Curriculum Development and Design Keystone Assignment: Unit Plan
Lynne Bailey, Germaine Behagen, Andrew Gallagher & Mary Nicholas

Global Community

Population – Growth, Impact & Diversity

Social Studies Element

See accompanying PowerPoint Presentations:
The United States of America 300 Million Faces (filename:
USAPeopleInterUnit.ppt) and
People of the USA (filename: USAPeopleMovie.pps)

Lynne Bailey

Professor Lipson   **Fall Term, 2006**   **EDPC 605**

Table of Contents

Global Community Unit Overview

Lynne Bailey, Germaine Beghagen, Andrew Gallagher, Mary Nicholas

This unit of study will introduce students to the concept of Global Communities through cross-curricular activities in the following subjects:

Social Studies
- Geography
- History
- Demographics
- Sociology

Technology
- Use of Internet
- Using graphing programs (e.g., Excel)
- Using technology for presentations (e.g., PowerPoint)
- Word processing
- Using digital imaging

Math
- Exponential growth
- Graphing data
- Understanding large numbers
- Understanding and expressing ratio and proportion

ELA
- Research skills
- Writing reports
- Understanding scientific and other specialized vocabulary

Science
- Earth science
- Environmental science
- Biology
- Nutritional science
- Epidemiology
- AIDS

Arts
- Primary documents
- Photographs
- Original paintings
- Expressing concepts graphically
- World music

Objectives (what students will know and be able to do)
Students will be able to:
- Identify indicators of human impact on environment
- Evaluate the impact of our lifestyles on the environment
- Understand relationships and implications of demographic data
- Explore the variation in quality of life in selected countries
- Develop a working vocabulary for population geography
- Use artistic & technology skills to express concepts: charts, graphs, tables, paintings, photographs, presentations.

Culminating Project
Students will produce a culminating project called "**The Village of 100**". This project will be in the form of a PowerPoint presentation, and will include elements of each of the above subjects. Students will reduce global statistics to a ration of 100, as a way of indication how many of a demographic population would be represented if they lived in a community of 100 people.

Social Studies Element – Lynne M. Bailey
The Social Studies element of this unit focuses on various concepts of populations, and comparing statistical information and maps of the world and several foreign countries. In groups, students will develop a presentation on individual countries, including China and India, to become more familiar with that country's geography, demographics, quality of life, features, locales and impact on the Earth. The USA presentation will serve as a guide. Students culminating project, called "**The Village of 100,**" will use the graphics and information collected for the PowerPoint presentation. The "Village of 100" will be a self-running (moving) visual show presentation.

The use of Technology throughout all the Social Studies activities is widespread, and incorporates Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Online interactive activities, Data Sheets, Google Earth, and PodCasts.

Social Studies Segment of Unit

Class/ Topic	Middle School Social Studies: Population Growth, Impact & Diversity Lesson Plans for 45-minute classes/ Unit length – 6 weeks
Unit Aims	★ Students will demonstrate a basic understanding of population dynamics, including population growth and diversity, by comparing statistical data, creating charts and graphs, and analyzing maps ★ Student groups will gather statistical and general information from the Internet on several foreign countries, including India and China ★ Students will create a presentation on a selected country including geographical information, appropriate pie chart(s) and bar graph(s), and general information: type of government, per capita data on literacy, personal wealth, health, population distribution and factors, major religions, environmental impact, photos of people and places and distinguishing characteristics ★ Students will also create a moving show presentation using the resources from the slide presentation ★ Students will also investigate human impact on the Earth
NYS Standards for Unit	SS (Social Studies) 2 World History • SS2.I.1A: Students know the social and economic characteristics, such as customs, traditions, child-rearing practices, ways of making a living, education, and socialization practices, gender roles, foods, and religious and spiritual beliefs that distinguish different cultures and civilizations SS3 Geography • SS3: Students will use a variety of intellectual skills to demonstrate their understanding of the geography of the interdependent world in which we live—local, national, and global—including the distribution of people, places, and environments over the Earth's surface • SS3.I.1B: Students understand the characteristics, functions, and applications of maps, global, aerial and other photographs, satellite-produced images, and models • SS3.I.1C: Students investigate why people and places are located where they are located and what patterns can be perceived in these locations • SS3.I.1D: Students describe the relationship between people and environments and the connections between people and places MST2 Information Systems • MST2.I.IS1A: Students use a range of equipment and software to integrate several forms of information in order to create good quality audio, video, graphic, and text-based presentations. • MST2.I.IS1B: Students use spreadsheets and database software to collect, process, display, and analyze information. Students access needed information from electronic databases and on-line telecommunication services. • MST2.I.IS1C: Students systematically obtain accurate and relevant information pertaining to a particular topic from a range of sources, including local and national media, libraries, museums,

	governmental agencies, industries, and individuals
Prior Learning	Some experience using Excel to create simple tables, and charts
Materials	Computers, Internet access, MS Word, Excel & PowerPoint, LCD projector; World map(s)
Select Essential Questions for Unit	• What are the essential elements used to measure population growth? Birth/Deaths/Net Migration • What data is collected to characterize people? How do countries/region compare to each other? • How does population growth differ from developed to undeveloped countries? How do we differentiate developed and undeveloped countries? • What factors have contributed to human population growth? How does the environment/habitat/geography effect population growth? • Is there a tendency for population growth to stabilize? Where do we see that happening? • Do experts think human population will reach a plateau? If so, when, and at what numbers? (cite sources) • What impact does a population have on its environment? • Are earth's resources in danger? Extended activities: Government Population Policies • Do you think we should limit population growth? Why or why not? • What countries have the happiest people? What qualities of life do you think contribute to a population's happiness? Where do you think most unhappy live and why? /Happiest? (BBC articles)
Select Resources	• US Census Bureau www.census.gov • Population Reference Bureau at www.prb.org • Population Growth Table (good/simple) http://geography.about.com/od/obtainpopulationdata/a/worldpopulation.htm • Synopsis at http://www.globalchange.umich.edu/globalchange2/current/lectures/human_pop/human_pop.html and Wikipedia at http://en.wikipedia.org/wiki/World_population • Resource list http://tigger.uic.edu/~rjensen/populate.html • Earth too Crowded for Utopia op ed at http://news.bbc.co.uk/1/hi/sci/tech/4584572.stm • Ecological footprint at http://earthday.net/footprint/index.asp • Population Education site http://www.populationeducation.org/pages/0,activitydetail,activitydetail,00.ecs?contentid=24; Watch Your Step – eco footprint http://www.populationeducation.org/docs/300millionlessons/watchys.pdf; • World literacy rates http://en.wikipedia.org/wiki/Literacy_Rate Databases and selected compilations • PRB database http://www.prb.org/datafind/datafinder7.htm • CIA Factbook https://www.cia.gov/cia/publications/factbook/index.html • World Bank data http://devdata.worldbank.org/hnpstats/ • http://www.library.uu.nl/wesp/populstat/populhome.html • World Health Organization http://www.who.int/healthinfo/en/ • Religions at http://www.wholesomewords.org/missions/greatc.html • UN statistics division at

	http://unstats.un.org/unsd/demographic/products/default.htm
	• http://www.world-gazetteer.com/wg.php?x=&men=glin&lng=en&dat=32&srt=npan&col=aohdq&allc=x
	• UN site for students http://cyberschoolbus.un.org/; Interactive Map of UN member nations with country info http://cyberschoolbus.un.org/infonation/index.asp
	• Geohive Global Statistics and graphs http://www.xist.org/default1.aspx
Select Unit Vocabulary	Birth Rate: Number of live births per 1,000 population in a given year. (NOT the growth rate!)
	Death Rate: Number of deaths per 1,000 of population in a given year.
	Density (Population Density): the average number of individuals or units per space unit <a population density of 500 per square mile> <a housing density of 10 houses per acre> Number of people living in a given area.
	Depopulation: A state of population decline.
	Emigration: Process of leaving one country to take up residence in another.
	Emigration Rate: Number of emigrants departing an area per 1,000 of population in that area of origin in a given year.
	Immigration: Process of entering one country from another to take up residence. Immigration Rate: Number of immigrants arriving at a destination per 1,000 of population at that destination in a given year.
	Life Expectancy: Average number of additional years a person could expect to live if current mortality trends were to continue for the rest of that person's life. Most commonly cited as life expectancy at birth.
	Migration: Movement of people across a specified boundary for the purpose of establishing a new residence.
	Mortality: Deaths as a component of population change.
	Natality: Births as a component of population change.
	Per Capita: Per 1,000
	Population: Group of objects or organisms of the same kind.
	Natural Increase: The surplus or deficit of births over deaths in a population in a given time frame.
	Overpopulation is the condition of any organism's numbers exceeding the carrying capacity of its ecological niche. In common parlance, the term usually refers to the relationship between the human population and its environment, the Earth. (Wikipedia.com)
	Urban: Typically a community is classified as urban with a population of more than 2,000.
	Urbanization: Growth in the proportion of population living in urban areas.
	Zero Population Growth ZPG: A population in equilibrium, with a growth rate of zero, achieved when births plus immigration equals deaths plus emigration.

Unit Plan by Week

Week One: Introduction, lifestyle variables, population density and trends

Week Two: Understanding population growth, vital statistics, and regional differences

Week Three: Consider human impact and implications, research tools and project strategies

Week Four: Gather country data and begin PowerPoint presentations

Week Five: Continue country research and finish presentations

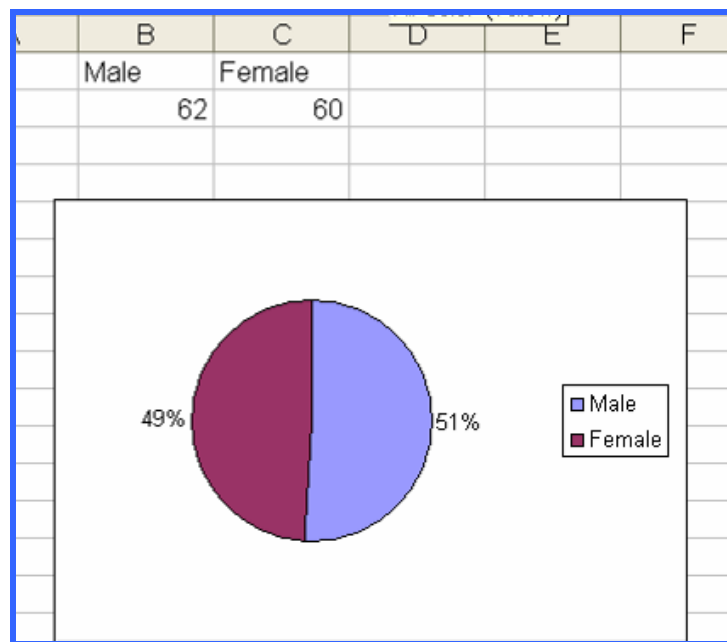**Week Six:**   Finalize moving presentations and present projects

Select Lesson Plans

Lesson 1: Introduction

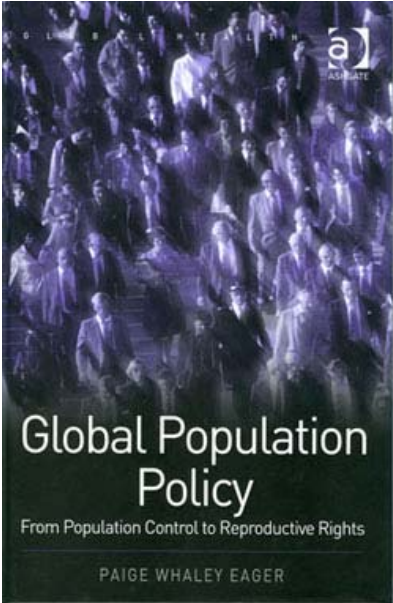|	
Aim	Unit Introduction: By using population information, students will understand and compare global population statistics.
Objectives	SWBAT (Students Will Be Able To): Use class sample survey to analyze gender distribution of aggregate class family members. Convert statistical information (gender) into simple pie chart. Identify distinguishing characteristics of global population (video).
Opening	DO NOW: Individually (in class blog), write sentences answering the following questions. 1) How many people are in your family? 2) How many brothers and sisters do you have? 3) How does that compare with your parent's and grandparents? 4) How many children would you (if you do) like to have?
Activities/ Procedure	1. Whole Class: Ask a couple of students to remark on answers above. Ask class what percentage do they think are male/female. Continue with, "Let's find out" and solicit gender comparison of family lists. "Survey Says…." Have student tally answers on board.
	2. Use LCD and display excel spreadsheet. Direct students to open excel as well and enter compiled responses into worksheet. Students create a pie chart using student comparing Male/Female ratio; student volunteer uses teacher computer to do same. Save files.
	3. After looking at the chart, ask: Of all the people in the world, how many of those people do you think are male/female? (Expect 50/50 answers.) And by the way, how many people are in the world? (6.3 billion) Display World Population Clock. http://www.census.gov/ipc/www/popclockworld.html
	4. Continue, "Let's see how someone else took a look at the world's population in the year 2000." Tell students to take note of 3 different facts in the video. Display Miniature World to introduce Population unit on YouTube.com (3.5 min) http://www.youtube.com/watch?v=DQDLndolQOQ .
	5. Direct students to do a 3 x 3 x 3 (3 students, 3 facts, 3 minutes)
Summary Essential Questions	Share 3 facts and comments with class; Discuss student impressions of the video. What surprised them? How many people live near a coastline? Without basic sanitation? Are hungry or malnourished? Live on less than $2 per day? Have a bank account? Have HIV/AIDs? Have a high school education? How does someone find out these things? How does this compare with student experiences?
Assignment	Write reflective paragraph about video.
Differentiated Learning	Students are grouped by teacher to complement student abilities. Printed and audio version of video script.
Assessment	General Class Rubric: Preparedness, Do Now, Participation & Demeanor, Activity

Sample Excel table & pie chart:

	B	C	D	E	F
	Male	Female			
	62	60			

49% 51%

Male
Female

Lesson 2 (2 class periods): Comparing Diverse Lifestyles

|	
Class/ Topic	Middle School: Population Growth, Impact & Diversity Two Periods are required for this lesson.
Aim	How different are lifestyles in various parts of the world? How and why do we use statistics?
Objectives	SWBAT: Compare and contrast lifestyles of teens in different parts of the world. Explain how statistics can help us understand the world we live in. Identify Shanghai, China; Barbados, Kenya, Los Angeles, California and Lima, Peru on a world map.
Materials	http://www.populationeducation.org/eyeocontentserver/data/upload/PopChallengemar03.pdf.
Opening	[Yesterday students watched a video called the Miniature Earth and to write a reflective paragraph for homework.] Do Now: Transcribe your homework paragraph to your class blog. "Reflections on Miniature Earth Video"

Activities/ Procedure	1. "How did you start your day? What was your day like from the time you left home to the time you got to school? How did you get here?" On Day 1 assign students to 6 groups and give each group one paragraph to read. Direct students to write a few lines of dialogues for a 2-3 minute skit, to go with the paragraph, adding characters if needed, and present it to the whole class with background information. Each group will also identify the country (and city if mentioned) on a world map for the class. Allow students 20 minutes to write skits. A sixth group will discuss a typical morning in NYC for them and create a comparable skit.
	
	2. Readings for Each Group from *People Count: Facing the Population Challenge, What's Going On in the World Today? A Tale of Five Teens*.
	
	   a. "In the morning in China, 17-year old Chao is biking to school with her friends Lee and Vu. On the crowded streets of Shanghai, thousands of people bike to school and work each day. Chao, Lee, and Vu are as close as sisters, but none of them actually has any siblings because of China's strict population policies which discourage couples from having more than one child."
	
	   b. "Half a world away, 15-year old Roland prepares for his after-school job as a lifeguard on one of Barbados' many beautiful beaches. From talking to tourists, he has learned that life in other parts of the world is very different from his peaceful and prosperous island nation. Roland sometimes wonders what it might be like to live in those other places, but he loves his home and hopes that Barbados will stay beautiful forever."
	
	   c. "Nisa's day begins early in her Kenyan village. She wakes at dawn to get a fire started to prepare breakfast for her family. Yesterday, she spent three hours searching for firewood, as the forests in her area are slowly disappearing. Her husband has gone to the city to look for work. Although only 18 years old, Nisa has been married for four years and has had three

children, with another child on the way. Sometimes she wonders if she will be able to afford to send her children to school."

d. "In California's San Fernando Valley, Ricky and his friends have been sitting in a traffic jam for two hours. Although they are eager to get to the beach, they understand that traffic is a fact of life in Los Angeles. Ricky remembers his grandmother once telling him that when she moved from Mexico to California, there were clear skies and orange groves as far as the eye could see. Driving through southern California today, Ricky barely recognizes the place she described."

e. "Today is an exciting day in the shantytown that Luz lives in on the edge of Lima, the capital of Peru. A community organization is installing a water pump for local residents. This is especially good news for Luz, who walks 30 minutes each way to fill her family's heavy water jugs each morning. Luz's family moved here two years ago when she was 12 and she still looks forward to the trips they make back to her home village twice a year. Sometimes she wishes that they could move back to that beautiful highland village, but she knows that there is no work for her parents there. They have been lucky that her father has found work driving a bus, and that her younger brother and sister can go to school."

3. Students will input skit using MS Word, print out skit dialogue and complete skit presentations on Day 2

4. Follow skits with whole class discussion of differences in lifestyles. These include transportation modes, quality/way of life, concerns for their future, climate, technological conveniences or lack thereof. Have each group complete a brief <u>compare and contrast table</u> of these characteristics.

5. Whole class reads and discusses balance of article.

"On the surface, Chao, Roland, Nisa, Ricky, and Luz have nothing in common. But although their lives are very different, they all live in the same world — a world of 6 billion people! And as teens growing up today, they do share many of the same concerns. They are all wondering about the future, and thinking about how to take care of themselves, their families, and their communities. How can we examine what these five teens have in common? **By taking a closer look at population—the number of people, and how those people work, live, and use resources—we can get a closer look at our changing world and discover our place in it**!"

Summary Essential Questions	How is life different for teens in other countries? What do these teens have in common? How can statistics about population help us understand differences?
Assessment	General Class Rubric: Do Now, Participation, Activity (Skit Dialogue and Compare & Contrast Table)
Differentiated Learning	Students are grouped by teacher to complement student abilities. Printed and audio transcripts of web document.

Lesson 3: 10 Most Populous Countries

| Class/ Topic	Middle School: Population Growth, Impact & Diversity
Aim	Current population and population density
Objectives	SWBAT: Analyze a map to determine which areas/countries are most populous; Use online resources to compare population statistics from several countries; Create a table & graph of 10 most populous countries
Vocabulary	Population: Group of objects or organisms of the same kind.
	Population Density: Number of people living in a given area; the average number of individuals or units per space unit <a population density of 500 per square mile> <a housing density of 10 houses per acre>
	Overpopulation: When population exceeds the *carrying capacity* (ability to sustain) of an area or environment
Opening	DO NOW: Individually (in notebooks or logs) Write a brief reflection on one or both of these images. http://www.cf.edu/current/imprints/vol13/over_population.htm http://www.udel.edu/poscir/web_images/eagerpub.jpg
Activities/ Procedure	1. Think-Pair-Share your reflections and make a comment in your student partner's blog.
	2. Whole Class Discussion: - Discuss today's vocabulary: Population, Population Density and Overpopulation.
	3. Where do most of the people in the world live? Display Map Review map and solicit answers, e.g. Data chart & map at http://sedac.ciesin.columbia.edu/gpw/global.jsp#summary

The World: Population Density, 2000   GPW [v3]

Gridded Population of the World
Persons per km²
0
1 - 4
5 - 24
25 - 249
250 - 999
1,000 +
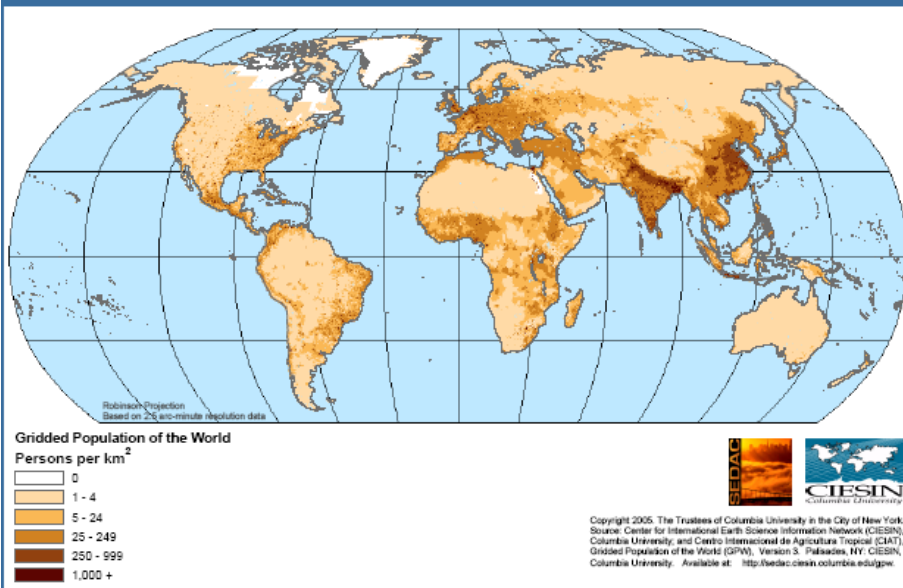
4. What countries have the most people? Refer to table (from year 2000) and sort data by clicking on column header (demo to class)

5. Students go to website http://www.xist.org/charts/population1.aspx and create spreadsheet collecting current data of 10 most populous countries and world population. Teacher does same projecting onto LCD; student share-pairs assist each other. Copy and paste relevant data and source.

Country	Population July 2006
China	1,313,973,713
India	1,095,351,995
U.S.A.	298,444,215
Indonesia	245,452,739
Brazil	188,078,227
Pakistan	165,803,560
Bangladesh	147,365,352
Russia	142,893,540
Nigeria	131,859,731
Japan	127,463,611

6. Use Chart Wizard to create graph.

10 Most Populous Countries
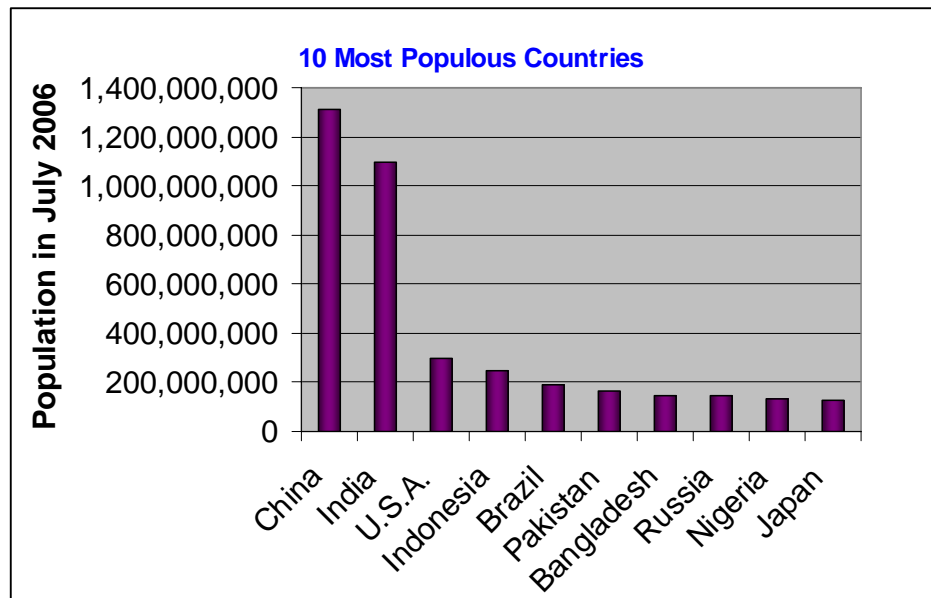
7. Save document properly. Help others or enhance graph if completed early.

Summary Essential Questions	• What areas of the world/countries are most populous? Which countries have over a billion people? What is the size of the world population?

• What areas of the world/countries are most populous? Which countries have over a billion people? What is the size of the world population?

• Show maps at http://upload.wikimedia.org/wikipedia/commons/b/b1/World_population.PNG and identify countries on a map at UN website http://cyberschoolbus.un.org/infonation/index.asp or Google maps

• Where and why do most of the people in the world live? e.g. coastlines, continents. Why are there large land areas with so few people? e.g. deserts, mountains, climate, jungle. Why do you think so many cities exist on coastlines and rivers? e.g. transportation, power. Hint: What does water provide?
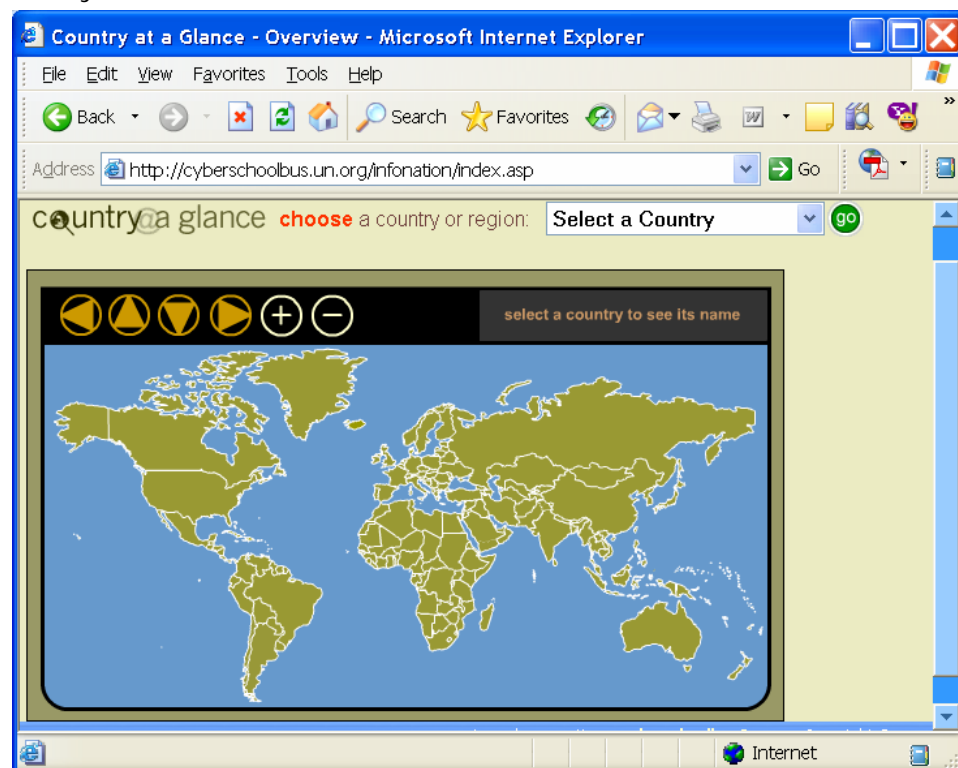
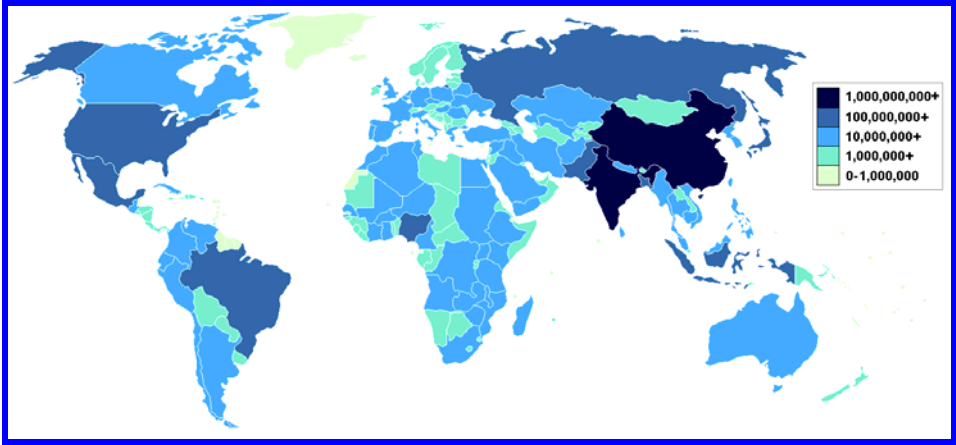Geohive http://www.xist.org/charts/pop_graph1.aspx
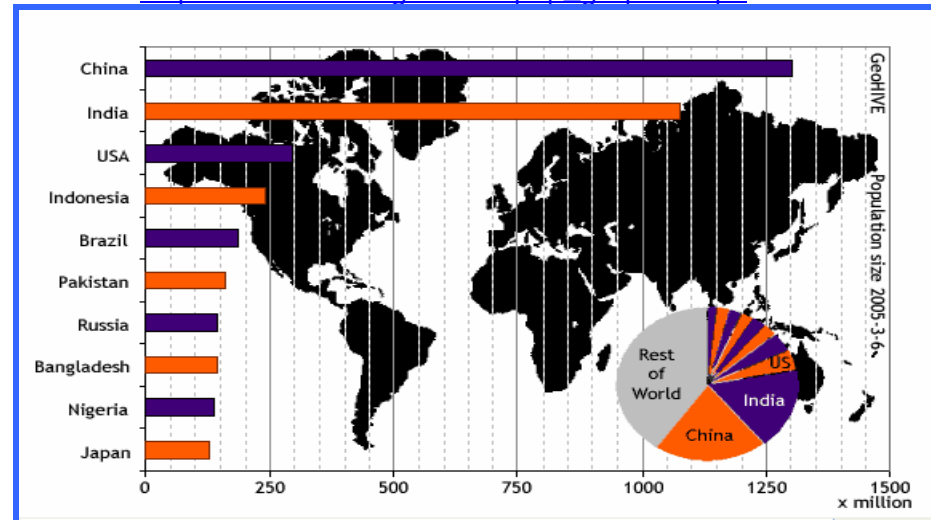
http://www.xist.org/earth/gen_popsize.aspx
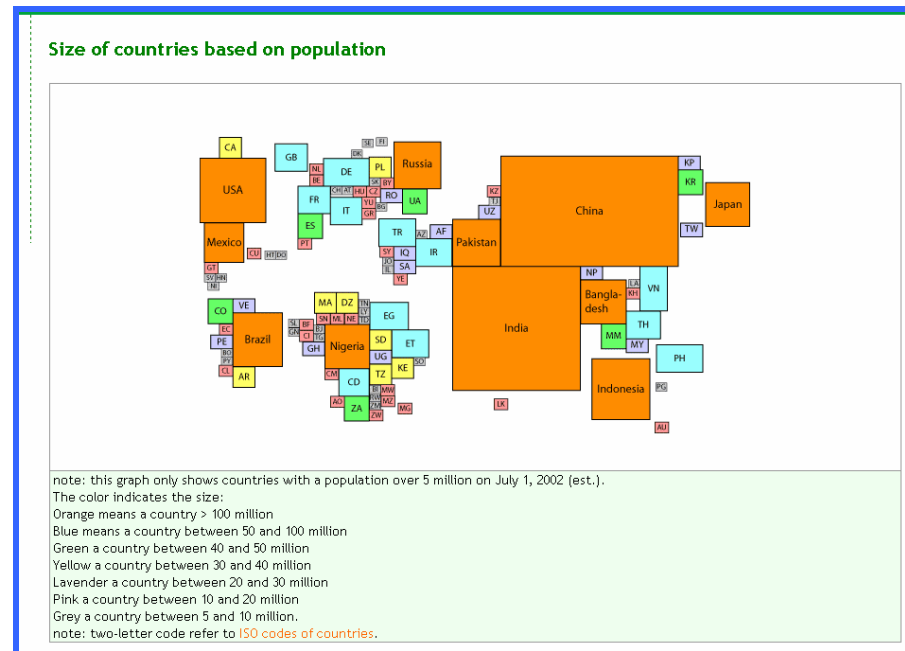
UN Cyber-school-bus website screenshot:

(Identifies MEMBER countries only)

	Wikipedia map doesn't identify countries.
Differentiated Learning	Students grouped to complement abilities.
Assessment	General class rubric: Do Now, Participation, Activity (Spreadsheet)

Lesson 4: Population Growth & Population Circle

Class/ Topic	Middle School: Population Growth, Impact & Diversity
Aim	Discover how world population has grown over time (population explosion?)
Objectives	SWBAT: Describe the growth of world population; Explain the basic attributes of exponential growth.
Additional Materials	Masking tape, 10-foot length of string, index cards numbered 0 – 25 (each one represents 250 million people). If possible draw circle with 10′ radius prior to start of class or during opening activities.
Vocabulary	**Exponential**: Relating to a mathematical expression containing one or more exponents. Something is said to increase or decrease exponentially if its rate of change must be expressed using exponents. A graph of such a rate would appear not as a straight line, but as a curve that continually becomes steeper or shallower.
Opening	DO NOW: [Previously students identified the 10 most populous countries and talked about population density, or where the most people lived.] In your blogs, write a paragraph about why the largest cities and most densely populated areas are on the coastlines, or near rivers.

Activities/ Procedure	1. Students Think-Pair-Share their thoughts and make a comment in partner's blog.
	 2. Population Circle
	    a. "We also discovered that there are about 6.5 billion people on Earth. Do you think it was a slow and continuous process?" Solicit class answers. "Let's find out." Using string and masking tape (or chalk), draw a 10′ circle on the floor of the classroom. (If possible draw prior to class) "This circle represents the earth, and we're going to see how the population changed over the last 500 years."
	    b. Distribute the 25 Population Counting Cards (if less than 25 students, use chairs to represent additional people.) Explain that each card represents 250 million people. Ask the 2 students with the number "0" on their cards to step into the circle. Explain that these 2 students represent everyone who lived on Earth 500 years ago when the population was about 500 million. Now, there's over 6 billion.
	    c. Tell the students, "We'll be counting from 1 to 100 to find out just how our population grew. As we count, we'll be fast-forwarding through the last 500 years: With every number we say, we'll be jumping ahead 5 years. So, when we reach 100, all 500 years will have passed. Listen closely – when we get to your number, you will step into the circle!"
	    d. As a group, count at a comfortable page. Students step in according to directions and the number on their card. Stop when you reach 100.
	 3. Discuss observations with whole class.
	    EQ: What did you learn about how human population changed over

time? *[It took a long time to add people. Most of them were added in just the last few years.]*
After we started counting, who was the first person to enter the circle? What number did they have? *[53].* So, how many years did it take to add 250 million people? *[53 x 5 = 265 years.]*
What happened at the end of our counting? How long was it taking to add 250 million people? *[5 years or less. Between 89 and 100, we added at least one person to the Earth with EVERY number counted.]*
In this exercise we counted from the year 1500 to 2000; how many more people do you think we added in the last 6 years? Let's check the census population clock! [Over 6.5 billion now]
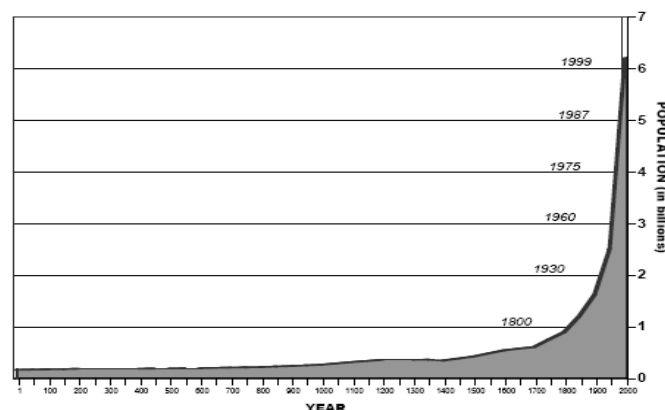How many more people would enter the circle if we counted to 101? [2 on the count of 101 for 500,000 people!]

4. Display chart below from the Internet to confirm observations.

THE HISTORY OF HUMAN POPULATION GROWTH

Years Elapsed	Year	Human Population
3,000,000	10,000 B.C. (Agricultural Revolution)	5-10 Million
10,000	1 A.D.	170 Million
1,800	1800 (Industrial Revolution)	1 Billion
130	1930	2 Billion
30	1960	3 Billion
15	1975	4 Billion
12	1987	5 Billion
12	1999	6 Billion

Discuss table information. Ask class if they know what exponential means. Relate to exponents in math, 1-2-4-8-16-256-512-1014 etc. It seems our population doesn't grow like a linear equation, but it doubles! Ask "how is exponential growth different from just adding?" Growing exponentially means doubling, or multiplying, rather than just adding. Display graph showing exponential growth

Human Population Growth Since 1 A.D.

5. Think-Pair-Share: What would happen if we continue to grow at this rate? Solicit answers re crowding, adequate resources, environmental impact, and further urbanization. Display projected population trend at http://www.census.gov/ipc/www/world.html

World Population: 1950-2050

Source: U.S. Census Bureau, International Data Base, August 2006 version.

| Summary Essential Questions	• How do we characterize exponential growth? How has human population grown over time? • Direct students to summarize today's learning in class blogs during last 10 minutes of class. They should include information about exponential growth, how human population has grown over time, including how many people there are today and offer an opinion about future conditions from Think-Pair-Share activity.
Assessment	General Class Rubric: Do Now, Participation, Activity (Learning and TPS summary)
Differentiated Learning	Students are paired by teacher to complement student abilities.

Counting Cards for Lesson 4

Population Circle Counting Cards

Cut out and give one to each student

Population Circle **0**	Population Circle **0**	Population Circle **53**	Population Circle **62**	Population Circle **72**
Population Circle **77**	Population Circle **81**	Population Circle **84**	Population Circle **87**	Population Circle **89**
Population Circle **90**	Population Circle **91**	Population Circle **92**	Population Circle **92**	Population Circle **93**
Population Circle **94**	Population Circle **94**	Population Circle **95**	Population Circle **96**	Population Circle **96**
Population Circle **97**	Population Circle **98**	Population Circle **98**	Population Circle **99**	Population Circle **100**

Slides from PopulationEducation.org
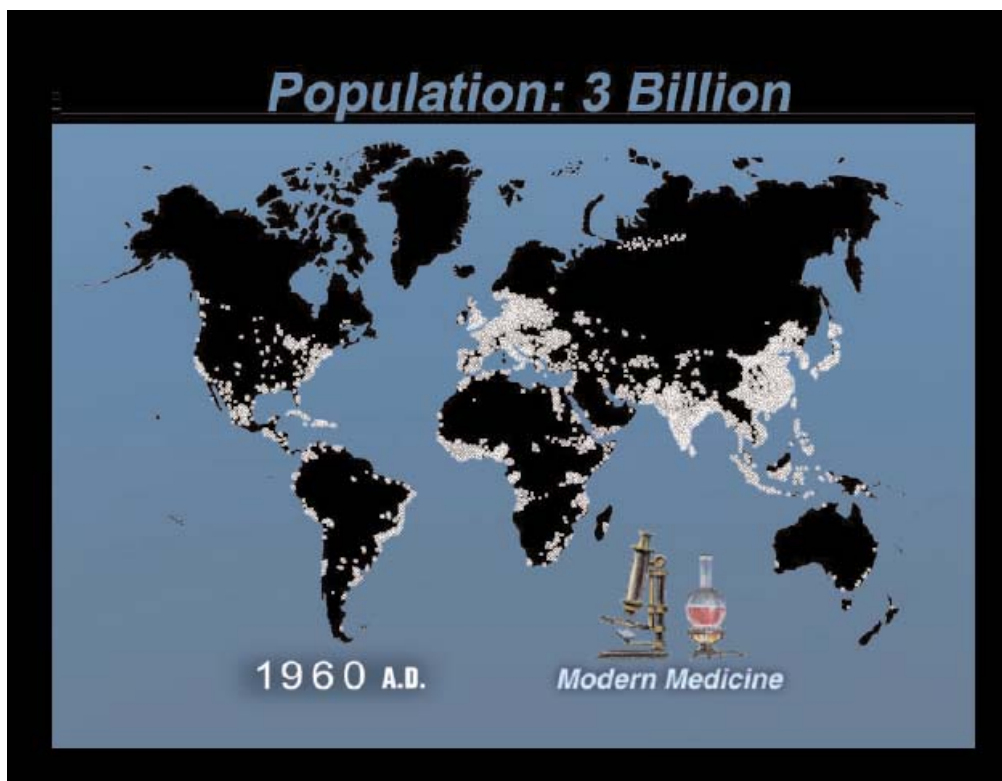
Lesson 5: Technology Lesson – Line Graph

Class/ Topic	Middle School: Population Growth, Impact & Diversity
Aim	How to create a line graph of population data using MS Excel Chart Wizard and population data.
Objectives	SWBAT: Create a line graph and describe how it is used
Vocabulary	Line Graph: Type of graph that shows a progression using a line and facilitates comparing data of multiple progressions. Students will identify Title, Series, Axis and Legend.
Opening	[Students recently made a graph to show how the 10 most populous countries compared to each other.] EQ: Suppose we want to show the change of something over time visually? How would you do that?
Activities/ Procedure World data: http://geography.about.com/od/obtainpopulationdata/a/worldpopulation.htm and http://www.census.gov/ipc/www/worldhis.html 1950-2050 data: http://unstats.un.org/pop/dVariables/DRetrieval.aspx India data: http://www.library.uu.nl/wesp/populstat/Asia/indiac.htm China data: http://www.library.uu.nl/wesp/populstat/Asia/chinac.htm	1. "Let's say you were doing an experiment about plant growth and you wanted to show how Plant A grew over a 30 day period, how would you do that?" Elicit responses, have student use board to diagram. "Let's say we wanted to add the results of Plant B." Continue with diagramming on board. Identify Series (Plant A & B) Axes (Days and Height) Legend (Plant A & B) and Title for graph. If students began with bar/column chart, addition of Plant B will yield to a line graph. 2. "We discovered that population is rapidly increasing and that it reached 6 billion people in 1999. It's expected to reach 9 billion by 2050. How can we show that visually? [pictures – see slides or graphs] We can plot population growth on a graph. Today we're going try this out using MS Excel's Chart Wizard and data on population growth." a. Display Data gathered from various websites and aggregated here: http://teacherlynneb.googlepages.com/pop01 Select Population Statistics (in Millions) {{TABLE}}

Select Population Statistics (in Millions)

| Year	China	India	USA	World
1700	153	127		610
1750	200	155		720
1800	315	255	5	950
1850	420	284	25	1200
1900	455	292	76	1600
1950	555	358	158	2520
2000	1274	1021	284	6073
2050	1392	1593	395	9000

3. Direct students to watch graph creation using LCD projector and then have students create on using their computers. "The most populous countries are China and India. I'm going to create a graph comparing the population growth of those 2 countries."

4. Procedure:

    a. Open Excel.

    b. Highlight the data to use (from Year to India 2050).

    c. Copy that data and paste the table into the Excel spreadsheet.

    d. Save your document (as PopYourName in class folder).

    e. Next, create a line graph using the chart wizard.

    f. Make sure the data is highlighted.

    g. Click on the Chart Wizard button.

    h. Select LINE GRAPH from the chart type.
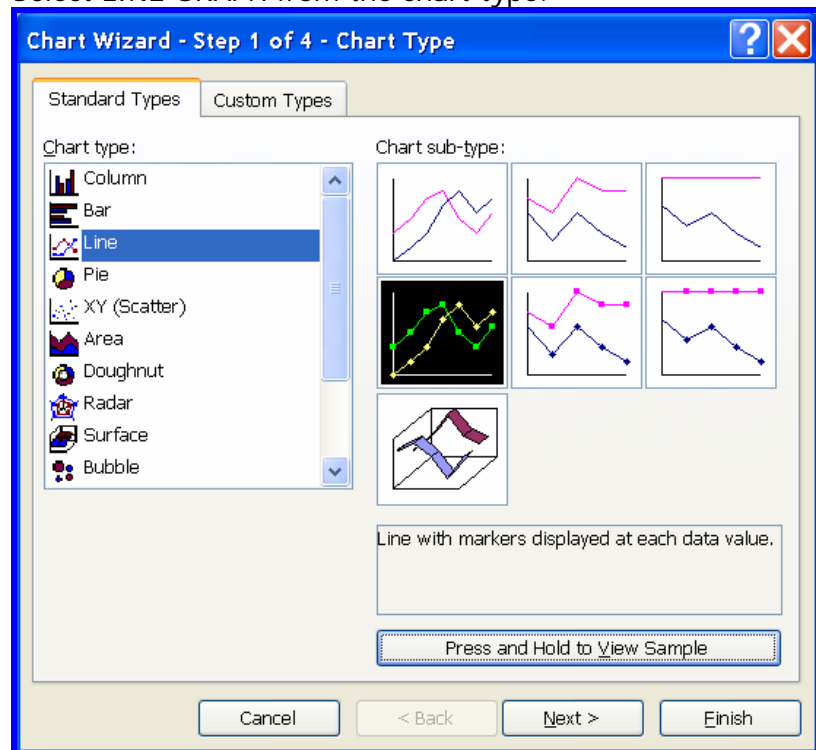
    i. Select a chart sub type. Click "Press and Hold to View Sample" to make sure you graph displays properly.

    j. Click next; Click on Series tab and select REMOVE to delete Year from Data Series.
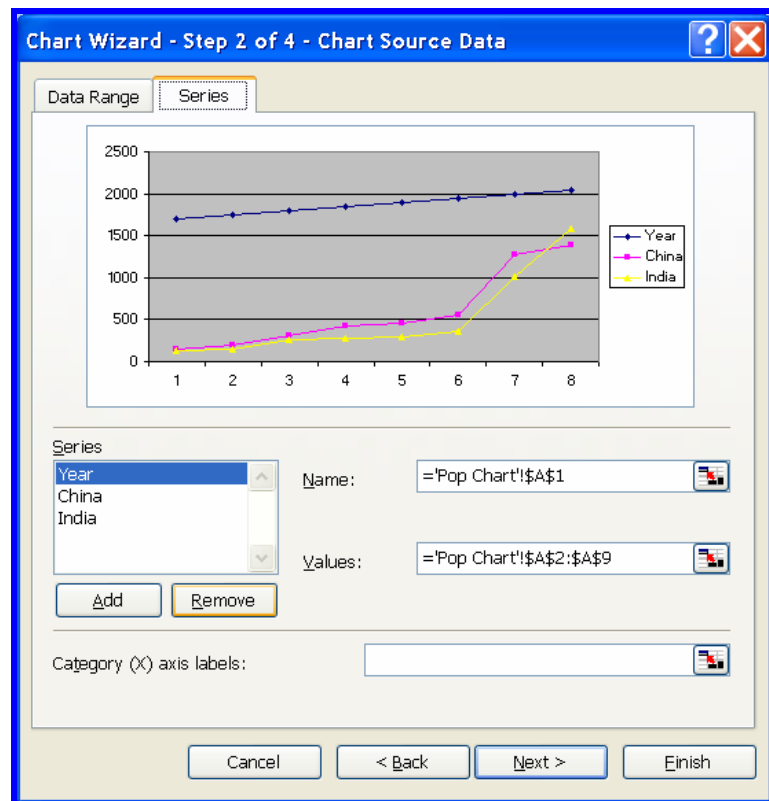
k. Insert the Category (X) axis labels: Click in the box, and (see pointer) and using the mouse select the Year Column data to fill in the information. Click ENTER after the data is selected.
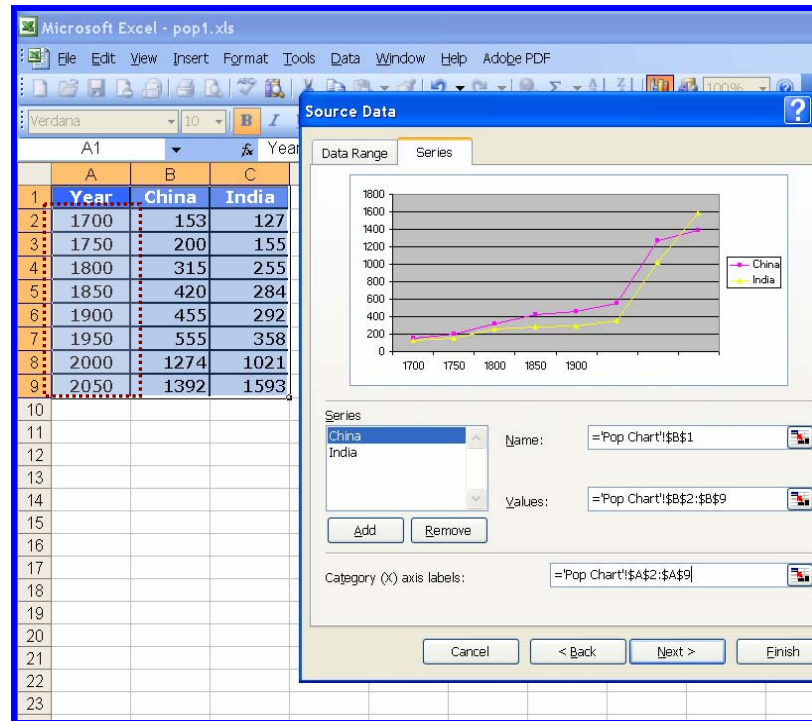
l. Click NEXT and fill in the appropriate information.
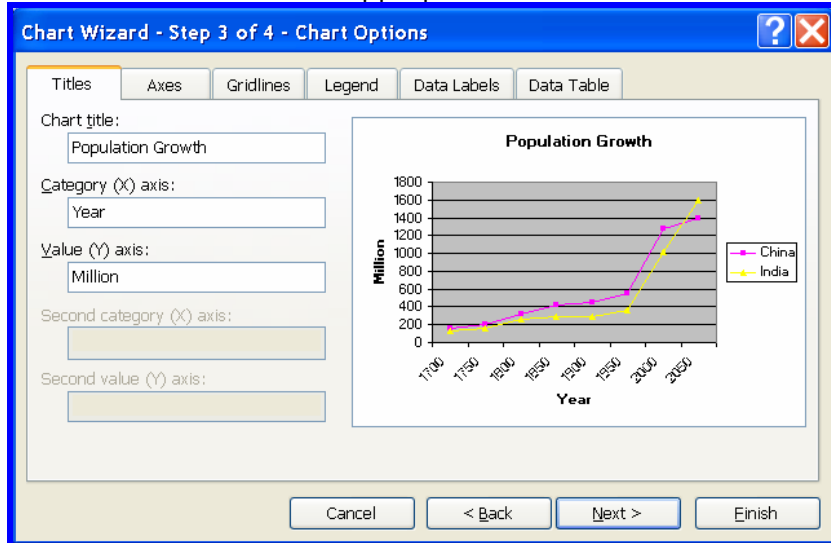
m. Click on the LEGEND tab to move the legend to a different position (bottom shown here).
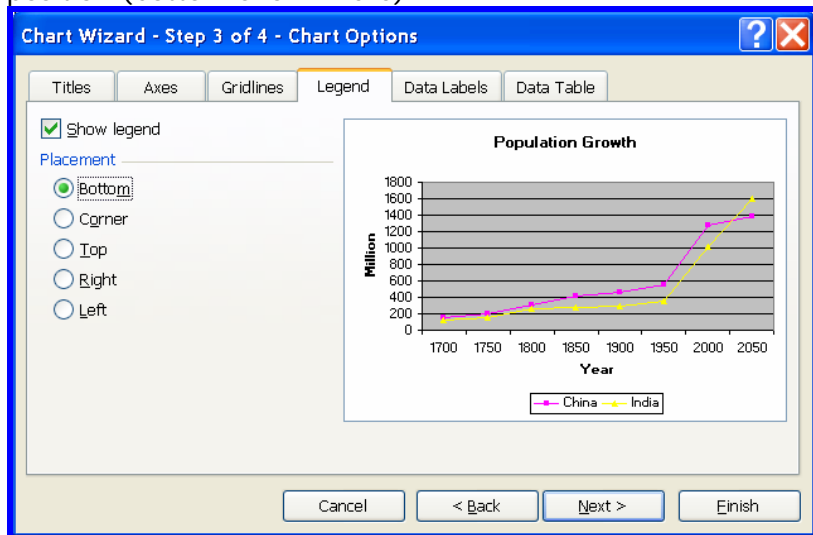
n. Click NEXT and accept the default location to put the graph (chart) on the same worksheet.
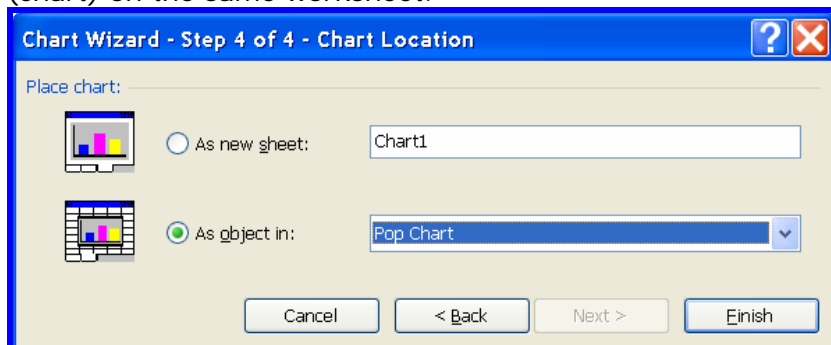
o. The finished chart should look like this:

Population Growth
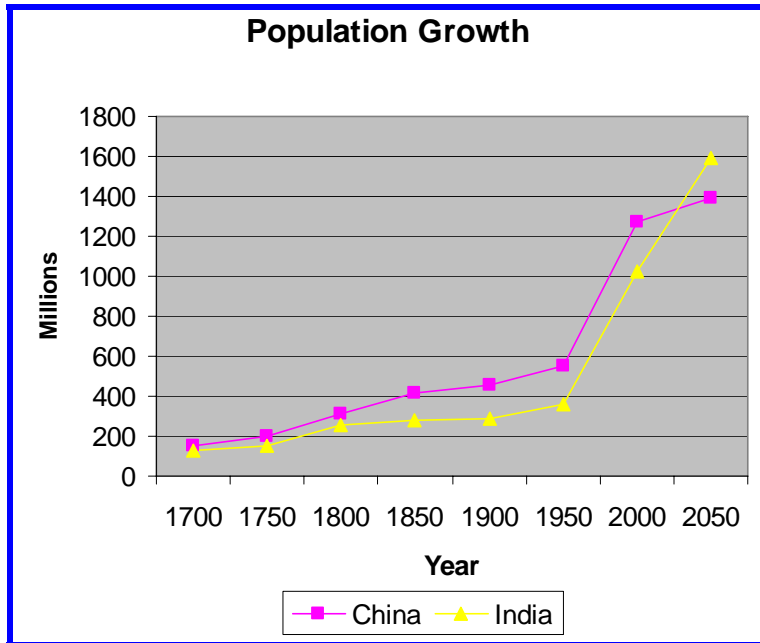
5. Teacher assists individual students as needed. Students who finish early assist their TPS partner and/or further enhance graphs.
6. Display graph of global population that goes back further in time.

Human Population Growth Since 1 A.D.
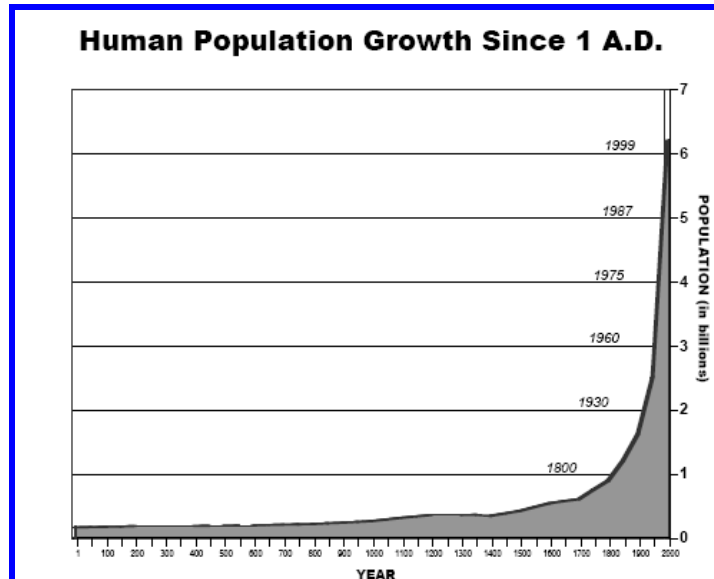
Summary Essential Questions	• How is a line graph different from a bar graph? When would you use a line graph instead? • What do you observe about how these populations have changed over time? How does a line graph help to compare them? • Think-Pair-Share your thoughts and write them in your class blog.
Assessment	General Class Rubric: Do Now, Participation, Activity (Line graph)
Differentiated Learning	Students are paired by teacher to complement student abilities.

Lesson 6: Impact on Environment (Primary Document Lesson)

Class/ Topic	Middle School: Population Growth, Impact & Diversity
Aim	Using political cartoons as a reference, students will discover that the population of the USA, though only a small percentage of the world, uses a disproportionate amount of the earth's resources.
Additional Standards	Performance Indicator SS1.I.4A: Students consider the sources of historical documents, narratives, or artifacts and evaluate their reliability. NY – New York City Standards-Based Scope And Sequence for Learning Subject : Social Studies Area : SKILLS AND STRATEGIES Key Concept : USING INFORMATION Major Understanding: Interpret information found in primary and secondary source documents, graphs, political cartoons, maps, charts, diagrams, timelines, posters, multimedia presentations, and dioramas. Major Understanding: Make connections between sources of information and ideas. Major Understanding: Evaluate information found in documents. Major Understanding: Use knowledge from other subjects and personal experiences to form and express opinions.
Previous Learning	Describing and analyzing Political Cartoons see http://teacherlynneb.googlepages.com/lesson1
Objectives	SWBAT: Describe and analyze a political cartoon about the US Population Milestone
Materials Vocabulary	Computers with Internet Access and MS Word or Handouts: Political Cartoon Analysis worksheet (Derived from http://www.archives.gov/education/lessons/worksheets/) ; copies of 2 political cartoons. LCD projector http://teacherlynneb.googlepages.com/lesson2 Vocabulary from Political Cartoon Lesson: Political Cartoon, Symbolism, Exaggeration, Labeling, Analogy, Irony (Reference page attached)
Opening	DO NOW: (in student class blog) Answer the following in writing: 1) How many people you think live in the USA?. 2) Do you think there are too many people? 3) Why or why not? Ask: Does anyone know what happened on October 17, 2006? Present: Here's the answer! Play short (1 min) video showing US Population Clock turning to 300 million: CBS Video 10/17/06 Census Bureau Clock 7:46 am hits 300M http://www.cbsnews.com/sections/i_video/main500251.shtml?id=2099991n How does the number compare with student guesses?
Activities/ Procedure	1. Display political cartoon 1 from either http://teacherlynneb.googlepages.com/lesson2a or http://cagle.msnbc.com/news/300million/images/margulies.gif

Cartoon 1

As a class, brainstorm on what this political cartoon is about. Ask students questions similar to those on the worksheet. Ask students to identify the techniques used by the cartoonist.
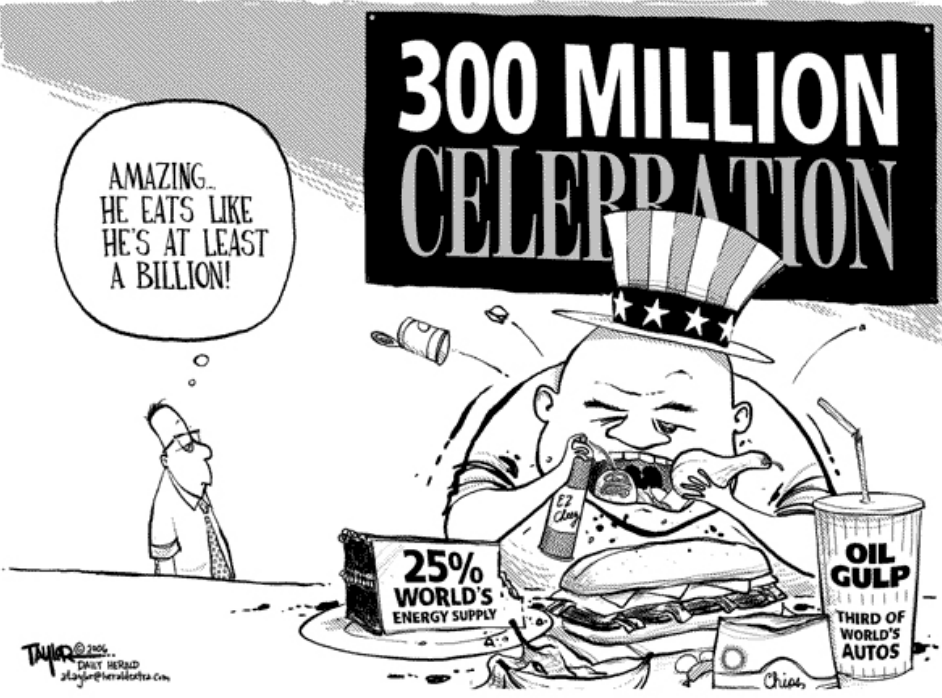
2. In pair-share groups, students analyze Cartoon 2 or Cartoon 3 found on the WWW at http://teacherlynneb.googlepages.com/lesson2a using the worksheet provided.

Students can download the worksheet onto their computers and use MS Word to complete it.

Cartoon 2: Why Such a Big Cake

Cartoon 3: 300 Million Celebration

Summary Essential Questions	What event do these political cartoons address?
	What techniques does the author use? - What labels, exaggerations, symbolism, analogies and/or irony is present?
	What issue(s) is this political cartoon about?
	How is the US represented?
	What point(s) is the cartoonist trying to make?
	Did you find this cartoon persuasive? Why or why not?
Assessment	General Class Rubric: Do Now, Participation, Activity (Evaluate completed worksheets)
Differentiated Learning	Students are paired by teacher to complement student abilities.

Lynne Bailey   Fall 2006
Prof. Lipson   EDPC 605

Cartoon Analysis Guide

http://lcweb2.loc.gov/learn/features/political_cartoon/cag.html
Use this guide to identify the persuasive techniques used in political cartoons.

The Vocabulary of Political Cartoons

Symbolism   Cartoonists use simple objects, or **symbols**, to stand for larger concepts or ideas.

After you identify the symbols in a cartoon, think about what the cartoonist intends each symbol to stand for.

Exaggeration   Sometimes cartoonists overdo, or **exaggerate**, the physical characteristics of people or things in order to make a point.

When you study a cartoon, look for any characteristics that seem overdone or overblown. (Facial characteristics and clothing are some of the most commonly exaggerated characteristics.) Then, try to decide what point the cartoonist was trying to make through exaggeration.

Labeling   Cartoonists often **label** objects or people to make it clear exactly what they stand for.

Watch out for the different labels that appear in a cartoon, and ask yourself why the cartoonist chose to label that particular person or object. Does the label make the meaning of the object more clear?

Analogy   An **analogy** is a comparison between two unlike things that share some characteristics. By comparing a complex issue or situation with a more familiar one, cartoonists can help their readers see it in a different light.

After you've studied a cartoon for a while, try to decide what the cartoon's main analogy is. What two situations does the cartoon compare? Once you understand the main analogy, decide if this comparison makes the cartoonist's point more clear to you.

Irony   **Irony** is the difference between the ways things are and the way things should be, or the way things are expected to be. Cartoonists often use irony to express their opinion on an issue.

When you look at a cartoon, see if you can find any irony in the situation the cartoon depicts. If you can, think about what point the irony might be intended to emphasize. Does the irony help the cartoonist express his or her opinion more effectively?

Name _____Class_____   Date_____

Political Cartoon Analysis Worksheet

Step 1: Visuals – The Picture

1. List the objects or people you see in the cartoon.

   _____

   _____

2. Which of the objects on your list are symbols?

   _____

   _____

3. What do you think each symbol means?

   _____

   _____

Step 2: Text – The Words (not all cartoons include words)

1. Identify the cartoon caption and/or title. What is it?

   _____

   _____

2. Locate three words or phrases used by the cartoonist to identify objects or people within the
   cartoon and list them here.

   _____

   _____

3. Record any important dates or numbers that appear in the cartoon.

   _____

   _____

4. Which words or phrases in the cartoon appear to be the most significant? Why do you think so?

   _____

   _____

   _____

5. List adjectives that describe the emotions portrayed in the cartoon.

   _____

   _____

Step 3: Action and Analysis

1. Describe the action taking place in the cartoon.

_____

_____

_____

2. Explain how the words in the cartoon clarify the symbols.

_____

_____

_____

_____

3. Explain the message of the cartoon.

_____

_____

_____

4. What special interest groups would agree/disagree with the cartoon's message? Why?

_____

_____

Step 4: Reflection

1. Reflect on how this cartoon affected your thoughts, feelings, or beliefs.

_____

_____

_____

_____

_____

_____

_____

General Class Rubric

Component	1 Never	2 Rarely	3 Sometimes	4 Usually	5 Always
On time & Prepared Student arrived on time for class (1 minute grace period) or had late pass, had notebook, writing instrument and promptly seated him or herself					
Do Now Student began do now promptly and diligently completed task					
Class Participation & Demeanor Student courteously participated in class discussions, collaborated with group partner and constructively assisted others; Student behaved with respect for persons and property					
Major Class Activity Student completed all aspects of major class activity diligently and assisted others if finished early or added something extra to the assignment					
Totals					

"Village of 100" – Final PowerPoint Rubric

Component	1 Never	2 Rarely	3 Sometimes	4 Usually	5 Always
Math Elements Used the ratio formula, and other Math elements of this unit to scale global demographic data down to represent 100 people. Provided this information within each slide.					
Social Studies Elements Used the Social Studies elements of this unit to contribute facts and information about global issues, economics, populations, race, religion, and wealth. Provided this information within the relevant slides.					
ELA Elements Used the ELA elements of this unit to contribute information about causes and effects of global population, ways to reduce negative effects of increased population, and the outcomes of living in a Village of 100. Provided this information within the relevant slides					
Science Elements Used the Science elements of this unit to contribute information about death rates, the spread of disease, sanitation, and general health issues. Explored and contributed information from the past and present, and used this within the relevant slides.					
Technology Elements - Internet Used the Internet and websites throughout this unit to collect data, information, and facts surrounding global issues in each of the above areas. Provided and shared necessary					
Technology Element - Worksheets Used the worksheet templates (Excel and Word) to enter all relevant data collected from the various websites. Used this information to make conjectures, estimations, and to provide accurate representations of information found.					

Component	1 Never	2 Rarely	3 Sometimes	4 Usually	5 Always
Technology Element – PowerPoint Used PowerPoint to produce the culminating project called "Village of 100". Slides contained information from each of the subjects learned in the unit (Math, ELA, Science, and Social Studies) Slides were informative and relevant to the issues surrounding GLOBAL COMMUNITIES. The correct ratios were used in each slide, using the equation / formula learned in the final Math lesson. All references for data were verified, and cited correctly. Slides looked aesthetically appealing and utilized the following: Animation Color Images Clear text Slide transitions For extra credits, students used music or sound effects to enhance their slides / presentation.					
TOTALS					