

## DATA USA ACTIVITY

### Investigating US Public Data and Trends

#### ACTIVITY SUMMARY

In this activity, students will use the Viz Builder tool on Data USA to explore trends related to total population, economy, health, education, or any other topic of their choice. By investigating and exploring these trends with US public data, students will be able to develop questions which in turn will guide inquiry into compelling questions within the local community and the overall nation. This activity would be best if used in a middle school setting or a high school civics or geography course.

#### MATERIALS NEEDED

- Chromebooks
- Graphic Organizer Handout
- Projector
- Document Camera

#### CONCEPT(S) ADDRESSED

- Population Growth
- Overall Employment Status
- Health Care Spending
- Educational Enrollment and Advancement

#### OBJECTIVES

*By the end of this activity, students will be able to:*

- Use the Data USA Viz Builder tool to investigate and explore trends involving US public data related to population growth, overall employment status, health care spending, and educational enrollment and advancement.
- Ask compelling and supporting questions to guide inquiry into local community or national issues.

#### RELATED STANDARDS

- P1.1 Use appropriate strategies to read and analyze social science tables, graphs, graphics, maps, and texts.
- P2.1 Apply methods of inquiry, including asking and answering compelling and supporting questions, to investigate social science problems.

#### ASSUMED BACKGROUND KNOWLEDGE/POTENTIAL CHALLENGES

In this lesson, it is assumed that students have already been exposed to a variety of data visualizations and have had practice in reading/analyzing them.

## INSTRUCTIONAL SEQUENCE

1. Ask students to open the Data USA website at <https://datausa.io>. In the menu or on the homepage they should click on “Viz Builder”. Once on the page, click on the orange box on the left-hand side that says, “Go directly to interface”.
2. Walk students through on how to use the Viz Builder tool with the automatic or default graph displayed on the site. The graph should show “Total Population Census Bureau”. Make sure to point out and discuss the prominent features and details of each data visualization, including interpretation and analysis of each.
  - a. Using the first data visualization, the choropleth map of the United States, explain and point out to students why choropleth maps are useful, and the trends students notice.
    - i. To get more accurate information, simply put the cursor over the data visualization or click on the state you would like to analyze.
  - b. Walk students through the rest of the data visualizations on the page. If you would like to focus on one visualization at a time, click the magnifying glass with the plus symbol to zoom in. Make sure to have students identify the different features of each. Some of these may include:
    - i. The differences and variation of colors
    - ii. The size of the boxes on the chart and what they represent
    - iii. The percentages displayed
    - iv. The x and y axis' on the graphs
    - v. The representation and value of numbers
    - vi. The size or thickness of each line and what they represent
  - c. Point out to students that the left sideline gives students a list of information that they can also consider and observe during the activity.
  - d. Notice that some of the graphs also have the ability to look at individual years. By clicking on the magnifying glass with the plus symbol, students can also pick a year. With the default graph, students will be able to analyze years from 2014-2017.
  - e. Ask students what they notice about the overall data relating to total population. Some questions to ask students:
    - i. What states tend to have a higher or lower population? Why do you think that is?
    - ii. Why do you think California has the highest population?
    - iii. Why do you think Wyoming has a lower population?
    - iv. What do the highest states, or the lowest states of total population have in common? How are they different?
    - v. Do any states' total population change throughout the years of 2014-2017? If so, why do you think that is?
3. Explain to students that they will be investigating, exploring, and observing more US public data and trends on their own in an activity. Describe to them that they will be using the different features, tools, and variables that you demonstrated using the total population default graph.
  - a. Provide students with the attached handout. Go over the guidelines and expectations with them when completing the activity. Make sure to check in with them occasionally or answer questions or concerns from students.

- After the students have had time to complete the activity, discuss as a whole group, projecting the graphs and data visualizations as you discuss. Make sure to let students know that they can share questions that they may have. Assist students in helping refine those questions into good compelling or supporting questions.

## INVESTIGATING US PUBLIC DATA AND TRENDS WITH DATA USA

DIRECTIONS: Use the Viz Builder tool at

<https://datausa.io/visualize?groups=0-z9TnC&measure=1qWfo> to investigate, explore, and observe US public data and trends. Follow each step below for each set of data visualizations and use your observations to create questions that might progress your thinking about issues in the local community and nation.

SET	STEPS	QUESTIONS TO ANSWER	QUESTIONS TO ASK AND CONSIDER
<b>Economy</b>	<p>Please look at the following:</p> <ul style="list-style-type: none"> <li>Industry Employees Thousands</li> <li>Workforce by Industry and Gender</li> </ul>	What trends or patterns do you notice?	What questions do you have for further exploration?
<b>Health</b>	<p>Please look at the following:</p> <ul style="list-style-type: none"> <li>Total Health Care Spending—to:</li> <li>Total Per Capita Spending on Hospital Care</li> </ul>	What trends or patterns do you notice?	What questions do you have for further exploration?

	<ul style="list-style-type: none"> <li>● Total Per Capita Spending on Personal Health Care</li> <li>● Total Per Capita Spending on Physician and Clinical Services</li> </ul>		
<b>Education</b>	<p>Please look at the following:</p> <ul style="list-style-type: none"> <li>● Enrollment to—:</li> <li>● Enrollment</li> <li>● Admissions to—:</li> <li>● Admissions</li> <li>● Enrolled Total</li> <li>● Graduation to—:</li> <li>● Graduation Rate</li> </ul>	<p>What trends or patterns do you notice?</p>	<p>What questions do you have for further exploration?</p>
<b>Choose your own set:</b> _____	<p>What did you choose to look at in the set?</p>	<p>What trends or patterns do you notice?</p>	<p>What questions do you have for further exploration?</p>

