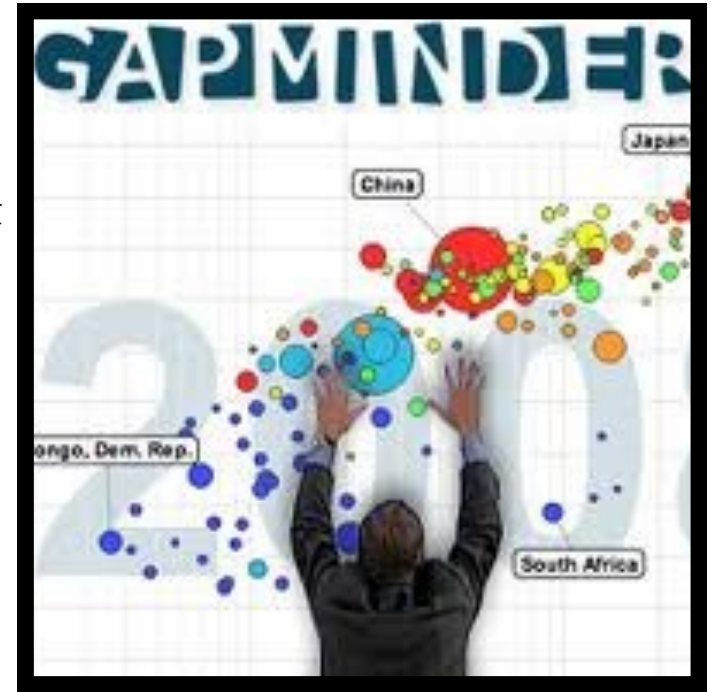
## Activity Overview:

- ♦ Preparation: For this lesson the teacher will need a SMART Board, projector, or computer lab accessibility. The teacher will also need functioning Internet since, Gapminder is a web-based program. Note: The program will not run on the iPad or iPod effectively.
- ♦ Viewing and Explaining the Graph: In order for students to grasp the full capabilities of the program it is imperative that the teacher displays and explains the functions of the graphs on Gapminder. Students need to understand how to access Gapminder World and how to find the data set that they have been instructed to view.
- ♦ Discuss the Different Types of Governments: A key part to the comprehension of the lesson is the expected background knowledge that students come to the proverbial table with. Students should know the different types of government, If they don't or if needed the teacher should review the different types of governments that exist globally.
- ♦ Discuss the Population of Nations: Explain to students that the larger the circle on the graph the larger the population is of the country.



## ...Activity Overview Continued

- ◆ Discuss what a Democracy Score is: Students must know what a democracy score is in order to understand the data set that is provided and how the democracy score relates to average income.
- ◆ Discuss What the Average Income Per Person Means: Students must understand what is meant by average income per person in order to understand how the democracy score of nations compares.
- ◆ Exploration Time: In order for students to have the opportunity to become acquainted with the program, students must be given the chance to explore the program.
- ◆ Activity Time: Students must also be given time to complete the assigned activity. This time should be separate or in addition to the exploration time.
- ◆ Reflection: Once students complete the activity they should be given time to reflect upon what they learned. The reflection can be completed by students any numerous ways. They can have some sort of formal write up, an informal question sheet, or a simple entry in their class journal.



Point out the country of Qatar and have students discuss why it is in the corner.

Select Chart or Map view

Click here for a short tutorial video.

Click here to get a short link to the specific graph you have created

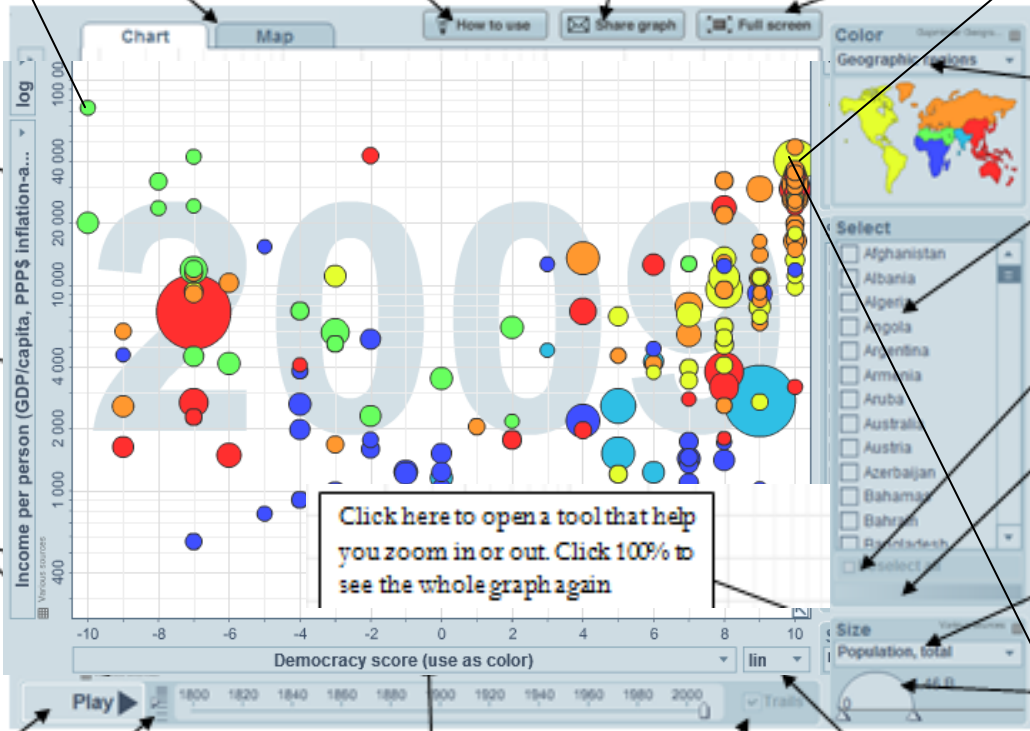
Click here if you use the graph in a lecture. The graph will cover the whole screen

Have students pick three countries and locate them on the graph.

Click here to select indicators for the y axis

Hover your mouse over the bubble to reveal the names of the countries

If you want information about the sources you can click on the small print next to the axis.



Click here to open a tool that help you zoom in or out. Click 100% to see the whole graph again

The countries on the graph are colour coded by continent. Here you can choose to colour code them by other indicators.

Select individual countries here by clicking the boxes. You can also click on the bubbles.

Deselect all countries here

Remove all countries other than those selected here.

The size of the bubbles normally represents the population of the country. Click here to make the size proportional to another indicator.

Change the size of the bubbles here.

Have students locate the country that they live in and discuss why it is located in the position on the graph that it is.

Watch the graph change over time by using these buttons

Change the speed of the graph here

Click here to select indicators for the x axis. You can also choose to display time on this axis.

Click Trails to track a selected country while an animation plays

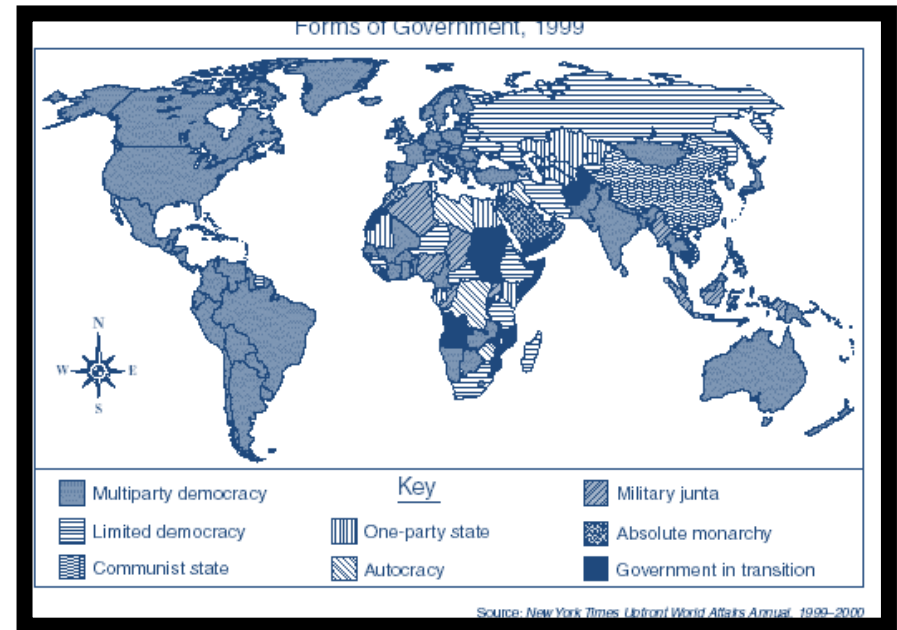
Both the x and y axis scales can be linear or logarithmic. Choosing log scale may make it easier to see the trends on the graph.

# Graph Overview

## Activity Instructions:

### Background Knowledge

- ◆ The teacher should also discuss the different types of governments to ensure that students will be able to understand and relate the types of governments to differing nations democracy score. Students should be able to make the connection that China does not have a very high democracy score because, the country is classified as communist. They should also be able to make the connection that the United States has the highest democracy score since, the United States' form of government is a democracy.
- ◆ Discussing and Exploring the Different Types of Governments: The types of governments should be known by students (Note: If students do not have the background knowledge, take a few minutes to discuss the different types of government as mentioned previously.) As an extension pose the following question to students for them to answer during their activity time either written on the board or printed for students in a handout: Describe the democracy score of five different countries and explain why they are located in the position that they are located on the graph.



## Activity Instructions Continued...

◆ The teacher should instruct students to go to [www.gapminder.org](http://www.gapminder.org), click on gapminder world, then click on the y-axis and select income per person, then click on the x-axis and select democracy score.

◆ The data that is being used in the graph should be explicitly explained to students to ensure that they will be successful in completing the activity.

1. Discussing the Democracy Score: If students have access to computing devices, set a timer to 5 minutes and instruct students to look up and be prepared to define Democracy Score. When the time has elapsed, ask for a student volunteer to tell the class what is meant by the term.
2. Discussing the Income Per person: Using the same method as above, instruct students to look up and be prepared to define the Income Per Person and what is meant by the term.
3. Discussing the Population of Nations: Instead of asking students what population is or what the circle size means- Write on the board or on a handout the name of three recognizable countries: China, USA, and England. Then instruct students to make some inferences about the appearance of the data based on the plotted points of those three countries. (This can be completed in sequential order as described or during the exploration time.)



INCOME PER PERSON

DEMOCRACY SCORE

The size of the circle represents the population of the country.

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## Activity Instructions Continued...

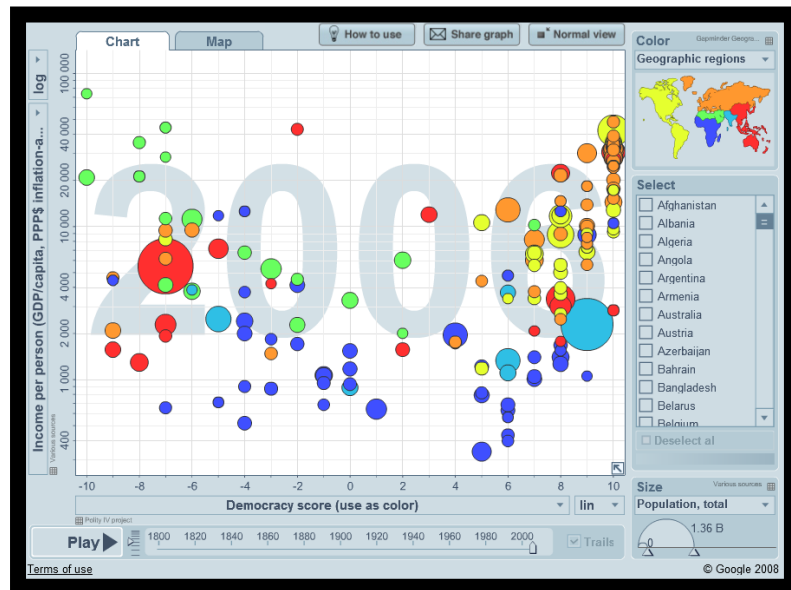
- ♦ Exploration Time: In order for students to have the opportunity to become acquainted with the Gapminder World program, students must be given the chance to explore the program. Set a timer and give students 10 minutes (Or more) to explore. Instruct students to take a look at Gapminder, enter in different data sets, and try to explain why some of them look the way that they do. If you think students need it or would benefit from it, you can make the exploration time guided.
- ♦ Activity Time: During the activity time students should be given ample time to complete the activity guide question sheet. Students should be able to complete this sheet independently since, all of the background knowledge and other information has been discussed previously.

## Questions for Activity Time:

1. Explain what is meant by democracy score. Choose 5 countries, describe the type of government the countries have and draw conclusion about why the countries democracy score is what it is.
2. Choose 3 countries that are different from the ones above and describe the wealth of the countries. Explain how you know the wealth of the nations and the process that you took to find the wealth.
3. From the countries that you have already worked with choose two and thoroughly explain how the population, location, and democracy score of those countries effect the overall wealth of the nation.
4. Based on the information that can be gleaned from gapminder only, decide on a country that you would most like to live in. (This can not be a country that you currently reside in.) Once you have chosen the country of your choice defend your choice using details.

## Activity Instructions Continued...

Teachers may want to add more questions or break the questions up into multiple questions. The questions are written to be multi-step and thought provoking in the hopes that students will inquire about the answers to the questions. The teacher may also choose to let students use Gapminder only or use other search engines/websites in addition to Gapminder.



### Reflection:

Once students complete the activity the teacher can instruct them to write down three things that they liked about the activity, three things they didn't like, and three things that they would change if they did the activity or used Gapminder again. This will help the teacher decide what worked, what didn't, or what needs to be changed the next time Gapminder is used.