

5-2023

Universal Design for Learning (UDL): Integrating UDL Instructional and Assessment Strategies to Assess Student Learning in a Middle School Classroom

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**Universal Design for Learning (UDL): Integrating UDL Instructional and Assessment
Strategies to Assess Student Learning in a Middle School Classroom**

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University Honors Capstone

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TED 4600: Senior Honors Project/Thesis

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May 2023

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Universal Design for Learning (UDL): Integrating UDL Instructional and Assessment Strategies to Assess Student Learning in a Middle School Classroom

Abstract

This capstone project investigates the implementation of Universal Design for Learning (UDL) principles in a seventh grade Social Studies classroom through teaching and assessing multiple skills, such as analyzing multiple perspectives in a text. The topic of the four-week unit was the Scientific Revolution and the European Age of Exploration. To meet the unique needs of all learners, the curriculum was differentiated. The students completed a pre-test, several formative assessments, and two summative assessments to assess learning. I analyzed the data from these assessments to determine the effect the strategies utilized had on student learning. Based on student data, student performance and learning increased by using differentiated instruction and instructional strategies that were adapted to support each student.

Keywords: assessment strategies, Universal Design for Learning, analyzing multiple perspectives

Background

Through collaboration with my cooperating teacher and three other seventh grade Social Studies teachers, I planned, taught, and analyzed data from a four-week unit. The study was conducted during my clinical practice placement. I was placed in a seventh-grade classroom at a suburban middle school in the Westside Community Schools district in Nebraska. At this middle school, 38.92% of students are eligible for Free and Reduced Lunch through the National School Lunch Program (NSLP). Of the 979 students, 14.2% are eligible for Special Education Services and 22.06% are eligible for the Excellence in Youth (EY) program. In the district itself, 3.77% of students are English Language Learners (ELL).

Introduction

The purpose of this unit was to strengthen and build Social Studies skills by incorporating Universal Design for Learning (UDL) principles into the lessons. The UDL framework

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emphasizes the following three components of teaching: representation, engagement, and action/expression. When implemented in a classroom, the UDL approach differentiates instruction and uses data to inform instruction.

The goal of this project was to see improvement from the pre-test to the two summative assessments for the majority of students. The unit was guided by the following objective: Does the modification of summative assessments for students on Individualized Education Plans effectively increase student understanding of content and improve specific skills related to Social Studies?

The unit began with the students participating in a pre-test. These pre-test scores determined what areas and skills related to the unit would require more instruction. At the end of the unit, the students completed two summative assessments: one assessing content knowledge and the other assessing the skill of multiple perspectives analysis. Throughout the unit, I used a variety of instructional and assessment strategies. Two instructional strategies used included guided primary source analysis and station teaching, and the two assessment strategies included exit tickets and think-pair-share.

In terms of guided primary source analysis, a study by Thomas (2004) discussed the best means of implementing primary sources in an American History classroom. Specifically, this study discussed political cartoons. Some suggestions the author made to educators included the following: use secondary sources to supplement primary sources, provide students with easily accessible primary sources, and incrementally approach analysis with a class. Through a guided, structured approach, Thomas noted that primary source analysis can be an effective instructional strategy.

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In a study by Rysavy et. al (2018) they studied undergraduate students' experience analyzing historical advertisements as primary sources. The students worked collaboratively to reflect upon primary sources they selected from a provided database. They found that when surveyed, students responded positively to virtually collaborating with their peers and participating in a peer reflection process. The way these primary sources were implemented into instruction was very structured, which assisted the students with their understanding and engagement with the sources.

Station teaching was another instructional strategy I implemented. Hamida et. al (2021) investigated the effect of station teaching methods on students' problem-solving ability in a junior high classroom. The study involved 100 eighth grade students in a junior high school in Indonesia. The students were split into two groups, one of which was taught using a traditional teaching model while the other was taught using the station teaching model. The students were evaluated with a pre-test and post-test. The data indicated that the students taught with the station teaching model demonstrated a higher level of problem-solving ability than the control group.

Another study utilized multimodal learning stations in an eighth grade English classroom to assist students in gaining a deeper understanding of Shakespeare (Harvey et. al, 2019). The students, over the course of three consecutive class periods, completed five station activities in small groups that included a variety of physical and digital tools that functioned as an introduction to Shakespeare. The study found that although this approach was effective and engaging for students, more adaptable research is necessary in serving students through this form of instruction, as some of the technology used is not accessible for all teachers and districts.

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In terms of research-based assessment strategies, the first strategy I implemented was the exit ticket. According to Fowler et. al (2019), they investigated exit tickets that asked students to reflect on the instructional methods used in a class on a specific day. Multiple forms of exit tickets, including modified versions, were investigated. The exit tickets varied and included questions asking students about their participation in group work, their preparedness for a quiz, and their content understanding. The study noted that exit tickets work well for informing instruction based on student input and allow for a platform for students to privately provide feedback who wouldn't otherwise.

Danley et. al (2016) also discussed exit tickets in the context of postsecondary education. The authors concluded that the data from the exit tickets implemented in the study provided for informed instruction, collected immediate feedback from students, and provided a reflection opportunity for the students as well. For future studies, the authors recommended implementing digital modes of exit tickets in addition to the typical physical means of collecting exit tickets.

I also utilized the assessment strategy of think-pair-share in the unit. A 2020 study evaluated the effectiveness of the think-pair-share model on collaborative learning (Setiadi et. al 2020). The study found that there was an increase in cooperation and engagement after repeatedly using this assessment strategy. Additionally, it was proven that this strategy hones student curiosity. The authors noted that the think-pair-share is a strategy that can be used across subject areas, can be paired with a variety of activities, and can assess student learning at multiple stages in a particular unit.

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Wuryandani & Herwin's (2021) study evaluated the effect of the think-pair-share model on learning outcomes of civics in elementary school students. The study found that student learning benefited significantly from the implementation of the think-pair-share model in a Civics unit. The model provided for active, collaborative learning. The authors noted that the student learning outcomes from this study can be achieved in other content areas through this model as well. Additionally, the study noted that the think-pair-share model had a positive impact not only on knowledge and skills, but also on student attitude, as it helped minimize selfish behaviors.

Participants

This project's unit was taught in a seventh grade Social Studies class of 24 students. Of these students, six (25%) have Individualized Education Plans (IEPs) and receive assessment modifications. Two students (8.3%) are identified as Excellence in Youth (EY), a high ability learner program. One student, who demonstrated sufficient content knowledge through the pre-test, was exempt from the formative and summative assessments and not included in assessment data. He instead completed replacement assessments designed by the EY coordinator.

Methods and Materials

The design of this unit was aligned with the following Nebraska State Social Studies standards: SS 7.4.1, SS 7.4.2, SS 7.4.3, and SS 7.4.4 (see Appendix A). I administered a pre-test (see Appendix B) at the start of the unit that evaluated four Social Studies skills (content knowledge, identifying primary sources, comparing ideas, and multiple perspectives analysis). The pre-test and summative assessments did not mirror each other, and the latter only assessed

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content knowledge and multiple perspectives analysis. The pre-test informed instruction by determining which skills to focus instruction on, plus determining which student(s) demonstrated sufficient content knowledge and would thus be exempt from the same formative and summative assessments. The pre-test was not modified.

I utilized the following instructional and assessment strategies throughout the unit: guided primary source analysis, station teaching, exit tickets, and think-pair-share. Guided primary source analysis in addition to station teaching were the strategies with the greatest impact in teaching the skills evaluated in the summative assessments.

The students participated in two summative assessments. One evaluated content knowledge and the other evaluated the skill of multiple perspectives analysis (see Appendix C). The summative assessments were modified for students on IEPs.

Results

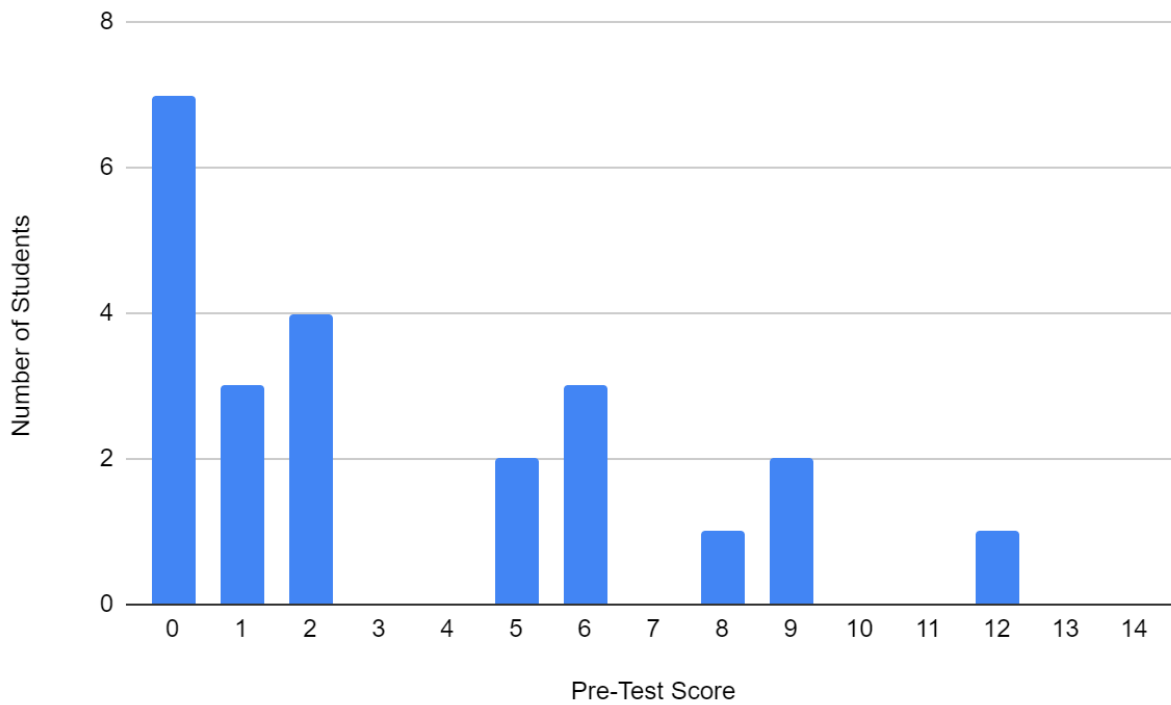
Data Analysis

Appendix B includes the pre-test I administered to the students. Figure 1 represents the student scores on the pre-test. 23 out of 24 students were present for the pre-test. Figure 2 represents the scores on the content knowledge section of the pre-test, and Figure 3 represents the scores on the multiple perspectives section of the pre-test. Figure 4 represents the content knowledge summative assessment scores, and Figure 5 represents the multiple perspectives summative assessment scores. 23 out of 24 students are represented in the summative data, which excludes the outlier.

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Figure 1

Overall Pre-Test Scores

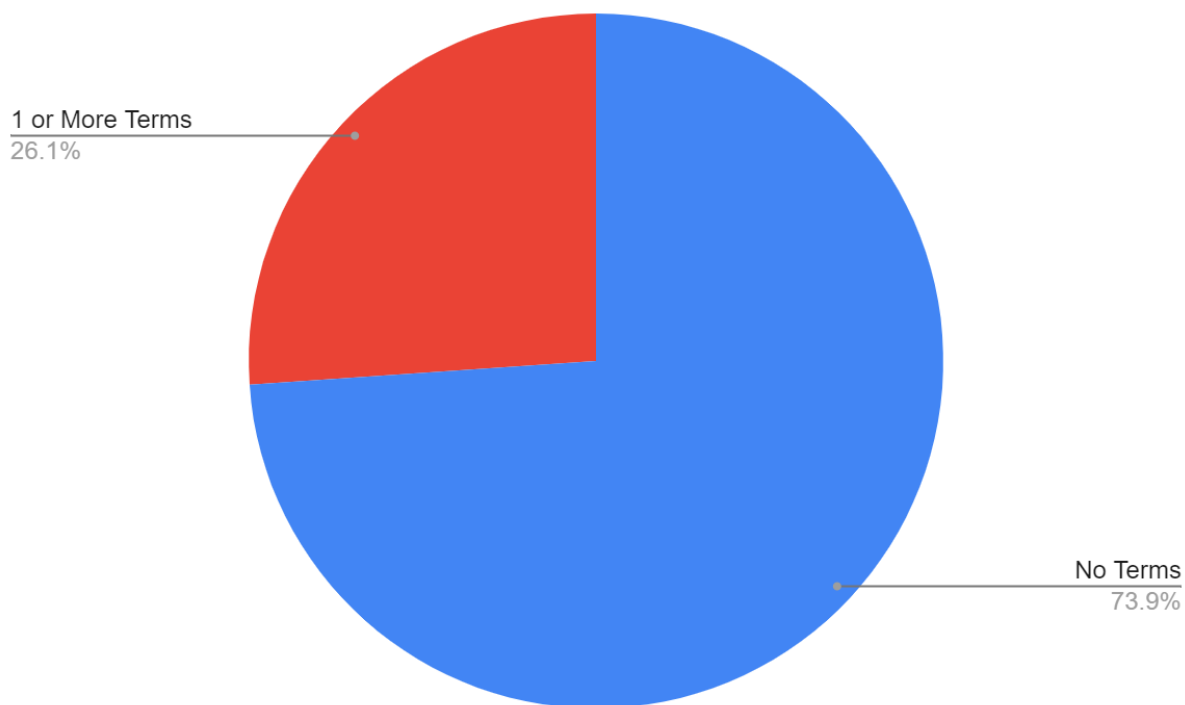


Note. Figure 1 illustrates pre-test scores out of 14 for 23 students.

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Figure 2

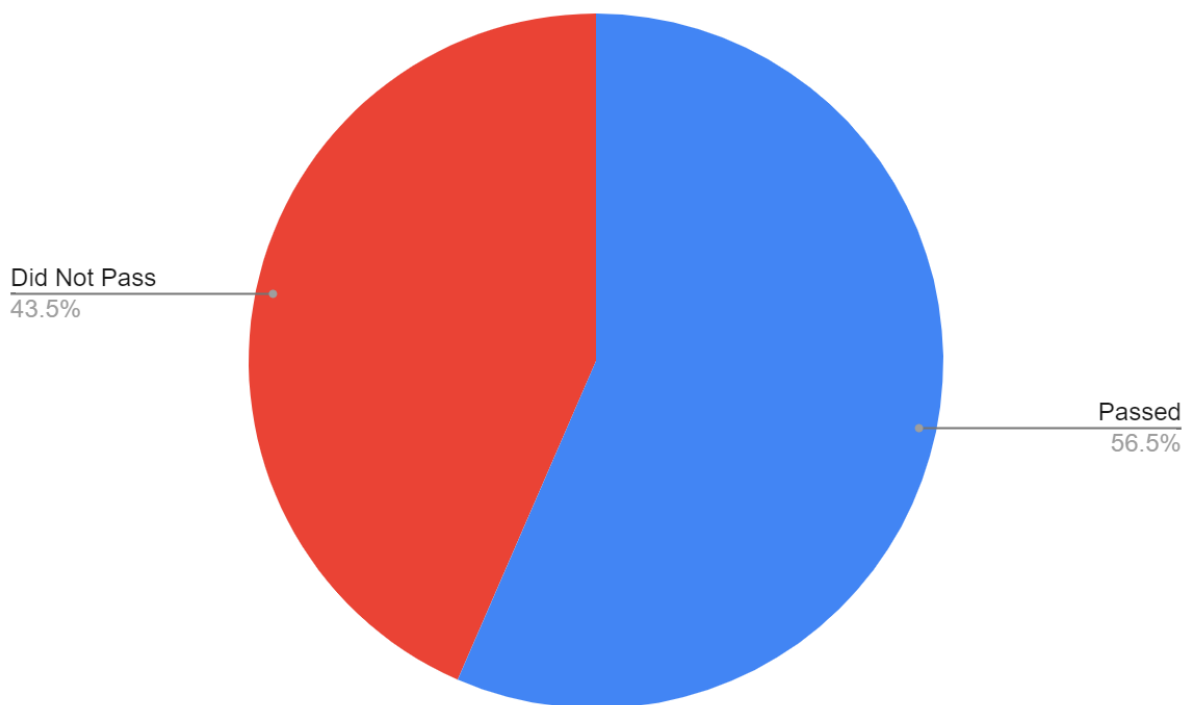
Pre-Test Content Knowledge



Note. Figure 2 illustrates the percentage of students who were able to identify at least one key term related to the unit content on the pre-test.

Figure 3

Pre-Test Multiple Perspectives

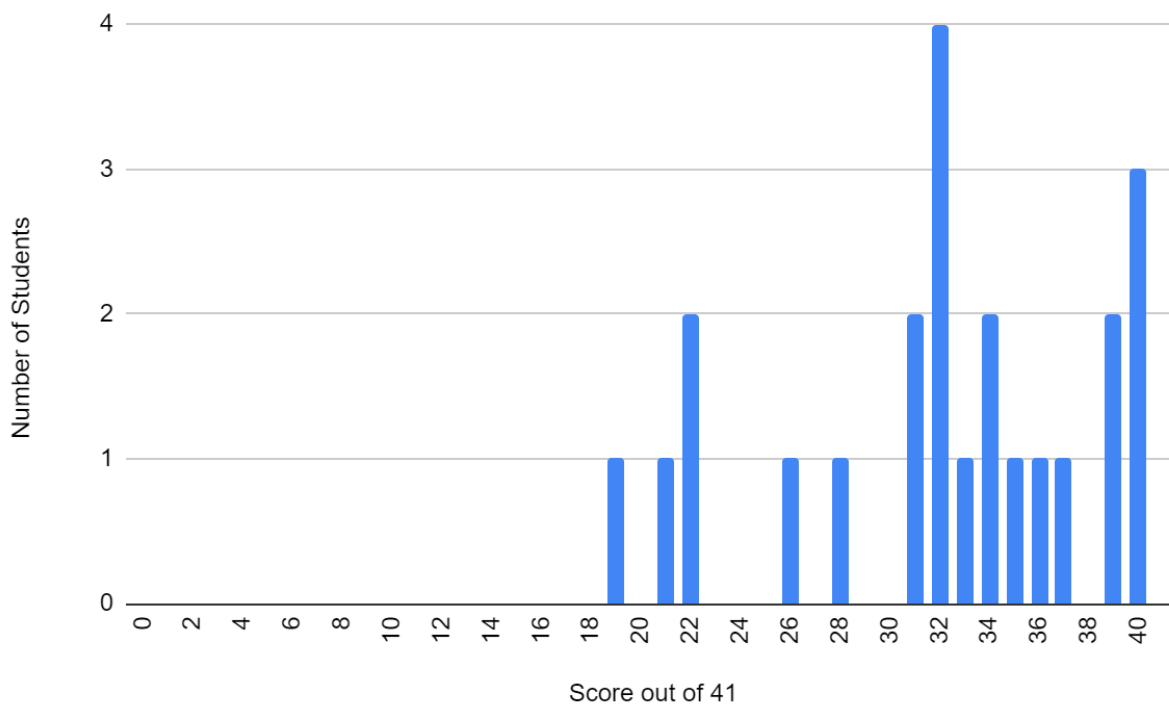


Note. Figure 3 illustrates the percentage of students who successfully identified two perspectives in a text on the pre-test.

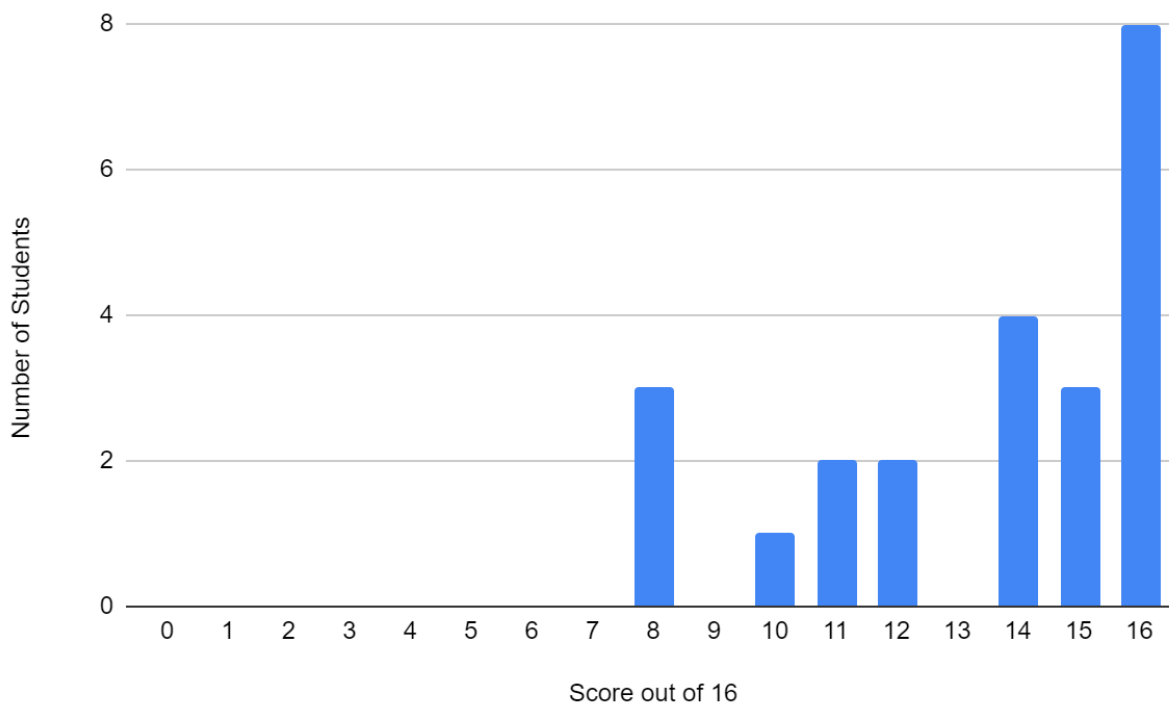
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Figure 4

Content Knowledge Summative Assessment



Note. Figure 4 reports the student scores out of 41 on the summative assessment that evaluated content knowledge.

Figure 5*Multiple Perspectives Summative Assessment*

Note. Figure 5 illustrates the student scores out of 16 points on the summative assessment that evaluated multiple perspective analysis.

Discussion and Conclusions

According to the data collected, I met my objective of seeing student improvement from the pre-test to the summative assessments. The modification of summative assessments for students on Individualized Education Plans effectively increased student understanding of content and improved specific skills related to Social Studies. Although the pre-test and summative assessments did not directly mirror each other, the data shows a general improvement in scores from the beginning of the unit to the end.

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Additionally, it's clear through the data that a majority of the students were successful in demonstrating the skills outlined in the following Nebraska State Social Studies standards: SS 7.4.1, SS 7.4.2, SS 7.4.3, and SS 7.4.4 (see Appendix A). It's evident that Universal Design for Learning approaches, when implemented, effectively engage students and support learning through data informed instruction and differentiation.

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Appendix A: Nebraska State Standards

- SS 7.4.1 Compare patterns of continuity and change over time in world history.
- SS 7.4.2 Use multiple perspectives to examine the historical, social, and cultural context of past and current events.
- SS 7.4.3 Examine historical events from the perspectives of marginalized and underrepresented groups.
- SS 7.4.4 Analyze and interpret sources for perspective and historical context.

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Appendix B: Pre-Test

Name: _____ Period: _____

Module 22-23 Pre-Test

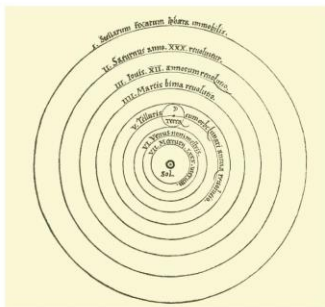
Part 1: Key Terms

Directions: Complete each sentence by filling in the blank with the correct term.

1. Greek _____ used logic and reason to explain what they observed in nature.
2. _____ wrote about important theories in his book *Principia Mathematica*.
3. One important invention of the Scientific Revolution was the _____, an instrument that measures air pressure.
4. The Spanish created large farms called _____ in the Americas.
5. An economic system in which the government controls all aspects of a country's economy to make it stronger is called _____.
6. A(n) _____ is a collection of maps.
7. What is a primary source?

8. Write 1-2 examples of primary sources.

Part 2: Comparing Ideas



Heliocentric Model from Nicolaus Copernicus

Write: What does this model illustrate? How does this model differ from the beliefs of the Middle Ages? Explain in at least two complete sentences.

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Part 3: Identifying

Directions: Read the following excerpt from an NPR article about Columbus Day, then answer the questions.

For Native Americans, Columbus Day has long been hurtful. It conjures the violent history of 500 years of colonial oppression at the hands of European explorers and those who settled here — a history whose ramifications and wounds still run deep today.

"Today we understand that while [Columbus] was an explorer and is credited with being one of the first Europeans to arrive in the Americas, we now know a great deal about the history and the way that he and his people behaved when they came to this continent," said Shannon Speed, a citizen of the Chickasaw Nation and director of the [UCLA American Indian Studies Center](#). "Which included . . . setting in motion a genocide of the people who were already here. That's not something we want to celebrate. That's not something anyone wants to celebrate."

The shift isn't happening without some pushback. For many Italian Americans, Columbus Day is their day to celebrate Italian heritage and the contributions of Italian Americans to the United States. It was adopted at a time when Italians were vilified and faced religious and ethnic discrimination . . . Italian Americans latched onto the day as a way to mainstream and humanize themselves in the face of rampant discrimination. It became a national holiday in 1934 to honor a man who, ironically, never set foot in the United States . . . For many Italian Americans, Columbus Day isn't just about the man but about what the day represents: a people searching for safety and acceptance in their new home.

1. What are the two perspectives on Columbus Day listed in the article?

2. Explain one argument from **each** perspective.

Appendix C: Multiple Perspectives Assessment (not modified) student sample

Columbus Day or Indigenous Peoples' Day? How the holiday has been shaped by oppression

Excerpts by Erin Blakemore, *National Geographic*, 2022



Was Christopher Columbus a heroic explorer or a villainous murderer? It depends on who you ask. The tussle over how or whether the United States should commemorate the Italian navigator's 1492 landing in the Americas has fueled controversy for generations.

A federal holiday celebrated the second Monday of each October, Columbus Day arose out of a late 19th century movement to honor Italian American heritage at a time when Italian immigrants faced widespread persecution.

But the holiday has since come under fire as a celebration of a man whose arrival in the Americas heralded the oppression of another group of people: Native Americans. In recent decades, it has been replaced by **Indigenous Peoples' Days** in many states and cities.

Early Columbus Day celebrations

On October 12, 1492, after a voyage of 10 weeks, Christopher Columbus' crew spotted the New World. It was the beginning of a new era in the history of the Western Hemisphere—an event **commemorated** in the U.S. since the nation was founded in 1776. But before the late 19th century, the celebrations were mainly limited to Catholic and Italian American enclaves (groups) on the East Coast, where many embraced Columbus as an **intrepid** explorer who embodied progress and bravery. For these people, Columbus represented their indelible (memorable) contribution to a society that viewed both Catholics and Italian Americans with suspicion.

Celebrations of Columbus gained momentum as Italian immigration grew from a trickle to a flood. Beginning in the 1880s, Italian immigrants began pouring into the U.S. in search of opportunity and a better life. But the new arrivals were not welcomed by all. Considered sinister and criminal, Italian immigrants were the focus of increasing discrimination.

In 1890 anti-Italian sentiment boiled over in New Orleans after police chief David Hennessy, reputed (known for) his arrests of Italian Americans, was murdered. In the aftermath, more than a hundred Italian Americans were arrested. When nine were tried and **acquitted** in March 1891, a furious mob rioted and broke into the city prison, where they beat, shot, and hanged at least 11 Italian American prisoners. None of the rioters who lynched the Italian Americans were prosecuted. It remains one of the largest mass lynchings in the nation's history.

Columbus Day becomes a nationwide holiday

The brutal killings created tit-for-tat tensions between the U.S. and Italy, which called for reparations for the murders. Eventually, in an attempt to appease Italy and acknowledge the contributions of Italian Americans on the 400th anniversary of Columbus' arrival, President Harrison in 1892 proclaimed a nationwide celebration of "Discovery Day," recognizing Columbus as "the pioneer of progress and enlightenment." Eventually, the nations mended their relationship and the U.S. paid \$25,000 to Italy.

In the decades after the mass lynching, Italian American advocates pushed for a nationwide holiday, and states slowly began to adopt it. In 1934, President Franklin D. Roosevelt designated it a national holiday, and in 1971 Congress changed the date from October 12 to the second Monday of October. The holiday, writes historian Bénédicte Deschamps, "allowed Italian-Americans to celebrate at the same time their Italian identity, their Italian-American group specificity, and their allegiance to America."

VOCAB
HELP

Indigenous: Native or naturally occurring in a particular area (people, animals, plants)
Commemorated: Celebrated, honored & remembered in a respectful way
Intrepid: Adventurous, fearless
Acquitted: Found not guilty in court

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The push for Indigenous Peoples' Day

Columbus Day celebrated Italians. But for many with Indigenous ancestry, it was a slap in the face—a celebration of invasion, theft, brutality, and colonization. Columbus and his crew kidnapped, enslaved, raped and abused the Native people, including children; the Native American population shrank by about half after European contact. For Indigenous Americans, the landing celebrated by some as a day of triumphant discovery was the beginning of an **incursion** onto land that had long been their home.

In the 1960s and 1970s, the Pan-Indian and **Red Power movements** brought together Native Americans who began to draw attention to the hero's sordid history. In the 1980s and 1990s, protests against the holiday grew. In 1990, ahead of the 100th anniversary of the Wounded Knee Massacre, in which U.S. soldiers killed some 300 Lakota native people, Native American publisher Tim Giago urged South Dakota's governor to declare it a year of **reconciliation** and change Columbus Day to a holiday called Native American Day. The governor, George S. Mickelson, agreed, and the holiday has replaced Columbus Day in the state ever since. Two years later, ahead of the 500th anniversary of Columbus' landing, Indigenous groups **lobbied** the United Nations and local governments not to participate in international celebrations.

How the holidays are recognized today



On October 12, 1998, Andrian Esquino Lisco, a Cacique Indian, burns incense during a ceremony in San Salvador to honor the thousands of Indigenous people who died as a result of Columbus' arrival in the Americas.

Though Italian American groups protested the move, it fueled ongoing activism among Indigenous people. In the 2010s, Indigenous Peoples' Day —known by some as Native American Day—gained steam as it was adopted by many cities and states around the nation. Some states honor both Columbus Day and Indigenous Peoples' Day on the paid holiday, while others have renamed it entirely. In addition, multiple states have stopped celebrating the date altogether. According to Pew Research, in 2021 only 21 states offered their government workers paid holidays on the second Monday in October.

Even Columbus, Ohio, the largest city named after the Italian navigator, has changed its tune: In 2018, it stopped celebrating Columbus Day, and in 2020 it declared October 12 Indigenous Peoples' Day. "It's impossible to think about a more just future without recognizing these original sins of our past," Columbus City Council president Shannon Hardin reportedly said at the meeting.

In a similar spirit of reckoning, in April 2019 New Orleans Mayor LaToya Cantrell apologized for the 1891 lynchings of Italian Americans, more than a century after the incident. "Some people didn't want me to make this apology today," Cantrell said at the time. "But...I have a responsibility to deal with what's in front of me, and to speak honestly about the challenges we face, those that shape our history and, more importantly, our future."

In 2021, the U.S. celebrated its first national Indigenous Peoples' Day in a commemoration President Joe Biden proclaimed as a day to honor "our diverse history and the Indigenous peoples who contribute to shaping this Nation." Biden also issued a Columbus Day proclamation acknowledging the contributions of Italian Americans as well as "the painful history of wrongs and atrocities" that resulted from European exploration.

VOCAB HELP

Incursion: Invasion, attack

Red Power Movement: Social movement led by Native American youths, demanded justice

Reconciliation: Come together as one, right your wrongs

Lobbied: Tried to influence political leaders

Multiple Perspectives Assessment

Columbus Day or Indigenous Peoples' Day?

During this chapter, you learned that Christopher Columbus accidentally landed in America while looking for a shorter sea route to Asia. Once Europeans learned of North and South America, many kings and queens quickly tried to colonize them. This led to the Columbian Exchange, which was the exchange of plants, animals and ideas between the Old World (Europe, Asia, Africa) and the New World (North and South America).

Part 1 Directions: Read the article "Columbus Day or Indigenous Peoples' Day? How the holiday has been shaped by oppression." If you need to make notes to yourself as you read, use the space below.

The landing celebrated by some as a day of triumph + discovery was the beginning of an incursion on to land that had long been their home

Part 2 Directions: Answer the questions using evidence from the article.

1. Identify the two perspectives:

Perspective 1: ^{Italian Americans} people who are supporting the idea that it's Columbus Day

Perspective 2: ^{Native Americans} people supporting the idea that it's Indigenous People's Day.

2. Write a four (or more) sentence summary of what you learned in the article.

People think of this day in different ways. People think that is Columbus Day because he accidentally found how of what is America. Some people think it's Indigenous Peoples Day because Columbus's crew attacked and abused these people. The landing celebrated by some as a day of triumph + discovery was the beginning of land that had been their a long home.

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3. Complete the chart below.

RATIONALE	
Why was this article written?	This article was written to educate readers learning about this particular day
Who was the intended audience?	The intended audience was probably students and other people learning about this topic.
IMPACT	
Who does the article impact?	This article impacts students, indigenous people, Italian americans, native americans and more
Why? Answer using complete sentences.	It impacts the people reading it because of what they're learning but it impacts everyone else because their ancestors had to go through that and they are still fighting for them.
EFFECTIVENESS	
Will this article increase the reader's understanding of the perspective?	Yes
How so? Answer using complete sentences.	Yes Yes because this article will help them understand more about this day and also how there are two sides to the story it helps us learn about both sides.
Rate the article. Did the author make their point clear? Might they convince others to agree with their perspective?	1 2 (3) 4 5 1 = Not effective 5 = Very effective
Justify your rating. Answer using complete sentences.	3 because the author made their point very clear but they did not try to convince you in any way so 5 for making their point clear but 1 for agreeing with perspectives.