

Citizen U[®]

Preparing tomorrow's citizens today



Subject: *Mathematics*

Grade Level: *9-12*

Lesson Title: *Data Analysis to Drive Civic Action*

Lesson Overview: In this math and civics lesson students will apply skills in statistical analysis (categorizing data, creating and reading graphs) to examine concepts of impact of civic engagement. Using data regarding school-associated violent deaths, students will examine and interpret data and use knowledge of civic life, politics and government to discuss potential civic engagement. The content of the lesson is driven by Library of Congress resources within an inquiry design to guide students in generating relevant questions and thinking critically about data and civic issues. The length of this lesson is 60 – 80-minutes.

CONCEPT: Service	THEME: Impact
Overarching Essential Question: <ul style="list-style-type: none"> • What are our responsibilities as citizens? 	Lesson Essential Question(s): <ul style="list-style-type: none"> • How does data have power to create action? • What is civic engagement and action? • Do young people have power to use data to change our nation?

Lesson Objectives:
Students will:

- Examine the role of statistical analysis of data in decision-making.
- Use data to analyze the impact of civic engagement by young people.
- Use data to identify a problem of interest for future civic action.

CIVIC KNOWLEDGE	CIVIC SKILLS	CIVIC DISPOSITIONS
<ul style="list-style-type: none"> • Civic life, politics & government • Purposes, values and principles of American democracy established by the Constitution • Roles of citizens in American Democracy 	<ul style="list-style-type: none"> • Working with others • Clearly articulating ideas and interests • Building coalitions, seeking consensus, negotiating compromise and managing conflict 	<ul style="list-style-type: none"> • Developing as an independent member of society • Respecting individual worth and human dignity • Participating in civic affairs in an informed, thoughtful and effective manner • Promoting the healthy functioning of American constitutional democracy

LIBRARY OF CONGRESS RESOURCES & ADDITIONAL RESOURCES

Library of Congress Resources
 Image: Children’s Protest Parade <https://www.loc.gov/item/2017759017/>
 Primary Source Analysis Tool <http://www.loc.gov/teachers/primary-source-analysis-tool/>

Materials Needed
 Library of Congress Resources (listed above)
 Handout A: CDC School-Associated Violent Death Study
<https://www.cdc.gov/violenceprevention/youthviolence/schoolviolence/SAVD.html>

Supporting Question 1 ENGAGE	Supporting Question 2 EXPLORE	Supporting Question 3 EVALUATE
How does data have power to create action?	What is civic engagement and action?	Do young people have power to use data to change our nation?
Performance Task 1	Performance Task 2	Performance Task 3
Have students create data driven subgroups and categories.	Use primary source to define civic engagement and action.	Present data around an issue of civic action.

TEACHING PLAN

PART 1 – INQUIRY INTRODUCTION

1. Begin by dividing the students into unequal groups by gender, height, etc. Ask students to work in their groups to gather data about that group (gender, age, ethnicity, religion) and to create a chart with the data represented in raw numbers and percentages. **(8 minutes)**
2. Have students briefly discuss different ways the data they gathered could be used by a teacher. **(3-5 minutes)**
3. Tell students they will be experiencing the potential that data gives them to influence change in our nation.

PART 2 – INQUIRY EXPLORATION WITH PRIMARY SOURCES

4. Ask students to consider whether they currently use data to make informed decisions and to take action about issues in this country. Have a brief **pair share** discussion. **(3 - 5 minutes)**.
5. Provide students the Library of Congress Primary Source photo of [Children’s Protest Parade for housing in NYC between 1930-38](#). Break students into small groups. Give students the [Primary Source Analysis Tool](#)

and ask them to examine the photo using each category of the tool to observe, reflect and question. **(10 minutes)**



6. Ask students, “Is this a picture of civic action and engagement and why? What makes it civic engagement? What is civic action and engagement?” **(5 minutes)**
7. Lead a discussion about the picture asking, “During this time period, how do you think these students got their data?” **(3-5 minutes)**
8. Ask students where we get data today and how do we know it is reliable data? **(5 minutes)**
9. Share with students the statistics from Handout A: the CDC on [School Associated Violent Death](#). In small groups, ask students to discuss the data and to make statements or draw conclusions about the data. Have each group share their conclusions. **(5-10 minutes)**

10. In small groups, have students identify current issues that are relevant to them that they would like to research. **(3 – 5 minutes)**.

PART 3 – APPLYING INQUIRY AND ACTION

11. Have each small group search and find data about the topic of interest to the group. Each group should present the data in graph or chart form and also create a two sentence statements why the data reveals that some change much take place. Have each group present their findings. In their presentation, have students state how young people can use data to make positive change. **(15 minutes)**

PART 4 – INQUIRY TO DRAW CONCLUSIONS

12. As homework or follow up, ask students how they can use analysis of data on a regular basis to inform positive change in the school, community, and country.

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Citizen U Teacher Guide

Lesson Title: *Data Analysis to Drive Civic Action*

Subject: *Mathematics*

Grade Level: *9-12*

Overview

If you're working with students on statistics and data analysis (categorizing data, creating and reading graphs), this lesson will provide students the opportunity to examine and represent data on school violence, and interpret and use that data to identify a problem of interest for future civic action.

Learning Objectives

Students will be able to:

- Examine the role of statistical analysis of data in decision-making.
- Use data to analyze the impact of civic engagement by young people.
- Use data to identify a problem of interest for future civic action.

Standards

- CCSS.MATH.CONTENT.HSS.IC.A.1 - Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
- CCSS.MATH.CONTENT.HSS.IC.B.6 - Evaluate reports based on data.

Teacher Instructions

- Make copies (one for each student) of Handout A – School-Associated Violent Death Study.
 - If students do not have access to a computer, make copies (one for each student) of Primary Source Analysis Tool <http://www.loc.gov/teachers/primary-source-analysis-tool/>. Make additional copies in case more room is needed.
- NOTE: The Primary Source Analysis Tool is the property of the Library of Congress and cannot be altered.

Library of Congress Resources

- Children's Protest Parade. They want better homes. New York. [Between 1930 and 1933?] Photograph. <https://www.loc.gov/item/2017759017/>
- CDC School-Associated Violent Death Study <https://www.cdc.gov/violenceprevention/youthviolence/schoolviolence/SAVD.html>
- Primary Source Analysis Tool <http://www.loc.gov/teachers/primary-source-analysis-tool/>

Materials Needed

- Library of Congress Resources (listed above)
- Handout A: School-Associated Violent Death Study

**PART 1 – INQUIRY
INTRODUCTION**

I. Introduction

Begin the lesson by presenting students with a task to collect data about their group and to chart the data. Discuss ways that the collected data can be used, and the overall potential of data to be used as an agent of influence or change.

A. Have students work in groups to complete task of data collection.

1. Begin by dividing the students into unequal groups.
2. Ask the students to work in their groups to gather data about that group (gender, age, ethnicity, religion).
3. Students should record the data on paper or in a notebook.

B. Have students create a chart with the data represented in raw numbers and percentages. **(8Minutes)**

C. Have students briefly discuss different ways that a teacher could use the data. **(3-5Minutes)**

D. Tell students they will be experiencing the potential that data gives them to influence or change our nation.

“Charts are used to display series of numeric data in a graphical format to make it easier to understand large quantities of data and the relationship between different series of data.”

To create a chart in Excel:

<https://support.office.com/en-us/article/Create-a-chart-from-start-to-finish-0baf399e-dd61-4e18-8a73-b3fd5d5680c2>

“Graphs and charts are great because they communicate information visually. For this reason, graphs are often used in newspapers, magazines and businesses around the world. Sometimes, complicated information is difficult to understand and needs an illustration. Graphs or charts can help ... get your point across quickly and visually.”

For detailed information on how to create bar graphs, line graphs, pie charts, and more:

Create a Graph Tutorial, Kids’ Zone Learning with NCES, <https://nces.ed.gov/nceskids/createagraph/>

**PART 2 – INQUIRY EXPLORATION
WITH PRIMARY SOURCES**

II. Exploration with Primary Sources

Have students examine a photo from the early 1930's and reflect on how it relates to civic action and engagement. Facilitate discussion. Then briefly examine data on School-Associated Violent Death and have students draw conclusions from the data.

A. Facilitate a brief pair share discussion. **(3-5 Minutes)**

Ask students: *Do you currently use data to make informed decisions and to take action in this country?*

B. Divide the students into small groups. **(10 Minutes)**

1. Provide the Library of Congress primary resource, the [Children's Protest Parade. They want better homes. New York.](#)

2. Have students use and complete the **Primary Source Analysis Tool** to examine the cartoon.

3. Lead a discussion relative to the photo. **(10-15 minutes)**

Ask: *Is this a picture of civic action and engagement and why?*

Ask: *What makes it civic engagement?*

Ask: *What is civic action and engagement?*

Ask: *During this time period, how do you think these students got their data?*

Ask: *Where do we get data today and how do we know it is reliable data?*

C. Present students with statistics from the [CDC on School-Associated Violent Death](#), draw conclusions and discuss. **(5-10 Minutes)**

D. Share with the students the **Handout A: School-Associated Violent Death Study**.

E. In small groups, ask students to discuss the data and to make statements or draw conclusions about the data.

F. Ask students to identify current issues that are relevant to them that they would like to research. **(3-5 Minutes)**

“Primary sources are the raw materials of history — original documents and objects which were created at the time under study. They are different from secondary sources, accounts or interpretations of events created by someone without firsthand experience.

Examining primary sources gives students a powerful sense of history and the complexity of the past. Helping students analyze primary sources can also guide them toward higher-order thinking and better critical thinking and analysis skills.”

(Using Primary Sources, Library of Congress, <https://www.loc.gov/teachers/usingprimarysources/>)

PART 3 – APPLYING INQUIRY AND ACTION

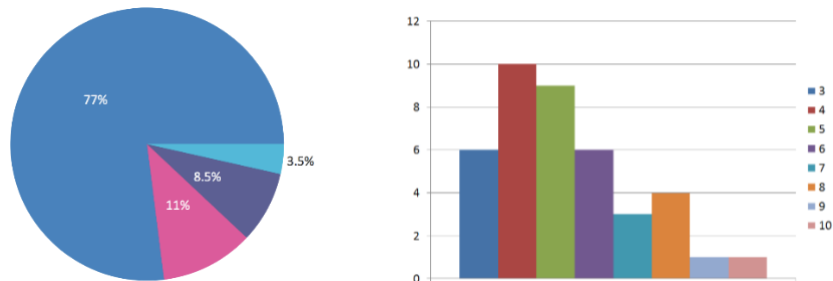
III. Applying Inquiry and Action

Dive deeper into the issues that students identified and explore how data could be used to help make a positive change.

- A. Continue to work in small groups. Using the current issues identified at the end of the previous section, have each small group select a topic of interest from the pool of current issues, then research to find data about the topic of interest to the group. **(15 Minutes)**

Find data that supports the notion that some civic action could be taken to cause a positive change.

Each group should present the data in graph or chart form. For example, pie chart or bar graph:



Each group should also create a two sentence statement why the data reveals that some change much take place, and how young people can use data to make positive change.

For example: The data shows that x% of teens between the ages of 14-18 experiences some form of depression caused by the pressures and stresses of school. To make a positive change, young people can create a campaign to...

Have each group present their findings.

PART 4 – INQUIRY TO DRAW CONCLUSIONS

IV. Draw Conclusions

Summarize the main points of the lesson and provide students the opportunity to share data on topics of interest to inform positive change.

- A. Summarize key points.

Data can be used to identify a problem, make decisions, and impact civic engagement.

- B. Extend the learning opportunity as homework or follow-up.

Ask students: *How can you use analysis of data on a regular basis to inform positive change in the school, community, and country?*

School-Associated Violent Death Study

Centers for Disease Control and Prevention

<https://www.cdc.gov/violenceprevention/youthviolence/schoolviolence/SAVD.html>

Background

CDC has been collecting data on school-associated violent deaths since 1992. The system, which was developed in partnership with the Departments of Education and Justice, monitors school-associated violent deaths at the national level. Information is collected each year from media databases, police, and school officials. The School-Associated Violent Death Study (SAVD) presents the most recent data available on school-associated violent deaths; common features of these events; and potential risk factors for perpetration and victimization. Data obtained from this study play an important role in monitoring and assessing national trends in school-associated violent deaths, and help to inform efforts to prevent fatal school violence.

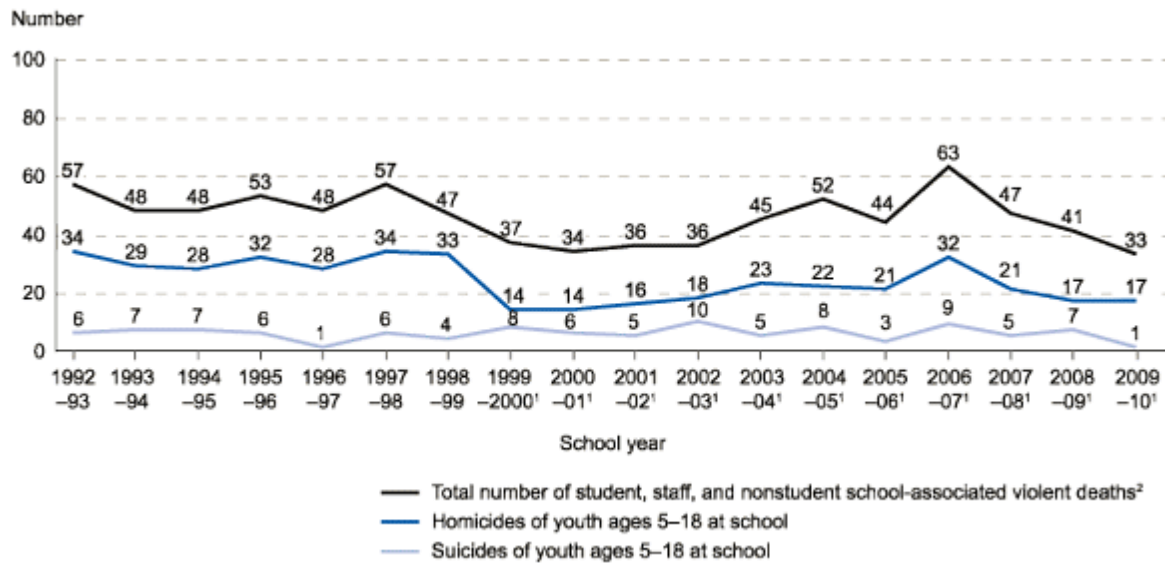
Case Definition

A case is defined as a fatal injury (e.g., homicide, suicide, or legal intervention) that occurs on school property, on the way to/from school, or during or on the way to/from a school-sponsored event. Only violent deaths associated with U.S. elementary and secondary schools, both public and private, are included.

Major Findings

- Most school-associated violent deaths occur during transition times – immediately before and after the school day and during lunch.¹
- Violent deaths are more likely to occur at the start of each semester.²
- Nearly 50 percent of homicide perpetrators gave some type of warning signal, such as making a threat or leaving a note, prior to the event.¹
- Firearms used in school-associated homicides and suicides came primarily from the perpetrator's home or from friends or relatives.³
- Homicide is the second leading cause of death among youth aged 5-18. Data from this study indicate that between 1% and 2% of these deaths happen on school grounds or on the way to or from school. These findings underscore the importance of preventing violence at school as well as in communities.

Trends in School-Associated Violent Deaths—1992-2010



Footnotes:

¹ The data from 1999—2000 onward are subject to change as additional information about confirmed cases is received and assessed. Reasons for change include but are not limited to: a) Reclassification of cases as non-cases based on specific details learned during the interviews with school and law enforcement officials; and b) identification of new cases in prior data years. The latter situation occasionally occurs because some cases did not appear in media databases during the case identification period for specific years and were not identified by supplemental case finding efforts.

Such cases are sometimes discovered in subsequent database expansions, in ongoing supplemental case finding efforts, and in law enforcement and school interviews conducted to verify known cases.

² Victims include students, staff members, and others who are not students, from July 1, 1992, through June 30, 2010.

³ Estimates were revised and may differ from previously published data.

⁴ At school refers to on school property, on the way to/from school, or during or on the way to/from a school-sponsored event.

Additional findings on violent deaths from CDC's School-Associated Violent Death Study are available in the Indicators of School Crime and Safety published annually by the Departments of Education and Justice <http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2013036>⁴ This report also includes the most recent data available on school crime and safety.

References:

1. Anderson M, Kaufman J, Simon TR, Barrios L, Paulozzi L, Ryan G, et al. School-associated violent deaths in the United States, 1994–1999. *JAMA* 2001;286(21):2695–2702.
2. Centers for Disease Control and Prevention. [Temporal variations in school-associated student homicide and suicide events – United States, 1992–1999](#). *MMWR* 2001;50(31):657–660.
3. Centers for Disease Control and Prevention. [Source of firearms used by students in school-associated violent deaths – United States, 1992–1999](#). *MMWR* 2003;52(09):169–172.
4. Robers S, Zhang J, Truman J, Snyder TD. [Indicators of School Crime and Safety, 2011](#). National Center for Education Statistics, U.S. Department of Education and Bureau of Justice Statistics, Office of Justice Programs, U.S. Department of Justice. Washington, DC; 2012.