

A Quick Trip to 7 Billion: Exploring the Timeline



Introduction:

Our global family reached a milestone in 2011 -- the addition of our 7 billionth member. The events of our past have shaped how our family has grown over the years and now our collective action will determine where we grow from here. The “Quick Trip to 7 Billion” timeline shows that our population growth has been the result of events related to a variety of topics, ranging from Industry and Technology to Women’s Rights. In this activity, students will learn how these events have influenced our population growth and how they are interconnected to paint a larger picture of our global family and the world that we live in.

Materials:

Computer with Internet access

“A Quick Trip to 7 Billion” poster (Can be viewed at www.Worldof7Billion.org/)

Student Worksheets: “Exploring the Timeline”; “Topic Essay”

Part 1: Exploring the Timeline

Procedure:

1. Provide each student with a copy of the Student Worksheet “Exploring the Timeline.”
2. Direct students to our website, www.Worldof7Billion.org/Wall_Chart. Allow students time to read the timeline and work through the questions.
3. Briefly go over the answers as a class.
4. As a class, discuss the following questions. Students do not have to be able to look at the poster to answer these questions, but it may be helpful to have it in view. Consider holding this discussion in a computer lab, where each student can look at the poster on their screen. Alternatively, you could project the poster to the front of the room.
 - a. The Comstock Laws (which made contraception illegal in the U.S.) were overturned by the U.S. Supreme Court in 1965. What do you think was different about a woman’s life after 1965? *Women could plan the timing and number of children they wanted to have; women could focus on their education or a career; women had more of a say over their role in the family and in the work place.*
 - b. Why do you think the Great Depression led to the “baby bust”? What factors do you think contributed to the post-WWII baby boom? *In times of prosperity, couples tend to have more children than in times of economic downturn. During the Great Depression*

Concept:

The human population has grown exponentially over the past 200 years, and in 2011 we add our 7 billionth member. As we hit this milestone, it is important to reflect on how we got here and how our population trends will impact our future.

Objectives:

Students will be able to:

- Understand how certain events from the past have influenced population.
- Discuss the factors that contribute to continued population growth.

Subjects:

Civics/Government, Economics, Environmental Science, Geography, Health, History, Science, Social Studies, Women’s Studies

Skills:

Critical thinking, essay writing, conducting research, drawing connections

Method:

Through group discussion and individual work, students explore how the events of our past have contributed to a world of 7 billion.



people feared they would not be able to financially support large families, leading to a decline in the fertility rate. In the years following WWII, the U.S. economy soared and jobs were plentiful. Men and women who were reunited after years of war were eager to start families and had the financial means to support large families.

- c. In 1834, the mechanical reaper was invented, tripling farmer's outputs. What other events in our history have increased farmers' yields? Do you think that we are currently at our maximum food output? *The invention of the combustion engine allowed farmers to use machinery which increased their efficiency; nitrogen fertilizer (the result of Fritz Haber's discovery in 1908) supplies plants with essential nutrients that they need to grow, increasing crop output; the use of DDT (beginning in 1939) marks the beginning of pesticide use, preventing insects from destroying crops; the Green Revolution introduced high-yield seeds, allowing for drastic increases in food production around the world. Answers will vary about our maximum food output.*
- e. What impact do you think global communication has on our population? *With advances in communication, people across the globe can more readily exchange ideas about population, family size and resource use - ideas that can now easily be exchanged through TV portrayals, radio, or social media.*
- f. The poster highlights advancements in medicine, industry, nutrition and women's roles that have helped improve lives, eradicate disease and bring down birth rates. Do you think that we've made equal progress with these advancements around the world? *Overall, our global family has made great strides, but there is still much progress to be made in developing countries. Among the least developed countries, only 36% of the population has access to improved sanitation, the infant mortality rate is 81/1,000 births (about 1 in 12), and fertility rates remain high at 4.3 children per woman. Women in the least developed countries lack equal access to education and employment opportunities, as well as family planning services.*

Part 2: A Quick Trip to 7 Billion: Topic Essay

Procedure:

Each event on the timeline is labeled with a topic symbol (Communications, Environment, Food and Agriculture, Health, Industry/Transportation, Population, Social Justice, or Women's Roles). Events within each of these topics have had direct and indirect impacts on our population over the years. Invite students to write essays to explore the ways that specific events on the timeline have affected population growth.

1. Ask students to choose 2 topics (from the Topic Key.) Students should read through each event that is labelled with the topic they choose.
2. Tell students to use the graphic organizer, "Topic Essay" to structure their essay. They should answer each question on the worksheet for both topics, and then write their essay. Students may want to conduct research.
3. For some helpful research sources, direct students to the "Research Resources" listed on www.Worldof7Billion.org under the Student Video Contest tab. Additional resources include: www.7billionactions.org; www.fao.org; www.who.int; and <http://ngm.nationalgeographic.com/7-billion>.



Name: _____

Date: _____

A Quick Trip to 7 Billion Student Worksheet: Exploring the Timeline, Part 1

Go to our website, www.Worldof7Billion.org/Wall_Chart. Look first at the timeline side of the poster. The events on the timeline explore events in our modern history that have shaped our population size. First, read through each event on the timeline. As you read, think about how each event might have had an impact on population size. Also, be sure to note the “topic symbol” next to each event. The Topic Key can be found in the bottom left corner of the poster. Once you’ve read the poster, answer the following questions.

1. The first transcontinental railroad in the U.S. was completed in 1869, allowing goods, food, and people to travel from coast to coast in a matter of days. In what ways might the transcontinental railroad have changed the lives of people living in that time? What other events on the timeline may have had a similar impact?

2. When birth rates are higher than death rates, a population grows. Knowing this, how do you think the Public Health Movement in Britain in the 1840’s impacted population (hint: think about how this would affect death rates)? What other events on the timeline have improved our overall health and allowed us to live longer lives? Do you think improved health and nutrition might also have an impact on birth rates? If so, why?

3. Which events on the timeline do you think led to an increase in death rates?

4. Can you find technological advances from our earlier history that had consequences (either intended or unintended) in our later history? How are these events related? (For example, production of the Ford Model-T could be related to the raising of surface sea temperatures that has led to coral bleaching.)

5. Which events at the end of the timeline, if any, might have an impact on our population in the future?



Name: _____

Date: _____

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Topic Essay

Choose 2 topics (Communications, Environment, Food and Agriculture, Health, Industry, Transportation, Population, Social Justice, or Women's Roles) and use the organizer to explore the ways that specific events on the timeline have effected population growth and played a role in creating our world of 7 billion. Use your answers to create a short essay.

Topic 1: _____

How do events in this topic impact population? Give examples.

What themes can you find within this topic's events?

What other events can be added to this topic strand that aren't on the timeline? Back up your answer with research.

Could any events in this topic be labeled with another topic symbol? Why?



Name: _____

Date: _____

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Topic Essay

Choose 2 topics (Communications, Environment, Food and Agriculture, Health, Industry, Transportation, Population, Social Justice, or Women's Roles) and use the organizer to explore the ways that specific events on the timeline have effected population growth and played a role in creating our world of 7 billion. Use your answers to create a short story.

Topic 2: _____

How do events in this topic impact population? Give examples.

What themes can you find within this topic's events?

What other events can be added to this topic strand that aren't on the timeline? Back up your answer with research.

Could any events in this topic be labeled with another topic symbol? Why?



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Suggested Student Worksheet Answers

Part 1: A Quick Trip to 7 Billion: Exploring the Timeline

1. *Because of the transcontinental railroad, goods could be transported from coast to coast, increasing trade and causing a spike in industry and production in the growing cities of the East Coast. With transportation being faster, cheaper and safer, more people began to go West, settling in new territories along the route of the railroad. Similar events include the invention of the first air conditioning unit, enabling populations to migrate to Southern cities, the Ford Model-T, the dawn of air travel, and in some ways even the creation of email and the World Wide Web.*
2. *Improving sanitation helped to combat water-borne diseases, such as typhoid and cholera, allowing people to live longer and healthier lives, eventually leading to a decline in death rates. This decline created an imbalance between birth and death rates, causing the population to grow. Advancements in nutrition (pasteurization, preservation and canning) and medicine (sterilization and antiseptics in medical treatment, antibiotics, vaccines) all bring down death rates. Medical and nutritional advances also lead to better health for infants and children. When infants are healthier, women are more confident that their children will live to adulthood and therefore tend to have smaller families. As a result, improvements in health and nutrition lead to lower birthrates.*
3. *Potato famine (hunger), WWI/WWII (war/conflict), Spanish Flu (disease).*
4. *Answers will vary. Answers may include: advances in industry and technology leading to environmental consequences like the Great Pacific Garbage Patch or the U.S. accounting for 25% of the world's resource consumption; the introduction of DDT to agriculture enabling heavy pesticide use; it was later banned in the U.S. because of its environmental impacts.*
5. *Answers will vary.*

Part 2: A Quick Trip to 7 Billion: Topic Essay - Teacher Notes

Communications

Population Influences -- With the beginning of the age of rapid global communication in the 20th century, it has become easier to share ideas and concepts about culture, lifestyle, and global trends. The accessibility and speed of the Internet, email and modern communicative devices (cell phones), have given people access into the far corners of the world, spanning great distances and creating opportunities to learn. As people become aware of the lifestyles and realities other people face around the world, they strive to progress -- people in the developing world have knowledge of the advancements in medicine, education, and economics as seen in developed countries and vice versa. Global communication can help spread information on social and environmental issues, the impacts of investing in education and medicine, and challenges that we face as a global society.



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Student Worksheet Answers, continued

Themes/Trends -- Global communication has become easier and more accessible through the years, allowing people to more readily exchange ideas about lifestyle, family size and resource use.

Additional Topic Symbols -- Population, Environment, Social Justice, Women's Roles

Environment

Population Influences -- As our numbers grow, so does our impact on the environment and the natural resources that support us. Environmental issues like the collapse of cod, deforestation, coral bleaching, and climate change all threaten our ability to rely on the resources that we need for survival.

Themes/Trends -- The majority of environmental issues are seen later in the timeline. Many of these are related to advances in technology, food production, and industry that we see in earlier stages of the timeline.

Additional Topic Symbols -- Population, Public Health, Food and Agriculture

Food and Agriculture

Population Influences -- Advancements in food and agriculture allow more people to be fed and have better nutrition. Better nutrition (from pasteurization, preservation, canning, and faster transportation of food) improves overall health and contributes to longer life expectancy for both children and adults, bringing down both birth and death rates. Food scarcity can cause a decrease in population, as it did in the Irish Potato Famine of 1845.

Themes/Trends -- Developments in agriculture have allowed us to produce food more efficiently and to feed more people. However, many of these developments (especially the use of fertilizers, pesticides) have had unintended environmental consequences.

Additional Topic Symbols -- Population, Industry/Transportation, Environment

Public and Reproductive health

Population Influences -- Advancements in public health allow both adults and children to live longer and healthier lives, leading to an eventual decline in fertility rates. Reproductive rights and family planning give women the ability to decide the timing of their children. Women who have control over their childbearing tend to have smaller families.

Themes/Trends -- Women today have more power over their fertility than they did in the past and we are overall, a healthier global society.

Additional Topic Symbols -- Population, Women's Roles, Social Justice



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Student Worksheet Answers, continued

Industry/Transportation

Population Influences -- With the availability of transportation, people settle in new areas (as with the building of the transcontinental railroad.) Transportation enables the fast transport of food, giving people access to a varied and more nutritional diet.

Themes/Trends -- Travel has become faster and easier through the years. Many of the advances in industry and travel have had unintended environmental consequences (For example, coral bleaching, the Great Pacific Garbage Patch, and the earth exceeding its ecological footprint.)

Additional Topic Symbols -- Food and Agriculture, Population, Environment

Population

Population Influences -- Not applicable.

Themes/Trends -- Our population grew slowly until the middle of the 20th century. We are now growing very quickly and adding a billion people every 12-13 years.

Additional Topic Symbols -- Environment, Food and Agriculture

Social Justice

Population Influences -- With development of the United Nations and the Millennium Development Goals, improving the standard of living for people in the poorest countries has become a global priority. This could have profound positive effects for slowing population growth in the years ahead.

Themes/Trends -- We see the development of the UN after WWII when it becomes clear that we are an inter-connected global society and need to work together to solve social and economic issues within our global community.

Additional Topic Symbols -- Women's Roles, Population, Health, Food and Agriculture

Women's Roles

Population Influences -- When women have access to education, have more opportunity in the workforce and are empowered within a society, birth rates fall and populations stabilize.

Themes/Trends -- Women's ability to enter the workforce and have control over childbearing has fluctuated over the years. In recent years, we've seen more women in positions of power and women have greater ability to control their family size.

Additional Topic Symbols -- Population, Social Justice, Health