INTRODUCTION

Before European settlement, the land that came to be the United States was populated by Native Americans, generally living in small communities distributed throughout the country. In 1610 the U.S. colonial population was estimated to be just 350 people. At the time of the first United States national census in 1790 the population had grown to almost 4 million. The U.S. population reached 300 million in 2006 and 330 million in 2020. Understanding changing demographics is a vital part of understanding U.S. history. These changing demographics have also had an impact on land use patterns, economics, the labor market, and gender roles.

MATERIALS

- Yarn
- Masking tape
- President Cards (provided)
- Labels for “Energy Use” and “Wealth” bags (provided)
- 120 individually wrapped candies
- 167 toothpicks
- 12 sealable bags

PREPARATION, THE NIGHT BEFORE

1. Measure out the yarn for each year according to the Information Chart. Use a different color yarn for each year or, if you only have one color, make a tag to label each piece with the name of the year it will represent.

2. Count out the number of candies required for each year represented and bag them. Hershey’s Chocolate Kisses™ work well. Cut out the provided “Wealth” labels and tape the appropriate label to each bag. Do the same for the toothpicks (“Energy Use”).

3. Read through all the Discussion Questions and make notes about links to current events. Seeing ties between the activity and the real world will dramatically enhance the meaning that students glean from the exercise. As much as possible, you’ll want to encourage students to make observations, critically evaluate the demographics, and hypothesize on possible relationships between the statistics.
Your students will likely start a discussion of these issues themselves, but if they don’t, the Discussion Questions will help to stimulate and/or direct class discussion. It’s best to discuss each group of statistics while they’re fresh in the students’ minds, rather than saving all discussion for the end.

SET UP, JUST BEFORE CLASS PERIOD BEGINS

1. Arrange the yarn on the floor to represent the U.S. land area for different years.

2. Hide the bags of candies and toothpicks in a larger bag. Place the bag within easy reach of where you’ll be standing as you lead the activity.

<table>
<thead>
<tr>
<th>Year</th>
<th>1800</th>
<th>1850</th>
<th>1900</th>
<th>1950</th>
<th>1990</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yarn Length</td>
<td>10 feet</td>
<td>17 feet</td>
<td>17 feet</td>
<td>17 feet</td>
<td>20 feet</td>
<td>20 feet</td>
</tr>
<tr>
<td>Land Area (sq. mi)²</td>
<td>867,930</td>
<td>2,944,337</td>
<td>2,974,159</td>
<td>2,977,128</td>
<td>3,539,289</td>
<td>3,536,338</td>
</tr>
<tr>
<td>Population in Millions³</td>
<td>5</td>
<td>23</td>
<td>76</td>
<td>161</td>
<td>259</td>
<td>330</td>
</tr>
<tr>
<td>Students in group (28 students) 1 = 30 million</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>8</td>
<td>11</td>
</tr>
</tbody>
</table>

PROCEDURE

1. While students are still seated, read or paraphrase the following introduction:

   “There has been more progress in the United States in the last 220 years than in the entire world in all the previous centuries. And though there are indisputable inequalities, U.S. residents are, on average, wealthier, healthier, and have more leisure time than our counterparts did 100 years ago. The vast majority of U.S. homes today have air conditioning, major appliances, and a computer. In 1900, almost no homes had modern conveniences and most homes were much smaller than they are today. While these advances have improved our lives, they also bring about problems like climate change, deforestation, poor air quality, and loss of biodiversity.

   The U.S. population has grown to 330 million and continues to grow by roughly 2 million people each year. This makes the United States one of the world’s fastest-growing industrialized nations. By 2050, the nation’s population is projected to increase by nearly 60 million people. That is the equivalent of adding another two states with the population of Texas.”

2. Appoint six students to be the “presidents” for each given year. Give them their President Cards and direct them to the appropriate yarn circle.

3. Populate the years with the rest of the students, according to the Information Chart. Given the length of the demonstration, you may wish to have students sit, rather than stand, in their area.

4. For each circle of yarn, identify the year and ask the president to read the introduction from their Card.

5. Explain that the dimensions of the land area of the United States for their years are to scale, and the number of students within each year is proportional to the actual population of that time; the idea is to show relative population density in each era.
6. For each of the sections that follow – I. Demographics & Representation, II. Quality of Life, III. Land Use Patterns, and IV. Energy Consumption & Wealth – use this basic procedure:

a. Go over the terms in the section. You may want to have them written on a PowerPoint slide or whiteboard.

b. For the first three sections (I. Demographics and Representation, II. Quality of Life, and III. Land Use Patterns) call on the presidents to read their year’s statistics. In the last section (IV. Energy Consumption and Wealth), distribute the bags of toothpicks and candies to a student in each year and ask them to read aloud the quantity of each resource.

c. Go over the Discussion Questions.

I. Demographics and Representation

A. Population: The number of people living in a region. 
B. Birth Countries of Immigrants: The top 2-3 origin countries or regions of current immigrants.
C. Elected Representation: Number of members of the U.S. House of Representatives.

Presidents read statistics A-C from their cards.

Discussion Questions

1. What trend is seen in the U.S. population from 1800-2020?

The population has increased steadily over the last 220 years. Prior to the abolition of slavery in 1865, the population of enslaved people constituted 10-20 percent of the U.S. population.

2. The U.S. has always been considered a "nation of immigrants." What has changed in the characteristics of immigrants coming to the U.S.?

Early immigration was primarily from western European countries – Great Britain and Ireland, and then Germany. It wasn't until the beginning of the 20th century that many more immigrants began coming from Italy, and central and eastern European countries. Over the past 40 years, a greater proportion of immigrants are from Latin America and Asia.

3. What's been the trend in the number (and gender proportions) in the U.S. House of Representatives since 1800?

The number of representatives increased as the nation’s population increased from 1800 to 1920. Since 1920, however, the number has remained the same (435 as mandated by the Permanent Apportionment Act of 1929), even as the population increased. There were 370,000 people/representative in 1950; there are 759,000 people/representative in 2020. There were no women in the legislative body until 1917, and it’s only been since 1993 that women have made up more than 10 percent of the House of Representatives.

II. Quality of Life

D. Fertility Rate: The average number of children a woman will have in her lifetime.
E. Infant Mortality Rate: The annual number of children who die before reaching the age of one year per 1,000 live births.
F. Life Expectancy: The average number of years a person could expect to live (from the time they are born).
G. School Enrollment: Percentage of children, 5-17 years old, that are enrolled in school.

Presidents read statistics D-G from their cards.
Discussion Questions

1. Do you see a connection between number of children women have in each of these years and infant mortality rates?

When people know each of their children has a relatively low chance of surviving to adulthood (about 2 out of 3 survived in 1800), they tend to have more children to increase the likelihood that some will survive. This may have been an even stronger motivation in earlier years in the United States, when social security and retirement plans were unheard of and the elderly were dependent on their children for financial support and personal care.

2. What other factors may have influenced family size at different points in U.S. history?

Answers may include: changing roles of women, availability of modern contraception, education levels, economic considerations, and industrialization. During the Great Depression, fertility was relatively low, but went up again after World War II when there was greater economic opportunity.

3. What is the relationship between infant mortality rates and life expectancy?

Since life expectancy is often expressed as “from birth,” a high infant mortality rate lowers overall life expectancy. In the U.S., as infant mortality rates came down, the life expectancy went up.

4. What contributes to a high infant mortality rate and short life expectancy, and what do these indicators say about the quality of life in an era?

The following could contribute to high infant mortality and short life expectancy: food that’s insufficient in quantity or nutritional value, lack of clean water, low quality or inaccessible medical care, exposure to high levels of pollution or carcinogens, war or political violence. Based on current standards of living, a high infant mortality rate and short life expectancy would indicate a low quality of life. However, a relatively low quality of life in 1850 would have been considered an improvement from life in 1800, so our standards may not apply to past eras.

5. How might an increase in school enrollment influence family size, infant mortality, and life expectancy rates?

More education equips people with knowledge about nutrition and healthcare, to better care for themselves and their children. It also prepares them for jobs with more earning potential to have a better quality of life.

III. Land Use Patterns

H. **Urban Population:** Percentage of the total population living in settled blocks of at least 2,500 people.13
I. **Population Density:** Number of people living in a unit of land area, usually a square mile.14
J. **Percentage of Farmers:** Percentage of the work force made up by farmers.15, 16, 17

Presidents read statistics H-J from their cards.

Discussion Questions

1. What do you think caused people to move to cities in the late 19th and 20th centuries?

The shift of jobs from agriculture to industry and services led to a concentration of economic opportunities in urban areas.
2. Since the mid-20th century, much of the population shift in the U.S. has involved people moving away from concentrated urban centers to sprawling suburban and metropolitan regions, or to small and intermediate-size cities. How do these settlement patterns affect the amount of farmland in the country? What are some other possible effects of having this sort of sprawling development?

As land is developed outside of cities for suburban and exurban areas, farmland and wildlife habitat are replaced by subdivisions, roads, and commercial space. This sort of growth also creates more car dependency, as people live further out from jobs in the cities and public transportation needs aren’t met.

3. As the U.S. population has grown, so has the demand for food and other agricultural products. And yet, the percentage of workers in the agricultural sector has steadily dropped. How can this be explained?

Early in the country’s history, most people grew at least some of their own food. As the country became urbanized and industrialized, more people relied on outside sources for their sustenance. Family farms gradually gave way to large, industrialized farms that became increasingly mechanized. As explained on the USDA website: “Early 20th century agriculture was labor intensive, and it took place on many small, diversified farms in rural areas where more than half the U.S. population lived. Agricultural production in the 21st century, on the other hand, is concentrated on a smaller number of large, specialized farms in rural areas where less than a fourth of the U.S. population lives.”

IV. Energy Consumption and Wealth

1. Share the following definitions with your students and explain the symbolism of the contents of their bags.

**Wealth**
- **GDP:** Gross domestic product, a commonly used measure of a nation’s wealth, determined from the annual profits generated within a country by all goods and services exchanged that year.
- **Symbolism of candies:** The candies represent the amount each person would get if the annual GDP from that year were divided equally among all its residents, adjusted to what a dollar was worth in the year 2012. One candy = $1,000.

**Energy**
- **Barrels of Oil/Person (equivalent):** While energy is generated in many ways, all these sources have been combined and are expressed in terms of barrels of oil equivalent.
- **Symbolism of toothpicks:** Each toothpick represents the average amount of energy consumed by each resident of the U.S. in that year, expressed as an amount of oil. One toothpick = one barrel of oil. One barrel contains 42 gallons. Note that oil wasn’t the predominant energy source until 50 years ago, so the leading sources of energy are listed.
- **Main Energy Source:** Most commonly used source(s) of energy.
- **CO₂ Emissions:** Total amount of CO₂ emissions divided by the population.

2. Distribute the labeled bags of toothpicks and candies to the presidents.
   - Proceed in chronological order.
   - Hold each bag up high so the whole class can see it.
   - Ask each president to read aloud their era’s quantity.

3. Instruct presidents to distribute the candy among their citizens.

4. Assist them in making connections between their reactions to the simulation and real-world phenomena.
Discussion Questions

1. What has been the trend in fossil fuel use over the course of U.S. history?

   *It has increased dramatically. From 1850 to 1900, our fossil fuel use increased by a factor of 35 (3500%). From 1900 to 1990, it grew by a factor of 10. While overall use continues to grow significantly as the population grows, the rate of per capita fossil fuel use has actually decreased by nearly 11 percent since 1990.*

2. How was it possible for energy use and CO$_2$ emissions to decrease between 1990 and 2020 while population increased by over 70 million people?

   *We may be finding ways to use energy more efficiently (such as more mass transportation and energy-efficient appliances and building materials) and starting to use “cleaner” sources of energy.*

3. In the process of eating the candies, which year generated the most wrappers? Do you think this is an accurate representation of real-life trends in waste production?

   *2020 generates the most wrappers. This reflects the trend in waste production in the United States. In 1960, the average American produced 2.7 lbs of trash per day. In 2017, the average American produced 4.5 lbs per day, nearly double the 1960 rate.*

4. The per capita GDP has increased over the years. How has the quality of life improved as the GDP has increased? Are there examples of ways that quality of life has not been affected by the increased value in GDP?

   *Students may think of a number of ways that most families have benefited from national economic gains such as greater material wealth and living conveniences. They may also offer ideas of quality of life indicators that are not necessarily affected by economic wealth. For example, in recent decades Americans have complained of more commuting time, more job stress, and less leisure time.*

ASSESSMENT

People often look back at earlier times with nostalgia as “the good old days.” This can mean different things to different people, but is often used to suggest that earlier periods of history were better in some ways. Considering the indicators that were presented and discussed in this activity, ask students to reflect on objective considerations of quality of life in the United States and to respond to the following statement:

*Life in the United States has never been better for most people than it is today.*

Have them write a short essay response to this statement. If they agree with the statement, ask them to present at least three points supporting it. If they don't agree with the statement, ask them to include at least three points on why they don't think the statement is accurate.

FOLLOW-UP ACTIVITY

Based on the trends students observed from 1800 to 2020, ask them to create a President Card for 2050. They can describe who the president will be at that time and predict statistics for the following: U.S. population, immigration, gender balance in the legislature, family size, life expectancy, educational trends, and leading industries. For each data point, they should offer a brief explanation of their prediction.
THE GOOD OLD DAYS

PRESIDENT CARDS

PRESIDENT CARD: 1800

Introduction
I am John Adams, the second president of the United States. I was born in the Massachusetts Bay Colony and served as the country's second president from 1797-1801.

A. Our population is estimated at 5 million, nearly 1 million of whom are enslaved.
B. Many people come to our shores looking for opportunities. Most of these immigrants are from Great Britain and Ireland.
C. There are 105 members of the House of Representatives, all of them men.

D. Women bear an average of 7-8 children.
E. The infant mortality rate is 350 deaths per 1,000 births (more than one-third of children don't survive their first year).
F. Life expectancy at birth is 35 years.
G. Public schools are now getting set up in all of the states, but many of our children still learn at home.

H. 6% of people live in urban areas.
I. The population density of the United States is approximately 6 people per square mile.
J. Farmers make up 94% of the labor force.

PRESIDENT CARD: 1850

Introduction
I am Millard Fillmore, the 13th president of the United States (1850-1853). I grew up in poverty in upstate New York and taught myself to read.

A. Our population is estimated at 23 million, including over 3 million enslaved people.
B. Most of our foreign-born population comes here from Ireland, Germany, and Great Britain.
C. There are 227 members of the House of Representatives, all of them men.

D. Women bear an average of 6-7 children.
E. The infant mortality rate is 217 deaths per 1,000 births (1 in 5 children don't survive their first year).
F. Life expectancy at birth is 40 years.
G. 47% of children, 5-17 years old, are enrolled in school.

H. 15% of people live in urban areas.
I. The population density of the United States is approximately 8 people per square mile.
J. Farmers make up 64% of the labor force.
THE GOOD OLD DAYS

PRESIDENT CARDS

PRESIDENT CARD: 1900

Introduction
I am William McKinley, the 25th President of the United States from years 1897-1901. I was teaching in a country school when the Civil War broke out.

A. Our population is estimated at 76 million.
B. Most of our foreign-born population comes here from Germany, Ireland, and Great Britain.
C. There are 357 members of the House of Representatives, all of them men.

D. Women bear an average of 4-5 children.
E. The infant mortality rate is 111 deaths per 1,000 births (1 in 10 children don’t survive their first year).
F. Life expectancy at birth is 47 years.
G. 72% of children, 5-17 years old, are enrolled in school.

H. 40% of people live in urban areas.
I. The population density of the United States is approximately 22 people per square mile.
J. Farmers make up 45% of the labor force.

PRESIDENT CARD: 1950

Introduction
I am Harry S. Truman, the 33rd President of the United States from years 1945-1953. I went to France during World War I as a captain in the Field Artillery and was president at the end of World War II.

A. Our population is estimated at 151 million.
B. Most of our foreign-born population comes from Italy, the U.S.S.R., and Canada.
C. There are 435 members of the House of Representatives, 9 of them women (2%).

D. Women bear an average of 3 children.
E. The infant mortality rate is 29 deaths per 1,000 births.
F. Life expectancy at birth is 68 years.
G. 83% of children, 5-17 years old, are enrolled in school.

H. 64% of people live in urban areas.
I. The population density of the United States is approximately 51 people per square mile.
J. Farmers make up 12% of the labor force.
THE GOOD OLD DAYS
PRESIDENT CARDS

PRESIDENT CARD: 1990

Introduction
I am George H.W. Bush, the 41st President of the United States from years 1989-1993. I was a Naval aviator in World War II and an oil developer in West Texas before becoming a politician.

A. Our population is estimated at 259 million.
B. Most of our foreign-born population comes from Mexico, China, and the Philippines.
C. There are 435 members of the House of Representatives, 17 of them women (7%).

D. Women bear an average of 2.1 children.
E. The infant mortality rate is 9 deaths per 1,000 births.
F. Life expectancy at birth is 75 years.
G. 90% of children, 5-17 years old, are enrolled in school.

H. 75% of people live in urban areas.
I. The population density of the United States is approximately 70 people per square mile.
J. Farmers make up 3% of the labor force.

PRESIDENT CARD: 2020

Introduction
I am Donald J. Trump, the 45th President of the United States. I became president in 2017, after careers as a real estate developer and reality TV star.

A. Our population is estimated at 330 million.
B. Most of our foreign-born population comes from Mexico, China, and India.
C. There are 435 members of the House of Representatives, 102 of them women (23%).

D. Women bear an average of 1.7 children.
E. The infant mortality rate is 6 deaths per 1,000 births.
F. Life expectancy at birth is 79 years.
G. 94% of children, 5-17 years old, are enrolled in school.

H. 82% of people live in urban areas.
I. The population density of the United States is approximately 94 people per square mile.
J. Farmers make up 1.3% of the labor force.
# THE GOOD OLD DAYS

Labels for Bags of Toothpicks and Candies

<table>
<thead>
<tr>
<th>Energy</th>
<th>Wealth</th>
<th>GDP/person</th>
<th>Candies</th>
</tr>
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<tbody>
<tr>
<td>1800</td>
<td>1800</td>
<td>$1,584</td>
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<tr>
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</tr>
<tr>
<td>2020*</td>
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*2019 data