

Math with a Civil War Map.

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Overview

Analyze statistics from a civil war era map showing population, naval forces, exports and land. Practice percent calculations and estimation with any or all of the statistics. Consider the data showing exports and another map showing cotton production to understand the impact of cotton on the motives behind the civil war. Objectives

Students will:

- understand that math can help comprehend historical events;
- use proportions, fractions and percents to solve practical problems;
- be able to read and analyze a map and statistics;
- further comprehend the motivating forces behind the civil war.

Time Required

1 class period

Recommended Grade Level

Grades 6-12

Topic

Mathematics/U.S. History

Era

US 5 - Civil War and reconstruction (1850-1877)

Format of Primary Sources Used

Maps

Standards

National Council of Teachers of Mathematics Standards and Expectations:

- build new mathematical knowledge through problem solving;
- solve problems that arise in mathematics and in other contexts;
- recognize and apply mathematics in contexts outside of mathematics;
- work flexibly with fractions, decimals, and percents to solve problems;
- understand and use ratios and proportions to represent quantitative relationships;
- develop and use strategies to estimate the results of rational-number computations and judge the reasonableness of the results;
- judge the reasonableness of numerical computations and their results.

Preparation

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Materials Used

- [Questions Worksheet](#)

Resources Used

Library of Congress



Bacon and Co. (1863). [Bacon's steel plate map of America, political, historical & military](#). Library of Congress: American Memory, Map Collections: 1500-2004



United States. Census office. 11th census, 1890. (1898). [Statistical atlas of the United States, based upon the results of the eleventh census by Henry Gannett. - Yield of cotton per square mile: 1890](#). Library of Congress: American Memory, Map Collections: 1500-2004

Procedure

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Resource(s)

- 1 Obtain poster size copies of the first map so that students will be able to read the detailed information on the map. (Statistics are difficult to read in smaller sizes)



- 2 Engage the students by explaining that by analyzing situations present at the time of the Civil War, we can understand via math some of the motivations behind the war. Explain that today's goal is to pursue understanding ways that: "Math helps us understand our world". Tell students that at the end of the activity, students should be able to answer the Investigative Question: How can Math help us analyze and understand a situation or concept?

- 3 Determine any other questions/activities with the map the students should as warm-up to the main activity. (See sample sheet for suggestions.)

[Questions Worksheet](#)

- 4 Pass out the first map. Ask student to use the legend to identify the "slave" and "free" states based on the outline colors. Estimate the percentage of the country that was "slave".



- 5 Instruct students to use the numbers in the chart next to the legend to calculate the actual percentage of the square miles that were considered "slave".



- 6 Discuss the secession (the numbers next to the state population give the order of secession). What reasons were there for not wanting this small part of the country to secede?



- 7 Examine the statistics in the lower left hand box on Exports. What percent of the total export revenue was cotton? Note the investment that the government had taken in bolstering cotton production (lower right corner).



- 8 Examine the second map showing the areas growing cotton in the U.S. Granted the war ended in 1865, assuming this was the norm, ask the students to imagine one economic and political reason for the war. Emphasize that cotton was not the only reason for the war.



- 9 Discuss how this information fits into prior knowledge of the Civil War. Lead the students back to the Investigative Question and Understanding Goal to emphasize the insight math can provide to historical situations.

Evaluation

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Evaluation

- Teacher monitoring of students calculations prior to evaluating answers;
- Teacher monitoring of responses to questions;
- Student self-evaluation of answers to questions;
- Group discussion of answers and meaning;
- Evaluation of writing calculations if teacher chooses to have students hand in work.

Possible Questions
Bacon's steel plate map of America, political, historical & military. 1863

1. Read the color coded key and estimate a percentage of the territory that was "Federal Slave", "Federal Free", "Federal Territories" and "Confederate Slave".
2. Using the table of state populations, determine the actual percentages of each.
3. Was your estimate a good estimate? What was the difference or what was the percent error?
4. Read the statistics on the number of soldiers for the territories. Do the percentages match with the amount of land?
5. How many soldiers were there per square mile in the territories? Total?
6. Look at the Price of this Map. 1s. 6d. refers to 1 shilling and 6 pennies (using the abbreviation for "denarius" which was an ancient Roman silver coin). If there were 12 pennies to a shilling and 20 shillings to a pound, how many pennies total did the map cost? Use a fraction to show how many shillings total the map cost. Compare the current cost of a pound and find the cost of the map in pounds and dollars.
7. Read the statistical data from the census of 1860 at the bottom of the Political box.
 - a. What was the number of newspapers published in 1850?
 - b. What was the total of domestic manufactures in 1860?
 - c. What was the actual percent of change in the bales of cotton produced from 1849 to 1859?
8. Read the Export box. What percent of the total exports were made of cotton? Compare the cost to the cost of the total cotton manufactured. Why is this expected from the time period?
9. Read the Political box. Look at the Export statistics. Look at the Map of Cotton Yield. Why was cotton a factor in the war? What would have been the percentage of imports lost if the Confederate states did not join the Union?

Extensions:

Compare the statistical data shown on the 1860 map with current statistics.

Convert the money values shown into current day dollars for understanding.

Compare the exports and cotton growth or the number of soldier per square mile now.