

The Impact of the Columbian Exchange on Native American Populations

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Introduction

This unit is written for teachers of history courses, specifically eighth grade United States History I. Through this course, students are expected to learn about the beginnings of American history, starting with Native American culture and ending at the Reconstruction Era. It is crucial for students of this course and grade level to begin using certain historical skills, such as conducting basic independent research. To help teach students the importance and value of independent historical research, this unit focuses on applying the concept of numeracy to social studies by evaluating the credibility and reliability of data found through the students' investigations.

The concept of numeracy is one that has been largely ignored by educators but is useful across all curriculums. When I was first introduced to the term *numeracy*, I assumed that it was a mathematics idiom and would have virtually no part in my history classroom. However, in a social studies class like United States history, being able to understand where data come from and how to apply them to social constructs is not only helpful but necessary; this skill is at the root of numeracy. Students conducting research projects must be able to approach social issues with the ability to discover the truth behind the myriad of myths and misleading information. We must infuse numeracy education into math and other classes so that we and our students can better understand data in research as well as everyday information.

Today's students live in a time when information is so readily available that it seems almost silly to conduct in-depth research. We would all love to say that we thoroughly do our own research whenever we need to find information, but the truth is that often we simply type a topic or question into a search engine and usually rely on the first couple links to provide us with credible information. So how can we be upset with our students when they use the same method to conduct their own research? We need to place an emphasis on diving deeper into data and information so that we and our students learn more than just what we find at the top of a Google search.

This brings me to the idea of infusing numeracy into my social studies curriculum. My students begin their journey into United States history by first looking at the Native American cultures that existed prior to European exploration in the western hemisphere. Information regarding population sizes of these civilizations varies considerably among different sources. It varies again when looking into the impact that the Columbian

Exchange had on the natives. This provides an opportunity for my students to dig deeper into the content to examine and analyze how historians use numbers to construct the history we study and teach in schools.

Demographics

The school at which I teach, Conrad Schools of Science (CSS), is a magnet secondary school that serves grades six through twelve with a focus on science disciplines. Some of the specialties that the school offers to its high school students include biotechnology, veterinary science, physical therapy/athletic healthcare, and nursing. To better prepare and introduce the younger students to these pathways, science-oriented courses are offered additionally as electives at the middle school level.

Enrollment at CSS is entirely through the choice system, and students must apply and conduct themselves accordingly through an interview process before gaining admission to the school. Students are accepted for the sixth grade and then must re-apply for ninth grade if they are not granted early admission from CSS. Students may also apply from other middle schools for high school. At the high school level, students declare a pathway, a science track on which they will focus for the remainder of their time at CSS. Social studies is mandatory in all middle schools grades (sixth through eighth grade), and three credits of social studies are required at the high school level. Students attend a ninety-minute social studies class every other day according to the block scheduling utilized by the school. There are additional social studies electives and Advanced Placement courses offered in the high school besides the required social studies classes. These higher level courses demand a strong background in geography, history, economics, and civics.

There are close to 1,200 students including all grades, as CSS maintains roughly 170 students in each grade level and averages 27 students in a classroom. The school is located in the Red Clay Consolidated School District of New Castle County just south of the city limits of Wilmington. Students attending Conrad commute from different parts of the city, the surrounding towns in New Castle County, as well as parts of Kent County to the south. The student population is socio-economically diverse, with approximately thirty-five percent of students identified as part of an ethnic/racial minority and over thirty-five percent living in low income homes according to the reported data from the 2013-2014 school year.

Rationale

I am in a lucky situation this year because I have made the move from teaching seventh grade to eighth grade. Therefore, I am already familiar with my students' abilities, including their ability to determine the credibility of sources. Knowing this, I also know that they still need to work on determining the credibility of sources. In seventh grade,

students gathered their own information on various historical phenomena and analyzed the artifacts (various readings, pictures, videos, etc.) to prove a thesis. In eighth grade, my students will now be able to move beyond that to focusing specifically on the data in their findings, and asking additional questions. Are the data accurate? Where do the data come from? How can you be sure you can trust the data? Are the data credible?

My students, and I'm sure many others, believe that numbers cannot lie. This unit will teach my students that although numbers may not lie, those who create and use the numbers may definitely bend the truth to their advantage. By scrutinizing the information, I hope my students will learn to dig deeper and think more critically about the data and other evidence they discover in their sources.

Learner Objectives

Students will understand that:

- There are varying perceptions of the impact that the Columbian Exchange had on Native Americans populations.
- Historical documents, artifacts, and other materials must be analyzed in terms of their credibility, purpose, and perspective or point of view for which they were constructed.
- Data can be manipulated to support an author's purpose.

Essential Questions

- How are numbers and other evidence manipulated by authors?
- Why are numbers and other evidence manipulated by authors?
- How did the Columbian Exchange impact the Native Americans populations?

Narrative: Teaching Numeracy in Middle School United States History I - The Impact of the Columbian Exchange on Native American Populations

In the textbook used by my students, the Columbian Exchange is defined as “the movement of living things between hemispheres.”¹ This began when Columbus first arrived in the Americas and lasted for approximately 250 years. Through the Columbian Exchange, livestock, crops, germs, and people were transported among Europe, Africa, and the Americas. This is considered to have started when Christopher Columbus first arrived in the Americas in 1492. The Columbian Exchange brought the world closer together culturally, as food was shared and traded. However, the diseases that were spread had a horrible and permanent effect on the Native American populations.²

Some of the illnesses the Europeans brought to America included measles, influenza, typhus, malaria, diphtheria, whooping cough,³ and yellow fever.⁴ Although each played a

role in decimating Native American populations, none proved to be quite as devastating as smallpox. Although our textbook focuses on this one disease, the book makes a general statement that “the spread of European diseases killed millions of Native Americans.”⁵ Other historians have supported assertions like this with facts about how the harmful germs were brought to America. For example, in his article entitled “Disease Transfer at Contact,” H. F. Dobyns states that through Columbus’ second voyage to the Americas in 1493, pigs aboard his ship carried swine influenza.⁶ Later, after the slave trade begins, African slave ships contributed to the continuous supply of smallpox germs.⁷

It is commonly accepted by historians that the transfer of diseases from Europe to the Americas is directly responsible for the decline of Native American populations between the times of Columbus’ voyages and the turn of the 20th century.⁸ Still, there is skepticism about how much the natives were impacted by European illnesses. Because there was no standardized collecting of statistics on natives’ populations during the early years of European exploration, it is difficult to determine how many natives were killed due to this new contact.⁹ Also, multiple theories exist for why so many natives died as a result of European diseases being introduced in the Americas. Some allege that Native Americans were genetically susceptible to the Old World diseases, but this is not commonly accepted in the scholarly realm of history.

Most historians agree that native populations were hit so hard by these diseases simply because they had not had the opportunities to build up immunities before being bombarded with the germs.¹⁰ Dobyns calls this “contact shock,”¹¹ while Alfred W. Crosby refers to this scenario as “virgin soil epidemics.”¹² Crosby defines virgin soil epidemics more precisely as “those in which the population at risk have had no previous contact with the diseases that strike them and are therefore immunologically almost defenseless.”¹³ This is evidenced in other situations aside from the Native Americans of early civilizations. Crosby cites an example of this as late as 1943 when the Teslin Lake natives were first contacted by outsiders as the Alaskan Highway was expanded into their land. The natives there experienced yearlong waves of measles, German measles, dysentery, catarrhal jaundice, whooping cough, mumps, tonsillitis, and meningococcal meningitis.¹⁴ Because these people had not been exposed to these illnesses prior to 1943, their first contact caused years of diseases.

Essentially, the people living in the Americas in the fifteenth century were extremely vulnerable due to the way they lived. By 1500, there were hundreds of different cultural groups and an estimated 2,000 languages being spoken. Early American civilizations were spread out, and the people lacked immunities to fight off European illnesses.¹⁵ So when Hernando Cortés arrived in the Aztec Empire in 1519, one of his most useful weapons in defeating Montezuma was smallpox.¹⁶ This pattern of European exploration leading to the decimation of Native Americans continued well into the 20th century.¹⁷

Numeracy in the Social Studies Classroom

Numeracy is being able to use your math, which includes understanding and applying numbers appropriately. After reading the history lesson above on the Columbian Exchange, it might be difficult to see where numeracy fits into the social studies classroom, but it is actually essential to creating young historians who think critically about the information they receive throughout their research. Creating histories and building on knowledge is a form of social construction that relies heavily on the use of statistical data. Even the most familiar social statistics are products of choices that can be questioned. Statistics are always created by people, so every number is a product of the creator's choice. This is a significant lesson for young historians to learn as they develop their ability to conduct independent investigations.

Statistics are provided in order to prove a point. They arouse concern about social issues that people deem important. It was not until the middle of the 20th century that historians began to dig deeper into researching the impact of the Columbian Exchange on Native American populations.¹⁸ Among historians – and other researchers with an agenda to push – there is a social competition to present the most compelling case possible. This makes statistical data difficult to trust, as extreme numbers and case studies appear more intriguing and garner more attention. For example, the quote mentioned above from our textbook about the millions of natives who died as a result of contact with European diseases is so vague, yet people read that millions died and are subsequently interested in learning about how all this happened.

Not only do students have to muddle their way through vague statistical data, they encounter statistics that are written so that the numbers are bent to portray a certain truth. Numbers can mean very different things when worded certain ways. Historians can produce the history they want simply by altering the wording of their findings. Was it 20 million natives who perished due to European diseases or 2 million? Millions is millions, right?

Most people, students included, think of numbers as facts. However, over time and multiple interpretations, numbers tend to become exaggerated and take on new meanings. A big number suggests there is a big problem, so people embellish statistics in order to make you perceive the issue as one that is worthy of your attention. This might lead you to think “Why should I even consider the numbers if they are social constructs made up by biased agenda-pushers?” The answer is that we need numbers in order to make sense of our world, and so do our students. Statistics provide a more concrete explanation of concepts and act as part of the way we build meaning of historical phenomena. Therefore, we can use numbers to help us grasp ideas, but we must also remember that statistics encompass more factors than just those being counted.

Native American Populations – The Numbers

Some estimate that there were as many as 100 million natives in the Americas when Columbus arrived in 1492. That would account for over fifteen percent of the human population of the world at that time. 400 years later, after data started being collected on people living in America, there were only a few million natives still around.¹⁹ What does this say about the impact of European diseases on the natives, and how can we use this data to teach our history students? Well, we need them to think critically about those numbers.

Let's focus on smallpox since research shows that it was the most devastating of the European illnesses in America. The population of Mexico is said to have dropped from 25.2 million in 1518 to a mere 2.65 million in 1523.²⁰ The students' textbook supports this by saying that more than 20 million Native Americans in modern day Mexico died from disease within the first century of European conquest.²¹ Dobyns asserts that between 1524 and 1525, smallpox decimated the Inca Empire, located in modern day Peru. By 1568, 90 percent of Mesoamerica had been wiped out.²²

These seem like truly compelling numbers until we compare the rate at which natives were dying from smallpox to the rate at which others died of the same disease. Crosby claims that in 1520, the death rate due to smallpox in the Aztec Empire was 38.5%. This is the same rate at which white soldiers in the American Civil War died of smallpox in the 1860s.²³ Without the second piece of information, students might assume this was an alarming rate that was unique to the natives.

There are many other Native American societies who were similarly impacted by smallpox, and there are numbers to go with each one. Smallpox is blamed for killing two thirds of the Omahas and "perhaps half the populations between the Mississippi River and New Mexico."²⁴ Starting in 1518, smallpox is said to have finished off the Taino.²⁵ It took out half the people of the Huron and Iroquois during the 1630's. The same disease killed half the Cherokee in 1738, almost half the Catawbas 21 years later, and half the Piegan natives during the American Revolution. It returned to wreak havoc on the natives living in the plains in 1837, wiping out half the population there. 6,000 Blackfeet natives, two thirds of their population, as well as half the Mandans died as a result of smallpox that year. These deaths do not even take into account the version of the plague that killed off as many as nine out of ten natives located between Cape Cod, Massachusetts and Maine.²⁶

Dobyns, Crosby, and many other researchers have presented these numbers as a way to bring attention to the negative impact of the Columbian Exchange on the Americas. Those who put forth very high estimates of pre-Columbian Exchange Native American populations are known as High Counters, while those who estimate lower numbers are referred to as Low Counters. In *Numbers from Nowhere: The American Indian Contact Population Debate*, author David P. Henige compares the two sets of estimates and

refutes the claims of the High Counters. Henige asserts the data presented by High Counters such as Dobyns “is riddled with unstable and untestable hypotheses.”²⁷ He goes on to say that Dobyns made no effort to validate the numbers he used to explain Native American populations. Instead, Dobyns merely accepts the numbers and uses them to push his own agenda, which leads to more High Counters as his information is referenced by future researchers. However, Henige does not necessarily side with the Low Counters. Instead, he insists that both the claims of the Low Counters and High Counters need to be scrutinized as we look at where those numbers originate.²⁸

Origin of Numbers

These examples were used by historians to support the claim that smallpox devastated the Native American populations for centuries. Smallpox and other European diseases obviously impacted the natives negatively, but the numbers seem too good to be true, meaning they are nice numbers to read. Why is it that almost every civilization that was impacted lost “half” of their population? Half is an easy fraction; it is easy to visualize and easy to comprehend. This is something to take into account when applying numeracy to the social studies classroom.

Also, where do these numbers originate? If no one was keeping track of the Native American populations in the early years, how can we accurately provide data on them now? Information was gathered in a variety of ways, so sometimes we can piece the information together to get a bigger picture. Not all documentation of Native American depopulations is neatly packaged into easy fractions and stated as statistical data.²⁹ We know about some populations from studying the writings of explorers. For example, Cortés’ men were told by villagers that the Aztec army consisted of 200,000 warriors. They also recorded that the Aztec’s city of Tenochtitlán housed, oddly enough, the same number of people.³⁰ When the villagers are not reliable sources of data, we can turn to information recorded by missionaries set up by European religious groups. The missionary records indicate that two thirds of the natives in the northwestern part of New Spain, one of Spain’s viceroyalties in America, died between 1591 and 1638. Other data comes from eyewitnesses, such as the statement that the population of the Izalco Pipil was down 90 to 98 percent from its population in 1549 due to a yearlong epidemic of typhus or plague that started in 1576. Other numbers come from assumptions and inferences, such as explaining a mass burial as the result of a sudden strike of a disease.³¹ Although people did not make neatly drawn out spreadsheets and graphs of population data, there are sources of information to be considered.

Causality and Other Factors

Historians put forth these data to prove that Old World diseases devastated the Native American populations. They are implying that there is causality in these situations. Essentially, these researchers assume that the crippling depopulation of the natives was

due to Native Americans dying of illnesses such as smallpox. However, there are other factors to consider.

Researchers who assert that European germs directly killed millions of natives are neglecting to acknowledge other possible factors. In a causal relationship, Factor A (European explorers bringing germs to America) results in Factor B (Native Americans dying from European diseases). Yet people are more complex than just two factors, and there were other parts to this equation. For instance, when disease first hits a civilization, nearly everyone gets sick at the same time. In this case, there is a problem of who gets to take care of whom. Also, when the first people get sick, they remain in society, perpetuating the illness as it spreads throughout the civilization. This leads to more people getting sick but no one to care for them.³²

As information about the illnesses traveled, fatalism and panic ensued. Some natives thought they were doomed as soon as the first symptom appeared. Panic resulted in the Cherokees killing themselves to avoid disfigurement. As smallpox hit the Omaha in 1802, the natives decided to kill the wives and children of the civilization in order to send them to a better place. During the 1837 outbreak of smallpox mentioned above, many of the Blackfeet committed suicide at the first sign of illness. During that same epidemic, George Catlin recorded that half of the Mandans killed themselves as well, dropping their population from 1,600 to as low as 125.³³

Panic also led people to abandon their society, leaving the sick to die. This could have been even worse, as those who evacuated carried the germs with them to other civilizations. The customs and traditions typical of the natives did not help them fend off diseases either. For example, in 1898, the Moqui Indians of Arizona experienced a smallpox epidemic. Because it was late in the 19th century, advanced medicine and treatments were available; however, not all the natives were willing to try them. 632 Moqui contracted smallpox. Of the 412 who accepted modern treatment, 388 survived, a survival rate of 94 percent. Of the 220 who refused modern medicine, only 57 survived, a survival rate of only 26 percent.³⁴ These other factors need to be considered when researching the overall impact of European diseases on Native American populations.

Strategies

My students are still developing note-taking skills. This is something that many students struggle with throughout their educational careers, so learning good note-taking strategies has become a focus of my curriculum. Also, because this unit is intended for middle school students, there is a lot of value in having the students work in collaborative pairs. This builds social skills, provides more perspectives and knowledge, and gives students an opportunity to move around and be active in the classroom.

Cornell Notes

I have my student use the Cornell notes method because it provides a mainstreamed visual representation of information, and my students have consistently given me positive feedback about them. In this strategy, students can take notes on a variety of informational pieces, such as PowerPoints, lectures, videos, and textual pieces. Student split the note paper into three sections: Vocabulary, General Notes, and Summarizing the Main Idea. See Appendix B for an example of the Cornell Notes I use. Students can take this a step further and also color-code their notes, highlighting or writing the Vocabulary in one color, the General Notes in a second color, and the Main Idea in a third color. This not only organizes the note-taking process, but the titles guide students in finding the important pieces of information to write (ex. Vocabulary) and makes it easier to find information when reviewing the notes later. In this unit, the Cornell Notes are used when the students take notes from the textbook as well as completing their own research.

Collaborative Pairs/Think-Pair-Share

Using collaborative pairs is a great way to ensure that all students are engaged in the activity and learning from the experience. It challenges students to collaborate with their peers instead of keeping information to themselves. By keeping it to pairs, you eliminate the option for students to be overruled by a majority, which might happen in a group of three or more students. Additionally, students have the opportunity to discuss their knowledge and opinions on the content without the pressures of answering in front of the entire class. During a Think-Pair-Share activity, students are asked to think about a prompt provided by the teacher. Then the students pair up with other students to discuss their thoughts on the prompt. In the end, one or both of the students share their ideas with the class. In this unit, the collaborative pairs are used to facilitate classroom discussion of Native American populations before and after the Columbian Exchange began.

Jigsaw

Employing the Jigsaw strategy provides a way to teach a lot of information in a short amount of time. In this method, each student or group of students is a single piece in a bigger puzzle. The student or group of students must become the master of a piece of information to share with the rest of the class as all students move about the room trying to get all the pieces of the puzzle. Once each student has all the pieces of the overall puzzle, the bigger picture is revealed. In this unit, the Jigsaw strategy is used to have students compare differing perspectives on the impact of the Columbian Exchange on Native American populations.

RARE Format

RARE Format is a strategy used to guide students' responses to a question or prompt. Students frequently take the shortest path to an answer without relying on evidence or

supporting details. RARE Format requires students to form a complete response by restating the question/prompt, answering the question/prompt directly, providing reasons for their answers through citing evidence from the texts, and stating examples and/or explaining the evidence as they pertain to the topic. In this unit, students respond to questions and prompts using RARE Format to ensure full comprehension of material.

Classroom Activities

Measuring Population: Where do population numbers originate?

What is the best way to measure population? How do you know if you have accurately measured a population?

This lesson is intended to have students consider what information is needed to accurately determine the population of a civilization. Students will think critically about how population is recorded and which methods are more accurate in determining and recording population.

Anticipatory Set: Ask students to estimate the population of the school. Then estimate the population of their home town. Then estimate the population of the state. Next, students explain how they arrived at their answers for each estimate.

Directed Instruction: Explain to students that the United States utilizes a census to determine the country's population. However, Native Americans did not use a census, and explorers did not travel throughout the Americas with the intent to record Native American populations. Therefore, historians must rely on other means to determine the population of Native Americans prior to the introduction of the census.

Activity: Students will research ways in which population numbers can be found in primary sources. Provide computer access and guide students to research journal entries from ship captains, explorers, and missionaries as well as mission records from pre-colonial America.

Assessment: Ask students to write a speech to the class about how to measure population using historical artifacts. Students should explain how population has been recorded in history and the best method for measuring population. Students should present their information to the class. The speech can be graded using the RARE Format rubric, and the presentation can be graded using the rubric in Appendix E: Presentation Rubric.

The Value of Millions

How much is one million? How much is one hundred million? Does it matter whether you have one million of something or one hundred million of something (or people)?

This lesson is intended to get students thinking critically about the value of high numbers, such as one million.

Anticipatory Set: Have students brainstorm that concept of *one million*. Students may work in collaborative pairs to discuss the value of *one million*. Next, the pairs decide on and write down a definition of *one million* on a piece of paper. Pairs then post their definitions on a wall or board. Finally, the definitions are shared and discussed among the class. Then ask students to do the same thing for *one hundred million*. Discuss whether *one million* is different from *one hundred million* and how.

Directed Instruction: Explain to students that although both numbers represent large values, there is a big difference between one million and one hundred million. Go into detail about how large numbers are often estimated, rounded, exaggerated, and used to prove a point. Using the data from the authors mentioned above, give examples of estimates of pre-Columbian Exchange Native American populations.

Activity: Split the class into groups of 3. Give each group a set of information from 3 different estimates on pre-Columbian Exchange Native American populations from 3 different authors (Crosby, Dobyn, and Henige). Students may work together to read through the information, or they can employ the Jigsaw method by splitting up the work and then reconvening to discuss their individual information as a whole. Have students complete the table in Appendix D labeled Authors' Estimates of Pre-Columbian Exchange Native American Populations.

Assessment: Have students respond to the following prompt: *Does it matter which author's estimate is used when researching the impact of the Columbian Exchange on Native American populations? Why or why not? Use evidence from the texts to support your claim.* Students' answers should be evaluated using the rubric provided in Appendix E: RARER Format.

The Devastation of Native American Populations

How did the Columbian Exchange impact Native American populations? How can we tell if the Columbian Exchange impacted Native American populations?

This lesson is intended to make students consider the impact the Columbian Exchange had on Native American populations. Students will analyze the extent to which the Columbian Exchange devastated Native American populations.

Anticipatory Set: Students work in collaborative pairs to respond to the following: *Think back to when you estimated the population of the school. Now imagine that your school had a bad case of the flu. How would you determine how many people were sick and*

what percentage of the school population missed school because of being sick? What information would you need in order to accurately answer the question? Have students compile answers and discuss as a class.

Directed Instruction: Provide students with information on differing estimates on the impact of the Columbian Exchange on Native American populations. Use data from the same authors as the previous lesson (Crosby, Dobyns, and Henige).

Activity: Students record information from the authors on the table in Appendix F: Estimates of Native American Populations After the Columbian Exchange Began. This is another good time to use the Jigsaw method so students are not overwhelmed by the information.

Draw a triangle on the floor of the classroom. Label one point of the triangle *Native Americans Populations Prior to the Columbian Exchange*. Label a second point *Native Americans Populations After the Start of the Columbian Exchange*. Label the third and final point *Factors that Might Impact Populations*. Create groups of 3 and have student groups write information about all 3 points of the triangle. Students can then approach the triangle to place their information on the appropriate points.

Discuss the information students came up with for each point of the triangle. Make sure that students understand that there may have been more than one factor affecting the change of Native American populations. Discuss the idea that there may have been multiple reasons or a combination of reasons for why the populations of Native Americans decreased during the time of the Columbian Exchange.

Assessment: Have students answer the essential questions: *How did the Columbian Exchange impact Native American populations? How can we tell if the Columbian Exchange impacted Native American populations* Students should report their answers on a mini-poster. The mini-poster should include a full answer to the question using RARE Format as well and an infographic displaying the change of Native American populations from pre-Columbian Exchange to after the Columbian Exchange began. The mini-poster can be graded using the rubric in Appendix G: Mini-Poster Rubric.

Bibliography

Best, Joel. *Stat-spotting a Field Guide to Identifying Dubious Data*. Updated and Expanded Edition 2013 ed. CA: University of California Press, 2008.

This source provides insight into the concept of numeracy while offering examples of questionable data representation.

Crosby, Alfred W. "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in

America." *The William and Mary Quarterly* 33, no. 2 (1976): 289. Accessed November 13, 2014. <http://www.jstor.org/stable/1922166>.

This source was used to find information on the impact of the Columbian Exchange on Native American populations. While studying this source, the focus was on how Native American populations were negatively affected by small pox and other European diseases after Columbus's arrival in the Americas.

Dobyns, H. F. "Disease Transfer at Contact." *Annual Review of Anthropology* 22 (1993): 273-91. Accessed November 13, 2014.

This source was used to gather data on changes in Native American populations before and after the Columbian Exchange began.

Garcia, Jesus. *Creating America: A History of the United States*. Evanston, Ill.: McDougal Littell, 2005.

This is the textbook that my students use in class. Definitions and examples are pulled from this source since it is also readily available to my students.

Hakim, Joy. "New Spain." In *The First Americans*, 101-106. Third Edition ed. New York: Oxford University Press, 1993.

This is a chapter in a book of stories and primary sources geared toward middle school students. This chapter discussed what Hernando Cortes saw when he arrived in the Aztec Empire, including estimates of population.

Henige, David P. *Numbers from Nowhere: The American Indian Contact Population Debate*. Norman: University of Oklahoma Press, 1998.

This source provides information on Native American population estimates from the perspectives of High Counters and Low Counters.

Appendix A: Standards

Although this is a social studies unit, students will be engaged in analyzing informational text using English Language Arts Common Core standards. The following standards can be applied.

CCSS.ELA-Literacy.WHST.6-8.1.b

Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.

CCSS.ELA-Literacy.WHST.6-8.8

Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.

CCSS.ELA-Literacy.WHST.6-8.9

Draw evidence from informational texts to support analysis, reflection, and research.

CCSS.ELA-Literacy.RH.6-8.1

Cite specific textual evidence to support analysis of primary and secondary sources.

CCSS.ELA-Literacy.RH.6-8.7

Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

Appendix B: Cornell Notes

Name _____ Date _____ Class Period _____

Cornell Notes: _____

<u>Key Ideas/Vocabulary</u>	<u>General Notes</u>
<u>Summarize the Main Idea</u>	

Appendix C: RARE Format

<p>4 EXCEPTIONAL ACHIEVEMENT</p> <ul style="list-style-type: none"> • Restates the question as a part of their first sentence; sentence does not start with a pronoun • Gives a clear answer to the question as a part of the first sentence • Their reason uses specific information from the textbook such as a quote or paraphrases a statement as a part of the support for their answer • Their support is appropriate, relevant to their answer • Have a conclusion sentence tying information together • Good use of transitions and organization
<p>3 GOOD ACHIEVEMENT</p> <ul style="list-style-type: none"> • Restates the question as a part of their first sentence; does not start with a pronoun • Gives an answer to the question • Reasons given paraphrase information from the text • Support is appropriate but not thoroughly explained or unclear • Attempts to use transitions and but answer is still organized • No conclusion present or answer just ends
<p>2 LIMITED ACHIEVEMENT</p> <ul style="list-style-type: none"> • Does not restate question; sentence starts with a pronoun • Gives an answer to the question • Gives a reason but does not have evidence from the text to support their answer • Doesn't uses transitions and answer is not organized (doesn't flow properly) • No conclusion present or answer just ends
<p>1 MINIMAL ACHIEVEMENT</p> <ul style="list-style-type: none"> • Does not restate the question; sentence begins with a pronoun • Support is irrelevant, not appropriate or not present as a part in addressing the question • No conclusion present or answer just ends • No attempt at organization or use of transitions

Appendix D: Authors' Estimates of Pre-Columbian Exchange Native American Populations

Authors' Estimates of Pre-Columbian Exchange Native American Populations

Who is the author of this information?	How do you know you can trust this author? (How do you know the author is a credible source on this topic?)	What is the author's estimate of pre-Columbian Exchange Native American population?	How did the author arrive at that estimate?

Appendix E: Presentation Rubric

Presentation Rubric

	3	2	1	0
Speaking	The presentation is spoken clearly and loud enough to be heard on the other end of the room.	The presentation is somewhat difficult to understand and/or sometimes hard to hear.	The presentation is somewhat difficult to understand and sometimes hard to hear.	No presentation is given.
Content	The content is relevant to the topic and does not stray from the topic.	The content is relevant to the topic but strays from the topic once.	The content is not relevant to the topic.	No presentation is given.
Time Management	The presentation is between 30 seconds and 2 minutes.	The presentation is between 15 seconds and 3 minutes.	The speech is shorter than 15 seconds or longer than 3 minutes.	No presentation is given.

Appendix F: Estimates of Native American Populations After the Columbian Exchange Began

Estimates of Native American Populations After the Columbian Exchange Began

Who is the author of this information?	What is the author's estimate of Native American population after the Columbian Exchange began?	What percentage of decreased population does the author report	How did the author arrive at that estimate?

Appendix G: Mini-Poster Rubric

Mini-Poster Rubric

	3	2	1	0
Presentation of Material	The mini-poster is legibly written and colorfully designed.	The mini-poster is difficult to read or lacking in colorful design.	The presentation is difficult to read and lacking in colorful design.	No mini-poster is submitted.
Content	The mini-poster responds to the question/prompt completely and includes an accurate infographic.	The mini-poster does not respond to the question/prompt completely or does not include an accurate infographic.	The mini-poster does not respond to the question/prompt completely and does not include an accurate infographic.	No mini-poster is submitted.

Notes

¹ Jesus Garcia, *Creating America: A History of the United States* (Evanston, Ill.: McDougal Littell, 2005), 62.

² Garcia, *Creating America: A History of the United States*, 62.

³ Ibid, 62.

⁴ Alfred W. Crosby, "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in America," *The William and Mary Quarterly* 33, no. 2 (1976): 289, accessed August 17, 2014, <http://www.jstor.org/stable/1922166>, 289.

⁵ Garcia, *Creating America: A History of the United States*, 54.

⁶ H. F. Dobyns, "Disease Transfer at Contact," *Annual Review of Anthropology* 22, no. 1 (1993): 273-291, accessed August 17, 2014, <http://www.jstor.org.udel.idm.oclc.org/stable/pdfplus/10.2307/2155849.pdf?acceptTC=true>, 275.

⁷ Dobyns, "Disease Transfer at Contact," 276.

⁸ Crosby, "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in America," 289.

⁹ Dobyns, "Disease Transfer at Contact," 274.

¹⁰ Crosby, "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in America," 291.

¹¹ Dobyns, "Disease Transfer at Contact," 273.

¹² Crosby, "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in America," 289.

¹³ Ibid, 289.

¹⁴ Ibid, 294.

¹⁵ Garcia, *Creating America: A History of the United States*, 29.

¹⁶ Crosby, "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in America," 292.

¹⁷ Dobyns, "Disease Transfer at Contact," 276.

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- ¹⁸ Crosby, "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in America," 289.
- ¹⁹ Ibid, 289.
- ²⁰ Joy Hakim, "New Spain," In *The First Americans*, Third Edition ed. (New York: Oxford University Press, 1993), 105.
- ²¹ Garcia, *Creating America: A History of the United States*, 63.
- ²² Dobyns, "Disease Transfer at Contact," 276-7.
- ²³ Crosby, "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in America," 292.
- ²⁴ Ibid, 290.
- ²⁵ Dobyns, "Disease Transfer at Contact," 277.
- ²⁶ Crosby, "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in America," 290-8.
- ²⁷ David P. Henige, *Numbers from Nowhere: The American Indian Contact Population Debate*, Norman: University of Oklahoma Press, 1998, 304.
- ²⁸ Henige, *Numbers from Nowhere: The American Indian Contact Population Debate*.
- ²⁹ Ibid, 295.
- ³⁰ Hakim, "New Spain," In *The First Americans*, 103-4.
- ³¹ Dobyns, "Disease Transfer at Contact," 279-283.
- ³² Crosby, "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in America," 295-7.
- ³³ Ibid, 297-8.
- ³⁴ Ibid, 296.

Curriculum Unit Title

The Impact of the Columbian Exchange on Native American Populations

Author

Katelyn K. Chiolan

KEY LEARNING, ENDURING UNDERSTANDING, ETC.

- The Columbian Exchange impacted Native Americans populations.
- Data can be manipulated to support an author’s purpose.

ESSENTIAL QUESTION(S) for the UNIT

- How are numbers and other evidence used by authors?
- Why are numbers and other evidence used by authors?
- How did the Columbian Exchange impact the Native Americans populations?

CONCEPT A

Measuring Population

CONCEPT B

The Value of Millions

CONCEPT C

The Devastation of Native American Populations

ESSENTIAL QUESTIONS A

What is the best way to measure population? How do you know if you have accurately measured a population?

ESSENTIAL QUESTIONS B

How much is one million? How much is one hundred million? Does it matter whether you have one million of something or one hundred million of something (or people)?

ESSENTIAL QUESTIONS C

How did the Columbian Exchange impact Native American populations? How can we tell if the Columbian Exchange impacted Native American populations?

VOCABULARY A

The Americas
Explorers
Population
Census
Missionaries
Primary Sources

VOCABULARY B

Low Counter
Millions
High Counter

VOCABULARY C

Columbian Exchange
Factors of Population Devastation

ADDITIONAL INFORMATION/MATERIAL/TEXT/FILM/RESOURCES

Best, Joel. *Stat-spotting a Field Guide to Identifying Dubious Data*. Updated and Expanded Edition 2013 ed. CA: University of California Press, 2008.

Crosby, Alfred W. "Virgin Soil Epidemics as a Factor in the Aboriginal Depopulation in America." *The William and Mary Quarterly*, 289-298.

Dobyns, H. F. "Disease Transfer at Contact." *Annual Review of Anthropology*: 273-91.

Garcia, Jesus. *Creating America: A History of the United States*. Evanston, Ill.: McDougal Littell, 2005.

Hakim, Joy. "New Spain." In *The First Americans*, 101-106. Third Edition ed. New York: Oxford University Press, 1993.

Henige, David P. *Numbers from Nowhere: The American Indian Contact Population Debate*. Norman: University of Oklahoma Press, 1998.