Student Achievement Committee Meeting

Wednesday, April 17, 2024 6:30 PM
BOE - Room 36 and via Zoom Meeting Platform, 129 Church Street, Bristol, CT 06010

1.	**Call to Order/ Pledge of Allegiance**	
2.	**Decision: Approval of Minutes**	
3.	**Public Comment**	
4.	**Decision**	
4.1.	Modern American History Revision	**Presenter:** Leszek Ward
4.2.	Introduction to CAD Revision	**Presenter:** Dr. Jaime Rechenberg
4.3.	Advanced Mathematical Decision-Making Revision	**Presenter:** Dr. Jaime Rechenberg
4.4.	ECE Physics Revision	**Presenter:** Dr. Jaime Rechenberg
4.5.	Academic Statistics Revision	**Presenter:** Dr. Jaime Rechenberg
4.6.	Culinary 1 Revision	**Presenter:** Dr. Jaime Rechenberg
4.7.	ECE Introduction to Allied Health Professions Revision	**Presenter:** Dr. Jaime Rechenberg
4.8.	Recharge Pilot Program	**Presenter:** Carly Fortin
5.	**Information**	
5.1.	ESSER ARP Update	**Presenter:** Carly Fortin
6.	**Adjournment**	

Student Achievement Committee
February 21, 2024
MINUTES - DRAFT

The minutes presented within this document are a summary of the discussion that took place at the Student Achievement Committee meeting. To view the meeting in its entirety and hear full reports please go to: February 21, 2024 SAC Meeting Recording

PRESENT: Committee members: Jill Fitzsimons-Bula, Kristen Giantonio , Maria Simmons

ALSO PRESENT: Kenneth Bagley, Catherine Carbone, Michael Dietter, Carly Fortin, Sara Hale (zoom), Shelby Pons (zoom), Jaime Rechenberg, Azra Redzic (zoom), Jillian Romann, Jennifer Van Gorder (zoom)

Call to Order
Commissioner Fitzsimons-Bula called the meeting to order at 6:31 p.m.

Decision: Approval of Minutes from January 17, 2024 meeting:
On a motion made by Commissioner Giantonio and seconded by Commissioner Simmons, it was unanimously;
VOTED: to approve the January 17, 2024 minutes.

Decision: PreK Music and Library
Mr. Kenneth Bagley , Supervisor of Fine Arts, presented the new PreK Music curriculum. Units include: Pitch Exploration, Fragment Songs, Movement Exploration, Arioso, and Songtales. Mrs. Jillian Romann, Supervisor of Elementary STEM, presented the new PreK Library curriculum. Units contain content that addresses cognition, language and literacy, mathematics, and science. Each month will have a theme. The themes are as follows: apples, pumpkins/leaves, shapes, snowflakes/winter, winter clothing/ snow people, teddy bears, robots, ladybugs/butterflies, water fun/ducks.

Questions and discussion followed.

On a motion made by Commissioner Giantonio and seconded by Commissioner Simmons, it was unanimously;
VOTED: to move the PreK Music and Library curriculum to the full Board of Education for approval.

Decision: AP Pre-Calculus
Dr. Jaime Rechenberg , Supervisor of Secondary STEM, presented the new course, AP Pre-Calculus. This will be a one-credit course and will focus on the following three units: 1. Polynomial and Rational Functions, 2. Exponential and Logarithmic Functions, and 3. Trigonometric and Polar Functions.

Questions followed.

On a motion made by Commissioner Giantonio and seconded by Commissioner Simmons, it was unanimously;
VOTED: to move the AP Pre-Calculus curriculum to the full Board of Education for approval.

Decision: Grade 7 Mathematics
Dr. Rechenberg presented the curriculum revision for Grade 7 Mathematics, including both academic and accelerated courses. The academic level class consists of 8 units of instruction: 1. Scale Drawings, 2. Introducing Proportional Relationships, 3. Measuring Circles, 4. Proportional Relationships and Percentages, 5. Rational Number Arithmetic, 6. Expressions, Equations and Inequalities, 7. Angles, Triangles and Prisms, and 8. Probability and Sampling.
There is also a new addition where families can receive support with homework and learn more about the lessons on the Kendall Hunt website.
The Accelerated Grade 7 Mathematics course consists of the following 10 units: 1. Proportional Relationships, 2. Percentage Increase and Decrease, 3. Rational Numbers, 4. Writing and Solving Equations, 5. Inequalities, Expressions and Equations, 6. Rigid Transformations and Congruence, 7. Scale Drawing, Similarity and Slope, 8. Linear Relationships, 9. Functions and Volume, and 10. Pythagorean Theorem and Irrational Numbers.

Questions and discussion followed.

On a motion made by Commissioner Giantonio and seconded by Commissioner Simmons,, it was unanimously;
VOTED: to move the Grade 7 Mathematics curriculum revision to the full Board of Education for approval.

There being no further discussion, Commissioner Fitzsimons- Bula adjourned the meeting at 7:25 pm.

Respectfully submitted,
Katlyne Laprise
Katlyne Laprise

PROCEDURES FOR REMOTE PUBLIC COMMENT

Members of the public are invited to comment to the Board on any topic related to school business.

Items requiring consideration by the Board must be approved as an agenda item by a 2/3ds vote of the Board members present. Such items may be referred for further study and not necessarily acted upon at this meeting.

Anyone wishing to address the Board should adhere to the following procedures:

PUBLIC COMMENT

Before a Remote Meeting

1. Send your comments to: KatlyneLaprise@bristolk12.org
2. Be sure to put **PUBLIC COMMENT-SAC** in the subject line.
3. Include your name and address.
4. Direct your comments to the Board Chair.
5. Your comments will be read at the meeting by the Board Chair.
6. All comments should be written in an appropriate manner, particularly if concerning a personnel matter.
7. Any comments not adhering to the guidelines will not be read at the meeting.

During a Remote Meeting

1. Everyone is requested to address the Chair for recognition.
2. Each speaker must state his/her name and address.
3. All speakers must observe rules of common etiquette. Personalities are not to be injected. Anyone violating this rule will be denied the floor. Unless waived by the Chairperson or a majority of the Board,
4. Each speaker shall limit his/her remarks to three (3) minutes.
5. A speaker will not be recognized for a second time on the same topic.
6. Each speaker must concern himself/herself with the topic under discussion. Anyone digressing from the topic will be ruled out of order.
7. Written statements and materials may be made available, in advance of comments, for distribution to Board members.
8. Speakers shall state their positions on the subject being discussed.
9. Board members will not respond directly to comments during the Board meeting. The Superintendent will direct the question to the appropriate staff member for follow-up.

Bristol Public Schools

Bristol, Connecticut

Course Title:	Content Area:	Grade Level:	Credit (if applicable)
Modern American History	**Social Studies**	**10th**	**1**

Course Description:

In the high school United States history course, students study both change and continuity as they investigate diverse perspectives and enduring issues in the United States over time. Students will explore United States history from Industrialization to the Digital Age using disciplinary tools and resources that support the planning and development of inquiries, evaluation of a broad range of historical sources, and communication of knowledge and ideas about the nation's history.

Aligned Core Resources:	Connection to the ***BPS Vision of the Graduate***
• US History - Reconstruction to the Present (2022)	CIVIC LITERACY • Participate effectively in civic life through knowing how to stay informed and understanding governmental processes • Exercise the rights and obligations of citizenship at local state, national and global levels • Understand the local and global implications of civic decisions CRITICAL THINKING AND PROBLEM SOLVING • Collect, assess and analyze relevant information. • Make sound judgements and decisions. Identify, define and solve authentic problems and essential questions. • Reflect critically on learning experience, processes and solutions • Transfer knowledge to other situations
Knowledge/Skill Dependent courses/Prerequisites:	**Link to *Completed Equity Audit***
•	• Modern American History Equity Audit

Unit Links

Unit 1: Industrialization and Progressivism
Unit 2: Imperialism and WWI
Unit 3: The Great Depression and New Deal
Unit 4: The Second World War
Unit 5: The Cold War

Unit 6: Civil Rights Movements
Unit 7: The New Conservatism
Unit 8: National Identity in a Digital Age
Standard Matrix

Unit 1: Industrialization and Progressivism

Overview

Relevant Standards: Bold indicates priority

- US.His.4.a. Analyze complex and interacting factors that influenced the strategies for Black social and economic progress in the late 19th and early 20th centuries (e.g., Booker T. Washington, W. E. B. Du Bois, Ida B. Wells, Mary Townsend Seymour).
- US.His.12.a. Develop questions about the rise of nativism and assimilation efforts of immigrants and Indigenous peoples (e.g., Punjabi Migration, Indian Boarding Schools, Chinese Exclusion Act, Rock Spring Massacre, 1907 Bellingham Riots, Immigration Act of 1917).
- US.Eco.12.a. Evaluate the impact of laissez-faire economic policies regarding corporate decision making, labor conditions, and public advocacy in the Gilded Age (e.g., monopoly, captains of industry, muckrakers, social Darwinism, labor unions).
- US.His.10.a. Describe how individual and group perspectives about gender and sexuality in the late 19th and early 20th centuries are documented in historical records while noting possible limitations (e.g., We'wha, Vaudeville, bicycles, women's suffrage and education).
- US.Civ.2.a. Analyze the role of citizens in advocating for and ratifying the 19th Amendment to the United States Constitution (e.g., Ida B. Wells, Alice Paul, Anna Bernard Shaw, Helena Hill Weed, Frank B. Brandegee).
- US.His.1.a. Evaluate how the Progressive Era is a result of immigration and industrialization (e.g., anti-lynching, Settlement House Movement, improved working conditions, childrens' rights).
- US.Civ.12.a. Analyze how people in the Progressive Era used and challenged laws to advance social, political, economic, and environmental reforms (e.g., Populist Party, B'nai B'rith, National Woman Suffrage Movement, Sierra Club, Niagara Movement, Socialist Party of America).

Overview

In Unit 1, students study the process and impact of industrialization, as well as a variety of reform movements from Reconstruction to 1920, in order to develop an argument about the extent to which the changes during this period represent progress. Students begin by exploring the factors that led to economic growth during this time, and by evaluating competing perspectives regarding the "captains of industry" in order to develop their own perspective regarding laissez-fair practices and their impact. From there, students study the various ways a wide range of Americans worked to effect social change, examining a variety of primary sources to understand the challenges faced by various groups and ways they pursued freedom, justice, and equality.

Essential Question(s):

1. To what extent did the progressive era represent progress?
    a. Did industrialization benefit society during the Gilded Age?
    b. Did reformers improve society during the Progressive Era?

Enduring Understanding(s):

- EQ1 - Prominent industrialists capitalized on new technologies and economic models to consolidate control over key industries, which led to massive economic growth. Although this economic growth created a great deal of wealth, prosperity, and philanthropic investment by industrial leaders, it also drove income inequality and left many Americans struggling to fend for themselves.

- EQ2 - Rapid industrialization, immigration, and urbanization highlighted significant tensions and inequalities in American society at the turn of the century. The government, individual citizens, and various groups of people sought to address the problems, injustices, and inequities that existed at the time. While some reforms led to meaningful improvements and protections, reformers themselves could also hold prejudiced or paternalistic views, and some groups of people benefitted more than others.

Demonstration of Learning:

- Summative Writing: To what extent did the progressive era represent progress? Write an argument that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views.
- Unit Exam

Connections to Prior Units:	**Connections to Future Units:**
• Students will have previously considered the impact of social movements on diverse groups of people in 8th grade. The summative inquiry of the unit on American Revolution asks students to evaluate the extent to which the Revolution addressed political injustices and affected change for women, Native Americans, and enslaved people.	• Students will once again study a variety of reform efforts in unit 6. In that unit, students study the goals, strategies, and impacts of the civil rights movement before comparing those efforts to other protest movements of the 1950s and 1960s.
Family Overview (link below)	**Pacing for Unit**
	• 11 classes, 4 weeks
Integration of Technology:	**Aligned Unit Materials, Resources, and Technology:**
• Use of google docs is recommended throughout the writing process to facilitate drafting, feedback, collaboration, and revision.	• Textbook • Primary/secondary sources listed below

Opportunities for Interdisciplinary Connections:	**Anticipated misconceptions:**
• In 7th Grade ELA, students will have read a fictional account of the Triangle Shirtwaist Factory Fire from multiple perspectives, as well as portions of *Flesh and Blood So Cheap*, a nonfiction examination of immigration and industrialization at the time.	•
Differentiation through *Universal Design for Learning*	

UDL Indicator
• CHECKPOINT 7.2 Optimize relevance, value, and authenticity.
	Teacher Actions:
	• Include hooks at the start of lessons/units that make learning targets and essential questions:
	  ○ Personalized and contextualized to learners' lives
	  ○ Culturally relevant and responsive by
	• Highlight connections between daily activities/sourcework and compelling questions that drive summative writing.
	• Provide tasks that allow for active participation, exploration and experimentation.
	• Invite personal response, evaluation and self-reflection focused the themes that will be explored throughout the year.

Supporting Multilingual/English Learners	
Related *CELP standards:* • 9-12.1 An EL can . . . construct meaning from oral presentations and literary and informational text through grade appropriate listening, reading, and viewing.	**Learning Targets:** • Level 1: with prompting and supports, identify a few key technologies during an interactive lecture on advancements during the Gilded Age. • Level 2: with prompting and supports, identify the technological innovations as a main topic an interactive lecture and retell a few examples • Level 3: with guidance and supports during interactive lecture, determine the economic benefits of technological advancements during the Gilded Age and explain specific examples • Level 4: identify examples of the social costs and benefits of industrialization in a primary source from the Gilded Age. • Level 5: determine whether a primary source is celebrating or critiquing society during the Gilded Age and explain how the author develops their perspective.

Unit 1: Immigration, Industrialization, Progressivism

Lesson Map				
Lesson	**Learning Targets**	**Sources**	**Knowledge**	**Vocabulary**
1-EQ1	• I can explain how technological innovations and economic practices caused the growth of industries in the Gilded Age.		Oil Steel Railroads Monopoly Laissez faire economics John D. Rockefeller Andrew Carnegie J.P. Morgan Henry Ford	
2-EQ1	• I can evaluate the degree to which industrial and economic growth benefited American society in the Gilded Age.	Gospel of Wealth Workingman's Prayer Nation of Inconsistencies Sister Carrie	Social Darwinism Urbanization Tenements	Disparaging Disregard Bustling
3-EQ2	• I can describe immigration patterns in the late 19th century, as well as the social and economic challenges immigrants faced at the turn of the century.	Cleveland's Veto Lodge's Senate Speech Polish Letters Riis How the Other Half Lives Riis Photos and Excerpts	Nativism Assimilation Chinese Exclusion Act Tenements	
4-EQ2	• I can explain how women fought for social change at the turn of the century.	Blackwell on Suffrage Memories of Hull House Immigrants and their Children	Settlement Houses Jane Addams Suffrage Movement	
5-EQ2	• I can explain how individuals, groups, and governments sought to address challenges facing workers in the late 19th century.	The Jungle	The Jungle Meatpacking Pure Food and Drug Act Meat Inspection Act Unions	
6-EQ2	• I can compare different strategies African Americans pursued in order to address social and economic challenges in the late 19th and early 20th century.	Plessy v. Ferguson The Call Atlanta Compromise Of Mr Washinton	Jim Crow Plessy vs Ferguson Booker T Washington WEB Dubois Niagara Movement	Mutual Advocate Submission

7	• I can participate in a seminar discussion with my peers to evaluate the extent of progress during the progressive era. • I can draft a thesis and outline an argument in response to a summative prompt.			
8	• I can draft a document based essay supporting a historical argument.			
9	• Assess/flex			
10	• Flex			

Unit 2: Imperialism and WWI

Overview

Relevant Standards: Bold indicates priority

- US.His.1.b. Evaluate the role of the media in shaping public opinions and debates about America's emergence as an imperial power (e.g., muckrakers, yellow journalism, propaganda).
- US.His.4.b. Analyze how economic and cultural hegemony influenced American perspectives of imperialism at the end of the 19th century (e.g., Cuba, Puerto Rico, Spanish American War, Annexation of Hawaii and Philippines, dispossession of Latino American lands in the American West).
- US.His.14.a. Analyze the causes and effects of United States involvement in WWI (e.g., threats to United States neutrality, support for democracy, suppression of civil liberties, debate over the League of Nations and the United States role in global affairs).
- US.His.14.b. Analyze how advancements in warfare impacted military personnel and civilians (e.g., aircraft, artillery, chemical weapons, land mines, trench warfare, shell shock).
- US.His.16.b. Evaluate the juxtaposition between celebration of wartime service in World War I and the discrimination faced by individuals and groups using evidence from multiple historical sources (e.g., European, Latino, Indigenous, and Black service members, Thind v. United States).
- US.His.4.c. Analyze how racism and nativism shaped perspectives about individuals and groups and influenced government policy (e.g., Red Summer, Sacco Vanzetti, eugenics movement, immigration acts in the 1920s, Angel Island, Ku Klux Klan).

Overview

In Unit 2, students study America's growing involvement in world affairs and examine the extent to which this was motivated by national ideals. They do so primarily by focusing on American involvement in three foreign wars: the Spanish American War, the Philippine-American War, and World War One. By exploring a variety of primary source documents from this era, students compare and contrast the role of democratic ideals, economic interests, public opinion, and the the media in these varying conflicts. Students will also study the impact of the First World War on civil liberties at home in order to consider whether developments at home provide insight into foreign policy decisions.

Essential Question(s):

- To What extent was American foreign policy motivated by national ideals?
    a. Why did America invade Cuba, Puerto Rico, and the Philippines?
    b. Why did America join WWI, but not the league of nations?
    c. Did America live up to national ideals at home during and after WWI?

Enduring Understanding(s):

- EQ1 - Although many leaders framed the Spanish American War as a fight for democratic ideals, this view was often based on notions of cultural superiority and was rejected and criticized by many at the time. Economic and strategic factors also played a significant role as the United States sought to expand its influence by gaining territories in the Caribbean and Pacific. Shifts in public opinion, influenced by triggering events and media coverage, also contributed to US entry into the war.

- EQ2 - After seeking to remain neutral for as long as possible, Woodrow Wilson also framed US entry into WWI as a fight for democratic ideals, but economic interests and shifts in public opinion also played a significant role in pushing the country to war. After the war, debate over the Treaty of Versailles and the League of Nations centered on the tension between protecting the sovereignty of countries around the world with American independence and autonomy..

- EQ3 - Although many African American servicemen fought for democratic ideals abroad, they continued to face racial violence and discrimination at home. Racial tensions were exacerbated by fears of communist infiltration and revolution after WWI, which led to increased surveillance, censorship, and restrictions on civil liberties such as freedom of speech, press, and assembly

Demonstration of Learning:

- Summative Writing: To what extent was American foreign policy in the Age of Imperialism motivated by national ideals? Write an argument that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views.
- Unit Assessment

Connections to Prior Units:	**Connections to Future Units:**
•	• Students will again directly consider American foreign policy through the lens of democratic ideals in Unit 5. In that unit, students will study the United States involvement in the Cold War, as well as the impact on civil liberties at home.
Family Overview (link below)	**Pacing for Unit**
	• 10 classes, 4 weeks

Integration of Technology:	**Aligned Unit Materials, Resources, and Technology:**
• Use of google docs is recommended throughout the writing process to facilitate drafting, feedback, collaboration, and revision.	• Textbook • Primary/secondary sources listed below
Opportunities for Interdisciplinary Connections:	**Anticipated misconceptions:**
•	•
Differentiation through *Universal Design for Learning*	
UDL Indicator • CHECKPOINT 3.1 Activate or supply background knowledge.	**Teacher Actions:** • Anchor instruction by linking to and activating relevant prior knowledge at the start of each new unit or lesson. • Use advanced organizers (e.g., KWL methods, concept maps) • Pre-teach critical knowledge needed for exploration of primary sources by through focused interactive lecture • Bridge concepts with relevant analogies and metaphors, using prior related units to build connections • Make explicit cross-curricular connections by leveraging prior knowledge from ELA
Supporting Multilingual/English Learners	
Related *CELP standards:* • 9-12.2 An EL can . . .participate in grade appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.	**Learning Targets:** • Level 1: with prompting and supports, actively listen to others during discussions of supporting questions and respond to simple yes/no questions and some wh- questions • Level 2: with prompting and supports, actively listen to others during short discussions of supporting questions and respond to simple questions and wh questions • Level 3: with guidance and supports, participate in conversations, discussions, and written exchanges on supporting questions by building on the ideas of others, expressing their own ideas, asking and answering questions, and adding relevant information • Level 4: participate in conversations, discussions, and written exchanges on compelling/supporting questions, building on the ideas of others, expressing their own ideas clearly, supporting points with specific and relevant evidence, asking/answering questions to clarify

	ideas and conclusions. • Level 5: participate in extended seminar discussions on compelling questions, building on the ideas of others, expressing his or her own ideas clearly and persuasively, referring to specific and relevant evidence from texts to support his or her ideas, asking/answering questions that probe reasoning and claims

Unit 2: Imperialism and WWI

Lesson Map

Lesson	Learning Targets	Sources	Knowledge	Vocab
1-EQ1	• I can weigh both short term and long term causes of the Spanish American war.	Did Yellow Journalism Fuel the Outbreak of the Spanish American War The March of the Flag	USS Maine Yellow Journalism Propaganda Economic Interests Strategic Interests	
2-EQ1	• I can evaluate the United States participation in the Philippine American War.	Benevolent Assimilation Aguinaldo's Manifesto Theodore Conley Mark Twain Anti-Imperialist League	Treaty of Paris Philippine-American War Social Darwinism	
3-EQ2	• I can evaluate the United States' decision to enter WWI.	Wilson's War Message Howard Zinn on WWI Wealth's Terrible Mandate	Lusitania Zimmerman Telegram Woodrow Wilson Isolationism Neutrality	
4-EQ2	• I can evaluate the United States decision not to ratify the Treaty of Versailles.	Lodge Opposes the League Norris Opposes the League	Treaty of Versailles League of Nations Irreconcilables Reservationists	Reconcile Reservation
5-EQ3	• I can compare the contributions of Americans to WWI to the discrimination they faced at home.	DuBois Returning Soldiers One Negro Officer	Thind v. United States? Naturalization Act of 1906 Red Summer of 1919 WEB Dubois	Vindictive Resignation
6-EQ3	• I can describe how fears in American society after the war impacted civil liberties.	Wilson's Request The Sedition Act No Conscription League	Espionage/Sedition Acts Schenck v. United States Palmer Raids	Contempt Substantive

		Eugene V. Debs Schenck Pamphlet Schenck v. United States		
7	• I can evaluate the extent to which American foreign policy during the Age of Imperialism was motivated by national ideals. • I can draft a thesis and outline an argument in response to a summative prompt.			
8	• I can draft a document based essay supporting a historical argument.			
9	• I can revise a prior essay to strengthen my historical argument.			
10	• Assess/flex			
11	• Flex			

Unit 3: The Great Depression and New Deal

Overview

Relevant Standards: Bold indicates priority

- US.His.4.c. Analyze how racism and nativism shaped perspectives about individuals and groups and influenced government policy (e.g., Red Summer, Sacco Vanzetti, eugenics movement, immigration acts in the 1920s, Angel Island, Ku Klux Klan).
- US.His.4.d. Analyze complex and interacting factors that influenced a debate over national identity in the United States in the 1920s (e.g., Scopes Trial, Jazz, flappers, Immigration Act of 1924, Marcus Garvey, mass media and advertising).
- US.His.14.c. Analyze the causes and effects of the Great Migration (e.g., Jim Crow laws, racial terrorism, emergence of urban Black cultural centers, resurgence of Islam).
- US.His.6.a. Analyze how authors, artists, and musicians documented perspectives and experiences of individuals and groups throughout the interwar period (e.g., Jacob Lawrence, Dorthea Lange, Langston Hughes, Billie Holiday, Yasuo Kuniyoshi, Magdalena Carmen Frida Kahlo y Calderón).
- US.His.12.b. Develop questions to investigate the causes and effects of the Great Depression using multiple historical sources.
- US.Eco.3.a. Analyze the ways in which government incentives and personal motivation influenced production and distribution under New Deal policies (e.g., Agricultural Adjustment Act, Tennessee Valley Authority Act, Civilian Conservation Corps, Federal Housing Administration).
- US.Eco.6.a. Explain potential approaches to stabilize markets in response to the Great Depression (e.g., plans by Herbert Hoover, Franklin D. Roosevelt, Huey Long, and the American Communist Party).
- US.Eco.8.a. Describe the possible consequences, both intended and unintended, of government policies to address social and economic problems during the Great Depression (e.g., role of the Federal government, banking practices, inequitable access to benefits, migration, environmental impacts, social safety net).

Overview

In Unit 3, students learn about the changes and challenges facing American society between the world wars before ultimately evaluating the degree to which the government was able to address those challenges. The unit begins with an exploration of the technological and social changes that took place during the 1920s. Students then turn their focus to the ways the government addressed racial injustice, immigration, and the economic challenges that faced the nation during the Great Depression. Students then explore the economic challenges that dominated life during the Great Depression, and the various proposals and programs aimed at addressing those challenges. By exploring a variety of primary source documents, students ultimately assess the extent to which the government improved the lives of the American people during this era.

Essential Question(s):

- To what extent did the government improve the lives of American people between 1920 and 1939?
    a. How was America changing during the 1920s?
    b. Did the government successfully address social inequalities in the 1920s?
    c. Did the government address economic challenges of the 1930s?

Enduring Understanding(s):

- EQ1 - During the 1920's, American society underwent significant changes, growing increasingly unified by mass media, advertising, and the consumption of consumer goods, but divided over changes to traditional norms.
- EQ2 - The federal government did little to address the racial discrimination and racial terrorism facing African Americans during the 1920s and 1930s. As a result, many African Americans took matters into their own hands in an attempt to improve their lives, moving north during the Great Migration and establishing black cultural centers. Immigration policy at this time was also influenced by racial and ethnic prejudices, seeking to protect American workers, but also seeking to maintain a white majority in the United States.
- EQ3 - After the stock market crash of 1929, America faced significant economic challenges due to risky investments, bank failures, and environmental factors. The government addressed the economic challenges of the 1930s primarily through the New Deal, a series of programs and reforms initiated by President Franklin D. Roosevelt. Although the scope of these reforms was far reaching, the extent to which they succeeded in addressing the challenges of the Great Depression are debated, and their impact was not evenly distributed across American society.

Demonstration of Learning:

- To what extent did the New Deal improve the lives of the American people? Write an argument that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views.
- Unit Exam

Connections to Prior Units:	**Connections to Future Units:**
• Students will have previously evaluated the success of government policies when studying Reconstruction in 8th grade. The summative inquiry of that unit asks students to what extent Reconstruction was successful. • Students will have previously explored the role of laissez-faire economic policies in Unit 1, providing a contrast to the increase in government regulations during the New Deal. • Students will have recently evaluated government policies in the prior unit. Whereas that unit focused on foreign policy and democratic	• In unit 7, students will again evaluate a broad set of Government policies. In that unit, students compare the Conservatism of the 1980s to Johnson's Great Society and evaluate how successfully Conservatism addressed the social and economic challenges of the day.

ideals, this unit focuses on domestic policy and its impact.	
Family Overview (link below)	**Pacing for Unit**
	• 11 classes, 4 weeks
Integration of Technology:	**Aligned Unit Materials, Resources, and Technology:**
• Use of google docs is recommended throughout the writing process to facilitate drafting, feedback, collaboration, and revision.	• Textbook • Primary/secondary sources listed below
Opportunities for Interdisciplinary Connections:	**Anticipated misconceptions:**
• In 10th grade ELA, students read *Of Mice and Men*, studying the lives of migrant workers in California during the Great Depression. • In 11th grade ELA, students read *The Great Gatsby* as a representation of American society in the 1920s, as well as excerpts from Bill Bryson's On Summer: America 1927.	•
Differentiation through *Universal Design for Learning*	
UDL Indicator • CHECKPOINT 3.3 Guide information processing and visualization	**Teacher Actions:** • Give explicit prompts for each step in a sequential process, such interactive lecture or exploration of (multiple)primary sources • Introduce graduated scaffolds that support information processing, such as questions to establish meaning and questions to analyze meaning • Provide multiple entry points to a lesson by tailoring Do Now activities to the students and learning target • "Chunk" information or text into smaller elements by planning pause points during interactive lecture and checks for understanding during exploration of primary sources. • Monitor student thinking during pause points in order to respond to to patterns, misconceptions, or common errors as effectively as possible
Supporting Multilingual/English Learners	
Related *CELP standards:* • 9-12.3 An EL can . . . speak and write about grade-appropriate	**Learning Targets:** • Level 1: with prompting and support, describe the Great Depression

complex literary and informational texts and topics.	using words and phrases acquired in conversations, reading, and being read to. • Level 2: with prompting and supports, compose a written texts describing various responses to the Great Depression that uses academic and domain specific vocabulary and includes key details from familiar (pretaught) primary sources • Level 3: with guidance and supports, compose a written text describing various responses to the Great Depression, using academic and domain specific vocabulary, and including relevant details from both familiar (pretaught) and new primary sources • Level 4: develop a written text describing various causes and responses to the Great Depression, using academic and domain specific vocabulary, and including relevant details from both familiar (pretaught) and new primary sources. • Level 5: fully developing a written text evaluating the extent to which the government helped the American people during the 1920s and 30s using academic and domain specific vocabulary, and including relevant details from both familiar (pretaught) and new primary sources.

Unit 3: 1920's, Great Depression and New Deal

Lesson Map

Lesson	Learning Targets	Sources	Knowledge	Vocabulary
1-EQ1	• I can evaluate the extent to which changes in American society unified the country.	Economic Statistics?	Automobile/radio Mass culture/media Flappers Prohibition Scopes Trial	
2-EQ2	• I can evaluate how the government, individuals, and groups of people responded to the challenges facing African Americans in the 1920's and 1930s.	Burdick Letter Roosevelt Letter	Jim Crow Klu Klux Klan Tulsa Massacre Ossion Sweet Black Urban Centers Great Migration Harlem Renaissance	Antagonistic Prominent
3-EQ2	• I can assess the impact of both the policies and the rhetoric surrounding immigration in the 1920s and 1930s.	Guerrero Letter California Apology Act Immigration Station Debates on Immigration	Immigration Act of 1924 Angel Island Mexican Repatriation	Assert Conceit Coerced
4-EQ3	• I can investigate the causes and effects of the Great Depression.		Consumerism/Credit Wealth distribution Regulation Laissez faire policies	
5-EQ3	• Explain and evaluate potential approaches to stabilize markets in response to the Great Depression.	Every Man a King Second Fireside Chat	Herbert Hoover Franklin D. Roosevelt Huey Long American Communist Party	
6-EQ3	• Describe and evaluate the effectiveness relief, recovery, and reform programs of the New Deal.	A Negro in the CCC Fechner Letter Roosevelt Fireside Chat	Emergency Banking Act Civilian Conservation Corps Social Security Administration	Emphatic Construed

			Works Progress Administration Federal Deposit Insurance Corporation	
7-EQ3	• I can compare and corroborate historical perspectives regarding the success of the New Deal.	Johnson Cartoon Towards a New Past Out of Our Past		
8	• I can participate in a seminar discussion with my peers to evaluate the extent to which the government improved the lives of Americans between 1920 and 1939. • I can draft a thesis and outline an argument in response to a summative prompt."			
9	• I can draft a document based essay supporting a historical argument.			
10	• Assess/flex			
11	• Flex			

Unit 4: The Second World War

Overview

Relevant Standards: Bold indicates priority

- US.His.1.c. Evaluate the role of economic and political developments that created the conditions leading to WWII and the Holocaust (e.g., Great Depression, nationalism, militarism).
- US.His.16.c. Develop arguments about the juxtaposition between the United States' founding ideals and actions of the Federal government during World War II using evidence from multiple relevant sources (e.g., **Japanese-American Internment**, Holocaust intervention, **Braceros Program**, Fair Employment Practices Act, segregated regiments, women in the military).
- US.His.16.d. Describe the achievements and contributions of diverse individuals and groups during World War II using evidence from historical sources (e.g., Women Accepted for Volunteer Emergency Service, Tuskegee Airman, Navajo Code Talkers, 442 Japanese-American regiment, 158th Regimental Combat Team).
- US.His.1.d. Evaluate how the demand for labor on homefront in World War II shaped gender roles (e.g., mobilization, victory gardens, rationing, War Production Board).
- US.Eco.13.a. Explain why investments in infrastructure and industry expanded consumer culture and increased standards of living in the United States (e.g., housing access, mass production, urbanization, utilities).
- US.His.16.e. Develop a reasoned argument about the role of the United States government in providing access to fair and open housing using multiple relevant sources (e.g., Federal Housing Administration, Servicemen's Readjustment Act of 1944, Levittown, redlining, Interstate Highway System).

Overview

In the final unit of the first semester, students turn their attention to the Second World War. This unit focuses on the domestic impacts of the war, beginning with an exploration of the debates surrounding America's policy of neutrality before moving to a study of the economic and social impacts of mobilization. Students study the experiences of Japanese Americans during the war, as well as the experiences of American service men and women across the globe, before finally examining the causes and effects of American prosperity following the Allied victory. Over the course of the unit, students explore a variety of primary source documents in order to assess the extent to which the greatest conflict in human history united the American people.

Essential Question(s):

- To what extent did WWII unify the American people?
    a. How unified were Americans in the decision to go to war?
    b. Did their wartime experiences bring Americans closer together?
    c. Did Allied victory bring Americans closer together?

Enduring Understanding(s):

- EQ1: At the outbreak of World War II, many Americans supported a policy of neutrality, but President Roosevelt sought ways to support American allies financially. The public grew increasingly sympathetic and involved as American allies fell under German occupation until the Japanese attack on Pearl Harbor largely united the country in favor of entering the war..
- EQ2: Economic hardships at home and military service abroad brought many Americans into closer contact with each other and contributed to feelings of patriotism and shared sacrifice, but did not erase existing inequalities and divisions in American society. Women, African Americans, and Mexicans helped provide necessary labor throughout the war, but were not permanently or fully integrated into the workforce and continued to face discrimination. Many Americans supported the government's decision to intern Japanese Americans based on fears of disloyalty, further highlighting racial divisions in American society.
- EQ3: The post WWII period saw a remarkable economic boom which brought many Americans into a significantly expanded middle class. While Government subsidies helped expand homeownership and access to education, redlining, segregation, and discrimination prevented African Americans from enjoying many of these benefits. Mass media helped shape a unifying popular culture largely defined by consumerism and idealized suburban family life, but also helped reinforce traditional gender roles and largely ignored the lives of minority women and families.

Demonstration of Learning:

- To what extent did World War II unify the American people? Write an argument that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views.
- Unit Exam

Connections to Prior Units:	**Connections to Future Units:**
• Students will have briefly studied the Second World War and the Holocaust in 6th grade Social Studies, as a historical example of ethnic conflict in Europe. • Students will have considered the theme of national unity twice in 8th grade. In that course, summative inquiries ask students to evaluate the extent to which the Constitution and the Civil War united the country. • Students will have studied the Second World War in 9th Grade World History, including major battles, turning points, and the Holocaust.	• Students will consider the impact of the September 11th attacks (as well as other crises) on American identity and unity in Unit 8.

• Students will have previously studied debates surrounding the United States role in foreign affairs in Unit 2, including the decision to enter the First World War.	
Family Overview (link below)	**Pacing for Unit**
	• 11 classes, 4 weeks
Integration of Technology:	**Aligned Unit Materials, Resources, and Technology:**
• Use of google docs is recommended throughout the writing process to facilitate drafting, feedback, collaboration, and revision.	• Textbook • Primary/secondary sources listed below
Opportunities for Interdisciplinary Connections:	**Anticipated misconceptions:**
• Students will have read *Refugee* in 6th grade. In this novel, one of the three protagonists is Josef, a 12 year old Jewish boy who escapes Nazi Germany on board the St. Louis, only to be turned away by both Cuba and the United States. • In 7th Grade, students will have read *A Raisin in the Sun*, a play exploring generational conflicts within an African American family living on the South Side of Chicago in the 1950's as they struggle with access to homeownership and the American Dream. • Some, but not all, students will have read *They Called Us Enemy*, a graphic novel memoir by George Takei relating his experience of Japanese internment as a child. • Students will have read *Night* in 8th grade. In this memoir, Nobel laureate Eli Weisel recounts his experience surviving Auschwitz-Birkenau.	•
Differentiation through *Universal Design for Learning*	
UDL Indicator • CHECKPOINT 8.1 Heighten salience of goals and objectives	**Teacher Actions:** • Prompt or require learners to explicitly formulate or restate goals for exploration of primary sources • Display and return to the learning target in multiple ways throughout the lesson • Encourage division of long-term goals into short-term objectives by drawing connections between summative prompts, essential questions, and daily learning targets

	• Engage learners in discussions of what constitutes excellence and generate relevant examples that connect to their cultural background and interests
Supporting Multilingual/English Learners	
Related *CELP standards:* • 9-12.5 An EL can . . . conduct research and evaluate and communicate findings to answer questions or solve problems.	**Learning Targets:** • Level 1: With prompting and supports, gather information from a few provided primary sources, labeling collected information as evidence of the war uniting or dividing Americans. • Level 2: With prompting and supports, gather information from a few provided primary sources, recording some quoted evidence and summarizing ways in which the war did or did not unite Americans. • Level 3: With guidance and supports, gather information from multiple provided primary sources, evaluating the reliability of each source, and paraphrasing key information in a short written or oral report. • Level 4: Gather and synthesize information from multiple primary sources, addressing multiple supporting questions, evaluating evaluate the reliability of each source and integrating information into organized oral or written argument • Level 4: Gather and synthesize information from multiple primary sources, addressing multiple supporting questions, evaluating the reliability of each source and integrating information into organized oral or written argument in response to the compelling question of whether WWII united Americans.

Unit 4: The Second World War

Lesson Map

Lesson	Learning Targets	Sources	Knowledge	Vocabulary
1-EQ1	• I can describe national debates and changes to changes to US policy regarding neutrality during WWII.	FDR Fireside Chat Lindberg Des Moines WWII propaganda	Neutrality Acts Lend Lease Act America First Committee Pearl Harbor	Appease
2-EQ2	• I can evaluate how the economic demands of World War II impacted American society.	Americans All Saturday Evening Post Oral Interview	Mobilization Braceros Program Black Rosies Double V Campaign Executive Order 8802	Devotion
3-EQ2	• I can evaluate United States policies of Japanese internment during the Second World War.	Executive Order 9066 Korematsu Decision Public Opinion Polls	Executive Order 9066 Korematsu v. US	Internment
4-EQ2	• I can describe the achievements and contributions of diverse individuals and groups during World War II.		Tuskegee Airmen Code Talkers European Theatre Pacific Theatre Iwo Jima D-Day	
5-EQ3	• I can explain the economic causes and social impact of unprecedented prosperity after World War II.	How To Be a Good Wife Redlining Maps of CT	Fair Deal GI Bill of Rights Baby Boom Interstate Highway Act Consumer Culture Levittown Redlining	Productive Conformity
6	• I can participate in a seminar discussion with my peers to			

	evaluate the extent to which World War II unified America. • I can draft a thesis and outline an argument in response to a summative prompt.			
7	• I can draft a document based essay supporting a historical argument.			
8	• I can revise a prior essay to strengthen my historical argument.			
9	Assess			
10	Flex			

Unit 5: The Cold War

Overview

Relevant Standards: Bold indicates priority

- US.His.1.e. Evaluate the United States government's complex responses to the Holocaust while recognizing the history of antisemitism in both historical and contemporary contexts (e.g., Voyage of the St. Louis, lack of response to the Final Solution, Nuremberg Trials).
- US.His.14.d. Analyze the multiple and complex causes and effects of the nuclear age (e.g., Manhattan Project, Hiroshima, Nagasaki, Operation Paperclip, nuclear proliferation, Strategic Arms Limitations Treaties, atomic culture, Three Mile Island accident).
- US.His.14.e. Evaluate the impact of foreign policy and military intervention in upholding the United States' founding ideals during the Cold War (e.g., Truman Doctrine, Marshall Plan, North Atlantic Treaty Organization, Warsaw Pact, Korea, Cuba, Chile, Vietnam).
- US.His.1.f. Evaluate how the Korean and Vietnam Wars were products of the geopolitical contexts of the Cold War.
- US.His.5.a. Analyze how heightened domestic tensions and claims about perceived threats to democratic values led to widespread civil rights violations (e.g., House Un-American Activities Committee, Hollywood Ten, Lavender Scare, treatment of Civil Rights and anti-Vietnam War activists, televised news).
- US.His.11.a. Determine the usefulness of historical sources to support an inquiry about the causes, escalation, and public reaction to the Vietnam War based on their maker, origin, intended audience, and purpose (e.g., art, ephemera, film, government reports, media, music).

Overview

Students start the second semester of Modern American by turning their attention back to foreign policy, studying America's role in the Cold War. They do so primarily by examining three "fronts'' of America's struggle against Communism: Eastern Europe, Korea, and Vietnam. As they learn about each of these conflicts, students examine a variety of primary source documents to determine the extent to which America's fight against communism exemplified or compromised democratic ideals. Students will also study the impact of the Cold War on civil liberties at home in order to consider whether developments at home provide insight into foreign policy decisions.

Essential Question(s):

- To what extent was American foreign policy during the Cold War motivated by democratic ideals?
    a. Why did America send economic and military aid to Europe, Korea, and Vietnam after WWII?
    b. Did America live up to national ideals at home during the Cold War?

Enduring Understanding(s):

- EQ1 - In Europe and Korea, the U.S. spurred economic development, promoted collective security, and went to war in order to defend its economic interests as well as the sovereignty of democratic governments in the face of Communist aggression. The U.S. often framed its involvement in Vietnam as a defense of democracy and freedom, but also supported imperial and authoritarian regimes in South Vietnam in order to suppress Communist independence movements.
- EQ2 - Many Americans viewed communism as an existential threat to democratic values, freedoms, and the American way of life. These fears, exacerbated by the heightened risk of the nuclear age and increasingly homogeneous mainstream culture, led to widespread paranoia, suspicion and efforts to root out communist threats, often at the expense of civil liberties and social movements fighting for equality and justice.

Demonstration of Learning:

- Summative Writing: To what extent was American foreign policy during the Cold War motivated by democratic ideals? Write an argument that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views.
- Unit Exam

Connections to Prior Units:	**Connections to Future Units:**
• Students will have been introduced to communism, the USSR, and the Cold War in 6th grade, and should have understood that Eastern and Western Europe took different political and economic paths after WWII. • Students will have studied the spread of communism throughout Europe, Latin America, and Asia in 9th grade World History, as well as clashes with democracy during the Cold War. • Students will have previously studied American foreign policy through the lens of democratic ideals in Unit 2. In that unit, students studied the reasons for United States involvement in the Spanish American War, the Philippines, and WWI, before also considering the impact on civil liberties at home.	

Family Overview (link below)	Pacing for Unit
	• 10 classes, 4 weeks
Integration of Technology:	**Aligned Unit Materials, Resources, and Technology:**
• Use of google docs is recommended throughout the writing process to facilitate drafting, feedback, collaboration, and revision.	• Textbook • Primary/secondary sources listed below
Opportunities for Interdisciplinary Connections:	**Anticipated misconceptions:**
• Students will have studied Animal Farm in 8th grade, and should understand that novel as an allegory for the Russian Revolution.	•
Differentiation through *Universal Design for Learning*	
UDL Indicator • CHECKPOINT 3.2 Highlight patterns, critical features, big ideas, and relationships	**Teacher Actions:** • Highlight or emphasize key elements in text, graphics, diagrams, formulas • Use outlines and/or graphic organizers to capture relationships learning targets, essential questions, and summative essays • Use cues and prompts to draw attention to critical features during interactive lecture and exploration of primary sources • Highlight previously learned knowledge that can be used to introduce related essential questions/summative prompts • Name historical thinking skills that students will practice at various points, such as causation, contextualization, continuity, change, and corroboration.
Supporting Multilingual/English Learners	
Related *CELP standards:* • 9-12.4 An EL can . . . construct grade appropriate oral and written claims and support them with reasoning and evidence.	**Learning Targets:** • Level 1: with prompting and pre teaching, verbally or nonverbally express an opinion about the Marshall Plan using a limited number of words and phrases acquired in conversations, reading, and being read to. • Level 2: with prompting and preteaching, construct a claim about the Marshall Plan by introducing the topic, giving a reason to support the claim, and providing a concluding statement

	• Level 3: with guidance and preteaching, construct a claim about the Marshall Plan by introducing the topic, providing sufficient evidence, reasons, or facts to support the claim, acknowledging opposing ideas, and providing a concluding statement • Level 4: construct a claim about the American foreign policy during the Cold War by introducing the topic, providing logically ordered reasons or facts that effectively support the claim, acknowledging opposing ideas, and providing a concluding statement • Level 5: construct an argument comparing American foreign and domestic policy during the Cold War by introducing the claim, distinguishing from counterclaims, providing sufficient evidence, reasons, or facts to support the claim, acknowledging opposing ideas, and providing a conclusion that summarizes the argument presented

Unit 5: The Cold War

Lesson Map

Lesson	Learning Targets	Sources	Knowledge	Vocabulary
1-EQ1	• I can evaluate the extent to which early Cold War policy in Europe was motivated by national ideals.	Truman Doctrine Iron Curtain Speech Soviet Telegram	Truman Doctrine Marshall Plan NATO Eisenhower Doctrine	
2-EQ1	• I can evaluate the extent to which military intervention in Korea was motivated by national ideals.	Truman's Memoir North Korean Textbook South Korean Textbook	38th Parallel Korean War Harry Truman Douglass MacArthur SEATO	Embolden
3-EQ1	• I can evaluate the extent to which early Cold War policy in Vietnam was motivated by national ideals.	DRV Independence Pendergrass Letter Kennedy's Response McNamara Speech	Geneva Accords Ho Chi Minh Ngo Dinh Diem Domino Theory Gulf of Tonkin Resolution	
4-EQ2	• I can describe the causes and effects of the nuclear age.	Atoms for Peace	Cuban Missile Crisis Space Race/NASA	Mutual Assured
5-EQ2	• I can describe how fears in American society during the Cold War impacted civil liberties.	McCarthy Communism Chase's Conscience Murrow "See if Now"	Red Scare Lavender Scare HUAC Joseph McCarthy Smith Act	Abdicate Conviction
6-EQ2	• I can explain how the Cold War impacted social critics and reformers during the 1950s.	Robeson Before HUAC		
7	• I can participate in a seminar discussion with my peers to evaluate the extent to which World War II unified America.			

	• I can draft a thesis and outline an argument in response to a summative prompt.			
8	• Draft			
9	• Assess/flex			
10	• Flex			

Unit 6: Civil Rights Movements

Overview

Relevant Standards: Bold indicates priority

- US.His.5.b. Analyze the role of popular culture, subculture, and counterculture in shaping public perception of national identity during the post-World War II era (e.g., Beat Generation, Rock and Roll, Motown, Jazz, Hippies, television sitcoms, Hollywood films).
- US.His.15.a. Identify both long term causes and triggering events to develop historical arguments about efforts to abolish legalized racial segregation, discrimination, and disenfranchisement (e.g., Southern Christian Leadership Conference, Black Panther Party, Student Nonviolent Coordinating Committee, American Jewish Congress, American Indian Movement, United Farm Workers, Congress of Racial Equality).
- US.Civ.5.b. Evaluate the effectiveness of individuals, groups, and institutions in addressing issues of civil rights and justice in the post-World War II era (e.g., disability, education, environmental justice, LGBTQ+ rights, poverty, racial and gender equity, voting access).
- US.Civ.5.c. Analyze the role of legislative and judicial decisions in expanding or limiting civil liberties (e.g., Hernandez v. Texas, Executive Order 10450, Loving v. Virginia, Civil Rights Act of 1964, Voting Rights Act of 1965, Title IX of the Education Amendments Act of 1972, Roe v. Wade).
- US.His.11.a. Determine the usefulness of historical sources to support an inquiry about the causes, escalation, and public reaction to the Vietnam War based on their maker, origin, intended audience, and purpose (e.g., art, ephemera, film, government reports, media, music).

Overview

In the second unit of the semester, students study what is arguably the most powerful movement for social change in American history. Over the course of the unit, students consider how the goals and strategies of the Civil Rights movement changed over time, examining its evolution, successes, setbacks, and tensions. This includes studying early bus boycotts and sit-ins, Freedom Rides, and the evolution of the Black Power movement. Students then work to contextualize the Civil Rights movement within the counterculture of the 1960s, making connections to popular music such as Motown and Rock and Roll, as well as the many other protest movements that drew on movement for inspiration while also seeking to address their own unique set of injustices, such as feminist movement and efforts to secure LGBTQ, Chicano, and Native American rights.

Essential Question(s):

- How united were the various protest movements of the 1950s and 60s?
    a. How much did the Civil Rights movement change over time?
    b. How did the Civil Rights movement compare to other protest movements of the 1960s?

Enduring Understanding(s):
• EQ1 - Throughout the 1950s and 1960s, the Civil Rights Movement sought to challenge racial segregation and discrimination, often through grassroots organizing and nonviolent protest. After Brown v. Board of Education, the movement pursued desegregation and voting rights through nonviolent direct action and increasingly large scale demonstrations. After legislative victories of the 1960s, the movement expanded its goals to include economic justice and community empowerment, causing tensions and divisions within the movement as new voices promoted more radical and confrontational approaches. • EQ2 - As the United States escalated the war in Vietnam, it was met with increasing resistance at home. There was significant overlap between the civil rights movement, the anti war movement, as well as other protest movements of the time. Although many drew on similar tactics and often saw themselves as part of a larger struggle for economic and social justice, they were not a unified coalition and achieved varying levels of success.
Demonstration of Learning:
• How united were the various protest movements of the 1950s and 1960s? Write an argument that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views. • Unit assessment.

Connections to Prior Units:	**Connections to Future Units:**
• Students will have previously considered the impact of historical events on diverse groups of people in 8th grade. The summative inquiry on the American Revolution asks students to evaluate the extent to which the Revolution addressed political injustices and affected change for women, Native Americans, and enslaved people. • Students will have previously studied how various groups of Americans worked to combat injustice and improve society in Unit 1 of this course. In that unit, students study the social inequities that arose during the Gilded Age and evaluate how various progressive movements responded.	•
Family Overview (link below)	**Pacing for Unit**
	• 12 classes, 5 weeks
Integration of Technology:	**Aligned Unit Materials, Resources, and Technology:**
• Use of google docs is recommended throughout the writing process to facilitate drafting, feedback, collaboration, and revision.	•

Opportunities for Interdisciplinary Connections:	Anticipated misconceptions:
• In 6th Grade, students will have read *Brown Girl Dreaming*, a memoir in verse that describes Jacqueline Woodson's experience growing up as a Black child in the 1960s and 1970s, living with the remnants of Jim Crow and developing a growing awareness of the civil rights movement. • In 7th Grade, students will have read *A Raisin in the Sun*, a play exploring generational conflicts within an African American family living on the South Side of Chicago in the 1950's as they struggle with access to homeownership and the American Dream.	•
Differentiation through *Universal Design for Learning*	
UDL Indicator • CHECKPOINT 8.4 Increase mastery-oriented feedback	**Teacher Actions:** • Provide feedback that encourages perseverance, focuses on development of efficacy and self-awareness, and encourages the use of specific supports and strategies in the face of challenge. • Use shared rubrics to provide feedback that emphasizes effort, improvement, and achieving a standard rather than on relative performance. • Use Show Call to provide feedback that is frequent, timely, and specific. • Provide feedback that is substantive and informative rather than comparative or competitive. • Use Show Call and/or Whole Class feedback to identify patterns of errors and wrong answers, and generate positive strategies for future success.
Supporting Multilingual/English Learners	
Related *CELP standards:* • 9-12.5 An EL can . . . conduct research and evaluate and communicate findings to answer questions or solve problems.	**Learning Targets:** • Level 1: With prompting and supports, gather information from a few provided sources and label collected information as evidence of a goal or a strategy • Level 2: With prompting and supports, gather information from provided sources, recording examples of goals, and summarizing changes between documents • Level 3: With guidance and supports, gather information from multiple provided sources, evaluating the reliability of each and paraphrasing

	key information • Level 4: Gather and synthesize information from multiple sources, evaluating the credibility of each, analyzing and integrating information into a clearly organized oral/written text describing changes in the civil rights movement. • Level 5: Gather and synthesize information from multiple sources, evaluating the credibility of each, analyzing and integrating information into a clearly organized oral/written text comparing multiple movements during the 1960s.

Unit 6: Civil Rights Movements

Lesson Map

Lesson	Learning Targets	Sources	Knowledge	Vocabulary
1-EQ1	• Evaluate the extent to which the goals and strategies of the civil rights movement changed over the course of the 1950s.	Brown v. Board of Education King at Holt St. Church Bigger than a Hamburger	Brown v. Board of Ed. Little Rock Nine Civil Rights Act of 1957 Montgomery Boycott	
2-EQ1	• I can evaluate the successes and setbacks of the Civil Rights movement in the 1960's.	SNCC Statement of Purpose Flier for Freedom Summer Letter from Birmingham Jail	Freedom Rides James Meredith John Lewis March on Washington Freedom Summer March on Selma Civil Rights Act of 1964 Voting Rights Act of 1965	Affirm Integrate Reconcile
3-EQ1	• I can evaluate the extent to which the goals and strategies of the civil rights movement changed over the course of the 1960s.	Malcolm X to Miss. Youth Black Panther Platform SNCC Leaflet Ballad or Bullet Carmichael on Black Power	SNCC Poor People's Campaign Malcom X Stokely Carmichael Black Power Black Panthers	
4-EQ2	• I can describe the ways popular culture reflected and influenced changes in American society.	Song Lyrics	Counterculture Beat Generation Rock and Roll Motown	
5-EQ2	• I can compare and contrast the protests against the Vietnam War with the Civil Rights Movement.	King's "Beyond Vietnam" SNCC on Vietnam	Tet Offensive My Lai Kent State Great Society	
6-EQ2	• I can compare and contrast the feminist and LGBTQ movement of the 1960s with the Civil	Steinem Living the Revolution Steinem on Equal Rights	Stonewall Uprising	

	Rights Movement.	Edmund White's City Boy Sylvia Rivera Speech		
7	• I can compare and contrast the Native American and Chicano Movements with the Civil Rights Movement		Cesar Chavez Dolores Huerta United Farm Workers Chicano Movement American Indian Movement	
8	• I can participate in a seminar discussion with my peers to compare and contrast the various protest movements of the 1950's and 1960's. • I can draft a thesis and outline an argument in response to a summative prompt.			
9	• I can draft a document based essay supporting a historical argument.			
10	• I can revise a prior essay to strengthen my historical argument.			
11	• Assess/Flex			
12	• Flex			

Unit 7: The New Conservatism

Overview

Relevant Standards: Bold indicates priority

- US.His.1.g. Evaluate whether the conservative ascendency of the 1980s was a reaction to social and economic change and to what extent it was consistent with broader historical trends (e.g., New Right, Watergate, energy crisis, Reaganomics).
- US.His.1.h. Evaluate how popular culture in the 1970s and 1980s promoted and reflected hyper-consumerism, racial tension, women's empowerment, and the Cold War.
- US.His.2.a. Analyze how innovations in the application of technology contributed to cultural and political diffusion (e.g., televangelism, Music Television, personal computing, Hip Hop music, cable television, political talk radio).
- US.His.15.b. Develop an argument about the long-term causes and triggering events of United States foreign policies designed to contain and dismantle communism (e.g., Iran Hostage Crisis, El Salvador, Nicaragua, Iran-Contra, Afghanistan).
- US.Geo.3.a. Analyze changing spatial patterns of cultural enclaves within and among United States regions using paper-based and electronic graphic techniques (e.g., Jamaican, Puerto Rican, Bosnian, Vietnamese, Sikh, Mexican, Cuban, Muslim).
- US.Civ.13.b. Evaluate United States policies to address public safety in terms of intended and unintended outcomes, and related consequences (e.g., War on Drugs, "America Responds to AIDS" public information campaign, Immigration Reform and Control Act).

Overview

In this unit, students again question the role of government in improving the lives of American citizens. Students begin by examining how the counterculture of the 1960's was impacted by new technologies and met with conservative and religious resistance in the form of the New Right. Students then examine the social, economic, and foreign policies of Ronald Reagan, comparing his approach to government with those of his predecessors, such as Lyndon Johnson. In doing so, students will again assess the extent to which these new approaches to government improved the lives of the American people.

Essential Question(s):
• Did New Conservatism improve the lives of American people between 1970 and 1989? a. How effectively did the government respond to cultural changes and challenges? b. How effective were conservative economic policies?
Enduring Understanding(s):
• Concerns with cultural change led religious groups to become more actively involved in politics, helping the conservative movement gain and maintain power. As a result, the government took a less active role than previous administrations in directly addressing some of the social challenges that arose during that time, while also seeking to limit some of the policies they had enacted. • Unlike previous administrations, Conservative economic policies during the 1970's and 1980's sought to address economic challenges by limiting government regulation, taxation, and spending. While some grew rich as a result, the number of Americans living in poverty increased and the national debt rose during this time, causing significant debate about the efficacy of these approaches.
Demonstration of Learning:
• Write an argument that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views. • Unit Exam

Connections to Prior Units:	**Connections to Future Units:**
• Students will have previously evaluated the success of the United States government's approach to social and economic challenges in Unit 3. In that unit, students evaluate the extent to which the New Deal improved the lives of Americans. This unit asks students to make a similar judgment regarding the impact of Conservatism during the 1980s.	•
Family Overview (link below)	**Pacing for Unit**
	• 9 classes, 4 weeks
Integration of Technology:	**Aligned Unit Materials, Resources, and Technology:**
• Use of google docs is recommended throughout the writing process to	• Textbook

facilitate drafting, feedback, collaboration, and revision.	• Primary/secondary sources listed below
Opportunities for Interdisciplinary Connections:	**Anticipated misconceptions:**
•	•
Differentiation through *Universal Design for Learning*	
UDL Indicator • CHECKPOINT 6.4 Enhance capacity for monitoring progress	**Teacher Actions:** • Narrate patterns in student thinking to prompt reflection relative to targets and success criteria • Show representations of progress, such as early written work compared to written work demonstrating growth in focus areas • Prompt learners to identify the type of feedback or advice that they are seeking • Use templates that guide self-reflection on quality and completeness • Use of assessment checklists, scoring rubrics, and multiple examples of annotated student work/performance examples
Supporting Multilingual/English Learners	
Related *CELP standards:* • 9-12.6 An EL can . . . analyze and critique the arguments of others orally and in writing.	**Learning Targets:** • Level 1: With prompting and supports, identify a point an author makes about the success of the conservative policies in the 1980's. • Level 2: With prompting and supports, identify the main argument an author makes regarding the success of the conservative policies in the 1980's. • Level 3:With guidance and supports, explain the reasons an author gives to support a claim regarding the success of conservative policies in the 1980's. • Level 4: Analyze the reasoning and determine whether the evidence is sufficient to support a claim regarding the success of conservative policies in the 1980's. • Level 5: Analyze and evaluate the reasoning and determine whether the evidence is sufficient to support a claim regarding the success of conservative policies in the 1980's.

Unit 7: The New Conservatism

Lesson Map

Lesson	Learning Targets	Sources	Knowledge	Vocabulary
1-EQ1	• Cultural tensions and changes of the 1970s and 1980s.	Teddi Holt on Feminism Jerry Falwell on Culture	Counterculture New Right Moral Majority Talk Radio/Cable Television Equal Rights Amendment	Admonish
2-EQ1	• Comparing Regan's social policies to those of his predecessors.	Regan's First Inaugural Address Johnson Great Society Speech	Liberal Conservative War on Drugs AIDS Epidemic Medicare Medicaid	
3-EQ2	• Comparing Regan's economic policies to those of his predecessors.	First Inaugural Address Johnson Great Society Speech Reaganomics SHEG Docs	Supply Side/Reaganomics Tax Cuts Budget Deficits National Debt Private Sector Clearinghouse on Corporate Responsibility?	
4	• Evaluate the degree to which American foreign policy changed under Regan.	Berlin Speech Kennedy Berlin Speech	Gorbachev Space Program	
5-EQ2	• I can compare and corroborate historical perspectives regarding the success of Reagan's policies.			
6	• I can participate in a seminar discussion with my peers to evaluate the extent to which the Conservative movement of the 1980s improved the lives of the American people. • I can draft a thesis and outline an argument			

	in response to a summative prompt.			
7	• I can draft a document based essay supporting a historical argument.			
8	• Assess/flex			
9	• Flex			

Unit 8: National Identity in a Digital Age

Overview

Relevant Standards: Bold indicates priority

- US.His.2.b. Assess the US response to human rights violations around the world (e.g., genocide, support for free elections, sanctions, humanitarian aid, funds for human rights organizations).
- US.His.2.c. Analyze the effectiveness of individual and group responses to public policies that they deem to be discriminatory.
- US.His.14.f. Analyze the multiple and complex causes and effects of the September 11th attacks on domestic and foreign policy.
- US.His.5.c. Analyze how the September 11th attacks shaped perspectives in the United States (e.g., views of Muslims and Sikhs, Department of Homeland Security, Transportation Security Administration, Patriot Act).
- US.Civ.10.a. Analyze the impact of personal perspectives in public debates about national security and individual liberties (e.g., 2nd Amendment, Obergefell v. Hodges, Dobbs v. Jackson Women's Health Organization, Sanctuary Cities, Dakota Access Pipeline).
- US.Eco.8.b. Describe domestic economic policies in terms of market outcomes (e.g., North American Free Trade Agreement, Electronic Benefit Transfer, Great Recession, Dodd-Frank Wall Street Reform and Consumer Protection Act, Puerto Rico Oversight, Management, and Economic Stability Act).
- US.Geo.12.a. Evaluate the effects of human-made and natural catastrophes on global trade, politics, and human migration in the United States (e.g., Hurricane Katrina, Flint water crisis, Deepwater Horizon oil spill, climate change, investments in green technology).
- US.Civ.14.b. Analyze the impact of multimedia on American politics and public discourse (e.g., 24-hour news cycle, echo chambers, social media algorithms, live streaming, trolls, deep fakes, artificial intelligence).

Overview

The final unit of the course examines questions of national identity since the 2000 election. The unit allows students to enter a national conversation regarding division and polarization in American society by examining the elections of three presidents and a major crisis each of them faced during their presidency. Students begin by learning about the elections of George Bush, Barack Obama, and Donald Trump, including each candidate's performance across multiple demographics in the popular vote, as well as the electoral college. Students then explore how each administration, and the public at large, reacted to a significant crisis. Students conclude by considering the impact of technology and social media in further uniting or dividing the country, equipping them to participate in the democratic process as critical consumers of information.

Essential Question(s):

- Has America grown more united since 2000?
    a. How have presidential elections united and divided American society?
    b. How have national crises united and divided American society?
    c. How has technology united and divided American society?

Enduring Understanding(s):

- EQ1 - Elections since 2000 have been incredibly close and fiercely contested, often illustrating significant divisions in American society. Despite these divisions, American institutions have consistently upheld the democratic process.
- EQ2 - American society has faced a number of significant challenges since the year 2000. Oftentimes Americans have banded together in response to threats or challenges, but in doing so have also sometimes highlighted divisions in American society, reinforcing "we/they" dynamics and excluding those deemed to be less American. The government has typically intervened in response to these challenges, but those interventions have been contentious in their own right.
- EQ3 - The rise of social media promised to/and allows for unprecedented connection across society. In many ways, Americans are more technologically connected than ever, but the 24 hour news cycle and social media have also created echo chambers that have further divided Americans with differing political allegiances/identities.

Demonstration of Learning:

- Write an argument that addresses the compelling question using specific claims and relevant evidence from historical sources while acknowledging competing views.
- Unit Exam

Connections to Prior Units:	**Connections to Future Units:**
• Students will have considered the theme of national unity twice in 8th grade. In that course, summative inquiries ask students to evaluate the extent to which the Constitution and the Civil War united the country. • Students will have previously studied the impact of threats and challenges on national unity in Unit 4. In that unit, students study ways in which the attack on Pearl Harbor, and WWII as a whole, impacted a shared sense of national identity.	•
Family Overview (link below)	**Pacing for Unit**
•	• 10 classes, 4 weeks

Integration of Technology:	**Aligned Unit Materials, Resources, and Technology:**
• Use of google docs is recommended throughout the writing process to facilitate drafting, feedback, collaboration, and revision.	• Textbook • Primary/secondary sources listed below
Opportunities for Interdisciplinary Connections:	**Anticipated misconceptions:**
•	•
Differentiation through *Universal Design for Learning*	
UDL Indicator • CHECKPOINT 3.4 Maximize transfer and generalization	**Teacher Actions:** • Provide scaffolds that connect new information/texts to prior knowledge and anchor texts studied over the course of the year • Embed new ideas/texts in familiar ideas and contexts studied throughout the year • Provide explicit, supported opportunities to generalize learning to new situations by reflecting on essential questions over the duration of the course • Offer opportunities over time to revisit key ideas and linkages between texts
Supporting Multilingual/English Learners	
Related *CELP standards:* • 9-12.9 An EL can . . . create clear and coherent grade-appropriate speech and text.	**Learning Targets:** • Level 1: With prompting and supports, communicate basic information about elections since 2000. • Level 2: With prompting and supports, introduce and explain a sequence of elections since 2000, providing facts about the popular vote • Level 3: With guidance and supports, introduce and explain a sequence of elections since 2000, providing facts about the popular vote and using common transitional phrases • Level 4: Introduce and develop a detailed account of elections since 2000, using a variety of complex transitions to link major sections of the text. • Level 5: Introduce and effectively develop a detailed account of elections since 2000, using a variety of complex transitions to link major sections of the text and clarify relationships between ideas..

Unit 8: National Identity in a Digital Age

Lesson Map

Lesson	Learning Targets	Sources	Knowledge	Vocabulary
1-EQ1	• Determine what presidential election results since 2000 indicate about national identity.	Popular vote counts Electoral college results Demographic breakdowns Op Ed Articles	Bush v Gore (2000) Obama v McCain (2008) Trump v Clinton (2016)	
2-EQ2	• I can describe the causes of the September 11th attacks, the government's response, and evaluate the impact on American society.	Bush approval ratings Polling Op Ed Articles	War in Afghanistan Invasion of Iraq Views of Muslims and Sikhs, Dept. of Homeland Security, Patriot Act	
3-EQ2	• I can describe the Great Recession, the government's response, and evaluate the impact on American society.	Obama approval ratings Polling Op Ed Articles	Great Recession Dodd-Frank Wall Street Reform Consumer Protection Act Affordable Care Act	
4-EQ2	• I can describe the Coronavirus Pandemic, the government's response, and evaluate the impact on American society.	Trump approval ratings Polling Op Ed Articles	Vaccination Quarantine Restrictions “Muslim Ban” Executive Order 13769	
5-EQ3	• I can analyze the impact of multimedia on American politics and public discourse		24-hour news cycle Echo chambers Social media algorithms,	
6	• I can participate in a seminar discussion with my peers to evaluate whether American Society has grown more divided since the 2000 election. • I can draft a thesis and outline an argument in response to a summative prompt.			

7	• I can draft a document based essay supporting a historical argument.			
8	• I can revise a prior essay to strengthen my historical argument.			
9	• Assess/flex			
10	• Flex			

Standard Matrix

		Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8
US.Inq.1.a.	Explain how compelling and supporting questions reflect an enduring issue in United States History.	S	S	S	S	S	S	S	S
US.Inq.1.b.	Explain how supporting questions contribute to an inquiry and how new compelling and supporting questions merge when engaging sources that represent varied perspectives.	S	S	S	S	S	S	S	S
US.Inq.1.c.	Determine the kinds of sources that will be helpful in answering compelling and supporting questions, taking into consideration multiple points of view represented in the sources, the types of sources available, and the potential uses of the sources.	S	S	S	S	S	S	S	S
US.Inq.2.a.	Apply disciplinary knowledge and practices to demonstrate an understanding of United States history content.	P	P	P	P	P	P	P	P
US.Inq.3.a.	Gather relevant information from multiple sources representing a wide range of views and mediums while using the origin, authority, structure, context, and corroborative value to guide the selection of credible sources.	P	P	P	P	P	P	P	P
US.Inq.3.b.	Organize and prioritize evidence directly and substantively from multiple sources in order to develop or strengthen claims (e.g., detect inconsistencies).	P	P	P	P	P	P	P	P
US.Inq.3.c.	Refine claims and counterclaims by pointing out strengths and limitations of arguments and explanations (e.g., precision, significance, knowledge conveyed).	P	P	P	P	P	P	P	P
US.Inq.4.a.	Construct arguments using precise and knowledgeable claims, with evidence from multiple sources, while acknowledging counterclaims and evidentiary weaknesses.	P	P	P	P	P	P	P	P
US.Inq.4.b.	Construct explanations using sound reasoning, correct sequence, relevant examples, and pertinent details to contextualize evidence and arguments (e.g., chronology, causation, procedure).	S	S	S	S	S	S	S	S
US.Inq.4.c.	Critique historical arguments and explanations while acknowledging the strengths and weaknesses given the purpose and audience (e.g., credibility, bias, reasoning, sequencing, details).			S				S	

US.Inq.4.d.	Present arguments and explanations that feature evocative ideas and multiple perspectives about United States History topics to reach a range of audiences and venues outside the classroom using print, oral, and digital technologies.								
US.Inq.4.e.	Analyze the characteristics and causation of national problems issues, both past and present, using a multidisciplinary lens.			S				S	S
US.Inq.4.f.	Evaluate and implement strategies for individual and collective action to address national problems in classrooms, schools, and out-of-school civic contexts.								
US.His.16.a	Analyze the political, economic, and social agency demonstrated by Black Americans throughout the period of Reconstruction using evidence from multiple relevant historical sources (e.g., Black Republicans, Historically Black Colleges and Universities, Edisto Island).								
US.Civ.13.a	Evaluate intended and unintended outcomes of Reconstruction plans and policies in terms of rebuilding a shared national identity (e.g., moderate and radical Republicans, Compromise of 1877, Freedmen's Bureau, Reconstruction Treaties).								
US.Civ.5.a.	Evaluate the effectiveness of state and federal government in upholding the Reconstruction Amendments (e.g., Black Codes, Enforcement Acts, Jim Crow laws).								
US.Civ.14.a.	Analyze the historical context of racism, racial violence, and challenges to reconciliation between the United States and the former Confederacy.								
US.His.7.a.	Explain how contemporary perspectives of Reconstruction are shaped by political and social attitudes.								
US.His.4.a.	Analyze complex and interacting factors that influenced the strategies for Black social and economic progress in the late 19th and early 20th centuries (e.g., Booker T. Washington, W. E. B. Du Bois, Ida B. Wells, Mary Townsend Seymour).	P							
US.His.12.a.	Develop questions about the rise of nativism and assimilation efforts of immigrants and Indigenous peoples (e.g., Punjabi Migration, Indian Boarding Schools, Chinese Exclusion Act, Rock Spring Massacre, 1907 Bellingham Riots, Immigration Act of 1917).	P							
US.Eco.12.a.	Evaluate the impact of laissez-faire economic policies regarding corporate decision making, labor conditions, and public advocacy in the Gilded Age (e.g., monopoly, captains of industry, muckrakers, social Darwinism, labor unions).	P							
US.His.10.a.	Describe how individual and group perspectives about gender and sexuality in the late 19th and early 20th centuries are documented in historical records while noting possible limitations (e.g., We'wha, Vaudeville, bicycles, women's suffrage and education).	P							
US.His.1.a.	Evaluate how the Progressive Era is a result of immigration and industrialization (e.g., anti-lynching, Settlement House Movement, improved working conditions, childrens' rights).	P							

US.Civ.12.a.	Analyze how people in the Progressive Era used and challenged laws to advance social, political, economic, and environmental reforms (e.g., Populist Party, B'nai B'rith, National Woman Suffrage Movement, Sierra Club, Niagara Movement, Socialist Party of America).	P							
US.His.1.b.	Evaluate the role of the media in shaping public opinions and debates about America's emergence as an imperial power (e.g., muckrakers, yellow journalism, propaganda).		P						
US.His.4.b.	Analyze how economic and cultural hegemony influenced American perspectives of imperialism at the end of the 19th century (e.g. Cuba, Puerto Rico, Spanish American War, Annexation of Hawaii and Philippines, dispossession of Latino American lands in the American West).		P						
US.His.14.a.	Analyze the causes and effects of United States involvement in WWI (e.g., threats to United States neutrality, support for democracy, suppression of civil liberties, debate over the League of Nations and the United States role in global affairs).		P						
US.His.14.b.	Analyze how advancements in warfare impacted military personnel and civilians (e.g., aircraft, artillery, chemical weapons, land mines, trench warfare, shell shock).		S						
US.His.16.b.	Evaluate the juxtaposition between celebration of wartime service in World War I and the discrimination faced by individuals and groups using evidence from multiple historical sources (e.g., European, Latino, Indigenous, and Black service members, Thind v. United States).		P						
US.His.4.c.	Analyze how racism and nativism shaped perspectives about individuals and groups and influenced government policy (e.g., Red Summer, Sacco Vanzetti, eugenics movement, immigration acts in the 1920s, Angel Island, Ku Klux Klan).		P	P					
US.His.4.d.	Analyze complex and interacting factors that influenced a debate over national identity in the United States in the 1920s (e.g., Scopes Trial, Jazz, flappers, Immigration Act of 1924, Marcus Garvey, mass media and advertising).			P					
US.Civ.2.a.	Analyze the role of citizens in advocating for and ratifying the 19th Amendment to the United States Constitution (e.g., Ida B. Wells, Alice Paul, Anna Bernard Shaw, Helena Hill Weed, Frank B. Brandegee).	P							
US.His.14.c.	Analyze the causes and effects of the Great Migration (e.g., Jim Crow laws, racial terrorism, emergence of urban Black cultural centers, resurgence of Islam).			P					
US.His.6.a.	Analyze how authors, artists, and musicians documented perspectives and experiences of individuals and groups throughout the interwar period (e.g., Jacob Lawrence, Dorthea Lange, Langston Hughes, Billie Holiday, Yasuo Kuniyoshi, Magdalena Carmen Frida Kahlo y Calderón).			S					
US.His.12.b.	Develop questions to investigate the causes and effects of the Great Depression using multiple historical sources.			P					

US.Eco.3.a.	Analyze the ways in which government incentives and personal motivation influenced production and distribution under New Deal policies (e.g., Agricultural Adjustment Act, Tennessee Valley Authority Act, Civilian Conservation Corps, Federal Housing Administration).			P					
US.Eco.6.a.	Explain potential approaches to stabilize markets in response to the Great Depression (e.g., plans by Herbert Hoover, Franklin D. Roosevelt, Huey Long, and the American Communist Party).			P					
US.Eco.8.a.	Describe the possible consequences, both intended and unintended, of government policies to address social and economic problems during the Great Depression (e.g., role of the Federal government, banking practices, inequitable access to benefits, migration, environmental impacts, social safety net).			P					
US.His.1.c.	Evaluate the role of economic and political developments that created the conditions leading to WWII and the Holocaust (e.g., Great Depression, nationalism, militarism).				P				
US.His.16.c.	Develop arguments about the juxtaposition between the United States' founding ideals and actions of the Federal government during World War II using evidence from multiple relevant sources (e.g., Japanese- American Internment, Holocaust intervention, Braceros Program, Fair Employment Practices Act, segregated regiments, women in the military).				P				
US.His.16.d.	Describe the achievements and contributions of diverse individuals and groups during World War II using evidence from historical sources (e.g., Women Accepted for Volunteer Emergency Service, Tuskegee Airman, Navajo Code Talkers, 442 Japanese-American regiment, 158th Regimental Combat Team).				P				
US.His.1.d.	Evaluate how the demand for labor on homefront in World War II shaped gender roles (e.g., mobilization, victory gardens, rationing, War Production Board).				P				
US.His.1.e	Evaluate the United States government's complex responses to the Holocaust while recognizing the history of antisemitism in both historical and contemporary contexts (e.g., Voyage of the St. Louis, lack of response to the Final Solution, Nuremberg Trials).					S			
US.His.14.d.	Analyze the multiple and complex causes and effects of the nuclear age (e.g., Manhattan Project, Hiroshima, Nagasaki, Operation Paperclip, nuclear proliferation, Strategic Arms Limitations Treaties, atomic culture, Three Mile Island accident).					P			
US.His.14.e.	Evaluate the impact of foreign policy and military intervention in upholding the United States' founding ideals during the Cold War (e.g., Truman Doctrine, Marshall Plan, North Atlantic Treaty Organization, Warsaw Pact, Korea, Cuba, Chile, Vietnam).					P			
US.His.1.f.	Evaluate how the Korean and Vietnam Wars were products of the geopolitical contexts of the Cold War.					P			
US.His.5.a.	Analyze how heightened domestic tensions and claims about perceived threats to democratic values led to widespread civil rights violations (e.g., House Un-American Activities Committee,					P			

	Hollywood Ten, Lavender Scare, treatment of Civil Rights and anti-Vietnam War activists, televised news).								
US.Eco.13.a.	Explain why investments in infrastructure and industry expanded consumer culture and increased standards of living in the United States (e.g., housing access, mass production, urbanization, utilities).				P				
US.His.16.e.	Develop a reasoned argument about the role of the United States government in providing access to fair and open housing using multiple relevant sources (e.g., Federal Housing Administration, Servicemen's Readjustment Act of 1944, Levittown, redlining, Interstate Highway System).				P				
US.His.5.b.	Analyze the role of popular culture, subculture, and counterculture in shaping public perception of national identity during the post-World War II era (e.g., Beat Generation, Rock and Roll, Motown, Jazz, Hippies, television sitcoms, Hollywood films).						P		
US.His.15.a.	Identify both long term causes and triggering events to develop historical arguments about efforts to abolish legalized racial segregation, discrimination, and disenfranchisement (e.g., Southern Christian Leadership Conference, Black Panther Party, Student Nonviolent Coordinating Committee, American Jewish Congress, American Indian Movement, United Farm Workers, Congress of Racial Equality).						P		
US.Civ.5.b.	Evaluate the effectiveness of individuals, groups, and institutions in addressing issues of civil rights and justice in the post-World War II era (e.g., disability, education, environmental justice, LGBTQ+ rights, poverty, racial and gender equity, voting access).						P		
US.Civ.5.c.	Analyze the role of legislative and judicial decisions in expanding or limiting civil liberties (e.g., Hernandez v. Texas, Executive Order 10450, Loving v. Virginia, Civil Rights Act of 1964, Voting Rights Act of 1965, Title IX of the Education Amendments Act of 1972, Roe v. Wade).						P		
US.His.11.a.	Determine the usefulness of historical sources to support an inquiry about the causes, escalation, and public reaction to the Vietnam War based on their maker, origin, intended audience, and purpose (e.g., art, ephemera, film, government reports, media, music).						P		
US.His.1.g.	Evaluate whether the conservative ascendency of the 1980s was a reaction to social and economic change and to what extent it was consistent with broader historical trends (e.g., New Right, Watergate, energy crisis, Reaganomics).							P	
US.His.1.h.	Evaluate how popular culture in the 1970s and 1980s promoted and reflected hyper-consumerism, racial tension, women's empowerment, and the Cold War.							P	
US.His.2.a	Analyze how innovations in the application of technology contributed to cultural and political diffusion (e.g., televangelism, Music Television, personal computing, Hip Hop music, cable television, political talk radio).							P	

US.His.15.b.	Develop an argument about the long-term causes and triggering events of United States foreign policies designed to contain and dismantle communism (e.g., Iran Hostage Crisis, El Salvador, Nicaragua, Iran-Contra, Afghanistan).							P	
US.Geo.3.a.	Analyze changing spatial patterns of cultural enclaves within and among United States regions using paper-based and electronic graphic techniques (e.g., Jamaican, Puerto Rican, Bosnian, Vietnamese, Sikh, Mexican, Cuban, Muslim).							S	
US.Civ.13.b.	Evaluate United States policies to address public safety in terms of intended and unintended outcomes, and related consequences (e.g., War on Drugs, “America Responds to AIDS” public information campaign, Immigration Reform and Control Act).							P	
US.His.2.b.	Assess the US response to human rights violations around the world (e.g., genocide, support for free elections, sanctions, humanitarian aid, funds for human rights organizations).								S
US.His.2.c.	Analyze the effectiveness of individual and group responses to public policies that they deem to be discriminatory.								S
US.His.14.f.	Analyze the multiple and complex causes and effects of the September 11th attacks on domestic and foreign policy.								P
US.His.5.c.	Analyze how the September 11th attacks shaped perspectives in the United States (e.g., views of Muslims and Sikhs, Department of Homeland Security, Transportation Security Administration, Patriot Act).								P
US.Eco.8.b.	Describe domestic economic policies in terms of market outcomes (e.g., North American Free Trade Agreement, Electronic Benefit Transfer, Great Recession, Dodd-Frank Wall Street Reform and Consumer Protection Act, Puerto Rico Oversight, Management, and Economic Stability Act).								P
US.Geo.12.a	Evaluate the effects of human-made and natural catastrophes on global trade, politics, and human migration in the United States (e.g., Hurricane Katrina, Flint water crisis, Deepwater Horizon oil spill, climate change, investments in green technology).								S
US.Civ.10.a.	Analyze the impact of personal perspectives in public debates about national security and individual liberties (e.g., 2nd Amendment, Obergefell v. Hodges, Dobbs v. Jackson Women's Health Organization, Sanctuary Cities, Dakota Access Pipeline).								P
US.Civ.14.b.	Analyze the impact of multimedia on American politics and public discourse (e.g., 24-hour news cycle, echo chambers, social media algorithms, live streaming, trolls, deep fakes, artificial intelligence).								P

Course Title:	Content Area:	Grade Level:	Credit (if applicable)
Introduction to Computer Aided Design	CTE: Engineering and Technical Sciences	9-12	0.5

Course Description:

This introductory course in Computer-Aided Design (CAD) provides students with fundamental knowledge and skills essential for creating, designing, and manipulating digital models in a professional engineering and design environment. The course is structured into three units of instruction: Parts, Technical Drawing, and Assemblies. Each unit focuses on key aspects of CAD, offering hands-on experience and practical applications to reinforce learning objectives. Throughout the course, students will engage in a combination of lectures, demonstrations, practical exercises, and project-based learning activities to reinforce theoretical concepts and develop practical CAD skills. By the end of the course, students will have acquired a solid foundation in CAD fundamentals, enabling them to create accurate parts, technical drawings, and assemblies essential for engineering and design applications.

Aligned Core Resources:	Connection to the ***BPS Vision of the Graduate***
	CRITICAL THINKING AND PROBLEM SOLVING • Collect, assess and analyze relevant information • Reason effectively. Use systems thinking • Make sound judgments and decisions. • Identify, define and solve authentic problems and essential questions. • Reflect critically on learning experience, processes and solutions • Transfer knowledge to other situations
Additional Course Information: ***Knowledge/Skill Dependent courses/prerequisites***	**Link to *Completed Equity Audit***

Standard Matrix

Advance CTE Standard	Unit 1	Unit 2	Unit 3
ESS01.03: Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities. • Comprehend key elements of oral and written information such as cause/effect, comparisons/contrasts, conclusions, context, purpose, charts /tables/graphs, evaluation/critiques, mood, persuasive text, sequence, summaries, and technical subject matter. • Evaluate oral and written information for accuracy, adequacy/sufficiency, appropriateness, clarity, conclusions/solutions, fact/opinion, propaganda, relevancy, validity, and relationship of ideas.	X	X	X

ESS01.03: Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career Opportunities. ● Apply data and measurements to solve a problem.	X	X	
ESS02.01: Select and employ appropriate reading and communication Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice. ● Demonstrate use of content, technical concepts and vocabulary when analyzing information and following directions. ● Interpret information, data, and observations to apply information learned from reading to actual practice. ● Transcribe information, data, and observations to apply information learned Transcribe information, data, and observations to apply information learned from reading to actual practice. ● Communicate information, data, and observations to apply information learned from reading to actual practice	X	X	X
ESS02.02 Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace. ● Record information needed to present a report on a given topic or problem.			X (optional activity)
Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants. ● Organize information to use in written and oral communications.		X	X
ESS02.04 Evaluate and use information resources to accomplish specific occupational tasks. ● Use informational texts, Internet web sites, and/or technical materials to review and apply information sources for occupational tasks.		X	X
ESS02.06 Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.			X (optional activity)
ESS02.09 Develop and interpret tables, charts, and figures to support written and oral communications. ● Interpret tables, charts, and figures used to support written and oral communication.		X	X
ESS03.01 Employ critical thinking skills independently and in teams to solve problems and make decisions (e.g., analyze, synthesize and evaluate). ● Analyze elements of a problem to develop creative solutions. ● Use structured problem-solving methods when developing proposals and solutions. ● Critically analyze information to determine value to the problem-solving task.	X	X	X
ESS03.04 Conduct technical research to gather information	X	X	X

necessary for decision-making. ● Gather technical information and data using a variety of resources.			
ESS04.10 Employ computer operations applications to manage work tasks. ● Manage computer computer operations. ● Manage file storage. ● Compress or alter files.	X	X	X
ESS04.11 Use computer-based equipment (containing embedded computers or processors) to control devices. ● Operate computer driven equipment and machines.	X	X	X
Implement quality control systems and practices to ensure quality products and services. ● Describe quality control standards and practices common to the workplace.		X	X
MNPB04.01 Employ production process audits and inspections to maintain quality and encourage continuous improvement. ● Check calibration of gauges and other data collection equipment.	X	X	
MNPB05.01 Communicate with co-workers and/or external customers to ensure production meets business requirements. ● Communicate material specifications and delivery schedules in a timely and accurate manner.		X	
ACC01.01 Perform math operations such as estimating and distributing materials and supplies to complete jobsite/workplace tasks. ● Use basic math functions to complete jobsite/workplace tasks. ● Use geometric formulas to determine areas and volumes of various structures. ● Use appropriate formulas to determine ratios, fractions, and proportion measures. ● Use appropriate formulas to determine measurements of dimensions, spaces and structures. ● Conceptualize a three-dimensional form from a two-dimensional drawing to visualize proposed work.	X	X	X
ACC03.02 Evaluate and adjust design and construction project plans and schedules to respond to unexpected events and conditions. ● Identify and assess critical situations as they arise to resolve issues.			X
ACC10.01 Read, interpret, and use technical drawings, documents, and specifications to plan a project. ● Interpret drawings used in project planning. ● Recognize how specifications and standards are arranged for proper access. ● Use the architect's plan, manufacturer's illustrations and other materials to communicate specific data and visualize proposed work.	X	X	

ACPA06.01 Develop technical drawings drafted by hand and computer generated plans to design structures. ● Draw and sketch by hand to communicate ideas effectively ● Learn to read and produce technical drawings, understanding the significance of each line in a drawing.	X	X	X
ACPA06.02 Employ appropriate representational media to communicate concepts and design. ● Convey graphic information using multi-dimensional drawings. ● Build models using referenced drawings and sketches. ● Utilize computer technology when communicating concepts and designs.	X	X	X

Unit Links

If unit headings are formatted as a heading, then we can link a Table of Contents to better organize and provide faster access to each unit

Parts
Technical Drawings
Assemblies

Unit Title:
Parts
Unit Summary and Relevant Standards: Bold indicates priority
In this unit, students will learn the foundational principles of creating 3D parts using CAD software. Topics covered include sketching, extrusion, revolve, fillets, chamfers, patterns, and feature-based modeling. Through guided exercises and projects, students will develop proficiency in generating precise and complex part models, applying geometric constraints, and understanding parametric modeling techniques. ESS01.03; ESS02.01; ESS03.01; ESS03.04; ESS04.10; ESS04.11; MNPB04.01; ACC01.01; ACPA06.01; ACPA06.02; ACC10.01

Essential Question(s):	**Enduring Understanding(s):**
• What is an isometric view/drawing? • How do I create a part file? • How do I add depth to a part file? • How are isometric views used in industry?	• **Basics of CAD software**: Students should have a solid understanding of how to navigate and use CAD software. This includes knowledge of tools for drawing, editing, and viewing objects in 2D and 3D. • **Understanding 2D drawings**: Before moving onto isometric views, students should be proficient in creating and interpreting 2D drawings. This includes understanding orthographic projections (top, front, side views) and basic drafting principles. • **Introduction to 3D modeling**: Students need to grasp the concept of creating three-dimensional objects within CAD software. This involves learning how to create basic shapes, extrude, revolve, and manipulate objects in three dimensions. • **Isometric projection**: Isometric projection is a method of representing three-dimensional objects in two dimensions. Students should understand the principles of isometric projection, including the angles used (typically 30 degrees from the horizontal) and how it differs from other types of projections like orthographic. • **Isometric drawing tools**: CAD software often provides specific tools for creating isometric views. Students should learn how to use these tools to accurately create and manipulate objects in isometric projection. • **Visualization skills**: Developing the ability to visualize objects in three dimensions from 2D representations is crucial for working with isometric views. Students should practice mentally rotating and manipulating objects to understand their spatial relationships. • **Dimensioning and annotations**: Students should learn how to add dimensions and annotations to isometric drawings to communicate important information such as size, scale, and angles accurately.

	• **Practice and application**: Like any skill, proficiency in creating and interpreting isometric views comes with practice. Students should engage in exercises and projects that require them to create and work with isometric drawings in various contexts.
Demonstration of Learning:	**Pacing for Unit**
Part development projects (11)	6 Weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
CAD, isometric, planes, part, axis, baseline, caliper, micrometer, orientation, sketch tools, 3D modeling tools, views, angular degrees, vertical, horizontal	Autodesk Inventor
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Expression and Communication: Use multiple tools for construction and composition; Build fluencies with graduated levels of support for practice and performance	• Provide Computer-Aided-Design (CAD), music notation (writing) software, or mathematical notation software • Use web applications (e.g., wikis, animation, presentation) • Provide differentiated models to emulate (i.e. models that demonstrate the same outcomes but use differing approaches, strategies, skills, etc.) • Provide scaffolds that can be gradually released with increasing independence and skills (e.g., embedded into digital reading and writing software) • Provide differentiated feedback (e.g., feedback that is accessible because it can be customized to individual learners) • Provide multiple examples of novel solutions to authentic problems
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**

An EL can determine the meaning of words and phrases in oral presentations and literary and informational text.
I can create a part file using CAD software.
• **Level 1:**
  ○ With support and guidance, I can use a special computer program (CAD) to make a drawing of a single piece.
  ○ I will follow step-by-step instructions to create the drawing using simple words and phrases.
  ○ I will recognize some new words related to CAD as I work.
• **Level 2**:
  ○ With support and guidance, I can use a special computer program (CAD) to make a drawing of a single piece.
  ○ I will use some words I hear a lot and some new words I'm learning, especially the ones related to the things I'm drawing.
• **Level 3**:
  ○ With guidance, I can utilize a specialized computer program (CAD) to generate a drawing of a single part.
  ○ I will incorporate CAD-specific vocabulary words and phrases into both my spoken and written communication.
• **Level 4:**
  ○ With limited guidance, I can effectively utilize CAD software to create detailed drawings of individual components.
  ○ I will incorporate complex CAD-specific terminology into both oral and written communication.
• **Level 5:**
  ○ I can adjust my language choices and writing style to precisely match the purpose, task, and audience while using CAD software to create detailed part drawings.	

○ I will employ a wide variety of complex general academic and CAD-specific terms and phrases in both spoken and written communication.		
Lesson Sequence	**Learning Target**	**Success Criteria/Assessment/Resources**
1 What is an isometric view/drawing?	I can create and explain the features of an isometric view.	• I can define the orientation of an isometric drawing. • I can sketch an isometric diagram on paper using a 30-60-90 triangle. • I can define the orientation of the X, Y and Z axis. • I can define the sides/planes of an isometric figure
2 How do I create a part file?	I can create a part file using CAD software.	• I can pick the appropriate template for part creation. • I can select the appropriate sketch plane (XY); (YZ); (XZ) to initiate part creation. • I can utilize the view cube and navigation bar to adjust part orientation. • I can utilize the appropriate sketch tools (i.e. line, rectangle, offset, trim, etc). • I can finalize a sketch.
3 How do I add depth to a part file?	I can use 3D modeling tools to create an Isometric.	• I can utilize the appropriate 3D modeling tools (i.e extrude, revolve, shell, fillet, chamfer etc) to add applicable features to the part.
4 How are isometric views used in industry?	I can explain why isometric views allow a engineer, manufacturer or end-user a 3 dimensional understanding of the part being created	• I can properly create an isometric view so that it can be accurately referenced by the manufacturer.

Unit Title:
Technical Drawings
Unit Summary and Relevant Standards: Bold indicates priority
The second unit introduces students to the principles of technical drawing and annotation within the CAD environment. Students will learn how to create detailed 2D drawings from 3D models, including orthographic projections, dimensioning, section views, and annotations. Emphasis will be placed on adhering to industry standards and conventions, such as ANSI, ISO, or ASME, to communicate design intent effectively. ESS01.03; ESS02.01; ESS02.03; ESS02.04; ESS02.09; ESS03.01; ESS03.04; ESS04.10; ESS04.11; MNC10.01; MNPB04.01; MNPB05.01; ACC01.01; ACPA06.01; ACPA06.02; ACC10.01

Essential Question(s):	**Enduring Understanding(s):**
• What are the components of a technical drawing? • What are the dimensioning/annotation standards for technical drawings? • How do you create a technical drawing using CAD software? • How are drawing sheets used in industry?	• **CAD software basics**: Students should become familiar with the user interface, commands, and tools available in the CAD software they are using. • **Drawing setup**: Understanding how to set up drawing templates, including title blocks, units, scales, and layers, is essential for creating standardized technical drawings. • **Geometry creation**: Proficiency in creating and modifying basic geometric shapes such as lines, circles, arcs, polygons, and ellipses is fundamental to creating technical drawings. • **Dimensioning**: Students need to learn how to add dimensions accurately to their drawings, including linear dimensions, angular dimensions, radial dimensions, and ordinate dimensions. • **Text and annotations:** Students should understand how to add text, labels, symbols, and other annotations to convey important information on their technical drawings. • **Orthographic projection:** Understanding orthographic projection principles, including creating and aligning multiple views (e.g., front, top, side views), is crucial for accurately representing three-dimensional objects in two dimensions. • **Section views and detail views**: Students should learn how to create section views to show internal features of objects and detail views to magnify specific areas of interest within a drawing. • **Symbols and standards:** Familiarity with industry-standard symbols, abbreviations, and drawing conventions (such as ANSI, ISO, or ASME standards) is essential for creating professional-quality technical drawings. • **Plotting and printing:** Knowing how to set up plot configurations, scale drawings for printing, and create PDF or physical prints is necessary for sharing technical drawings with others.

	• **File management:** Understanding how to organize and manage CAD files, including naming conventions, file formats, and version control, helps students maintain an efficient workflow and collaborate effectively. • **Practice and application:** Regular practice and application of CAD skills through exercises, projects, and real-world applications are essential for students to develop proficiency in creating technical drawings using CAD software.
Demonstration of Learning:	**Pacing for Unit**
Variety of Projects	6 Weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Technical drawing, drawing sheets, dimensions, annotation, multiview, isometric, orthographic, sectional, auxiliary, extension lines, leader lines, hidden lines, center lines, object lines, construction lines, cutting plane, hidden features	Autodesk Inventor
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Expression and Communication: Use multiple tools for construction and composition; Build fluencies with graduated levels of support for practice and performance	• Provide Computer-Aided-Design (CAD), music notation (writing) software, or mathematical notation software • Use web applications (e.g., wikis, animation, presentation) • Provide differentiated models to emulate (i.e. models that demonstrate the same outcomes but use differing approaches, strategies, skills, etc.) • Provide scaffolds that can be gradually released with increasing independence and skills (e.g., embedded into digital reading and writing software) • Provide differentiated feedback (e.g., feedback that is accessible because it can be customized to individual learners) • Provide multiple examples of novel solutions to authentic problems
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
An EL can determine the meaning of words and phrases in oral presentations and literary and informational text. **I can pick the appropriate drawing template and place views to convey information needed to create a part.** • **Level 1:** ○ With guidance and assistance, I can select the correct drawing template and arrange views to communicate the necessary information for creating a part. ○ I will use words and phrases commonly heard and understood. ○ I will also recognize the meaning of some new words learned through conversations, reading, and listening to instructions. • **Level 2**: ○ With guidance and assistance, I can select the correct drawing template and arrange views to convey the necessary information for	

creating a part.
    - I will adjust my language choices to match the task and audience, demonstrating developing control.
    - I will use some commonly heard general academic and CAD-specific words in conversations and discussions related to the task.
- **Level 3**:
    - With guidance and support, I can select the appropriate drawing template and arrange views to effectively convey the necessary information for creating a part.
    - I will adapt my language choices and writing style to suit the purpose, task, and audience, demonstrating developing ease.
    - I will incorporate an increasing number of general academic and CAD-specific words and expressions in both speech and written text.
- **Level 4:**
    - I can select the suitable drawing template and arrange views to effectively communicate the required information for creating a part.
    - I will adapt my language choices and writing style to match the purpose, task, and audience.
- **Level 5:**
    - I can select the suitable drawing template and arrange views to effectively convey the required information for creating a part.
    - I will adapt my language choices and writing style with ease to match the purpose, task, and audience.
    - I will utilize a diverse range of complex and content-specific words and phrases.

Lesson Sequence	Learning Target	Success Criteria/Assessment/Resources
1 What are the components of a multiview drawing?	I can identify the major components of a multiview drawing.	• I can identify the positions of a front, right, top view and isometric on a drawing sheet • I can identify hidden features within each view on a drawing sheet • I can explain how a section view relays information about the hidden features of an object. • I can explain how an auxiliary view can be used to relay information about a face of an object.
2 How do you create a technical drawing using CAD software?	I can pick the appropriate drawing template and place views to convey information needed to create a part.	• I can pick the appropriate template for drawing creation • I can pick the appropriate sheet size needed based on design or printing constraints • I can use the appropriate tools to place necessary views (front/ top/ side/ isometric, sectional, etc) on a drawing sheet • I can use features (shading, hidden lines, etc) to convey details about a part • I can edit a title block to add pertinent information needed
3 What are the dimensioning/ annotation standards for technical drawings?	I can apply ANSI standards/guidelines when dimensioning an object.	• I can properly place dimensions within views on a drawing sheet • I can add dimension details (symbols/notes) within views on a drawing sheet • I can identify the different line types used to dimension on a drawing sheet
4 How are drawing sheets used in industry?	I can explain how drawings are the industry connection/ primary communication tool between the designer and the manufacturer.	• I can demonstrate that a properly created drawing can convey all the information needed to create a part

Unit Title:
Assemblies
Unit Summary and Relevant Standards: Bold indicates priority
In the final unit, students will explore the assembly modeling process, focusing on the integration and interaction of multiple parts to create complex assemblies. Topics covered include component hierarchy, constraints, mates, fasteners, interference detection, exploded views, and bill of materials (BOM). Through hands-on projects, students will develop skills in assembling, simulating motion, and documenting assemblies for manufacturing and visualization purposes. ESS01.03; ESS02.01; ESS02.02 ESS02.03; ESS02.04; ESS02.06; ESS02.09; ESS03.01; ESS03.04; ESS04.10; ESS04.11; MNC10.01; MNPB05.01; ACC01.01; ACC0302; ACPA06.01; ACPA06.02; ACC10.01

Essential Question(s):	**Enduring Understanding(s):**
• How do I use CAD assembly tools to combine multiple part files into a common assembly file? • How do you make part updates within an assembly? • How do I apply constraints to parts within an assembly? • How are assembly files used in industry? • *How do presentation files help show a working assembly (optional)?*	• **Part modeling:** Before assembling components, students should be proficient in creating individual parts using CAD modeling tools. This includes creating sketches, extruding, revolving, sweeping, and applying features to generate complex shapes. • **Component hierarchy:** Students need to understand the concept of component hierarchy within an assembly. This includes defining relationships between parts, such as mates, constraints, and alignments, to accurately position and connect components. • **Constraints and mates:** Learning how to apply constraints and mates is essential for assembling components in CAD. Constraints define how parts relate to each other geometrically, while mates specify how parts are positioned and oriented relative to one another. • **Assembly structure:** Students should grasp the structure of an assembly, including the organization of components within a hierarchical tree or list. This involves understanding how to create subassemblies, insert parts into assemblies, and manage assembly components efficiently. • **Interference detection:** Understanding how to detect and resolve interference between components is crucial for ensuring that the assembled product functions correctly. CAD software often provides tools for detecting and visualizing interferences, allowing students to identify and address potential issues. • **Assembly motion and animation:** Students may need to learn how to simulate assembly motion and create animations to visualize how components interact and move within the assembly. This involves defining motion constraints and creating motion paths to animate the assembly.

	• **Fasteners and joints:** Students should understand how to incorporate fasteners, such as screws, bolts, nuts, and joints, such as hinges and bearings, into assemblies. This includes selecting appropriate standard components from libraries or modeling custom fasteners as needed. • **Exploded views:** Learning how to create exploded views helps students communicate the assembly process visually by showing how components fit together and how they are assembled or disassembled step by step. • **Bill of Materials (BOM):** Understanding how to generate a bill of materials from an assembly is essential for documenting the components required to build the product. CAD software typically provides tools for automatically generating BOMs based on the components in the assembly. • **Collaboration and sharing:** Students should learn how to share and collaborate on assemblies with others, including methods for exchanging CAD files, managing revisions, and incorporating feedback from team members or stakeholders.
Demonstration of Learning:	**Pacing for Unit**
Various Projects	6 Weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Mates, constraints, assembly tools, presentation, exploded view, balloon notes	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Expression and Communication: Use multiple tools for construction and composition; Build fluencies with graduated levels of support for practice and performance	• Provide Computer-Aided-Design (CAD), music notation (writing) software, or mathematical notation software • Use web applications (e.g., wikis, animation, presentation) • Provide differentiated models to emulate (i.e. models that demonstrate the same outcomes but use differing approaches, strategies, skills, etc.) • Provide scaffolds that can be gradually released with increasing independence and skills (e.g., embedded into digital reading and writing software) • Provide differentiated feedback (e.g., feedback that is accessible because it can be customized to individual learners) • Provide multiple examples of novel solutions to authentic problems
Supporting Multilingual/English Learners	

Related *CELP standards:*	Learning Targets:

An EL can determine the meaning of words and phrases in oral presentations and literary and informational text.
Using CAD software, I can use the correct assembly constraints to assemble parts.

- **Level 1:**
  - With help, I can use CAD software to put parts together using the right rules.
- **Level 2**:
  - With support, the student will practice applying assembly constraints in CAD software to correctly assemble parts.
- **Level 3**:
  - I can apply assembly constraints in CAD software to assemble parts accurately without significant assistance.
  - I can articulate the assembly process, including the rationale behind selecting and applying specific assembly constraints, demonstrating proficiency in conveying technical information related to CAD assembly.
- **Level 4:**
  - I can apply assembly constraints in CAD software to assemble parts with a high degree of precision and accuracy, demonstrating proficiency in utilizing advanced features of the software.
  - I can articulate assembly procedures and rationale for constraint selection and implementation with clarity and coherence, effectively conveying technical concepts to peers or instructors.
- **Level 5:**
  - Using CAD software, I can use the correct assembly constraints to assemble parts.
  - I can communicate assembly procedures and rationale for constraint selection and implementation articulately, producing clear and comprehensive documentation that effectively conveys technical concepts to peers or instructors.

Lesson Sequence	Learning Target	Success Criteria/Assessment/Resources
1 How do I use CAD assembly tools to combine multiple part files into a common assembly file?	I can combine part files into one assembly.	• I can create an assembly file within a CAD program. • I can use the place feature within an assembly file to place parts.
2 How do I apply constraints to parts within an assembly?	I can use the correct assembly constraints to assemble parts.	• I can apply the applicable constraints (mate, revolute, slider, insert, etc) where needed when bringing parts together
3 How do you make part updates within an assembly?	I can identify mistakes within parts in an assembly and fix the part file so the assembly functions properly	• I can diagnose issues within an assembly, pinpointing the specific parts or features causing problems and understanding how these issues impact overall assembly functionality. • I can apply appropriate corrective measures to fix identified mistakes within part files, including adjusting dimensions, repositioning features, resolving constraints, or making other necessary modifications to ensure the assembly functions properly without compromising design integrity. • I can navigate to a part file to make necessary modifications and save for assembly updates.
4 How are assembly files used in industry?	I can explain how assemblies allow engineers, manufacturers and end users the physical relationships between components when put together.	• I can visually demonstrate the combining of parts to create an assembly • I can show others how an assembly gives more information about the makeup of a part.
5	I can explain how the use of a CAD	• I can articulate the purpose and benefits of using a

How do presentation files help show a working assembly? (optional)	presentation file can help engineers, manufacturers and end users visualize how numerous parts will interact when assembled.	CAD presentation file to visualize the interaction of numerous parts within an assembly, effectively communicating how it aids engineers, manufacturers, and end users in understanding the design and functionality of the final product. • I can use a presentation file to demonstrate the proper assembly and function of completed design

Course Title:	Content Area:	Grade Level:	Credit (if applicable)
Advanced Mathematical Decision Making	Advanced Mathematical Decision Making	11-12	1.0

Course Description:

This course is designed to challenge students to develop critical skills for success in college and careers. Students will be asked to investigate, research, collaborate with other classmates, write about their findings, and present solutions to problems in applied situations. They will work through mathematical topics, including statistics in the media, using functions to make decisions, managing data, network graphs, and understanding credit, debt and investments. Emphasis will be placed on modeling real world scenarios with mathematics so that students can become critical consumers of everyday data, knowledgeable decision makers, and mathematical thinkers who can solve problems related to a wide range of situations. **This course is an alternative to pre-calculus intended for college bound students.**

Aligned Core Resources:	Connection to the *BPS Vision of the Graduate*
Advanced Mathematical Decision Making Book from University of Texas Dana Center	CRITICAL THINKING AND PROBLEM SOLVING • Collect, assess and analyze relevant information • Reason effectively. • Use systems thinking • Make sound judgments and decisions. Identify, define and solve authentic problems and essential questions. • Reflect critically on learning experience, processes and solutions • Transfer knowledge to other situations
Additional Course Information: ***Knowledge/Skill Dependent courses/prerequisites***	**Link to *Completed Equity Audit***
Algebra 2	

Standard Matrix

Common Core State Standard for Mathematics	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
HS.A-REI.A.1: Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.	X				
HS.A-REI.A.2: Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.				X	
HS.G-MG.A.1: Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).					X
HS.G-MG.A.3: Apply geometric methods to solve design problems (e.g.,	X				X

designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).					
HS.G-SRT.C.8: Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.	X				
HS.N-Q.A.2: Define appropriate quantities for the purpose of descriptive modeling.	X				
HS.N-Q.A.3: Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.	X				
HS.S-CP.B.6: Calculate probabilities of compound events, using methods such as organized lists, tree diagrams, and area models.		X			
HS.S-IC.A.2: Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?		X			
HS.S-ID.A.1: Represent data with plots on the real number line (dot plots, histograms, and box plots).			X		
HS.S-ID.A.2: Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.			X		
HS.S-ID.A.3: Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).			X		
HS.S-ID.B.5: Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies).			X		

Unit Links

Analyzing Numerical Data
Probability
Statistical Studies
Decision Making in Finance
Networks and Graphs

Unit Title:	
Analyzing Numerical Data	
Relevant Standards: Bold indicates priority	
HS.N-Q.A.2; HS.N-Q.A.3; HS.A-REI.A.1; HS.G-SRT.C.8; HS.G-MG.A.1	
Essential Question(s):	**Enduring Understanding(s):**
How can differing strategies affect the results of a question?	The strategy used is dictated by assumptions made in the problem, which differ from person to person, resulting in potentially different answers to the same problem.
Demonstration of Learning:	**Pacing for Unit**
• Unit 1 Test • Fermi Project	18 Days (includes 1 flex day, 2 quizzes, test, and project)
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
aspect ratio, letterbox, pillarbox, weighted average, weighted sum, check digit, identification number, single-digit error, transposition error	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Engagement: Foster Collaboration and Community	• Create cooperative learning groups with clear goals, roles, and responsibilities • Provide prompts that guide learners in when and how to ask peers and/or teachers for help • Encourage and support opportunities for peer interactions and supports • Construct communities of learners engaged in common interests or activities • Create expectations for group work (e.g., rubrics, norms, etc.)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
An EL can construct grade appropriate oral and written claims and support them with reasoning and evidence.	I can make simplifying assumptions about a real-world situation to formulate and solve a hypothetical mathematical problem. • Level 1: With prompting support, I can explain my ideas about the assumptions for a problem

		• Level 2: With prompting support, I can make one assumption about a problem. • Level 3: With guidance, I can make assumptions about a problem • Level 4: I can make assumptions about a problem. • Level 5: I can use academic and domain specific vocabulary to make assumptions about a problem.
Lesson Sequence	**Learning Target**	**Success Criteria/Assessment/Resources**
1 Estimating Large Numbers (4.5 blocks)	I can use proportions and the fundamental counting principle to estimate large numbers. I can make simplifying assumptions about a real-world situation to formulate and solve a hypothetical mathematical problem.	SAS 1 & 2 • I can make simplifying assumptions about a real-world situation to formulate and solve a hypothetical mathematical problem. SAS 3 • I can use proportions and the fundamental counting principle to estimate large numbers.
2 Using Ratios (2.5 blocks)	I can understand and interpret aspect ratio in various settings. I can use proportional reasoning to solve problems involving ratios such as changing tires and selecting televisions.	SAS 4 • I can demonstrate comprehension of aspect ratio concepts. • I can apply understanding to interpret aspect ratio in different scenarios. SAS 5 • I can apply the concept of proportionality accurately, setting up and solving proportion equations to find missing values or determine relationships between quantities. • I can solve problems involving ratios in diverse contexts, such as problems related to rates, proportions, scales, or percentages.
3 Weighted Sums and Averages (1 block)	I can calculate and interpret weighted averages and weighted sums.	SAS 6 • I can calculate weighted averages. • I can interpret weighted averages.
4 Validating Identification Numbers (1 block)	I can determine the check digit of a Universal Product Code (UPC) identification number or a credit card number. I can analyze errors in recording UPC identification numbers or credit card numbers detected by the check digit method.	SAS 12 • I can determine the check digit of a universal product code identification number. • I can analyze errors in recording UPC identification numbers.

Unit Title:	
Probability	
Relevant Standards: Bold indicates priority	
HS.S-IC.A.2; HS.S-CP.B.6	
Essential Question(s):	**Enduring Understanding(s):**
How can Venn Diagrams, Tree Diagrams, and Area Models be used to inform decision making?	Venn Diagrams, Tree Diagrams, and Area Models can be used to show relationships among data. Venn diagrams easily display overlapping data in situations with bi-variate data; Tree Diagrams easily display number of choices with respective likeliness of being chosen; Area Models display data pictorially so that probability can be seen based on area.
Demonstration of Learning:	**Pacing for Unit**
• Unit 2 Test • Probability Project	14 blocks (includes 1 flex day, 1 quiz, test, and project)
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
area model, binomial probability, complement of a set, compound events, conditional probability, dependent events, equally likely, expected value, independent events, probability, sample space, tree diagram, Venn diagram, intersection, union	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Engagement: Foster collaboration and community	• Create cooperative learning groups with clear goals, roles, and responsibilities • Provide prompts that guide learners in when and how to ask peers and/or teachers for help • Encourage and support opportunities for peer interactions and supports • Construct communities of learners engaged in common interests or activities • Create expectations for group work (e.g., rubrics, norms, etc.)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
An EL can construct grade appropriate oral and written	Students explore the use of probabilities in everyday

claims and support them with reasoning and evidence.		situations such as playing computer games or selecting classes. ● Level 1: With prompting support, I can verbally express an opinion about probability in a situation ● Level 2: With prompting support, I can construct a claim about probability. ● Level 3: With guidance, I can provide evidence, reasons, or facts to support a claim. ● Level 4: I can provide logically ordered reasons or facts that effectively support the claim. ● Level 5: I can use academic and domain specific vocabulary to provide a conclusion that summarizes the results of a probability problem.
Lesson Sequence	**Learning Target**	**Success Criteria/Assessment/Resources**
1 Determining Probabilities (5 blocks)	I can analyze and construct representations of events, including tree diagrams, to determine conditional probabilities. I can construct venn diagrams and determine probabilities of compound events to make decisions about the risks involved in the situation. I can analyze and construct area models to determine the probabilities of events in order to make decisions about the risks involved in problem situations.	SAS 1 ● I can analyze Venn diagrams to explain events. ● I can construct a Venn diagram to represent an event. ● I can use a Venn diagram to determine conditional probabilities. SAS 2 ● I can analyze tree diagrams to explain events. ● I can construct a tree diagram to represent an event. ● I can use a tree diagram to determine conditional probabilities. SAS 3 ● I can analyze area models to explain events. ● I can construct area models to represent events. ● I can use an area model to define risks involved in a problem situation. SAS 4 ● I can determine conditional probabilities using a weighted tree diagram or other appropriate diagram.
2 Everyday Decisions Based on Probabilities (1 block)	I can explore the use of probabilities in everyday situations such as playing computer games or selecting classes. I can explore and make decisions and justify their decisions about the risk involved in the situation.	SAS 5 ● I can use probabilities to make decisions about the risk involved in the situation. ● I can justify my decisions with evidence and reasoning.
3 Expected Value (1 block)	I can calculate expected values to analyze payoffs in a variety of situations. I can apply my understanding of	SAS 10 ● I can calculate expected values to analyze payoffs. ● I can apply the understanding of expected values to determine the mathematical fairness of situations.

	expected values to determine the mathematical fairness of situations.	

Unit Title:	
Statistical Studies	
Relevant Standards: Bold indicates priority	
HS.S-ID.A.1; HS.S-ID.A.2; HS.S-ID.A.3; HS.S-ID.B.5	
Essential Question(s):	**Enduring Understanding(s):**
What makes a particular graph appropriate or inappropriate for displaying a set of data?	A specific type of graph may be chosen to represent a set of data based on its strengths/advantages in displaying that data – or, a graph may be chosen to represent data to serve a desired outcome (regardless of whether or not the graph is appropriate). *Note: advantages/disadvantages for each type of graph can be found in the teacher materials on pages III-98 through III-102.
Demonstration of Learning:	**Pacing for Unit**
• Unit Quiz • Misleading Graphs Project • Presidential Inquiry Project	10 blocks (including quiz and 2 projects)
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
distort, frequency, frequency table, interval width, skewness, bivariate, box-and-whisker plot, boxplot, categorical data, dotplot (line plot), five-number summary, outlier, quartile, univariate, measures of center/shape/spread	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Engagement: Foster Collaboration and Community	• Create cooperative learning groups with clear goals, roles, and responsibilities • Provide prompts that guide learners in when and how to ask peers and/or teachers for help • Encourage and support opportunities for peer interactions and supports • Construct communities of learners engaged in common interests or activities • Create expectations for group work (e.g., rubrics, norms, etc.)
Supporting Multilingual/English Learners	

Related *CELP standards:*		**Learning Targets:**
An EL can construct grade appropriate oral and written claims and support them with reasoning and evidence.		I can interpret a variety of graphical displays of statistical information. ● Level 1: With prompting support, I can verbally interpret a graphical display ● Level 2: With prompting support, I can construct a claim about a graphical display. ● Level 3: With guidance, I can use academic specific vocabulary to interpret a graphical display. ● Level 4: I can make conclusions about graphical displays. ● Level 5: I can use academic and domain specific vocabulary to construct a substantive claim about a variety of graphical displays.
Lesson Sequence	**Learning Target**	**Success Criteria/ Assessment/Resources**
1 Analyzing Data (4 blocks)	I can interpret a variety of graphical displays of statistical information. I can estimate center, shape, and unusual features of graphical displays and use these characteristics to describe distributions. I can analyze the appropriateness and usefulness of statistical graphical displays.	SAS 5 ● I can interpret a variety of graphical displays of statistical information. ● I can analyze the usefulness of a graphical display. SAS 6 ● I can estimate center, shape, spread, and unusual features of graphical displays. ● I can use these characteristics to describe distributions. ● I can analyze the usefulness of a graphical display.

Unit Title:	
Decision Making in Finance	
Relevant Standards: Bold indicates priority	
HS.A-REI.A.2	
Essential Question(s):	**Enduring Understanding(s):**
How do interest rates and payment affect the length of a loan (car, mortgage, credit card, etc.)?	The interest rate will affect what percentage of each payment made will go toward the interest earned and the principal. Higher payments will put more money toward paying off the principal, which will shorten the overall length of the loan.
Demonstration of Learning:	**Pacing for Unit**
• Unit Quiz • Magic of Compound Interest Project • Buying a House Project • Credit Cards Project	18 blocks (including 1 flex day, 1 quiz, and 3 projects)
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
compound interest, deposit, future value, initial value, investment, present value, principal, quarterly, semiannually, time value of money, actual interest rate, amortization, annual percentage rate, average daily balance, balloon payment, credit card, daily periodic rate, debit, down payment, effective annual rate, finance charge, lease	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Engagement: Optimize relevance, value, and authenticity	• Vary activities and sources of information so that they can be: ○ Personalized and contextualized to learners' lives ○ Culturally relevant and responsive ○ Socially relevant ○ Age and ability appropriate ○ Appropriate for different racial, cultural, ethnic, and gender groups • Design activities so that learning outcomes are authentic, communicate to real audiences, and reflect a purpose that is clear to the participants

	• Provide tasks that allow for active participation, exploration and experimentation • Invite personal response, evaluation and self-reflection to content and activities • Include activities that foster the use of imagination to solve novel and relevant problems, or make sense of complex ideas in creative ways
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
An EL can construct grade appropriate oral and written claims and support them with reasoning and evidence.	I can analyze real-world scenarios dealing with the future value and present value of an investment, present and discuss their conclusions, and synthesize the results into solutions to life lessons. • Level 1: With prompting support, I can find the present or future value of an investment. • Level 2: With prompting support, I can provide a concluding statement about the time value of money. • Level 3: With guidance, I can provide a concluding statement about the time value of money. • Level 4: I can make conclusions about the time value of money. • Level 5: I can use academic and domain specific vocabulary to construct a substantive claim about the time value of money.

Lesson Sequence	Learning Target	Success Criteria/ Assessment/Resources
1 Present Value of an Investment (4 blocks)	I can examine a budget to determine information about how money is being used. I can interpret the information given in a pay stub to determine accuracy of that pay stub. I can analyze real-world scenarios dealing with the future value and present value of an investment, present and discuss their conclusions, and synthesize the results into solutions to life lessons.	Budget Lesson • I can create a budget for someone to pay their bills and pay off debt. Paystub Lesson • I can read a pay stub. SAS 5 • I can analyze given real world scenarios dealing with future value and present value of an investment, present. • I can discuss conclusions and synthesize the results into solutions to life lessons.
2 Using Credit (4 blocks)	I can analyze the parts of a credit card statement and derive how the calculations are made. I can calculate the minimum payment on a credit card balance and the length of	SAS 8 • I can analyze the parts of a credit card statement • I can derive how the calculations are made. • I can calculate the minimum payment on a credit card balance and the length of repayment based on that minimum.

	repayment based on that minimum and recommend an alternate debt repayment plan. I can create an amortization model based on a set debt plan and analyze the behavior of principal and interest with a constant payment. I can compare the three methods of financing a new vehicle and analyze affordability on budgetary constraints.	● I can recommend an alternate debt payment plan based on my calculations. SAS 9 ● I can create an amortization model based on a set debt plan. ● I can analyze the behavior of principal and interest with a constant payment. SAS 10 ● I can calculate the monthly payment for financing a new vehicle. ● I can analyze the costs of financing an asset that is scheduled to lose value.

Unit Title:	
Networks and Graphs	
Relevant Standards: Bold indicates priority	
HS.G-MG.A.2; HS.G-MG.A.3	
Essential Question(s):	**Enduring Understanding(s):**
How can networks and graphs be used to determine the most efficient method for completing a task?	Weighted graphs along with the rules of Euler circuits can be used to determine the shortest possible route in a network.
Demonstration of Learning:	**Pacing for Unit**
End of Unit Test	14 classes (including 1 flex day and test)
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
circuit, edge, Euler circuit, graph, Hamiltonian circuit, path, vertex, minimal spanning tree, minimally connected, spanning tree, weighted graph, adjacency, chromatic number	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Engagement: Foster Collaboration and Community	• Create cooperative learning groups with clear goals, roles, and responsibilities • Provide prompts that guide learners in when and how to ask peers and/or teachers for help • Encourage and support opportunities for peer interactions and supports • Construct communities of learners engaged in common interests or activities • Create expectations for group work (e.g., rubrics, norms, etc.)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
An EL can construct grade appropriate oral and written claims and support them with reasoning and evidence.	I can make conjectures and use theorems to determine whether graphs have Euler or Hamiltonian circuits. • Level 1: With prompting support, I can express whether a graph has an Euler or Hamiltonian circuit.

		• Level 2: With prompting support, I can provide a concluding statement about whether a graph has an Euler or Hamiltonian circuit. • Level 3: With guidance, I can provide a concluding statement about Euler and Hamiltonian circuits. • Level 4: I can make conclusions about Euler and Hamiltonian circuits. • Level 5: I can use academic and domain specific vocabulary to construct a substantive claim about whether a graph has an Euler or Hamiltonian circuit.
Lesson Sequence	**Learning Target**	**Success Criteria/ Assessment/Resources**
1 Circuits, Paths, and Graph Structures (4 blocks)	I can devise and use algorithms to locate Euler circuits. I can make conjectures and use theorems to determine whether graphs have Euler or Hamiltonian circuits.	SAS 1 • I can use graphs and the definitions of circuits and paths to study real world problems. • I can devise and use algorithms to locate Euler circuits. SAS 3 • I can use graphs and the definitions of circuits and paths to study real world problems. SAS 4 • I can make conjectures. • I can use theorems to determine whether graphs have Euler or Hamiltonian Circuits.
2 Spanning Trees (4 blocks)	I can represent situations with graphs and then look at ways of determining the spanning trees that solve questions arising from the situation. I can devise, test, and use algorithms for finding spanning trees and minimal spanning trees.	SAS 6 • I can represent situations with graphs and look at ways of determining the spanning trees that solve questions arising from the situation. SAS 7 • I can devise algorithms for finding spanning trees and minimal spanning trees. • I can test algorithms for finding spanning trees and minimal spanning trees. • I can use algorithms for finding spanning trees and minimal spanning trees.
3 Graph Coloring (4 blocks)	I can create maps conforming to specific coloring properties and create graphs associated with maps. I can use graph coloring to model a scheduling problem.	SAS 9 • I can create maps conforming to specific coloring properties. SAS 10 • I can create graphs associated with maps. • I can solve scheduling problems with graphs. SAS 11 • I can use graph coloring to model a scheduling problem.

Course Title:	Content Area:	Grade Level:	Credit (if applicable)
UConn ECE Physics 1201Q/1202Q	Science	12	1.0 BPS 1201Q: 4.0 UConn 1202Q: 4.0 UConn

Course Description:

Through quantitative and qualitative analysis, students will gain a deeper understanding of matter, forces, and the interaction between them. Major units of study include: Kinematics, Newton's Laws, Conservation Laws, Rotation, SHM/Waves, and Gravitation for Physics 1201Q; electrostatics, electric circuits, magnetostatics, electrodynamics, geometric and physical optics, atomic and nuclear physics, and the particle nature of light for Physics 1202Q. Through cooperative learning and lab experiences, students will improve communication and critical thinking skills.

Aligned Core Resources:	Connection to the *BPS Vision of the Graduate*
College Physics (Serway 2019)	CONTENT MASTERY • Develop and draw from a baseline understanding of knowledge in academic disciplines from our Bristol curriculum. CRITICAL THINKING AND PROBLEM SOLVING • Collect, assess and analyze relevant information • Reason effectively. Use systems thinking. • Make sound judgments and decisions. Identify, define and solve authentic problems and essential questions. • Reflect critically on learning experience, processes and solutions. • Transfer knowledge to other situations.
Additional Course Information: ***Knowledge/Skill Dependent courses/prerequisites***	**Link to *Completed Equity Audit***
	Equity Audit=ECE Physics

Standard Matrix

AP Science Practices	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10
Practice 1: Modeling-The student can use representations and models to communicate scientific phenomena and solve scientific problems.										
1.1 The student can create representations and models of natural or man-made systems in the domain.	X	X	X	X	X	X	X	X	X	X
1.2 The student can describe representations and models of natural or man-made phenomena and	X	X	X	X	X	X	X	X	X	X

systems in the domain.										
1.3 The student can refine representations and models of natural or man made phenomena and systems in the domain.	X	X	X	X	X	X	X	X	X	X
1.4 THe student can use representations and models to analyze or solve problems qualitatively and quantitatively.	X	X	X	X	X	X	X	X	X	X
1.5 The student can re-express key elements of natural phenomena across multiple representations in the domain.	X		X	X	X	X	X	X		X
Practice 2: Mathematical Routines-The student can use mathematics appropriately.										
2.1 The student can justify the selection of a mathematical routine to solve a problem.	X	X	X	X	X	X	X	X	X	X
2.2 The student can apply mathematical routines to quantities that describe natural phenomena.	X	X	X	X	X	X	X	X	X	X
Practice 3: Experimental Methods-The student can plan and implement data collection strategies in relation to a particular scientific question.										
3.1 The student can justify the selection of the kind of data needed to answer a particular science question.	X	X	X	X	X	X		X		X
3.2 The student can collect data to answer a particular scientific question.	X	X	X	X	X	X	X	X	X	X
3.3 The student can evaluate sources of data to answer a particular scientific question.	X	X	X	X	X	X	X	X	X	X
Practice 4: Data Analysis-The student can perform data analysis and evaluation of evidence										
4.1 The student can analyze data to identify patterns or relationships.	X	X	X	X	X	X	X	X	X	X
4.2 The student can refine observations and measurements based on data analysis.	X									
4.3 The student can evaluate evidence provided by data sets in relation to a particular scientific question.	X	X	X		X	X		X	X	X
Practice 5: Argumentation-The student can work with scientific explanations and theories.										

5.1 The student can articulate the reasons that scientific explanations and theories are refined or replaced.						X				X
5.2 The student can make claims and predictions about natural phenomena based on scientific theories and models.	X	X	X	X	X	X	X	X	X	X
Practice 6: Making Connections-The student is able to connect and relate knowledge across various scales, concepts and representations in and across topics.										
6.1 The student can connect phenomena and models across spatial and temporal scales.			X	X	X	X	X	X	X	X

Unit Links

Kinematics (1201)
Newton's Laws (1201)
Conservation Laws (1201)
Rotation (1201)
Simple Harmonic Motion (1201)
Thermal Physics (1202)
Gravitation (1202)
Electricity and Magnetism (1202)
Electric Current and Circuits (1202)
Waves and Optics (1202)
Modern Physics (1202)

Unit Title:	
Kinematics (1201)	
Relevant Standards: Bold indicates priority	
AP Science Practices: Modeling (1.1, 1.2, 1.3, 1.4, 1.5); Mathematical Routines (2.1, 2.2); Experimental Methods (3.1, 3.2, 3.3); Data Analysis (4.1, 4.2, 4.3); Argumentation (5.2); Making Connections (6.1)	
Essential Question(s):	**Enduring Understanding(s):**
• How can the motion of objects be predicted and/or explained? • Can equations be used to answer questions regardless of the questions' specificity? • How can the idea of frames of reference allow two people to tell the truth yet have conflicting reports? • How can we use models to help us understand motion? • Why is the general rule for stopping your car "when you double your speed, you must give yourself four times as much distance to stop?"	Position, Displacement, and Distance: • Understanding the difference between position, displacement, and distance. • Recognizing that displacement is a vector quantity that includes both magnitude and direction. Speed and Velocity: • Defining speed as the magnitude of velocity. • Understanding velocity as a vector quantity with both magnitude and direction. Acceleration: • Defining acceleration as the rate of change of velocity. • Understanding that acceleration is a vector quantity with both magnitude and direction. Equations of Motion: • Applying kinematic equations to describe the motion of an object in one dimension. Projectile Motion: • Understanding the motion of projectiles launched at an angle to the horizontal. • Analyzing projectile motion using kinematic principles. Graphical Representations of Motion: • Interpreting and creating graphs representing position, velocity, and acceleration vs. time. • Understanding the relationships between slopes and areas under these graphs. Motion in Two Dimensions: • Applying kinematic principles to describe the motion of objects in two dimensions. • Recognizing the independence of motion in perpendicular directions. Relative Motion: • Analyzing motion from different reference frames. • Understanding how velocity and acceleration transform between reference frames. Instantaneous and Average Values: • Differentiating between instantaneous and average values of velocity and acceleration. • Recognizing that instantaneous values are determined at a specific instant, while average values are over a time interval.

	Uniform Circular Motion: • Understanding the kinematics of objects moving in a circle at a constant speed. • Recognizing the relationships between linear and angular kinematics.
Demonstration of Learning:	**Pacing for Unit**
University of Connecticut shared assessments	4 Weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Acceleration, average speed, constant, constant acceleration, displacement, dynamics, frame of reference, free-fall acceleration, instantaneous speed, instantaneous velocity, kinematics, magnitude, motion diagram, one-dimensional motion, order of magnitude, projectile motion, relative velocity, scalar, stationary, vector, vector quantity, velocity	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Clarify vocabulary and symbols	• Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge • Provide graphic symbols with alternative text descriptions • Highlight how complex terms, expressions, or equations are composed of simpler words or symbols • Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations) • Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.* An EL can conduct research and evaluate and communicate findings to answer questions or solve problems. **I can use the equations of motion to solve problems.** • Level 1: I can name the define the components of basic formulas like distance=speed×time with support. • Level 2: I can interpret and manipulate the equations of motion with guidance. • Level 3: I can analyze motion scenarios (word problems) and choose appropriate equations to solve problems	

independently. I can explain my problem-solving process and justify my choices of equations.
- Level 4: I can critique and refine problem-solving strategies based on verbal or written feedback.
- Level 5: I can synthesize information from multiple sources to solve real-world problems involving motion and explain my solutions effectively.

Lesson Sequence	**Learning Target**	**Success Criteria**
1 Equations of Kinematics and free fall	I can use the equations of motion to solve problems.	• I can identify given variables and make a plan to solve kinematics problems. • I can infer necessary or missing information, so I can solve a problem. This may include developing an algorithm. • I can develop/solve a series of equations to solve for all required variables. • I can recognize the limitations of the equation(s). • I can anticipate failures and persevere in learning to solve challenging problems in physics. • I can make and interpret motion graphs.
2 Vectors	I can appropriately manipulate vector quantities as required to solve problems.	• I can recognize situations when vector composition is required. • I can recognize when to resolve a vector into components.
3 Projectile motion	I can solve problems involving projectiles.	• I can recognize the independence of a projectile's horizontal and vertical motions. • I can appropriately apply vector techniques as needed. • I can appropriately apply the equations of kinematics as needed.

Unit Title:	
Newton's Laws (1201)	
Relevant Standards: Bold indicates priority	
AP Science Practices: Modeling (1.1, 1.2, 1.3, 1.4); Mathematical Routines (2.1, 2.2); Experimental Methods (3.1, 3.2, 3.3); Data Analysis (4.1, 4.3); Argumentation (5.2)	
Essential Question(s):	**Enduring Understanding(s):**
• What are Newton's Three Laws of Motion, and how do they provide a framework for understanding the fundamental principles governing the motion of objects? • How can free-body diagrams and force diagrams be used as visual tools to represent and analyze the forces acting on an object in equilibrium or in motion?	First Law (Law of Inertia): • Understanding Newton's First Law, which states that an object at rest will remain at rest, and an object in motion will remain in motion with a constant velocity unless acted upon by a net external force. • Recognizing the concept of inertia as an object's resistance to changes in its state of motion. Second Law: • Understanding Newton's Second Law, which states that the acceleration of an object is directly proportional to the net force acting on it and inversely proportional to its mass. • Expressing the relationship as $F=ma$, where F is the net force, m is the mass and a is the acceleration. Third Law: • Understanding Newton's Third Law, which states that for every action, there is an equal and opposite reaction. • Recognizing that forces always occur in pairs, and the action and reaction forces act on different objects. Force Diagrams (Free-Body Diagrams): • Constructing force diagrams to represent the forces acting on an object. • Analyzing force diagrams to determine the net force and acceleration of an object. Applications of Newton's Laws: • Applying Newton's laws to analyze the motion of objects under the influence of various forces. • Solving problems involving forces, masses, and accelerations. Frictional Forces: • Understanding the role of frictional forces and differentiating between static and kinetic friction. • Analyzing situations involving friction and determining the net force. Tension Forces and Normal Forces: • Analyzing tension forces in strings and cables and normal forces in contact situations. • Recognizing how these forces contribute to the net force acting on an object. Applications to Circular Motion:

	• Applying Newton's laws to analyze circular motion, including centripetal and centrifugal forces. • Recognizing that a net force is required to maintain circular motion. Gravitational Forces: • Understanding the gravitational force acting between two objects with mass. • Applying Newton's law of universal gravitation. Applications to Equilibrium: • Analyzing situations in which objects are in equilibrium, with the net force and net torque equal to zero. • Understanding the conditions for static equilibrium.
Demonstration of Learning:	**Pacing for Unit**
University of Connecticut shared assessments	4 Weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Acceleration, coefficient of friction, contact forces, field forces, force, free-body diagram, friction, frictional force, gravitational force, inertia, mass, newton, Newton's second law, Newton's third law, normal force, object in equilibrium, static, tension, universal gravitational constant, weight	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Clarify vocabulary and symbols	• Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge • Provide graphic symbols with alternative text descriptions • Highlight how complex terms, expressions, or equations are composed of simpler words or symbols • Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations) • Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
The CELP guidance is to **support the development of language; access to course content expectations should*	

not change as a result of MLL status.

I can follow the procedure to solve problems involving forces.
An EL can conduct research and evaluate and communicate findings to answer questions or solve problems.

- Level 1: With prompting and support, follow simple step-by-step procedures to solve basic force-related problems. I can label and identify basic force-related terms and concepts.
- Level 2: With prompting and support, follow step-by-step procedures to solve force-related problems. I can record and summarize basic data and information related to force problems.
- Level 3: With guidance and support, follow procedures to solve force-related problems independently. I can gather information from word problems to understand and apply force concepts.
- Level 4: I can follow procedures to solve force-related problems both independently and collaboratively. Gather and synthesize information from multiple print and digital sources to solve force problems. I can integrate problem information into organized oral or written explanations and problem solutions.
- Level 5: I can analyze and integrate information providing thorough explanations and solutions to force-related problems. I can apply advanced problem-solving strategies to solve force-related problems in various contexts.

Lesson Sequence	Learning Target	Success Criteria
1	*I can recognize how Newton's Laws describe the possible effects of forces acting on a body.*	• I can recognize equilibrium conditions, • I can recognize non-equilibrium conditions. • I can identify action/reaction force pairs.
2	I can follow the procedure to solve problems involving forces.	• I can use appropriate expressions to calculate forces. • I can draw a free body diagram. • I can use free body diagrams to generate relevant Newton's second law equations.

Unit Title:	
Conservation Laws (1201)	
Relevant Standards: Bold indicates priority	
AP Science Practices: Modeling (1.1, 1.2, 1.3, 1.4, 1.5); Mathematical Routines (2.1, 2.2); Experimental Methods (3.1, 3.2, 3.3); Data Analysis (4.1, 4.3); Argumentation (5.2); Making Connections (6.1)	
Essential Question(s):	**Enduring Understanding(s):**
• What are conservation laws, and how do they provide a foundation for understanding and predicting the behavior of physical systems? • How does the conservation of energy manifest in various physical processes, and what are the implications for understanding mechanical systems?	Conservation of Energy: • Understanding the principle that the total mechanical energy of an isolated system is conserved. • Recognizing the interconversion of kinetic energy and potential energy. Conservation of Linear Momentum: • Understanding the principle that the total linear momentum of an isolated system remains constant in the absence of external forces. • Applying the conservation of linear momentum to analyze collisions and explosions. Conservation of Angular Momentum: • Understanding the principle that the total angular momentum of an isolated system remains constant in the absence of external torques. • Recognizing how changes in moment of inertia or angular velocity affect angular momentum. Conservation of Charge: • Understanding the principle that the total electric charge in an isolated system is conserved. • Recognizing the conservation of charge in electrical circuits and interactions. Conservation of Mass (in Non-Nuclear Reactions): • Recognizing the principle that the total mass of an isolated system is conserved in non-nuclear reactions. Conservation of Energy-Mass Equivalence ($E=mc^2$): • Understanding the relationship between mass and energy in the context of nuclear reactions. • Recognizing the equivalence of mass and energy as described by Einstein's equation $E=mc^2$. Conservation of Linear Momentum in Two Dimensions: • Applying the conservation of linear momentum separately in each dimension (horizontal and vertical) in collisions and other interactions. Conservation of Mechanical Energy in a System with Non-Conservative Forces: • Recognizing situations where non-conservative forces (such as friction) are present and understanding how mechanical energy is not conserved.

	Conservation of Energy in Simple Harmonic Motion: • Understanding how mechanical energy is conserved in ideal conditions during simple harmonic motion. Conservation of Energy in Circular Motion: • Applying the conservation of energy principle to analyze circular motion.
Demonstration of Learning:	**Pacing for Unit**
University of Connecticut released assessments	4 Weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Average force, average power, collision, conservative force, conservation, conservation of energy, conservation of momentum, electrical transmission, elastic collision, electromagnetic radiation, energy, foot-pound, gravitational work, heat, impulse, impulse-momentum theorem, inelastic collision, instantaneous power, joule, kinetic energy, linear momentum, mechanical energy, mechanical waves, momentum, newton, newton-meter, nonconservative force, potential energy, power, recoil, system, Watt, Work, work-energy theorem	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Clarify vocabulary and symbols	• Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge • Provide graphic symbols with alternative text descriptions • Highlight how complex terms, expressions, or equations are composed of simpler words or symbols • Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations) • Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.*	

I can use the work/energy theorem to solve problems.
An EL can conduct research and evaluate and communicate findings to answer questions or solve problems.

- Level 1: With prompting and support, I can understand basic concepts related to the work/energy theorem and use them to solve simple problems with some help.
- Level 2: I can record and summarize data related to energy and work, with some guidance provided.
- Level 3: I can gather information about a word problem and paraphrase key information in written or oral explanations, possibly including illustrations or diagrams.
- Level 4: I can synthesize information to explore various applications of the work/energy theorem.
- Level 5: I can independently, analyze and solve complex word problems related to the work/energy theorem.

Lesson Sequence	Learning Target	Success Criteria
1 Work and Energy	I can recognize the relationship between work and energy.	• I can use the work/energy theorem to solve problems.
2 Power	I can recognize that time is often a practical matter when doing work.	• I can identify power as the rate at which energy is converted from one form to another.
3 Conservation of Energy	I can recognize problem types which can be solved using conservation of energy.	• I can solve problems when mechanical energy is conserved (no friction) • I can recognize situations (involving friction) where mechanical energy is lost as heat to the surroundings
4 Impulse and Momentum	I can recognize the relationship between impulse/momentum.	• I can use impulse /momentum to solve appropriate problems.
5 Conservation of Momentum	I can recognize problem types which can be solved using conservation of momentum.	• I can apply conservation of momentum for problems involving recoil and collisions. • I can identify collision types in terms of kinetic energy concerns.

Unit Title:	
Rotation (1201)	
Relevant Standards: Bold indicates priority	
AP Science Practices: Modeling (1.1, 1.2, 1.3, 1.4, 1.5); Mathematical Routines (2.1, 2.2); Experimental Methods (3.1, 3.2, 3.3); Data Analysis (4.1); Argumentation (5.2); Making Connections (6.1)	
Essential Question(s):	**Enduring Understanding(s):**
• How does rotational motion differ from linear motion, and what key quantities and concepts characterize rotational dynamics? • What is the significance of understanding the moment of inertia in rotational motion, and how does it affect an object's response to torques? • In what ways can we apply Newton's laws to analyze and predict the rotational motion of objects and systems? • How does torque contribute to rotational motion, and what factors influence the torque experienced by an object?	Angular Displacement, Velocity, and Acceleration: • Defining angular displacement as the change in angle or position. • Understanding angular velocity as the rate of change of angular displacement. • Recognizing angular acceleration as the rate of change of angular velocity. Rotational Kinematics: • Applying kinematic equations to describe the motion of rotating objects. • Understanding the relationship between linear and angular kinematics. Moment of Inertia: • Defining moment of inertia as a measure of an object's resistance to changes in rotational motion. • Recognizing how the distribution of mass affects the moment of inertia. Torque and Newton's Second Law for Rotation: • Defining torque as the rotational analog of force, causing angular acceleration. • Understanding Newton's second law for rotation: $\tau = I\alpha$, where is torque, *I* is moment of inertia, and α is angular acceleration. Rotational Energy and Work: • Understanding rotational kinetic energy and its relationship with linear kinetic energy. • Recognizing the work-energy principle in rotational motion. Conservation of Angular Momentum: • Understanding the conservation of angular momentum for isolated systems. • Recognizing how changes in moment of inertia or angular velocity affect angular momentum. Rolling Motion: • Analyzing the motion of objects that roll without slipping. • Understanding the relationship between translational and rotational motion. Rotational Equilibrium: • Understanding conditions for rotational equilibrium, where the net torque is zero. • Recognizing the relationship between torque and

	lever arms. Angular Impulse and Collision: • Understanding angular impulse as the product of torque and time. • Recognizing the conservation of angular momentum in collisions. Precession and Gyroscopic Motion: • Understanding the precession of rotating objects. • Analyzing gyroscopic motion and its stability.
Demonstration of Learning:	**Pacing for Unit**
University of Connecticut released assessments	4 weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Angular acceleration, angular displacement, angular position, angular velocity, average angular velocity, center of mass, centripetal acceleration, constant of universal gravitation, conservation of angular momentum, instantaneous angular acceleration, instantaneous angular speed, instantaneous angular velocity, Kepler's laws, moment of inertia, radial acceleration, rotational equilibrium, rotational second law of motion, Radian, tangential acceleration, tangential velocity, tension, torque, uniform circular motion	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Clarify vocabulary and symbols	• Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge • Provide graphic symbols with alternative text descriptions • Highlight how complex terms, expressions, or equations are composed of simpler words or symbols • Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations) • Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**

The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.*

I can apply Newton's second law for equilibrium in both the linear and rotational form to build a sufficient number of equations to solve the problem.

An EL can conduct research and evaluate and communicate findings to answer questions or solve problems.

- Level 1: I can understand the basic principles of Newton's second law for equilibrium in simple situations with some help. I can identify and label forces involved in a problem.
- Level 2: I can explain Newton's second law for equilibrium and identify forces in a problem with some support. I can start to write basic equations based on linear and rotational forms of the law.
- Level 3: I can evaluate the forces involved in a word problem, write equations in both linear and rotational forms, and start solving problems with guidance.
- Level 4: I can effectively build equations in both linear and rotational forms, integrate them to solve complex problems, and cite sources properly.
- Level 5: I can generate a sufficient number of equations in both linear and rotational forms, integrate them seamlessly, and present my findings clearly and accurately, citing sources appropriately.

Lesson Sequence	Learning Target	Success Criteria
1 Circular Motion	I can recognize the effect of a force that is applied perpendicular to the motion.	• I can understand how a particle can accelerate while traveling at constant speed. • I can recognize uniform circular motion as an application of Newton's Laws. • I can solve circular motion problems.
2 Rotational kinematic	I can recognize the need for angular variables to describe rotational motion.	• I can recognize the kinematics equations are the same as linear motion, but using the rotational quantities. • I can relate linear and rotational quantities.
3 Torque	I can recognize that a force acting through a lever arm, or a torque, can causes a rotation	• I can calculate a torque, and a sum of torques.
4 Static Equilibrium	I can recognize situations in which an object cannot be treated as a point particle.	• I can apply Newton's second law for equilibrium in both the linear and rotational form to build a sufficient number of equations to solve the problem.

Unit Title:	
Simple Harmonic Motion (1201)	
Relevant Standards: Bold indicates priority	
AP Science Practices: Modeling (1.1, 1.2, 1.3, 1.4, 1.5); Mathematical Routines (2.1, 2.2); Experimental Methods (3.1, 3.2, 3.3); Data Analysis (4.1, 4.3); Argumentation (5.2); Making Connections (6.1)	
Essential Question(s):	**Enduring Understanding(s):**
• What is simple harmonic motion, and how does it differ from other types of periodic motion? • How can we describe the displacement, velocity, and acceleration of an object undergoing simple harmonic motion using mathematical equations? • What are the connections between simple harmonic motion and the behavior of waves, and how do wave properties apply to oscillating systems? • How can we use energy considerations to analyze and describe simple harmonic motion, and what are the implications for the conservation of energy in oscillatory systems? • How can the principles of simple harmonic motion be applied to solve real-world problems and describe natural phenomena, such as the motion of vibrating strings or the behavior of mechanical systems? • What are the limitations of the simple harmonic motion model, and in what situations might it not accurately represent the behavior of oscillating systems?	Harmonic Motion: • Defining simple harmonic motion as a type of periodic motion where the restoring force is directly proportional to the displacement from equilibrium. • Understanding that many systems in nature exhibit simple harmonic motion. Equations of Motion: • Describing the displacement, velocity, and acceleration of an object undergoing simple harmonic motion using mathematical equations. • Recognizing the sinusoidal nature of these equations. Period and Frequency: • Defining and understanding the period and frequency of simple harmonic motion. • Recognizing the relationship between period and frequency: T=1/f Amplitude: • Defining amplitude as the maximum displacement from equilibrium in simple harmonic motion. Phase: • Understanding the concept of phase in simple harmonic motion, which represents the position of the object in its oscillation cycle. Energy in Simple Harmonic Motion: • Recognizing the interconversion of kinetic and potential energy during the motion. • Understanding how the total mechanical energy remains constant in ideal conditions. Damping and Resonance: • Understanding the effects of damping on simple harmonic motion and recognizing the distinction between underdamped, critically damped, and overdamped systems. • Understanding resonance and its relation to the natural frequency of a system. Simple Pendulum: • Analyzing the simple harmonic motion of a mass-spring system and a simple pendulum. • Understanding the factors affecting the period of a simple pendulum. Hooke's Law:

	• Recognizing Hooke's Law as a fundamental principle governing the restoring force in a mass-spring system. Angular Simple Harmonic Motion: • Understanding angular simple harmonic motion for systems involving rotational motion. Wave Properties: • Recognizing the relationship between simple harmonic motion and wave motion, particularly sinusoidal waves.
Demonstration of Learning:	**Pacing for Unit**
University of Connecticut released assessments	4 weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Amplitude, angular frequency, elastic potential energy, frequency, harmonic motion, Hertz, Hooke's Law, oscillation, period, pendulum, simple harmonic motion, spring constant	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Clarify vocabulary and symbols	• Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge • Provide graphic symbols with alternative text descriptions • Highlight how complex terms, expressions, or equations are composed of simpler words or symbols • Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations) • Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.* **I can explain the relationship between Hooke's Law and simple harmonic motion.** An EL can conduct research and evaluate and communicate findings to answer questions or solve problems. • Level 1: Through simple activities and guided discussions, I can start from basic sentences to describe how	

Hooke's Law influences the motion of objects attached to springs.

- Level 2: I can create simple diagrams to explain the relationship between force and displacement in simple harmonic motion, using vocabulary and sentence structures appropriate for their proficiency level.
- Level 3: I can gather information from various sources such as textbooks, articles, and videos to explain how Hooke's Law leads to oscillatory motion in springs.
- Level 4: I can conduct more independent research to explore the connection between Hooke's Law and simple harmonic motion. I can write organized responses that demonstrate a thorough understanding of the topic, using appropriate academic language and citing sources accurately.
- Level 5: I can critically evaluate complex theories and models, integrating information from diverse sources to construct sophisticated explanations of the relationship between Hooke's Law and simple harmonic motion.

Lesson Sequence	**Learning Target**	**Success Criteria**
1 Springs	*I can recognize that a spring exerts a linear restoring force.*	• I can use Hooke's Law to relate force and elongation of a spring. • I can solve problems involving spring potential energy
2 Simple Harmonic Motion	I can recognize that Hooke's Law causes simple harmonic motion.	• I can calculate the period and frequency of a simple harmonic motion.

Unit Title:	
Thermal Physics (1202)	
Relevant Standards: Bold indicates priority	
AP Science Practices: Modeling (1.1, 1.2, 1.3, 1.4, 1.5); Mathematical Routines (2.1, 2.2); Experimental Methods (3.1, 3.2, 3.3); Data Analysis (4.1, 4.3); Argumentation (5.2); Making Connections (6.1)	
Essential Question(s):	**Enduring Understanding(s):**
	Temperature: ● Understanding temperature as a measure of the average kinetic energy of particles in a substance. ● Recognizing the Celsius and Kelvin temperature scales. Thermal Equilibrium and Zeroth Law: ● Defining thermal equilibrium and understanding the Zeroth Law of Thermodynamics. ● Recognizing how the concept of temperature is related to thermal equilibrium. Heat and Internal Energy: ● Defining heat as energy transfer due to temperature differences. ● Understanding internal energy as the sum of the microscopic kinetic and potential energies of particles in a substance. Specific Heat and Heat Capacity: ● Defining specific heat as the amount of heat required to raise the temperature of a unit mass of a substance by one degree. ● Understanding heat capacity as the total heat required to raise the temperature of an object. First Law of Thermodynamics: ● Understanding the First Law, which states that the change in internal energy of a system is equal to the heat added to the system minus the work done by the system. Work in Thermodynamics: ● Defining work as the transfer of energy from one system to another due to the application of force through a distance. ● Recognizing the signs of work done on or by the system. Adiabatic Processes: ● Understanding adiabatic processes, where no heat is exchanged with the surroundings. Heat Engines and Efficiency: ● Understanding the principles of heat engines and the concept of thermal efficiency. ● Recognizing the Carnot cycle as a theoretical limit for the efficiency of heat engines. Entropy:

	• Defining entropy as a measure of the disorder or randomness in a system. • Recognizing that natural processes tend to increase the overall entropy of the universe. Second Law of Thermodynamics: • Understanding the Second Law, which states that the total entropy of an isolated system always increases over time.
Demonstration of Learning:	**Pacing for Unit**
University of Connecticut released assessments	4 weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Absolute zero, adiabatic process, calorie, calorimetry, coefficient of area expansion, coefficient of volume expansion, convection, first law of thermodynamics, heat, heat of fusion, heat of vaporization, ideal gas law, internal energy, Isobaric process, isovolumetric process, Kelvin, kinetic theory of gasses, law of equilibrium, law of thermodynamics, latent heat, mechanical equivalent of heat, phase change, radiation, specific heat, temperature, thermal conduction, thermal contact, thermal equilibrium, thermal expansion, thermometer, thermodynamics, triple point.	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Clarify vocabulary and symbols	• Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge • Provide graphic symbols with alternative text descriptions • Highlight how complex terms, expressions, or equations are composed of simpler words or symbols • Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations) • Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
**The CELP guidance is to support the development of language; access to course content expectations should not*	

change as a result of MLL status.

I can explain how heat is exchanged during a phase change.
An EL can conduct research and evaluate and communicate findings to answer questions or solve problems.

- Level 1: I can identify key vocabulary words such as heat, temperature, phase change, melting, freezing, vaporization, and condensation. Through simple activities and guided discussions, I can start forming basic sentences to describe how heat causes substances to change from one phase to another.
- Level 2: I can observe and describe phase changes in everyday materials such as water, ice, and steam. I can explain the energy transfer involved in melting, freezing, vaporization, and condensation, using vocabulary and sentence structures.
- Level 3: I can gather information from various sources such as textbooks, articles, and multimedia resources to explain the mechanisms of heat transfer during phase transitions.
- Level 4: I can write an organized explanation that demonstrates a thorough understanding of heat exchange, using appropriate academic language.
- Level 5: I can communicate my understanding effectively through well-structured essays, presentations, or scientific reports, demonstrating fluency in academic language and precise terminology. I can engage in discussions about the implications and applications of heat exchange during phase changes in various contexts.

Lesson Sequence	**Learning Target**	**Success Criteria**
1 Heat	I can recognize heat as a form of energy	• I can relate heat added or removed to a change in temperature. • I can solve problems involving thermal energy transferred to other forms
2 Change of State	I can recognize that heat is exchanged during a phase change.	• I can solve problems involving a substance changing state.
3 Thermal expansion	I can relate the change in temperature of a substance to its change in dimension.	• I can solve problems relating change in temperature to change in length

Unit Title:	
Gravitation (1202)	
Relevant Standards: Bold indicates priority	
AP Science Practices: Modeling (1.1, 1.2, 1.3, 1.4, 1.5); Mathematical Routines (2.1, 2.2); Experimental Methods (3.2, 3.3); Data Analysis (4.1); Argumentation (5.1, 5.2); Making Connections (6.1)	
Essential Question(s):	**Enduring Understanding(s):**
• What are the fundamental principles underlying gravitational interactions, and how do they govern the behavior of celestial objects? • How do gravitational forces and fields shape the behavior of objects in orbit around larger bodies, and what factors influence the stability of these orbits? • What is the relationship between gravitational potential, gravitational potential energy, and gravitational field strength, and how do these concepts contribute to our understanding of gravitational interactions?	Law of Universal Gravitation: • Understanding Newton's law of universal gravitation, which states that every particle in the universe attracts every other particle with a force that is directly proportional to the product of their masses and inversely proportional to the square of the distance between their centers. Gravitational Force: • Defining the gravitational force between two objects and recognizing it as a vector quantity. • Understanding the direction of the gravitational force between objects. Gravitational Field: • Defining the gravitational field as the region of space surrounding a massive object where another mass experiences a force due to gravity. • Recognizing that gravitational field strength is the force per unit mass experienced by an object. Weight: • Understanding weight as the force experienced by an object due to gravity. • Recognizing that weight is the product of an object's mass and the acceleration due to gravity: $W = mg$. Gravitational Potential Energy: • Defining gravitational potential energy as the energy associated with an object due to its position in a gravitational field. • Recognizing the relationship between gravitational potential energy, mass, height, and gravitational acceleration. Escape Velocity: • Understanding escape velocity as the minimum velocity an object must have to escape the gravitational influence of a massive body. • Recognizing the factors that influence escape velocity. Kepler's Laws of Planetary Motion: • Understanding Kepler's laws, which describe the motion of planets in elliptical orbits around the Sun. • Recognizing Kepler's first law (elliptical orbits), second law (equal area in equal time), and third law (relationship between orbital period and semi-major

	axis). Satellites and Orbits: • Analyzing the motion of artificial satellites and celestial bodies in orbit around larger objects. • Understanding the conditions required for stable orbits. Gravitational Potential: • Defining gravitational potential as the work done in bringing a unit mass from infinity to a point in a gravitational field. • Recognizing the relationship between gravitational potential and gravitational potential energy. Gravitational Field Strength: • Understanding the relationship between gravitational field strength, mass, and distance from the center of a massive object.
Demonstration of Learning:	**Pacing for Unit**
University of Connecticut released assessments	4 weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Celestial Body, Ellipse, Escape Velocity, Gravitational Field, Gravitational Field Strength, Gravitational Force, Gravitational Potential, Gravitational Potential Energy, Kepler's Laws of Planetary Motion, Law of Universal, Gravitation, Orbit, Orbital Period, Satellite, Semi-major, Axis, Weight	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Clarify vocabulary and symbols	• Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge • Provide graphic symbols with alternative text descriptions • Highlight how complex terms, expressions, or equations are composed of simpler words or symbols • Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations) • Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect)
Supporting Multilingual/English Learners	

Related *CELP standards:*	Learning Targets:

**The CELP guidance is to support the development of language; access to course content expectations should not change as a result of MLL status.*

I can explain how heat is exchanged during a phase change.
An EL can conduct research and evaluate and communicate findings to answer questions or solve problems.

- Level 1: I can identify key vocabulary words such as gravity, gravitational field, force, mass, and acceleration. Through simple activities and guided discussions, I can start form basic sentences to describe how gravitational field strength affects the acceleration of objects.
- Level 2: I can engage in activities where they observe and describe the effects of gravity on objects of different masses. I can create simple diagrams to explain the relationship between gravitational field strength and acceleration, using vocabulary and sentence structures appropriate.
- Level 3: I can gather information from various sources such as textbooks, articles, and multimedia resources to explain how gravity influences the motion of objects. I can paraphrase key information and present it in written or oral reports, incorporating illustrations or diagrams to enhance comprehension.
- Level 4: I can conduct more independent research to explore the relationship between gravitational field strength and acceleration due to gravity in greater depth. I can analyze information from multiple sources and synthesize their findings into coherent explanations.
- Level 5: I can communicate my understanding effectively through articulate and well-structured essays, presentations, or scientific reports, demonstrating fluency in academic language and precise terminology. I can engage in discussions and debates about the implications and applications of gravitational field strength and acceleration in various contexts.

Lesson Sequence	Learning Target	Success Criteria
1 Gravitational force	I can solve problems using Newton's Law of Universal Gravitation.	• I can relate gravitational force to mass and distance between centers. • I relate how force varies with distance
2 Gravitational field	I can derive an expression for gravitational field strength.	• I can relate gravitational field strength to acceleration of gravity.

Unit Title:	
Electricity and Magnetism (1202)	
Relevant Standards: Bold indicates priority	
AP Science Practices: Modeling (1.1, 1.2, 1.3, 1.4, 1.5); Mathematical Routines (2.1, 2.2); Experimental Methods (3.1, 3.2, 3.3); Data Analysis (4.1, 4.3); Argumentation (5.2); Making Connections (6.1)	
Essential Question(s):	**Enduring Understanding(s):**
• How do electric and magnetic fields interact to produce forces and influence the behavior of charged particles? • What are the fundamental principles underlying circuits and the flow of electric current, and how do these principles govern the behavior of electrical components? • How do electromagnetic phenomena, including electromagnetic induction and Maxwell's Equations, contribute to our understanding of electricity, magnetism, and light?	Coulomb's Law and Electric Fields: • Electric force between charged objects is determined by Coulomb's Law. • Electric fields describe the influence a charge has on the space around it. Gauss's Law: • Gauss's Law relates the electric flux through a closed surface to the charge enclosed by that surface. Electric Potential: • Electric potential difference is related to the work done by an external force in moving a charge. Capacitance and Dielectrics: • Capacitance measures the ability of a system to store electric charge. • The effect of dielectrics on capacitance. Current, Resistance, and DC Circuits: • Current is the flow of charge; it is related to drift velocity and current density. • Resistance is related to both the material and the geometry of an object. • Ohm's Law governs the relationship between current, voltage, and resistance. • DC circuits involving resistors, capacitors, and inductors. Magnetic Fields and Forces: • Magnetic fields are created by moving charges. • Magnetic forces on moving charges and current-carrying wires. Magnetic Induction: • Faraday's Law describes how a changing magnetic field induces an electromotive force (EMF) in a loop of wire. • Lenz's Law determines the direction of induced currents. AC Circuits: • Alternating current involves time-varying voltage and current. • Impedance and resonance in AC circuits. Maxwell's Equations: • Maxwell's Equations describe the fundamental principles of classical electromagnetism. • The role of electromagnetic waves in understanding

	light.
Demonstration of Learning:	**Pacing for Unit**
University of Connecticut released assessments	4 weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Ampere's Law, Capacitors, Circuits, Conductors, , Dielectric, Drift velocity, Electric Charge, Electric current, Electric field, Electric field lines, Electric flux, Electric force, Electric potential, Electrostatic equilibrium, Electronvolt, Equipotential surface, Faraday's Law, Ferromagnetic, Flux, Gauss' Law, Induced current, Induced emf, Inductance, Induction, Insulators, Kilowatt hour, Lenz's Law, Magnetic field line, Magnetic flux, Magnetic torque, Ohm's Law, Ohmic, Permanent magnet, Poles, Polarization, Power, RC circuit, Resistivity, Resistors, Self-induction, Series, Parallel, Solenoid,Time constant, Voltage.	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Clarify vocabulary and symbols	• Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge • Provide graphic symbols with alternative text descriptions • Highlight how complex terms, expressions, or equations are composed of simpler words or symbols • Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations) • Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
The CELP guidance is to support the development of language; access to course content expectations should not change as a result of MLL status.* **I can define and use the definition of capacitance. An EL can conduct research and evaluate and communicate findings to answer questions or solve problems. • Level 1: I can identify key vocabulary words such as capacitance, charge, voltage, and capacitor. Through simple activities and guided discussions, I can form basic sentences to define capacitance and its relation to charge	

and voltage, with assistance as needed.
- Level 2: I can engage in activities where they observe and describe simple capacitor circuits. I can create diagrams to explain the definition of capacitance and its practical applications, using appropriate vocabulary and sentence structures.
- Level 3: I can gather information from various sources such as textbooks, articles, and online resources to explain capacitance in different contexts. I can paraphrase key information and present it in written or oral reports, using illustrations or diagrams to aid comprehension.
- Level 4: I can analyze information from multiple sources and synthesize findings into coherent explanations. I can write organized essays or deliver presentations that demonstrate a thorough understanding of capacitance, using academic language and citing sources accurately.
- Level 5: I can communicate my understanding effectively through articulate essays, presentations, or scientific reports, demonstrating fluency in academic language and precise terminology.

Lesson Sequence	**Learning Target**	**Success Criteria**
1 Static Electricity Force and charge	I can define and use the basic concepts of electricity.	• I can define and state the origins and characteristics of electric charge. • I can calculate the net force between point charges.
2 Electric Field		• I can calculate the electric field of a collection of point charges. • I can calculate the electric field between charged parallel plates. • I can calculate the force on a charged point particle due to an electric field.
3 Electric potential/ potential energy	I can recognize there is potential energy associated with a system of charges.	• I can calculate electric potential energy. • I can make energy calculations involving charges. • I can relate electric potential with electric potential energy. • I can make calculations involving potential differences. • I can recognize that a potential difference can cause charges to move.
4 Capacitance	I can define and use the definition of capacitance.	• I can make calculations using charged parallel plates.

Unit Title:	
Electric Current and Circuits (1202)	
Relevant Standards: Bold indicates priority	
AP Science Practices: Modeling (1.1, 1.2, 1.3, 1.4); Mathematical Routines (2.1, 2.2); Experimental Methods (3.2, 3.3); Data Analysis (4.1, 4.3); Argumentation (5.2); Making Connections (6.1)	
Essential Question(s):	**Enduring Understanding(s):**
• How do electric charge and its quantization form the fundamental basis of electrical phenomena? • What are the fundamental principles underlying electric current, and how does its flow relate to the scalar quantity and direction? • What are the foundational components and principles that govern electrical circuits, and how do they interact to determine circuit behavior?	Electric Charge: • Understanding the concept of electric charge and the quantization of charge. Electric Current: • Defining electric current as the flow of electric charge. • Recognizing that current is a scalar quantity and understanding the direction of current flow. Circuits: • Understanding the basic components of electrical circuits, including resistors, capacitors, and batteries. • Describing the difference between open and closed circuits. Ohm's Law: • Understanding Ohm's Law, which relates the voltage across a conductor to the current flowing through it: V=IR Resistors and Resistance: • Defining resistance and recognizing factors that affect resistance. • Understanding how to calculate total resistance in series and parallel resistor configurations. Power in Electric Circuits: • Understanding the concept of electrical power and its relationship to voltage and current P=IV Kirchhoff's Laws: • Applying Kirchhoff's laws (Kirchhoff's loop rule and Kirchhoff's junction rule) to analyze complex circuits. Capacitors in Circuits: • Understanding the behavior of capacitors in circuits and how they store and release electrical energy. Series and Parallel Circuits: • Analyzing and understanding the characteristics of series and parallel circuits. • RC Circuits: Analyzing circuits containing resistors and capacitors (RC circuits). • Understanding the time constant and the charging/discharging process of a capacitor in an RC circuit. Meters and Measurements: • Using meters to measure current, voltage, and

	resistance in circuits.
Demonstration of Learning:	**Pacing for Unit**
University of Connecticut released assessments	4 weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Capacitor, Circuit Diagram, Conductor, Coulomb's Law, Current, Direct Current (DC), Electric Current, Electric Potential Difference, Inductor, Insulator, Kirchhoff's rules, Ohm's Law, Parallel Circuit, Power, Resistor, Resistance, Series Circuit, Superconductor, Voltage, Magnetic Field, Magnetic Forces, Alternating Current (AC), Capacitor, Circuit Diagram, Conductor, Coulomb's Law, Current, Direct Current (DC), Electric Power Grid, Electric Current, Electric Potential Difference, Inductor, Insulator, Kirchhoff's Laws, Ohm's Law, Parallel Circuit, Power, Resistor, Resistance, Series Circuit, Superconductor, Voltage.	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Clarify vocabulary and symbols	• Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge • Provide graphic symbols with alternative text descriptions • Highlight how complex terms, expressions, or equations are composed of simpler words or symbols • Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations) • Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
The CELP guidance is to support the development of language; access to course content expectations should not change as a result of MLL status.* **I can explain the conditions required for magnetism to create electric currents. An EL can conduct research and evaluate and communicate findings to answer questions or solve problems. • I can identify key vocabulary words such as magnetism, electric current, conductor, and generator. Through simple activities and guided discussions, I can form basic sentences to describe the relationship between	

magnetism and electric currents, with assistance as needed.

- Level 2: I can engage in activities where I observe and describe basic electromagnetic phenomena. I can create diagrams to explain how motion or changes in magnetic fields induce electric currents, using appropriate vocabulary and sentence structures.
- Level 3: I can gather information from various sources such as textbooks, articles, and online resources to explain electromagnetic induction in different contexts. I can paraphrase key information and present it in written or oral reports, using illustrations or diagrams to aid comprehension.
- Level 4: I can analyze information from multiple sources, evaluate the reliability of each source, and synthesize their findings into coherent explanations. I can write organized essays or deliver presentations that demonstrate a thorough understanding of the conditions required for magnetism to create electric currents, using academic language and citing sources accurately.
- Level 5: I can critically evaluate complex theories and models, integrate information from diverse sources, and construct sophisticated explanations. I can communicate my understanding effectively through articulate essays, presentations, or scientific reports, demonstrating fluency in academic language and precise terminology.

Lesson Sequence	**Learning Target**	**Success Criteria**
1 Electric Currents	*I can define electric current.*	• I can relate charge current and time.
2 Resistance	I can identify resistance as an opposition to current.	• I can use Ohm's Law to relate current voltage and resistance. • I can calculate the resistance of an object. • I can calculate the power dissipated by a circuit.
3. Electric Circuits	I can calculate resistance, current, power, voltage, and capacitance of an electric circuit.	• I can make calculations with resistors in series, parallel, and combination connections. • I can properly connect voltmeters and ammeters. • I can construct circuits in the lab given a schematic diagram. • I can analyze circuits with capacitors connected in various ways. • I can properly treat capacitors in circuits immediately after it is energized and at steady state.
Magnetostatics	I can analyze the magnetic force on a moving charge in a magnetic field.	• I can calculate the force on a moving charge in a magnetic field, and determine the resulting motion of the charge. • I can calculate the force on a current-carrying conductor in a magnetic field. • I can calculate the magnetic field of a straight current carrying conductor.
Electrodynamics	I can understand the conditions required for magnetism to create electric currents.	• I can calculate magnetic flux. • I can quantify the relationship between changing magnetic flux and induced voltage. • I can use Lenz's Law to determine the direction of the induced current.

Unit Title:	
Waves and Optics (1202)	
Relevant Standards: Bold indicates priority	
AP Science Practices: Modeling (1.1, 1.2, 1.3, 1.4); Mathematical Routines (2.1, 2.2); Experimental Methods (3.2, 3.3); Data Analysis (4.1, 4.3); Argumentation (5.2); Making Connections (6.1)	
Essential Question(s):	**Enduring Understanding(s):**
• How do waves propagate and interact, and what are the key characteristics that define their behavior? • How does light behave as it travels through different mediums and interacts with surfaces, mirrors, and lenses? • What evidence supports the wave-particle duality of light, and how does this duality manifest in various optical phenomena?	**Waves:** Wave Characteristics: • Understanding the nature of waves, including amplitude, wavelength, frequency, and wave speed. • Recognizing the distinction between transverse and longitudinal waves. Wave Interactions: • Exploring the principles of interference, both constructive and destructive, in the context of waves. • Understanding standing waves and their formation. Doppler Effect: • Understanding how the observed frequency of a wave changes when the source or observer is in motion. **Optics:** Reflection and Refraction: • Applying the laws of reflection and refraction to understand how light interacts with surfaces and changes direction. • Mirrors and Lenses: • Understanding the behavior of convex and concave mirrors, as well as convex and concave lenses. • Analyzing how mirrors and lenses form images and how image characteristics are determined. Ray Optics: • Applying ray optics to describe the behavior of light as rays. Diffraction and Polarization: • Understanding diffraction as the bending of waves around obstacles. • Recognizing polarization as the orientation of oscillations in a transverse wave. Interference and Young's Double-Slit Experiment: • Understanding the phenomenon of interference and applying it to analyze patterns created by multiple sources of light. Thin-Film Interference: • Understanding how interference occurs in thin films and its impact on the colors observed. Wave Nature of Light: • Recognizing the dual nature of light as both a wave and a particle.

Demonstration of Learning:	**Pacing for Unit**
University of Connecticut released assessments	4 weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Amplitude, Concave Lens, Diffraction, Doppler Effect, Electromagnetic Wave, Focal Length, Focal Point, Frequency, Interference, Lens, Longitudinal Wave, Mechanical Wave, Mirror, Optical Instruments, Period, Polarization, Ray Optics, Refraction, Standing Wave, Transverse Wave, Wavelength, Wave, Wave Equation, Wave Speed.	

Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Clarify vocabulary and symbols	• Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge • Provide graphic symbols with alternative text descriptions • Highlight how complex terms, expressions, or equations are composed of simpler words or symbols • Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations) • Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect)

Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**

**The CELP guidance is to support the development of language; access to course content expectations should not change as a result of MLL status.*

I can explain how diffraction patterns prove that light has wave properties.
An EL can conduct research and evaluate and communicate findings to answer questions or solve problems.

- Level 1: I can identify key vocabulary words such as diffraction, light, waves, pattern, and proof. Through simple activities and guided discussions, I can begin forming basic sentences to describe how patterns are formed when light waves encounter obstacles.
- Level 2: I can participate in activities where I observe and describe basic diffraction phenomena. I can create diagrams to explain how diffraction patterns provide evidence of light behaving like waves, using appropriate vocabulary and sentence structures.
- Level 3: I can gather information from various sources such as textbooks, articles, and online resources to explain diffraction in different contexts. I can paraphrase key information and present it in written or oral reports, using illustrations or diagrams to aid comprehension.

- Level 4: I can analyze information from multiple sources, evaluate the reliability of each source, and synthesize their findings into coherent explanations. I can write organized essays or deliver presentations that demonstrate a thorough understanding of how diffraction patterns provide evidence of light's wave properties, using academic language and citing sources accurately.
- Level 5: I can critically evaluate complex theories and models, integrate information from diverse sources, and construct sophisticated explanations. I can communicate my understanding effectively through articulate essays, presentations, or scientific reports, demonstrating fluency in academic language and precise terminology.

Lesson Sequence	**Learning Target**	**Success Criteria**
1 Wave basics	I can understand wave motion	• I can appreciate that wave motion is the motion of a form. • I can relate the frequency, wavelength, and speed of a wave • I can calculate the amplitude of overlapping waves
2 Mechanical waves	I can understand the origin of standing waves and calculate their details.	• I can identify parts of standing waves • I can predict the resonant modes of a standing wave • I can relate wave properties to the properties of sound
3. Light	I can recognize visible light as a part of the electromagnetic spectrum	• I can identify the parts of the electromagnetic spectrum • I can relate wavelength to color • I can analyze the behavior of light striking an interface between two media
4. Geometric optics	I can identify situations when light can form an image	• I can locate the foci of an optical element. • I can use ray tracing to locate images and determine their properties • I can use analytical methods to locate images and determine their properties. • I can differentiate between real and virtual images.
5. Physical optics	I can predict the properties of light based on interference patterns	• I can use Young's Equation to calculate the wavelength of light. • I can understand how diffraction patterns prove that light has wave properties.

Unit Title:	
Modern Physics (1202)	
Relevant Standards: Bold indicates priority	
AP Science Practices: Modeling (1.1, 1.2, 1.3, 1.4, 1.5); Mathematical Routines (2.1, 2.2); Experimental Methods (3.1, 3.2, 3.3); Data Analysis (4.1, 4.3); Argumentation (5.1, 5.2); Making Connections (6.1)	
Essential Question(s):	**Enduring Understanding(s):**
• How do the wave-particle duality of light and matter shape our understanding of the universe? • What are the underlying principles that govern atomic structure and behavior, and how have they evolved over time? • What role does nuclear physics play in shaping our understanding of matter, energy, and the universe?	Dual Nature of Light and Matter: • Light and matter exhibit both wave-like and particle-like behavior, as demonstrated by phenomena such as the photoelectric effect and atomic spectra. • Understanding the wave-particle duality is essential for explaining various phenomena in modern physics. Evolution of Atomic Models: • Historical atomic models, including the Rutherford and Bohr models, represent milestones in understanding the structure of the atom. • Each atomic model builds upon previous ones and introduces new concepts to explain experimental observations. Quantum Mechanics: • Quantum mechanics provides a framework for understanding the behavior of particles at the atomic and subatomic levels. • Concepts such as quantized energy levels and wave functions are fundamental to explaining atomic phenomena. Nuclear Physics: • The structure and stability of atomic nuclei are determined by the balance between nuclear forces and electromagnetic forces. • Nuclear reactions, including decay processes and fusion reactions, involve changes in nuclear energy and mass. Applications of Modern Physics: • Knowledge of modern physics principles underlies various technological applications, such as nuclear energy generation and medical imaging. • Understanding the principles of modern physics enables the development of innovative technologies and solutions to real-world problems. Interdisciplinary Connections: • Modern physics concepts have interdisciplinary connections with other scientific fields, such as chemistry, engineering, and materials science. • Integration of modern physics principles enhances our understanding of natural phenomena and drives advancements in multiple scientific disciplines.

Demonstration of Learning:	**Pacing for Unit**
University of Connecticut released assessments	6 weeks
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Alpha Decay, Atomic Spectra, Binding Energy, Bohr Model, Conservation of Energy, Electromagnetic Spectrum, Fission, Fusion, Isotope, Mass Defect, Nuclear Decay, Photoelectric Effect, Quantum Mechanics, Rutherford Model, Wave-Particle Duality	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Clarify vocabulary and symbols	• Pre-teach vocabulary and symbols, especially in ways that promote connection to the learners' experience and prior knowledge • Provide graphic symbols with alternative text descriptions • Highlight how complex terms, expressions, or equations are composed of simpler words or symbols • Embed support for vocabulary and symbols within the text (e.g., hyperlinks or footnotes to definitions, explanations, illustrations, previous coverage, translations) • Embed support for unfamiliar references within the text (e.g., domain specific notation, lesser known properties and theorems, idioms, academic language, figurative language, mathematical language, jargon, archaic language, colloquialism, and dialect)
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**

**The CELP guidance is to support the development of language; access to course content expectations should not change as a result of MLL status.*

I can explain how classical physics is insufficient to accurately describe all aspects of light's behavior.
An EL can conduct research and evaluate and communicate findings to answer questions or solve problems.

- Level 1: I can identify key vocabulary words such as classical physics, light, behavior, and limitations. Through simple activities and guided discussions, I can form basic sentences to describe how classical physics fails to fully explain certain properties of light.
- Level 2: I can engage in activities where I observe and describe basic phenomena that classical physics cannot fully account for, such as the photoelectric effect or the wave-particle duality of light. I can create diagrams to explain these limitations, using appropriate vocabulary and sentence structures.
- Level 3: I can gather information from various sources such as textbooks, articles, and online resources to explain phenomena that classical physics cannot adequately describe, such as interference patterns in the double-slit experiment or the polarization of light. I can paraphrase key information and present it in written or oral reports, using illustrations or diagrams to aid comprehension.
- Level 4: I can analyze information from multiple sources, evaluate the reliability of each source, and synthesize

their findings into coherent explanations. I can write organized essays or deliver presentations that demonstrate a thorough understanding of why classical physics is insufficient to fully describe light's behavior, using academic language accurately.

- Level 5: I can critically evaluate complex theories and models, integrate information from diverse sources, and construct sophisticated explanations. I can communicate my understanding effectively through articulate essays, presentations, or scientific reports, demonstrating fluency in academic language and precise terminology.

Lesson Sequence	Learning Target	Success Criteria
1	I can appreciate that classical physics is insufficient to accurately describe all aspects of light's behavior.	• I can name photoelectric effect as a phenomena that cannot be explained by the wave model of light • I can list several aspects of the photoelectric effect that cannot be explained by the wave model. • I can name atomic spectra as an example of a phenomenon that cannot be explained by the wave model of light.
2	I can explain how the particle model of light can fully explain the photoelectric effect.	• I can solve problems relating photon energy to frequency. • I can apply conservation of energy to calculate photoelectron energy. • I can relate cutoff frequency to target electron work function.
3	I can understand the wave/particle duality of light.	• I can appreciate that light sometimes acts like a wave and sometimes acts like a particle.
4	I can appreciate the need for revised models of the atom	• I can give a brief synopsis of historical atomic models and their limitations • I can understand how the Rutherford model of the atom explains the scattering of the gold foil experiment
5	I can understand the structure of the Bohr Model of the atom.	• I can understand the Bohr atom as a planetary model with additional assumptions that provide for quantized electron energy levels. • I can predict the wavelength of light emitted or absorbed by hydrogen atoms. • I can state the limitations of the Bohr model of the atom.
6	I can understand the wave/particle duality of matter.	• I can appreciate that matter sometimes acts like a wave and sometimes acts like a particle. • I can relate the wavelength of a particle to its momentum. • I can use the wave nature of matter to improve the bohr model of the atom.
7	I can understand nuclear structure	• I can state the constituents of a nucleus • I can understand that the number of protons determines the element and the number of neutrons determines the isotope. • I can understand why some nuclei are stable and why others are radioactive.

8	I can understand that mass can be converted into energy	• I can relate the mass defect to binding energy • I can relate the loss of nuclear mass to the emission of a high energy photon. • I can relate binding energy to nuclear stability.
9	I can understand the nuclei change spontaneously by nuclear decay.	• I can recognize and write reactions for alpha and beta decay. • I can relate gamma decay to nuclear energy levels. • I can calculate the change in nuclear energy during reactions.
10	I can understand the process of a nuclear fission chain reaction.	• I can state the role of fission reactor components. • I can relate mass lost in reactions to energy produced.
11	I can understand the process of a nuclear fusion reaction.	• I can state the role of fusion reactor components. • I can relate mass lost in reactions to energy produced.

Course Title:	Content Area:	Grade Level:	Credit (if applicable)
Academic Statistics	Mathematics	11-12	1.0

Course Description:

Academic statistics is a high school (non-AP) statistics course, designed for a fourth credit in mathematics for any student who has earned a passing grade in Algebra 2. It is also a course for strong math students who are interested in learning statistics in a real-world context in addition to the traditional mathematics curriculum. The purpose of this course is to provide students with a class that introduces them to statistical reasoning in a context that is rich with examples that spark their interest and better engage students in their learning. This course teaches students how to use four-steps of the statistical process in the context of real-world applications: ask questions, collect data, analyze data, and make conclusions. The course also includes some topics in probability. Each unit will begin with a real-world statistical question and then students will learn how to collect appropriate data, how to analyze the data, and how to make reasonable conclusions. Although the context of the examples and exercises will be real-world related, the primary focus of the class will be to teach students the basic principles of statistical reasoning. The hope is to encourage more students to explore the interesting and relevant world of statistics with a focused emphasis on statistical thinking. These 21st century skills are a reflection of the increasingly data driven world we live in and will further help students meet mathematics standards towards College and Career Readiness.

Aligned Core Resources:	Connection to the *BPS Vision of the Graduate*
Statistics and Probability With Applications (3rd Edition)	**Critical Thinking and Problem Solving** • Collect, assess and analyze relevant information • Reason effectively. Use systems thinking • Make sound judgments and decisions. Identify, define and solve authentic problems and essential questions. • Reflect critically on learning experience, processes and solutions • Transfer knowledge to other situations
Additional Course Information: ***Knowledge/Skill Dependent courses/prerequisites***	**Link to *Completed Equity Audit***
	Academic Statistics

Standard Matrix

Standards	Aligned Lessons
S.ID.1	S.1.2, S.1.3, S.1.4, S.1.5, S.1.8
S.ID.2	S.1.1, S.1.3, S.1.4, S.1.5, S.1.6, S.1.7,
S.ID.3	S.1.6, S.1.8
S.ID.4	S.1.9, S.5.1, S.5.2, S.5.5, S.5.6, S.5.7, S.6.3, S.6.4, S.6.5, S.6.6
S.ID.5	
S.ID.6	S.2.1, S.2.2

S.ID.6a	S.2.5
S.ID.6b	6.2.5
S.ID.6c	6.2.8
S.ID.7	S.2.5
S.ID.8	S.2.3, S.2.4, S.2.6, S.2.7
S.ID.9	
S.IC.1	S.3.1, S.6.1, S.6.2
S.IC.2	S.4.1
S.IC.3	S.3.2, S.3.3, S.3.5, S.3.6
S.IC.4	S.3.4
S.IC.5	S.3.7, S.3.8
S.IC.6	S.3.9
S.CP.1	S.4.1, S.4.2
S.CP.2	S.4.4, S.4.6
S.CP.3	S.4.4
S.CP.4	S.4.3
S.CP.5	
S.CP.6	S.4.4
S.CP.7	S.4.3
S.CP.8	S.4.5
S.CP.9	S.4.7, S.4.8
S.MD.1	S.5.1
S.MD.2	S.5.2
S.MD.3	S.5.3, S.5.4, S.6.1, S.6.3, S.6.4, S.6.5
S.MD.4	S.6.3, S.6.4
S.MD.5	
S.MD.5A	
S.MD.5B	
S.MD.6	

S.MD.7	

Unit Links

If unit headings are formatted as a heading, then we can link a Table of Contents to better organize and provide faster access to each unit

Unit 1: Analyzing One Variable Data
Unit 2: Analyzing Two-Variable Data
Unit 3: Collecting Data
Unit 4: Probability
Unit 5: Random Variables

Unit Title:
Unit 1: Analyzing One Variable Data
Relevant Standards: Bold indicates priority

Lesson	Standards
S.1.1	S.ID.2
S.1.2	S.ID.1
S.1.3	S.ID.1, S.ID.2,
S.1.4	S.ID.1, S.ID.2
S.1.5	S.ID.1, S.ID.2
S.1.6	S.ID.2, S.ID.3
S.1.7	S.ID.2
S.1.8	S.ID.1, S.ID.3
S.1.9	S.ID.4

Essential Question(s):	**Enduring Understanding(s):**
What is data analysis and what is its purpose? What statistical measures can be used to describe univariate data and its distribution?	• Data analysis is the art of using graphs and numerical summaries to identify patterns, relationships, trends and exceptions amongst data. • Univariate data can be described using a 5-number summary, standard deviation, range and variance and its distribution can be described by its shape, center and spread.
Demonstration of Learning:	**Pacing for Unit**
• Quiz or CFA on creating, describing, and comparing graphs (1.3-1.5). • Quiz or CFA on measures on measures of center and variability (1.6-1.7) • Unit assessment	12 Blocks (includes first day, flex, and assessment)
Family Overview (link below)	**Integration of Technology:**
Chapter 1 Worked Example Videos	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning*

Unit-specific Vocabulary:	Aligned Unit Materials, Resources, and Technology (beyond core resources):
Individuals, Variables, Categorical, Quantitative, Distribution, Frequency, Relative Frequency, Bar Graph, Pie Chart, Dotplot, Histogram, Stemplot, Shape, Center, Variability, Outliers, Symmetric, Skewed Left, Skewed Right, Median, Mean, Range, Interquartile Range (IQR), First Quartile, Third Quartile, Standard Deviation, Resistant, 1.5xIQR Rule, Boxplot, Five-Number Summary, Percentiles, z-Scores	https://www.statsmedic.com/ https://skewthescript.org/

Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Highlight patterns, critical features, big ideas, and relationships	• Highlight or emphasize key elements in text, graphics, diagrams, formulas • Use outlines, graphic organizers, unit organizer routines, concept organizer routines, and concept mastery routines to emphasize key ideas and relationships • Use multiple examples and non-examples to emphasize critical features • Use cues and prompts to draw attention to critical features • Highlight previously learned skills that can be used to solve unfamiliar problems

Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
An EL can construct grade appropriate oral and written claims and support them with reasoning and evidence.	I can summarize quantitative data. • Level 1: With prompting support, I can explain my ideas about a data set. • Level 2: With prompting support, I can use one piece of evidence to explain my ideas about a data set/graph. • Level 3: With guidance, I can make a conclusion about a data set/graph and explain using evidence. • Level 4: I can make a conclusion about a data set/graph and explain using evidence. • Level 5: I can use academic and domain specific vocabulary in my data summary.

Lesson Sequence	Learning Target	Success Criteria/Assessment/Resources
1 Classifying Data (1 Block)	• I can classify data.	Lesson 1: • I can identify the individuals and variables in a data set. (1.1) • I can classify the variables as categorical or quantitative. (1.1)

2 Graphing Data (2-3 Blocks)	• I can summarize categorical data. • I can summarize quantitative data. (*Midterm to stress interpreting data and graphs)*	Lesson 2: • I can create a relative frequency table. (1.2) • I can interpret and summarize information from a relative frequency table. (1.2) • I can create a bar graph. (1.2) • I can interpret and summarize information from a bar graph. (1.2) • I can interpret and summarize information from pie charts. (1.2) Lesson 3: • I can create dot plots. (1.3) • I can interpret and summarize information from dot plots. (1.3) • I can create histograms (1.5) • I can interpret and summarize information from histograms. (1.5) • I can create stem and leaf plots. (1.4) • I can interpret and summarize information from stem and leaf plots. (1.4)
3 Analyzing Data (4 Blocks)	• I can use statistics appropriate to the shape of the distribution to compare the center and spread of two or more different data sets.	Lesson 4: • I can calculate the median. (1.6) • I can interpret the median. (1.6) • I can calculate the mean. (1.6) • I can compare the mean and the median. (1.6) Lesson 5: • I can identify outliers/extreme values in a data set. (1.7) • I can calculate the standard deviation. (1.7) • I can calculate interquartile range. (1.7) Lesson 6: • I can use the 1.5 x IQR rule to identify outliers. (1.8) • I can create box plots. (1.8) • I can interpret and summarize information from box plots. (1.8) • I can calculate the percentile of a value in a distribution. (1.9) Lesson 7: • I can interpret a percentile calculation. (1.9) • I can calculate the z-score of a value in a distribution. (1.9) • I can interpret the z-score of a value in a distribution. (1.9)

Unit Title:

Unit 2: Analyzing Two-Variable Data

Relevant Standards: Bold indicates priority

Lesson	Standards
S.2.1	S.ID.6
S.2.2	S.ID.6
S.2.3	S.ID.8
S.2.4	S.ID.8
S.2.5	S.ID.6A, S.ID.6B, S.ID.7
S.2.6	S.ID.6B
S.2.7	S.ID.6B
S.2.8	S.ID.6C

Essential Question(s):	Enduring Understanding(s):
What does a scatter plot help us determine? Why do we use regression lines (least-squares regression lines) and what are their limitations? What is the relationship between association and causation?	• A scatter plot helps us determine the direction, form and strength of a relationship that exists between two quantitative variables. • Regression lines and least-squares regression lines allow us to make estimates through interpolation and make predictions through extrapolation; however, predictions through extrapolations may be less accurate. • Two variables may have a strong association; however, association does not imply causation. • Data that follows a curved pattern can be linearized through transformations so a mathematical model can be constructed and predictions can be made.
Demonstration of Learning:	**Pacing for Unit**
• Quiz or CFA on comparing two sets of categorical or quantitative data (2.1-2.4) • Quiz or CFA on regression and extrapolation (2.5-2.8) • Unit assessment	12 Blocks (includes flex and assessment)
Family Overview (link below)	**Integration of Technology:**
Chapter 2 Worked Example Videos	*Intentionally aligned use of digital tools and resources*

	to support acquisition of content, researching, organizing and communicating learning
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Response Variable, Explanatory Variable, Association, Causation, Segmented Bar Graph, Scatterplot, Direction, Form, Strength, Outlier, Correlation r, Regression Line, Extrapolation, Residual, Least-Squares Regression Line, Coefficient of Determination r^2, Quadratic Model, Exponential Model	https://www.statsmedic.com/ https://skewthescript.org/
Connections to Prior Units:	**Connections to Future Units:**
- Students utilize their knowledge differentiating between categorical and quantitative data to compare multiple data sets of each type.	• There are few, if any, connections to future units.
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Highlight patterns, critical features, big ideas, and relationships	• Highlight or emphasize key elements in text, graphics, diagrams, formulas • Use outlines, graphic organizers, unit organizer routines, concept organizer routines, and concept mastery routines to emphasize key ideas and relationships • Use multiple examples and non-examples to emphasize critical features • Use cues and prompts to draw attention to critical features • Highlight previously learned skills that can be used to solve unfamiliar problems
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
An EL can construct grade appropriate oral and written claims and support them with reasoning and evidence.	I can represent data of two quantitative variables on a scatter plot and describe how the variables are associated. • Level 1: With prompting support, I can explain my ideas about how two variables are associated. • Level 2: With prompting support, I can use one piece of evidence to explain my ideas about how two variables are associated. • Level 3: With guidance, I can make a conclusion about a scatterplot and explain using evidence. • Level 4: I can make a conclusion about a scatterplot and explain using evidence. • Level 5: I can use academic and domain specific vocabulary in my scatter plot analysis.

Lesson Sequence	Learning Target	Success Criteria/Assessment/Resources
1 Comparing Two Sets of Categorical Data (1 Block)	• I can distinguish between explanatory and response variables for categorical data. (Lesson 1)	Lesson 1: • I can identify a response variable. (2.1) • I can identify an explanatory variable. (2.1) • I can make a segmented bar graph. (2.1) • I can interpret and summarize information from a segmented bar graph. (2.1) • I can interpret and summarize information from a side by side bar graph. (2.1) • I can determine if there is an association between two categorical variables and describe the association if it exists. (2.1)
2 Comparing Two Sets of Quantitative Data (3 Blocks)	• I can distinguish between explanatory and response variables for quantitative data. (Lesson 2) • I can represent data of two quantitative variables on a scatter plot and describe how the variables are related. (Lesson 3) • I can compute using technology and interpret the correlation coefficient. (Lesson 4)	Lesson 2: • I can identify a response variable. (2.2) • I can identify an explanatory variable. (2.2) • I can make a scatter plot to display the data between two quantitative variables. (2.2) • I can describe the direction of a relationship displayed in a scatter plot. (2.2) • I can describe the form of a relationship displayed in a scatter plot. (2.2) • I can describe the strength of a relationship displayed in a scatter plot. (2.2) • I can identify outliers displayed in a scatter plot. (2.2) Lesson 3: • I can estimate the correlation between two quantitative variables from a scatter plot. (2.3) • I can interpret the correlation between two variables from a scatter plot. (2.3) • I can distinguish correlation from causation. (2.3) Lesson 4: • I can calculate the correlation between two quantitative variables. (2.4) • I can apply the properties of correlation. (2.4) • I can describe how the outliers influence the correlation. (2.4)
3 Regression and Extrapolation (4 Blocks)	• I can fit a linear function for a scatter plot that suggests a linear association. • I can fit a quadratic function for a scatter plot that suggests a curved association. • I can fit an exponential function for a scatter plot that suggests a curved association.	Lesson 5: • I can visualize a trend line through data. (2.5) • I can make predictions using regression lines through a scatter plot. (by hand and with technology) (2.5) • I can calculate and interpret a residual. (2.5) • I can understand the benefits and risks of extrapolating. (2.5) • I can interpret the slope and y-intercept of a regression line. (2.5)

		Lesson 6: ● I can calculate the equation of the least squares regression line using technology. (2.6) ● I can describe how outliers affect the least squares regression lines. (2.6) Lesson 7/8: ● I can calculate and interpret the coefficient of determination r^2. (2.7) ● I can use technology to calculate quadratic models for curved relationships. (2.8) ● I can use technology to calculate exponential models for curved relationships. (2.8)

Unit Title:

Unit 3: Collecting Data

Relevant Standards: Bold indicates priority

Lesson	Standards
S.3.1	S.IC.1
S.3.2	S.IC.3
S.3.3	S.IC.3
S.3.4	S.IC.4
S.3.5	S.IC.3
S.3.6	S.IC.3
S.3.7	S.IC.5
S.3.8	S.IC.5
S.3.9	S.IC.6

Essential Question(s):	**Enduring Understanding(s):**
Why are experiments considered more convincing than observational studies? What are the important principles of experimental design? What characteristics are found in a well designed experiment?	• Experiments are more convincing than observational studies since effects on a variable can be controlled. Generally, in observational studies, there are lurking variables that often influence the interpretation of the relationship between variables in a study. • The important principles of experimental design are control, replication and randomization. • Well-designed experiments are usually randomized, double-blind, comparative and placebo-controlled.
Demonstration of Learning:	**Pacing for Unit**
• Quiz or CFA on sampling (3.1-3.5) • Quiz or CFA on experiments (3.6-3.9) • Unit assessment	16 Blocks (includes flex, and assessment) Consider going up until date of midterm depending on need
Family Overview (link below)	**Integration of Technology:**
Chapter 3 Worked Example Videos	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning*

Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Statistical Question, Random Sampling, Random Assignment, Population, Sample, Census, Simple Random Sample, Sampling Variability, Margin of Error, Bias, Convenience Sample, Voluntary Response Sample, Undercoverage, Nonresponse, Response Bias, Observational Study, Experiment, Confounding, Treatment, Experimental Units (Subjects), Placebo, Placebo Effect, Single Blind, Double Blind, Control Group, Completely Randomized Design, Statistically Significant, Explanatory Variable, Response Variable	https://www.statsmedic.com/ https://skewthescript.org/
Connections to Prior Units:	**Connections to Future Units:**
• Students will apply what they learned graphing and analyzing quantitative data (histograms, dotplots) to analyze sample and population proportions.	• This lesson lays the foundation towards later topics: probability distributions, normal distributions, and confidence intervals.
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Highlight patterns, critical features, big ideas, and relationships	• Highlight or emphasize key elements in text, graphics, diagrams, formulas • Use outlines, graphic organizers, unit organizer routines, concept organizer routines, and concept mastery routines to emphasize key ideas and relationships • Use multiple examples and non-examples to emphasize critical features • Use cues and prompts to draw attention to critical features • Highlight previously learned skills that can be used to solve unfamiliar problems
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
An EL can construct grade appropriate oral and written claims and support them with reasoning and evidence.	I can recognize the purpose of and differences among samples, surveys, experiments, and observational studies. • Level 1: With prompting support, I can explain my ideas about the results of a survey, observational study, or experiment. • Level 2: With prompting support, I can use one piece of evidence to explain my ideas about the results of a survey, observational study, or experiment. • Level 3: With guidance, I can use one piece of evidence to explain my ideas about the results of a survey, observational study, or experiment. • Level 4: I can make a conclusion about the results

		of a survey, observational study, or experiment • Level 5: I can use academic and domain specific vocabulary in my analysis of a survey, observational study, or experiment.
Lesson Sequence	**Learning Target**	**Success Criteria/Assessment/Resources**
1 Observational Studies (5 Block)	• I can understand statistics as a process for making inferences about population parameters based on a random sample from that population. • I can use data from a sample survey to estimate a population mean or proportion. • I can recognize the purpose of and differences among samples, surveys, experiments, and observational studies. • I can explain how randomization relates to aforementioned data collection methods.	Lesson 1: • I can distinguish statistical questions from other types of questions (3.1) • I can identify the population of a statistical study. (3.1) • I can identify the sample of a statistical study. (3.1) • I can distinguish between an observational study and an experiment. (3.1) Lesson 2: • I can describe how convenience sampling can lead to bias. (3.2) • I can describe how voluntary response sampling can lead to bias. (3.2) Lesson 3: • I can explain how random sampling can help to avoid bias. (3.2) • I can describe how to obtain a simple random sample using slips of paper or technology. (3.3) Lesson 4: • I can explain the concept of sample variability and the effect of increasing sample size. (3.3) • I can interpret the margin of error. (3.4) Lesson 5: • I can explain how undercoverage can lead to bias. (3.5) • I can explain how nonresponse can lead to bias. (3.5) • I can explain how other aspects of a sample survey (response bias) can lead to bias. (3.5)
2 Experiments (6 Block)	• I can recognize the purpose of and differences among samples, surveys, experiments, and observational studies. • I can explain how randomization relates to aforementioned data collection methods. • I can use data from a randomized experiment to compare two treatments. • I can use simulations to decide if differences between parameters are significant.	Lesson 6: • I can distinguish between an observational study and an experiment. (3.1, 3.6) • I can explain the concept of confounding and how it limits the ability to make cause-and-effect conclusions. (3.6) Lesson 7: • I can explain the purpose of comparison in an experiment. (3.6) • I can describe the placebo effect in an experiment (3.6)

	• I can evaluate reports based on data.	• I can describe the purpose of blinding in an experiment. (3.7) Lesson 8: • I can describe how to randomly assign treatments using slips of paper or technology. (3.7) • I can explain the purpose of random assignment in an experiment. (3.7) • I can identify other sources of variability in an experiment and explain the benefits of keeping these variables the same for all experimental units. (3.7) Lesson 9: • I can outline an experiment that uses a completely randomized design. (3.8) • I can explain the concept of statistical significance in the context of an experiment. (3.8) • I can use simulation to determine if the difference between two means or two proportions in an experiment is significant. (3.8) Lesson 10: • I can identify when it is appropriate to use information from a sample to make an inference about a population. (3.9) • I can identify when it is appropriate to use information from a sample to make an inference about cause and effect. (3.9) Lesson 11: • I can evaluate if a statistical study has been carried out in an ethical manner. (3.9)

Unit Title:

Unit 4: Probability

Relevant Standards: Bold indicates priority

Lesson	Standards
S.4.1	S.CP.1, S.IC.2
S.4.2	S.CP.1
S.4.3	S.CP.4, S.CP.7
S.4.4	S.CP.3, S.CP.6, S.CP.2
S.4.5	S.CP.8
S.4.6	S.CP.2
S.4.7	S.CP.9
S.4.8	S.CP.9

Essential Question(s):	**Enduring Understanding(s):**
What is simulation and what does it imitate? What is probability? What is meant by independence?	• A simulation is a model of a real-world situation that imitates chance behavior of random events. • Probability is the basis for statistical inference and is the tool used for anticipating what the distribution of data should look like under a given model. • Independence means that the outcome of one event does not influence the probability of the other.
Demonstration of Learning:	**Pacing for Unit**
• Quiz or CFA on basic probability rules (4.1-4.3) • Quiz or CFA on conditional probability and two-way tables (4.3-4.4) • Quiz or CFA on the general multiplication rule, the multiplication rule for independent events, and tree diagrams (4.5-4.6) • Quiz or CFA on permutations and combinations (4.7-4.8)	20 Blocks (includes flex, and assessment)
Family Overview (link below)	**Integration of Technology:**
Chapter 4 Worked Example Videos	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning*

Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Probability, Law of Large Numbers, Simulation, Probability Model, Sample Space, Event, Complement, Complement Rule, Mutually Exclusive, Addition Rule for Mutually Exclusive Events, General Addition Rule, Two-way Table, Venn Diagram, Union, Intersection, Conditional Probability, General Multiplication Rule, Tree Diagram, Independent Events, Dependent Events, Multiplication Counting Principle, Permutation, Factorial, Combination	https://www.statsmedic.com/ https://skewthescript.org/
Connections to Prior Units:	**Connections to Future Units:**
• There are few, if any, connections to prior units.	• This lesson lays the foundation towards later topics: probability distributions, normal distributions, and confidence intervals.
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Highlight patterns, critical features, big ideas, and relationships	• Highlight or emphasize key elements in text, graphics, diagrams, formulas • Use outlines, graphic organizers, unit organizer routines, concept organizer routines, and concept mastery routines to emphasize key ideas and relationships • Use multiple examples and non-examples to emphasize critical features • Use cues and prompts to draw attention to critical features • Highlight previously learned skills that can be used to solve unfamiliar problems
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
An EL can construct grade appropriate oral and written claims and support them with reasoning and evidence.	I can determine the probability of an event. • Level 1: With prompting support, I can explain my ideas about the probability of an event. • Level 2: With prompting support, I can calculate the probability of an event. • Level 3: With guidance, I can calculate the probability of an event. • Level 4: I can calculate the probability of an event. • Level 5: I can use academic and domain specific vocabulary to calculate and interpret the probability of an event.

Lesson Sequence	**Learning Target**	**Success Criteria / Assessment / Resources**
1	• I can describe events as subsets of	Lesson 1:

Basic Probability Rules (4 Blocks)	a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not"). • I can decide if a specified model is consistent with results for a given data generating process (e.g. using simulation.) • I can construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. • I can apply the addition rule and interpret the answer in terms of the model.	• I can interpret probability as a long-run relative frequency. (4.1) • I can dispel common myths about randomness. (4.1) • I can use simulation to model chance behavior. (4.1) Lesson 2: • I can give a probability model for a chance process with equally likely outcomes and use it to find the probability of an event. (4.2) • I can use the complement rule to find the probability of an event. (4.2) • I can determine if events are mutually exclusive. (4.2) • I can use the addition rule for mutually exclusive events to find probabilities. (4.2) Lesson 3/4: • I can use a two-way table to find probabilities. (4.3) • I can use a Venn diagram to find probabilities. (4.3) • I can calculate probabilities with the general addition rule. (4.3)
2 Independent and Dependent Probability (7 Blocks)	• I can construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. • I can use the two-way tables as a sample space to decide if events are independent and to find probabilities. • I can understand the conditional probability of "A given B" and interpret independence of "A and B" as saying that the conditional probability of "A given B" is the same as the P(A) and the conditional probability of "B given A" is the same as P(B). • I can find the conditional probability of "A given B" as the fraction of B's outcomes that also belong to A and interpret the answer in terms of the model. • I can understand that two events A and B are independent if the probability of A and B occurring together is the product of probabilities, and use this characterization to determine if they are independent. • I can apply the multiplication rule in a uniform probability model, P(A and B) = P(A)P(B | A) = P(B)P(A | B), and interpret the answer in terms of	Lesson 5: • I can find and interpret conditional probabilities using two-way tables (4.4) and/or venn diagrams. Lesson 6: • I can use the conditional probability formula to calculate probabilities. (4.4) Lesson 7: • I can determine whether two events are independent. (4.4) Lesson 8: • I can use the general multiplication rule to calculate probabilities. (4.5) Lesson 9: • I can use tree diagrams to model a chance process involving a sequence of outcomes. (4.5) • I can calculate conditional probabilities using tree diagrams. (4.5) Lesson 10/11: • I can use the multiplication rule for independent events to calculate probabilities. (4.6) • I can calculate P(at least 1) using the complement rule and the multiplication rule for independent events. (4.6) • I can determine if it is appropriate to use the multiplication rule for independent events in a given setting. (4.6)

	the model.	
3 Permutations and Combinations (4 Blocks)	• I can use permutations and combinations to compute probabilities of compound events and solve problems.	Lesson 12: • I can use the multiplication counting principle to determine the number of ways to complete a process involving several steps. (4.7) Lesson 13 • I can use factorials to count the number of permutations of a group of individuals. (4.7) • I can compute the number of permutations of n individuals taken *k* at a time. (4.7) Lesson 14 • I can compute the number of combinations of *n* individuals taken *k* at a time. (4.8) Lesson 15 • I can use combinations to calculate probabilities. (4.8) • I can use the multiplication counting principle and combinations to calculate probabilities. (4.8)

Unit Title:

Unit 5: Random Variables

Relevant Standards: Bold indicates priority

Lesson	Standards
S.5.1	S.MD.1, S.ID.4
S.5.2	S.MD.2, S.ID.4
S.5.3	S.MD.3
S.5.4	S.MD.3
S.5.5	S.ID.4
S.5.6	S.ID.4
S.5.7	S.ID.4

Essential Question(s):

- What can be said about chance behavior in the short and long run and how is chance behavior related to the Law of Large Numbers?
- What is a random variable and what are the differences
- between the two types of random variables?
- What is meant by the probability distribution for a random variable?
- What is standardizing and how does it help us?
- What is a standard Normal distribution?
- What are the various ways to assess if a set of data is normally distributed?

Enduring Understanding(s):

- Chance behavior is unpredictable in the short run but has a regular and predictable pattern in the long run and The Law of Large Numbers says that as the number of independent trials increases, the long-run relative frequency of repeated events gets closer and closer to a single value.
- A random variable is a variable whose value is a numerical outcome of a random phenomenon. A discrete random variable has a countable number of distinct outcomes whereas a continuous random variable takes on all values within a range of values, which may be infinite or bounded at either or both ends.
- A probability distribution for a random variable is an idealized relative frequency distribution.
- Standardizing converts an individual score to a standard deviation unit and helps us compare the relative standing of individuals within the same distribution and across different distributions.
- Standard Normal distribution is a special type of density curve which has been standardized to have a mean of 0 and a standard deviation of 1.
- To assess if a set of data is Normally distributed, you can create a histogram, stem plot and/or box plot to see if the graph is bell-shaped and symmetric with respect to the mean, determine if the proportion of observations is approximately distributed following the 68-95-99.7 rule, or

	construct a Normal probability plot to check if the points lie close to a straight line.
Demonstration of Learning:	**Pacing for Unit**
• Quiz or CFA on discrete random variables and probability distributions (5.1-5.2) • Quiz or CFA on binomial distributions (5.3-5.4) • Quiz or CFA on normal distributions (5.5-5.7) • Unit assessment	15 Blocks (including flex days and assessments)
Family Overview (link below)	**Integration of Technology:**
Chapter 5 Worked Example Videos	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning*
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Random Variable, Probability Distribution, Discrete Random Variable, Continuous Random Variable, Density Curve, Mean of a Random Variable, Expected Value, Standard Deviation of a Random Variable, Binomial Setting, BINS, Binomial Random Variable, Binomial Distribution, Normal Distribution, 68-95-99.7 Rule, Standard Normal Distribution	https://www.statsmedic.com/ https://skewthescript.org/
Connections to Prior Units:	**Connections to Future Units:**
• Students will utilize the probability knowledge gained in Unit 4 to tabulate, graph, and analyze probability distributions.	• This lesson builds toward the creation of topics such as confidence intervals.
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Highlight patterns, critical features, big ideas, and relationships.	• Highlight or emphasize key elements in text, graphics, diagrams, formulas • Use outlines, graphic organizers, unit organizer routines, concept organizer routines, and concept mastery routines to emphasize key ideas and relationships • Use multiple examples and non-examples to emphasize critical features • Use cues and prompts to draw attention to critical features • Highlight previously learned skills that can be used to solve unfamiliar problems
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
An EL can construct grade appropriate oral and written	I can determine the probability of an event.

claims and support them with reasoning and evidence.		• Level 1: With prompting support, I can explain my ideas about a probability distribution. • Level 2: With prompting support, I can calculate the probability of an event using a probability distribution. • Level 3: With guidance, I can calculate the probability of an event using a probability distribution. • Level 4: I can calculate the probability of an event using a probability distribution. • Level 5: I can use academic and domain specific vocabulary to calculate and interpret the probability of an event using a probability distribution.
Lesson Sequence	**Learning Target**	**Success Criteria/ Assessment / Resources**
1 Two Types of Random Variables	• I can define a random variable for a quantity of interest by assigning a numerical value to each even in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.	Lesson 1: • I can verify the probability distribution of a discrete random variable is valid. (5.1) • I can calculate probabilities involving a discrete random variable. (5.1) • I can classify a random variable as discrete or continuous. (5.1)
2 Analyzing Discrete Random Variables	• I can define a random variable for a quantity of interest by assigning a numerical value to each even in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions. • I can calculate the expected value of a random variable; interpret it as a mean of the probability distribution.	Lesson 2 • I can make a histogram to display the probability distribution of a discrete random variable and describe its shape. (5.2) • I can calculate and interpret the mean (expected value) of a discrete random variable. (5.2) • I can calculate and intercept the standard deviation of a discrete random variable. (5.2)
3 Binomial Random Variables	• I can develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value.	Lesson 3 • I can determine whether or not a given scenario is a binomial setting. (5.3) Lesson 4 • I can calculate probabilities involving a single value of a binomial random variable. (5.3) • I can make a histogram to display a binomial distribution and describe its shape. (5.3)
4 Analyzing Binomial Random Variables	• I can develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value.	Lessons 5/6 • I can calculate and interpret the mean and standard deviation of a binomial distribution. (5.4) • I can find probabilities involving several values of a binomial random variable. (5.4) • I can use technology to calculate cumulative binomial probabilities. (5.4)

5 Continuous Random Variables	• I can use the mean and standard deviation of a data set to fit it to a distribution and to estimate population percentages. • I can recognize that there are data sets for which such a procedure is not appropriate. • I can use calculators, spreadsheets, and tables to estimate areas under a normal curve.	Lesson 7 • I can show that the probability distribution of a continuous random variable is valid and use the distribution to calculate probabilities. (5.5) • I can determine the relative locations of the mean and median of a continuous random variable from the shape of its probability distribution. (5.5) • I can draw a normal probability distribution with a given mean and standard deviation. (5.5)
6 The Standard Normal Distribution	• I can use the mean and standard deviation of a data set to fit it to a distribution and to estimate population percentages. • I can recognize that there are data sets for which such a procedure is not appropriate. • I can use calculators, spreadsheets, and tables to estimate areas under a normal curve.	Lesson 8 • I can use the 68-95-99.7 rule to find approximate probabilities in a normal distribution. (5.6) Lesson 9/10 • I can use Table A or technology to find a probability (area) from a z-score in the standard normal distribution. (5.6) • I can use Table A or technology to find a z-score from a probability (area) in the standard normal distribution. (5.6)
7 Normal Distribution Calculations	• I can use the mean and standard deviation of a data set to fit it to a distribution and to estimate population percentages. • I can recognize that there are data sets for which such a procedure is not appropriate. • I can use calculators, spreadsheets, and tables to estimate areas under a normal curve.	Lesson 11/12 • I can calculate the probability that a value falls within a given interval in a normal distribution. (5.7) • I can find a value corresponding to a given probability (area) in a normal distribution. (5.7)

Unit Title:

Unit 6: Sampling Distributions

Relevant Standards: Bold indicates priority

Lesson	Standards
S.6.1	S.IC.1, S.MD.3
S.6.2	S.IC.1, 2.MD.3
S.6.3	S.MD.3, S.MD.4, S.ID.4
S.6.4	S.MD.3, S.MD.4, S.ID.4
S.6.5	S.MD.3, S.ID.4
S.6.6	S.ID.4

Essential Question(s):

- Given a random phenomenon, how do you recognize it as a binomial setting, a geometric setting, or neither?
- To what extent does our world exhibit binomial and geometric phenomena?
- What is a sampling distribution of a statistic and what is its significance?
- What conditions are necessary to use a Normal approximation to the sampling distribution of P?
- Which statistics make good estimators of parameters and how do we refer to them?
- What does the Central Limit Theorem tell us?

Enduring Understanding(s):

- In a binomial setting, each observation falls into one of two categories, “success” or “failure”, there are a fixed number of observations that are independent of each other, and the probability of success for each observation is constant. In a geometric setting, the same conditions exist except the variable of interest is the number of trials required to obtain the first success. If these conditions do not exist, neither a binomial or geometric setting exists.
- Many discrete phenomena may be described and thus predicted by binomial and geometric models.
- A sampling distribution of a statistic, such as sample proportion or sample mean, is the distribution of all values of the statistic when all possible samples of the same size n are taken from the same population under the same conditions. Sampling distributions are the key to understanding statistical inference which allows us to draw conclusions about the population from which the sample data came from.
- Use the Normal approximation when the population is at least 10 times as large as the sample, when $np > 10$ and when $n(1 - p) > 10$.
- Mean, variance, and proportion are statistics that are good estimators of parameters. We refer to them as unbiased estimators.
- The Central Limit Theorem tells us that if the sample size is large enough, the distribution of sample means can be approximated by a Normal

	distribution, even if the original population is not Normally distributed.
Demonstration of Learning:	**Pacing for Unit**
	12 Blocks (Includes flex days and assessments)
Family Overview (link below)	**Integration of Technology:**
Chapter 6 Worked Example Videos	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning*
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Parameter, statistic, sampling distribution, unbiased estimator, mean, standard deviation, Large Counts,	https://www.statsmedic.com/ https://skewthescript.org/
Connections to Prior Units:	**Connections to Future Units:**
• Quiz on 6.1-6.3? • Quiz on the sampling distribution of a sample proportion (6.4) • Quiz on the sampling distribution of a sample mean and the Central Limit Theorem (6.5-6.6) • Unit assessment	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Highlight patterns, critical features, big ideas, and relationships.	• Highlight or emphasize key elements in text, graphics, diagrams, formulas • Use outlines, graphic organizers, unit organizer routines, concept organizer routines, and concept mastery routines to emphasize key ideas and relationships • Use multiple examples and non-examples to emphasize critical features • Use cues and prompts to draw attention to critical features • Highlight previously learned skills that can be used to solve unfamiliar problems
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**
An EL can construct grade appropriate oral and written claims and support them with reasoning and evidence.	I can determine the probability of an event. • Level 1: With prompting support, I can explain my ideas about a sampling distribution. • Level 2: With prompting support, I can calculate the probability of an event using a sampling distribution.. • Level 3: With guidance, I can calculate the probability of an event using a sampling

		distribution. • Level 4: I can calculate the probability of an event using a sampling distribution. • Level 5: I can use academic and domain specific vocabulary to calculate and interpret the probability of an event using a sampling distribution.
Lesson Sequence	**Learning Target**	**Success Criteria/ Assessment / Resources**
1 What is a Sampling Distribution ?	• I understand statistics as a process for making inferences about population parameters based on a random sample from that population.	Lesson 1: • I can distinguish between a parameter and a statistic. (6.1) • I can create a sampling distribution using all possible samples from a small population. (6.1) Lesson 2 • I can use the sampling distribution of a statistic to evaluate a claim about a parameter. (6.1)
2 Sampling Distributions: Center and Variability	• I understand statistics as a process for making inferences about population parameters based on a random sample from that population.	Lesson 3 • I can determine if a statistic is an unbiased estimator of a population parameter. (6.2) • I can describe the relationship between sample size and the variability of a statistic. (6.2)
3 The Sampling Distribution of a Sample Count	• I can develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated. • I can find the expected value.	Lesson 4 • I can calculate the mean and the standard deviation of the sampling distribution of a sample count and interpret the standard deviation. (6.3) • I can determine if the sampling distribution of a sample count is approximately normal. (6.3) • I can, if appropriate, use the normal approximation to the binomial distribution to calculate probabilities involving a sample count. (6.3)
4 The Sampling Distribution of a Sample Proportion	• I can develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically. • I can find the expected value.	Lesson 5 • I can calculate the mean and the standard deviation of the sampling distribution of a sample proportion and interpret the standard deviation. (6.4) • I can determine if the sampling distribution of a sample proportion is approximately normal. (6.4) Lesson 6 • I can, if appropriate, use the normal approximation to calculate probabilities involving a sample proportion. (6.4)
5 The Sampling Distribution	• I can use the mean and standard deviation of a data set to fit a normal distribution and to estimate population percentages.	Lesson 7 • I can find the mean and the standard deviation of the sampling distribution of a sample mean and interpret the standard deviation. (6.5)

of a Sample Mean	• I can recognize that there are data sets for which a procedure is not appropriate. • I can use calculators, spreadsheets, and tables to estimate areas under the areas under the normal curve.	Lesson 8 • I can use a normal distribution to calculate probabilities involving a sample mean when sampling from a Normal population. (6.5)
6 The Central Limit Theorem		Lesson 9 • I can determine if the sampling distribution of the sample mean is approximately normal when sampling from a non-normal population. (6.6) Lesson 10 • I can, if appropriate, use a normal distribution to calculate probabilities involving sample mean. (6.6)

Course Title:	Content Area:	Grade Level:	Credit (if applicable)
Culinary 1	Family and Consumer Science	9-11	0.5

Course Description:

This introductory course offers an exploration of fundamental principles and practical applications in food safety, hygiene, kitchen operations, culinary techniques, and baking. Students will develop a thorough understanding of the factors contributing to foodborne illnesses, including contamination sources and high-risk populations. They will examine the critical importance of proper hygiene practices, temperature control, and allergen awareness in preventing foodborne illness outbreaks. Through hands-on training and theoretical instruction, students will learn essential culinary skills such as knife handling, stock preparation, sauce making, and salad crafting. Additionally, the course covers key concepts in kitchen management, equipment operation, and recipe scaling, preparing students for success in professional culinary settings. Emphasis is placed on industry best practices, regulatory compliance, and food safety protocols to ensure safe and sanitary food handling practices. By the end of the course, students will emerge equipped with the knowledge and skills necessary for pursuing careers in the culinary arts and foodservice industry.

Aligned Core Resources:	Connection to the *BPS Vision of the Graduate*
FOUNDATIONS OF RESTAURANT MANAGEMENT & CULINARY ARTS, 2E	COLLABORATION ● Demonstrates ability to work effectively and respectfully with diverse teams. ● Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal. ● Assume shared responsibility for collaborative work and value the individual contributions made by each team member.
Additional Course Information: ***Knowledge/Skill Dependent courses/prerequisites***	**Link to *Completed Equity Audit***

Standard Matrix

National Standards for Family and Consumer Sciences Education

Standard	Unit 1	Unit 2	Unit 3
● Area of Study 8.0: Food Production and Services ○ 8.2 Demonstrate food safety and sanitation procedures	X	X	X
● Area of Study 8.0: Food Production and Services ○ 8.3 Demonstrate industry standards in selecting, using, and maintaining food production and food service equipment		X	X

• Area of Study 8.0: Food Production and Services ○ 8.5 Demonstrate professional food preparation methods and techniques for all menu categories to produce a variety of food products that meet customer needs		X	X
• Area of Study 9.0: Food Science, Dietetics, and Nutrition ○ 9.2 Apply risk management procedures to food safety, food testing, and sanitation.	X		
• Area of Study 14.0: Nutrition and Wellness ○ 14.4 Evaluate factors that affect food safety from production through consumption.	X		

Unit Links

A Safe Operation
Introduction to the Kitchen
Culinary Exploration

Unit Title:	
A Safe Operation	
Relevant Standards: Bold indicates priority	
National Standards for Family and Consumer Sciences Education ● Area of Study 8.0: Food Production and Services ○ 8.2 Demonstrate food safety and sanitation procedures ● Area of Study 9.0: Food Science, Dietetics, and Nutrition ○ 9.2 Apply risk management procedures to food safety, food testing, and sanitation. ● Area of Study 14.0: Nutrition and Wellness ○ 14.4 Evaluate factors that affect food safety from production through consumption.	
Essential Question(s):	**Enduring Understanding(s):**
<u>Chapter 6, Introduction to food safety</u> ● What is a foodborne-illness outbreak? ● What are the costs associated with a foodborne-illness outbreak? ● Who is at high risk for contracting a foodborne illness? ● What are the ways that food becomes unsafe? ● What is FAT TOM? ● What are the characteristics of TCS food? ● What are the most common food allergens? ● What are the methods for preventing allergic reactions to food? ● Why is a food defense system needed? ● What government agencies regulate the restaurant and foodservice industry? <u>Chapter 7, Hygiene and cleanliness</u> ● What personal behaviors contaminate food? ● What are proper personal hygiene practices and proper work attire? ● What are the steps to correct handwashing, and when should hands be washed? ● How should ready-to-eat food be handled? ● When should food handlers be prevented from working with or around food? ● What is the difference between cleaning and sanitizing? ● What are the correct procedures for cleaning and sanitizing tools and equipment? ● What factors affect the effectiveness of sanitizers? ● What are the elements of a master cleaning schedule?	<u>Chapter 6: Introduction to Food Safety</u> ● Foodborne-illness outbreaks can result from various factors, including contamination and improper food handling practices. ● The costs associated with foodborne-illness outbreaks extend beyond financial implications, impacting public health, reputation, and legal ramifications. ● Individuals at high risk for contracting foodborne illnesses include the elderly, young children, pregnant women, and those with compromised immune systems. ● Food becomes unsafe through various means, including microbial contamination, chemical hazards, and physical hazards. ● FAT TOM (Food, Acidity, Time, Temperature, Oxygen, Moisture) outlines the conditions favorable for bacterial growth in food. ● Temperature Control for Safety (TCS) foods possess characteristics that make them susceptible to bacterial growth and require careful handling. ● Common food allergens pose a risk to individuals with allergies, and preventing allergic reactions involves awareness, proper labeling, and cross-contact prevention. ● A robust food defense system is essential to safeguard against intentional contamination and ensure the security of the food supply. ● Government agencies, such as the FDA and USDA, play pivotal roles in regulating and overseeing the restaurant and foodservice

• What is the correct procedure for managing pests? <u>Chapter 8, The safe flow of food</u> • What are the ways to prevent cross-contamination? • How can time-temperature abuse be prevented? • What are the steps for calibrating a bimetallic stemmed thermometer? • What are the characteristics of an approved food source? • What are the criteria for accepting or rejecting food during receiving? • What are the correct procedures for storing food? • What are the correct procedures for preparing and cooking various TCS food items? • What are the correct procedures for holding, cooling, and reheating TCS food? • How should food be handled for service? • What are the correct procedures for preparing and serving food for off-site service? • What is a food safety management system?	industry to maintain food safety standards. <u>Chapter 7: Hygiene and Cleanliness</u> • Personal behaviors, such as poor hygiene practices and improper attire, can introduce contaminants into food, jeopardizing its safety. • Proper personal hygiene practices, including hand washing and appropriate attire, are crucial to prevent contamination and maintain food safety. • Correct handwashing techniques and frequency are critical in reducing the risk of foodborne illness transmission. • Handling ready-to-eat food requires strict adherence to hygiene protocols to prevent cross-contamination. • Food handlers should be excluded from food-related activities when exhibiting symptoms of illness to prevent the spread of pathogens. • Understanding the distinction between cleaning and sanitizing is vital for maintaining hygienic surfaces and equipment. • Proper procedures for cleaning and sanitizing tools and equipment are necessary to prevent cross-contamination and ensure food safety. • Various factors, including concentration, contact time, and water quality, influence the effectiveness of sanitizers. • A master cleaning schedule outlines systematic cleaning tasks to maintain a clean and sanitary environment. • Effective pest management strategies are essential to prevent contamination and maintain a safe food establishment. <u>Chapter 8: The Safe Flow of Food</u> • Preventing cross-contamination involves implementing measures to keep raw and cooked foods separate during storage, preparation, and service. • Time-temperature abuse can be prevented through proper storage, cooking, and monitoring of food temperatures. • Calibrating thermometers ensures accurate temperature measurements, critical for food safety. • Approved food sources meet quality and safety standards, reducing the risk of foodborne illness. • Proper receiving procedures, including inspection and temperature checks, help

	ensure the quality and safety of received food items. • Correct food storage practices, including temperature control and proper labeling, are essential for maintaining food quality and safety. • Following correct procedures for preparing, cooking, holding, cooling, and reheating TCS foods minimizes the risk of foodborne illness. • Safe food handling practices during service reduce the risk of contamination and ensure food safety. • Proper procedures for off-site service involve maintaining food safety standards during transportation, setup, and serving. • A food safety management system encompasses policies, procedures, and protocols designed to ensure the safe handling and preparation of food throughout the establishment.
Demonstration of Learning:	**Pacing for Unit**
Knowledge Checks, pages 110, 114, 125, 126, 130, 135, 145, 147, 150, 153, 154 Exam Prep Questions, pages 118-119, 138-139, 157 Demonstrate Essential Skills, pages 126, 129, 132, 145	5 days
Unit-specific Vocabulary:	
Abrasive cleaners, Active managerial control, Approved food source, Bacteria, Bimetallic stemmed thermometer, Boiling, Boiling-point method, Calibrated, Cleaning, Cleaning program, Cleaners, Contamination, Contact time, Cross-contact, Cross-contamination, Degreasers, Delimers, Detergents, FAT TOM, First in, first out (FIFO), Flow of food, Food allergy, Food allergens, Food handlers, Food safety management system, Foodborne illness, Foodborne illness outbreak, Fungi, Hazard, Hazard Analysis Critical Control Point (HACCP), High-risk populations, ICE paddles, Ice-point method, Ice-water bath, Immune system, Inspection, Integrated pest management (IPM) program, Microorganisms, Mold, Off-site service, Parasites, Pathogens, Ready-to-eat food, Sanitizing, Temperature danger zone (TDZ), TCS Food, Time-temperature abuse, Viruses, Yeast.	
Opportunities for Interdisciplinary Connections:	**Anticipated misconceptions:**
Activate prior knowledge from science courses	Confusion between cleaning and sanitizing
Connections to Prior Units:	**Connections to Future Units:**
	Standards for food handling in future units Basic procedures needed in the kitchen
Differentiation through *Universal Design for Learning*	

UDL Indicator	Teacher Actions:
Engagement: Optimize relevance, value, and authenticity	Vary activities and sources of information so that they can be: ● Personalized and contextualized to learners' lives ● Culturally relevant and responsive ● Design activities so that learning outcomes are authentic, communicate to real audiences, and reflect a purpose that is clear to the participants ● Provide tasks that allow for active participation, exploration and experimentation ● Invite personal response, evaluation and self-reflection to content and activities

Supporting Multilingual/English Learners

Related *CELP standards:*	Learning Targets:

The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.*

An EL can . . .participate in grade appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.

I can understand and discuss food contaminants and their importance.

- Level 1: With prompting and supports, an EL can:
  - Identify basic food contaminants, such as bacteria, viruses, and physical objects.
  - Demonstrate basic understanding of why food contaminants are important.
  - Respond to simple questions about the concept of food contamination.
- Level 2: With prompting and supports, an EL can:
  - Describe common types of food contaminants and their potential sources.
  - Explain the importance of identifying and addressing food contaminants.
  - Provide examples of how food contaminants can affect food safety.
  - Participate in discussions about the significance of food safety measures.
- Level 3: With guidance and supports, an EL can:
  - Explain in detail various types of food contaminants and their impact on food safety.
  - Analyze the importance of preventing and controlling food contamination in different contexts.
  - Discuss strategies for minimizing food contamination risks in food handling and preparation.
  - Engage in conversations about the role of regulations and standards in ensuring food safety.
- Level 4: An EL can:
  - Articulate comprehensive knowledge of food contaminants, including their sources, characteristics, and effects.
  - Evaluate the significance of different types of food contaminants in various food-related settings.
  - Propose effective measures for preventing, detecting, and mitigating food contamination incidents.
  - Contribute insights and perspectives to discussions on emerging issues and challenges related to food safety.
- Level 5: An EL can:
  - Elaborate on advanced concepts and research findings related to food contaminants and their implications for public health.
  - Synthesize information from multiple sources to analyze complex issues surrounding food safety and contamination.

○ Advocate for policies and practices that promote stringent food safety standards and practices. ○ Lead discussions or seminars on innovative approaches and technologies for ensuring food safety and minimizing contamination risks.		
Lesson Sequence	**Learning Target**	**Success Criteria/Assessment/Resources**
1	A. I can analyze all aspects of a foodborne illness. B. I can analyze food allergens and why they are important.	● I can define what a foodborne illness is and explain what the main causes are. (A) ● I can explain how to prevent foodborne illnesses. (A) ● I can identify the major food allergens. (B) ● I can describe how to prevent and handle allergic reactions to food. (B)
2	A. I can identify personal hygiene and cleanliness standards that are appropriate for the kitchen. B. I can *understand and discuss food contaminants and their importance.*	● I can recognize personal hygiene habits that are appropriate for the kitchen and those that are not. (A) ● I can describe cleanliness standards in the kitchen and why they are important.(A) ● I can classify different types of food contaminants. (B) ● I can explain what causes food contaminants. (B) ● I can describe why food contaminants are harmful. (B)
3	A. I can differentiate between cleaning and sanitizing. B. I can demonstrate the essential skill of clea*ning or sanitizing different items.*	● I can define and describe cleaning. (A) ● I can define and describe sanitizing. (A) ● I can demonstrate cleaning. (B) ● I can demonstrate sanitizing. (B)
4	*I can define cross contamination and describe ways to prevent it.*	● I can explain what cross contamination is. ● I can discuss how to prevent cross contamination.
5	A. I can explain what an approved food source is. B. I can explain the ways in which food is purchased, received, stored, prepared/cooked, held, cooled, reheated, and served.	● I can explain why using approved food sources is important in the food industry. (A) ● I can explain how food is purchased and received and why it is done that way. (B) ● I can describe how food is stored and why it is important. (B) ● I can explain and list how food is prepared and cooked. (B) ● I can explain how food is held. (B) ● I can describe how food is safely cooled and

		reheated. (B) ● I can explain how food is served. (B)

Unit Title:	
Introduction to the Kitchen	
Relevant Standards: Bold indicates priority	
National Standards for Family and Consumer Sciences Education Area of Study 8.0: Food Production and Services ● 8.2 Demonstrate food safety and sanitation procedures ● 8.3 Demonstrate industry standards in selecting, using, and maintaining food production and food service equipment ● 8.5 Demonstrate professional food preparation methods and techniques for all menu categories to produce a variety of food products that meet customer needs	
Essential Question(s):	**Enduring Understanding(s):**
<u>Chapter 11, Foodservice equipment</u> ● What equipment is needed in receiving and storing food and supplies? ● What types of preparation equipment are used in the foodservice kitchen? ● What equipment is needed for holding and serving food and beverages? <u>Chapter 12, Knives and smallwares</u> ● What hand tools and small equipment are needed for pre-preparation? ● What are the different types of knives used in the foodservice kitchen and their common uses? ● How do you use knives correctly? ● What are the classical knife cuts? <u>Chapter 13, Kitchen basics</u> ● What are the major positions in a modern, professional kitchen? ● What is mise en place? ● What is the difference between seasoning and flavoring? ● What are the basic pre-preparation techniques? ● What is a nutrition label, and how is it used? <u>Chapter 14, Culinary math</u> ● What are the basic math calculations using numbers and fractions? ● What are the components and functions of a standardized recipe? ● How do you convert recipes to yield smaller and larger quantities based on operational needs? ● What is the difference between customary and metric measurement units?	<u>Chapter 11: Foodservice Equipment</u> ● Effective receiving and storing of food and supplies require appropriate equipment such as refrigerators, freezers, shelving units, and storage containers. ● Various preparation equipment, including mixers, slicers, and food processors, are essential in a foodservice kitchen to efficiently prepare ingredients. ● Holding and serving food and beverages require equipment like steam tables, chafing dishes, and beverage dispensers to maintain quality and temperature. <u>Chapter 12: Knives and Smallwares</u> ● Hand tools and small equipment play a crucial role in pre-preparation tasks, including measuring, mixing, and portioning ingredients. ● Understanding different types of knives and their common uses is essential for efficient and safe food preparation. ● Proper knife skills involve correct handling techniques, ensuring safety, precision, and consistency in cuts. ● Classical knife cuts, such as julienne, brunoise, and chiffonade, provide uniformity and aesthetic appeal in culinary creations. <u>Chapter 13: Kitchen Basics</u> ● Major positions in a professional kitchen, such as executive chef, sous chef, and line cook, contribute to the efficient operation and production of high-quality dishes. ● Mise en place, the practice of organizing and

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- How do you convert between customary and metric measurements?
- How do you calculate the amounts for something as purchased (AP) and as an edible portion (EP)?
- How do you calculate the cost and portion cost of a standardized recipe?

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preparing ingredients before cooking, is fundamental for smooth kitchen operations and timely service.
- Seasoning enhances the natural flavors of ingredients, while flavoring adds additional taste elements to dishes.
- Basic pre-preparation techniques like washing, peeling, and trimming ensure ingredients are properly prepared for cooking.
- Understanding nutrition labels helps in making informed choices about food ingredients, considering their nutritional content and dietary requirements.

<u>Chapter 14: Culinary Math</u>

- Basic math calculations, including addition, subtraction, multiplication, and division, are essential for recipe scaling and portioning.
- Standardized recipes provide consistency in food production by specifying ingredients, quantities, and procedures.
- Converting recipes to yield smaller or larger quantities requires adjusting ingredient amounts proportionally based on operational needs.
- Understanding customary and metric measurement units facilitates accurate measurement and recipe conversion.
- Conversion between customary and metric measurements involves knowing conversion factors and using appropriate conversion tools.
- Calculating amounts for something as purchased (AP) and as an edible portion (EP) ensures accurate inventory management and cost control.
- Determining the cost and portion cost of a standardized recipe involves calculating ingredient costs, labor costs, and overhead expenses per serving.

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<td>Demonstration of Learning:</td>
<td>Pacing for Unit</td>
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<tr>
<td>Knowledge checks, pages 203, 212, 216, 232, 240, 249, 258, 263, 265, 275, 282, 292
Exam Prep Questions, pages 219, 243, 269, 295
Demonstrate Essential Skills, pages 259, 260, 261, 262, 263, 278, 283</td>
<td>15 days</td>
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<tr>
<td>Unit-specific Vocabulary:</td>
<td>Aligned Unit Materials, Resources, and Technology (beyond core resources):</td>
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<tr>
<td colspan="2">As purchased (AP), Bain-marie, Balance beam, Baker’s scale, Blade, Borrowing, Broilers, Carbonated</td>
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beverage machine, Carrying, Captain, Chafing dishes, Chef, Coffeemaker, Conversion chart, Conversion factor, Convenience food, Consommé, Cookware, Cutter, Cutting board, Dividend, Denominators, Divisor, Edible portion (EP), Electric scale, Electronic scale, Espresso machine, Expediter, Flavor, Flavoring, Forged blade, Food warmer/steam table, Freezers (walk-in and reach-in), Front waiter, Hand tools and small equipment (detailed list in textbook), Headwaiter, Herbs, Hot box, Hot-holding cabinet, Ice machines, Ingredients, Knives (detailed list in textbook), Like fractions, Lowest common denominator, Measurement, Measuring utensils (detailed list in textbook), Metric units, Mise en place, Mixers, Mold, Nonusable trim, Numerators, Nutrition information, Ovens, Pans (detailed list in textbook), Pastry chef, Percent, Portion size, Proofing cabinet, Range, Recipe, Refrigerators (walk-in and reach-in), Receiving table/area, Scales, Seasoning, Sharpening stone, Shelving, Smallware, Sous chef, Speed racks, Spices, Spring scale, Standard portion cost, Standardized recipes, Station chef, Steamer, Steel, Stamped blade, Tea makers, Temperature, time, and equipment, Taring, Utility carts, Usable trim, Volume, Walk-in refrigerator, Walk-in freezer, Weight, Wine steward, Yield, Yield test.

Differentiation through *Universal Design for Learning*

UDL Indicator	**Teacher Actions:**
Comprehension: Guide information processing and visualization	• Give explicit prompts for each step in a sequential process • Provide options for organizational methods and approaches (tables and algorithms for processing mathematical operations) • Provide interactive models that guide exploration and new understandings • Introduce graduated scaffolds that support information processing strategies • Provide multiple entry points to a lesson and optional pathways through content (e.g., exploring big ideas through dramatic works, arts and literature, film and media) • "Chunk" information into smaller elements • Progressively release information (e.g., sequential highlighting) • Remove unnecessary distractions unless they are essential to the instructional goal

Supporting Multilingual/English Learners

Related *CELP standards:*	**Learning Targets:**

The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.*

An EL can . . .participate in grade appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.

I can describe and demonstrate how to properly and safely use kitchen equipment.

- Level 1: With prompting and supports, an EL can:
  - Identify basic kitchen equipment and tools.
  - Follow simple instructions for using kitchen equipment with assistance.
  - Demonstrate basic safety precautions when handling kitchen tools and equipment.
  - Respond to simple questions about the use of kitchen equipment.

- Level 2: With prompting and supports, an EL can:
  - Describe the purpose and basic functions of common kitchen equipment.
  - Follow step-by-step instructions for using kitchen tools and equipment.
  - Apply basic safety guidelines when operating kitchen equipment with assistance.
  - Participate in discussions about the importance of proper equipment use in the kitchen.
- Level 3: With guidance and supports, an EL can:
  - Explain the proper use and operation of various kitchen equipment in detail.
  - Demonstrate proficiency in using a variety of kitchen tools and appliances.
  - Follow safety protocols independently while using kitchen equipment.
  - Provide clear and organized demonstrations of equipment usage to peers or instructors.
- Level 4: An EL can:
  - Articulate detailed instructions on how to safely and effectively operate a wide range of kitchen equipment.
  - Demonstrate mastery in using advanced kitchen tools and appliances with precision.
  - Implement comprehensive safety measures to prevent accidents or injuries while using equipment.
  - Offer guidance and support to others in using kitchen equipment effectively.
- Level 5: An EL can:
  - Elaborate on the technical specifications and advanced features of specialized kitchen equipment.
  - Utilize advanced language and terminology specific to kitchen equipment and culinary technology.
  - Conduct thorough demonstrations or tutorials on the proper use of complex kitchen appliances.
  - Engage in discussions or workshops addressing best practices, troubleshooting, and innovation in kitchen equipment usage.

Lesson Sequence	**Learning Target**	**Success Criteria/Assessment/Resources**
1-3	A. *I* can identify the equipment needed for receiving and storing food and supplies. B. I can identify the equipment needed for food preparation, and explain how it is used. C. I can identify the equipment n*eeded for serving food and beverages.*	• I can identify food receiving and storage equipment and supplies. (A) • I can explain how to properly use food receiving and storage equipment and supplies. (A) • I can identify food preparation equipment.(B) • I can describe how food preparation equipment is properly and safely used.(B) • I can identify food and beverage serving equipment. (C) • I can explain how to use food and beverage serving equipment. (C)
4	A. I can list and define the hand tools and small equipment needed for pre-preparation. B. I can identify the knives used in foodservice and their most common uses.	• I can list hand tools and small equipment used for pre-preparation. (A) • I can describe how those hand tools and small equipment are properly and safely used for pre-preparation. (A) • I can demonstrate the use of hand tools and small equipment. (A) • I can identify the knives most commonly used in foodservice. (B) • I can categorize the knives most commonly

		used in foodservice with their common uses. (B)
5-6	A. *I can de*scribe and demonstrate how to properly and safely use a knife. B. I can identify and demonstrate the classic*al knife cuts.*	• I can describe how to properly and safely use and clean a knife. (A) • I can demonstrate how to properly and safely use and clean a knife. (A) • I can identify the classical knife cuts and what they are used for. (B) • I can demonstrate the classical knife cuts. (B)
7	A. *I can explain what mise en place is and demonstrate how it is used in the kitchen.* B. *I can list and describe the major positions in a modern kitchen.*	• I can describe mise en place and how it is used. (A) • I can perform mise en place in the kitchen. (A) • I can list and describe major positions in a modern kitchen. (B) • I can perform major positions in a modern kitchen (when applicable). (B)
8	A. *I can identify and describe the major pre-preparation techniques.* B. *I can distinguish between seasoning and flavoring.*	• I can describe the major pre-preparation techniques. (A) • I can demonstrate the major pre-preparation techniques. (A) • I can differentiate between flavoring and seasoning. (B)
9	A. *I can explain nutrition labels and how they are used.* B. *I can read nutrition labels and interpret their meaning.*	• I can explain nutrition labels and their importance. (A) • I can read a nutrition label and interpret their meaning. (B)
10	A. *I can name and perform basic math calculations using numbers and fractions.* B. *I can list the components and functions of a standardized recipe.*	• I can name basic math calculations used frequently in kitchen math. (A) • I can perform basic math calculations using numbers and fractions. (A) • I can list the components of and describe the functions of a standardized recipe. (B)
11-12	A. *I can convert a recipe to yield a smaller or larger quantity.* B. *I can explain the difference between customary and metric measurements.* C. *I can convert between customary and metric measurements.*	• I can use math to convert a recipe to yield a smaller or larger quantity. (A) • I can explain the difference between customary and metric measurements. (B) • I can describe why customary or metric measurements would be used at different times. (B) • I can convert a recipe between customary and metric measurements. (C)
13	A. *I can describe what "as purchased" is compared to what "edible portion" is.* B. *I can calculate the cost and*	• I can describe what an "as purchased" portion is. (A) • I can describe what an "edible portion" is. (A) • I can explain the difference between an as

	portion cost of a standardized recipe.	purchased portion and an edible portion. (A) ● I can calculate the cost of a standardized recipe. (B) ● I can calculate the portion cost of a standardized recipe. (B) ● I can compare the two. (B)

Unit Title:	
Culinary Exploration	
Relevant Standards: Bold indicates priority	
National Standards for Family and Consumer Sciences Education Area of Study 8.0: Food Production and Services ● 8.2 Demonstrate food safety and sanitation procedures ● 8.3 Demonstrate industry standards in selecting, using, and maintaining food production and food service equipment ● 8.5 Demonstrate professional food preparation methods and techniques for all menu categories to produce a variety of food products that meet customer needs	
Essential Question(s):	**Enduring Understanding(s):**
<u>Chapter 15, Salads, dressings, and dips</u> ● What are the roles of salads on the menu? ● What ingredients are used to make salads? ● What are the four parts of a salad and what is the purpose of each? ● How do you prepare the various types of salads? ● What are the procedures for cleaning and storing salad greens? ● What are the differences between various oils and vinegars? ● How do you prepare vinaigrettes and emulsions? ● What are various common dips and how do you prepare them? <u>Chapter 16, Sandwiches and pizza</u> ● What are the basic kinds of sandwiches and pizza and what are the basic components? ● What role does each of the three main elements of a sandwich play? ● What are the necessary tools and equipment needed at a sandwich station? ● How do you prepare different types of sandwiches/pizza? <u>Chapter 17, Stocks, soups, and sauces</u> ● What are the four essential parts of a stock and the proper ingredients for each? ● What are the various types of stock and their specific ingredients? ● What are the three methods for preparing bones and stock? ● What are the ingredients for several types of	<u>Chapter 15: Salads, Dressings, and Dips</u> ● Salads serve diverse purposes on the menu, ranging from appetizers to main courses, offering refreshing and nutritious options for patrons. ● Various ingredients, including fresh produce, proteins, grains, and dressings, are utilized in salad preparation to create flavor, texture, and visual appeal. ● Understanding the composition of salads involves knowledge of base, body, dressing, and garnish, each contributing to the overall taste and presentation. ● Different salad types, such as composed salads, tossed salads, and bound salads, require distinct techniques in assembly and presentation. ● Proper handling, washing, and storage techniques are crucial to maintain the freshness and quality of salad greens. ● Variations in oils and vinegars influence the flavor profile and texture of dressings, with considerations for acidity, viscosity, and flavor intensity. ● Mastery of emulsification techniques is essential for creating stable dressings like vinaigrettes, ensuring proper balance and consistency. ● Familiarity with various dip recipes and their preparation methods enhances culinary versatility and customer satisfaction. <u>Chapter 16: Sandwiches and Pizza</u>

stock? ● How and why do you remove fat from stock? ● What is the proper way in which to cool stock? ● How do you prepare mother sauces? What derivative sauces are made from them? ● What are the proper ingredients for sauces? ● How do you prepare different kinds of sauces? ● How do you match sauces to the appropriate type of food? ● What are the two basic kinds of soup? ● How do you prepare the basic ingredients for broth, consommé, purée, clear, and cream soups? <u>Chapter 18, Cooking methods</u> ● How is heat transferred to food through conduction, convection, and radiation? ● What are the types of dry-heat cooking methods and which food items are best suited for them? ● What is moist-heat cooking, and which food items are best suited for it? ● What is combination-heat cooking, and which food items are best suited for it? ● What are the sous vide and microwave cooking techniques? ● How do you determine when food is done cooking? <u>Chapter 19, Introduction to baking</u> ● What are the main ingredients used in baking? ● How do you calculate the ingredient weights in a recipe using baker's percentages? ● How do you convert to a new recipe yield using baker's percentages? ● List and identify the seven types of cookies. ● What are quick breads, and how are they prepared?	● Understanding the fundamental structures of sandwiches and pizza involves knowledge of bread or crust, fillings or toppings, and condiments or sauces. ● Each element, including bread, fillings, and condiments, contributes to the overall flavor, texture, and presentation of a sandwich. ● Proper equipment and utensils are essential for efficient sandwich preparation, ensuring consistency and quality. ● Mastering various sandwich and pizza-making techniques allows for creativity and customization, catering to diverse tastes and preferences. <u>Chapter 17: Stocks, Soups, and Sauces</u> ● Stocks consist of bones, mirepoix, aromatics, and water, with variations in ingredients and techniques yielding different types of stocks. ● Different types of stocks, such as white, brown, and vegetable, require specific ingredients and preparation techniques for optimal flavor extraction. ● Proper fat removal and cooling methods are critical to enhance stock clarity, flavor, and safety. ● Understanding the basic techniques and ingredients for mother sauces enables the creation of derivative sauces, expanding culinary possibilities. ● Knowledge of sauce ingredients and preparation methods allows for customization and enhancement of dishes, complementing flavors and textures. ● Pairing sauces with appropriate foods involves considering flavor profiles, textures, and cultural traditions, enhancing overall dining experiences. ● Understanding the differences between broth, consommé, purée, clear, and cream soups enables versatility and creativity in soup preparation. <u>Chapter 18: Cooking Methods</u> ● Understanding heat transfer mechanisms and cooking methods, including conduction, convection, radiation, dry-heat, moist-heat, and combination-heat, facilitates precise and efficient cooking. ● Dry-heat cooking methods, such as roasting, baking, grilling, and sautéing, are best suited for certain food items based on their texture,

	moisture content, and flavor profile. ● Moist-heat cooking techniques, including boiling, steaming, and poaching, are ideal for tenderizing and infusing flavors into various foods. ● Combination-heat cooking methods, such as braising and stewing, offer the benefits of both dry-heat and moist-heat cooking, resulting in tender and flavorful dishes. ● Knowledge of advanced cooking techniques like sous vide and microwave cooking expands culinary repertoire and efficiency. ● Mastery of food doneness indicators, including visual cues, texture, and internal temperature, ensures consistent and safe cooking results. <u>Chapter 19: Introduction to Baking</u> ● Baking relies on staple ingredients such as flour, sugar, fats, leavening agents, liquids, and flavorings, each playing a crucial role in texture and flavor development. ● Baker's percentages facilitate accurate recipe scaling and ingredient adjustments, ensuring consistent and reliable baking results. ● Knowledge of cookie types, including drop, bar, molded, pressed, refrigerator, rolled, and sandwich, allows for creative and diverse baking applications. ● Quick breads, leavened with baking powder or baking soda, are prepared using simple mixing methods, offering versatility and convenience in baking.
Demonstration of Learning:	**Pacing for Unit**
Knowledge checks, pages 317, 323, 335, 337, 339, 356, 359, 365, 367, 391, 395, 405, 409 Exam Prep Questions, pages 326, 346, 372, 397, 412 Demonstrate Essential Skills, pages 310-317, 321, 322, 339-342, 356-358, 368, 369, 381, 383, 385, 387, 389, 390, 392, 405, 408, 409	25 days
Unit-specific Vocabulary:	
Accompaniment salad, Aromatics, Base, Basket method, Batter, Beurre manié, Body, Bouquet garni, Bread, Breaded, Brown, Canapé, Carryover cooking, Chilled, Chowders, Clarified, Club sandwich, Cold sandwich, Combination cooking, Combination salad, Combustion, Composed salad, Conduction, Convection, Deep-fried sandwiches, Deep-fry, Demi-glace, Dessert salads, Different sauces (detailed list in textbook), Dip, Double-basket method, Emulsified vinaigrettes, Emulsion, Emulsifier, Fat removal, Filling, Float, Fruit salad, Garnish, Griddling, Grilled (or toasted) sandwiches, Grilling, Hors d'oeuvres,	

Infrared heat, Intermezzo salad, Liaison, Main-course salads, Mayonnaise, Mayonnaise-based dressings, Mirepoix, Multidecker sandwich, Nappe consistency, Open-faced sandwich, Oignon brûlé, Pan-fry, Panini, Parcooking, Paupiettes, Petit gâteau, Pizza, Pot roasting, Purée soups, Pullman loaves, Raft, Radiant, Reduction, Reducing, Roux (detailed list in textbook), Sachet d'épices, Salad dressing, Sautéing, Sauce, Saucier, Sear, Shocking, Shallow poaching, Smoking point, Small sauces, Soup, Spread, Starter salad, Steam, Steaming, Stewing, Stir-frying, Stock (detailed list in textbook), Submarine sandwich, Sweating, Suspension, Tempering, Thick soups, Tossed salad, Vegetable salad, Vinaigrette dressing, Wringing method, Wrap sandwich.

Differentiation through *Universal Design for Learning*

UDL Indicator	**Teacher Actions:**
Comprehension: Guide information processing and visualization	• Give explicit prompts for each step in a sequential process • Provide options for organizational methods and approaches (tables and algorithms for processing mathematical operations) • Provide interactive models that guide exploration and new understandings • Introduce graduated scaffolds that support information processing strategies • Provide multiple entry points to a lesson and optional pathways through content (e.g., exploring big ideas through dramatic works, arts and literature, film and media) • "Chunk" information into smaller elements • Progressively release information (e.g., sequential highlighting) • Remove unnecessary distractions unless they are essential to the instructional goal

Supporting Multilingual/English Learners

Related *CELP standards:*	**Learning Targets:**

The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.*

An EL can . . .participate in grade appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.

I can describe how to prepare various types of foods/recipes.

- Level 1: With prompting and supports, an EL can:
  - Identify and name various types of foods and recipes.
  - Use basic vocabulary to describe simple food preparation steps.
  - Demonstrate understanding through nonverbal communication or gestures.
  - Respond to basic questions about food preparation.
- Level 2: With prompting and supports, an EL can:
  - Describe the ingredients and basic steps involved in preparing different types of foods or recipes.
  - Use simple language and descriptive words to explain cooking techniques.
  - Present information orally or in writing with assistance.

- Respond to questions about the process of food preparation.

- Level 3: With guidance and supports, an EL can:
  - Explain the steps required to prepare various types of foods or recipes in detail.
  - Use appropriate vocabulary related to cooking methods, ingredients, and kitchen tools.
  - Provide clear and organized instructions orally or in writing.
  - Engage in discussions about different cooking techniques and recipes.
- Level 4: An EL can:
  - Articulate detailed explanations of how to prepare a wide range of foods or recipes.
  - Use precise language and specialized vocabulary related to culinary arts.
  - Present information clearly and coherently in both oral and written formats.
  - Respond to questions and comments with depth and clarity, providing additional insights or explanations.
- Level 5: An EL can:
  - Articulate detailed explanations of how to prepare a wide range of foods or recipes.
  - Use precise language and specialized vocabulary related to culinary arts.
  - Present information clearly and coherently in both oral and written formats.
  - Respond to questions and comments with depth and clarity, providing additional insights or explanations.

Lesson Sequence	Learning Target	Success Criteria/Assessment/Resources
1	I can analyze salads.	• I can explain the role of salads on the menu. • I can name and describe ingredients that are used to make salads. • I can list the four parts of a salad and define their purposes. • I can describe how to prepare various types of salads. • I can properly clean and store salad greens.
2	I can analyze dips.	• I can name the most common dips and how to prepare them. • I can establish the differences between various oils and vinegars. • I can explain how to prepare dips, vinaigrettes, and emulsions.
3	I can demonstrate the preparation of salads, dips, vinaigrettes, and emulsions.	• I can demonstrate how to prepare various types of salads. • I can demonstrate how to prepare dips, vinaigrettes, and emulsions.
4	I can analyze sandwiches and pizza.	• I can define the basic kinds of sandwiches and pizza and identify the basic components of each. • I can describe what the role of each main element of a sandwich plays. • I can construct a proper sandwich station, complete with the necessary tools and equipment needed.

		● I can describe how to prepare different types of sandwiches and pizza.
5-6	I can demonstrate how to prepare different types of sandwiches and pizza.	● I can demonstrate preparation of sandwiches and pizza.
7	I can analyze stock.	● I can name and describe the various types of stock and their specific ingredients. ● I can define the four essential parts of a stock and the proper ingredients for each. ● I can list three methods for preparing bones and stock. ● I can name the main ingredients for several types of stock. ● I can describe how to properly cool stock. ● I can describe how to properly remove fat from stock.
8	I can demonstrate how to make, remove the fat from, and cool stock.	● I can demonstrate how to make stock. ● I can demonstrate skimming fat off stock. ● I can demonstrate cooling stock.
9	I can analyze the five mother sauces.	● I can name and describe the five mother sauces. ● I can determine what derivative sauces are made from the mother sauces. ● I can discuss how to prepare sauces. ● I can match sauces to appropriate types of food.
10	I can demonstrate how to make sauces, including the five mother sauces as well as derivative sauces.	● I can demonstrate how to make the five mother sauces. ● I can demonstrate how to make derivative sauces from the five mother sauces.
11	I can analyze soup.	● I can name the two basic kinds of soup. ● I can describe how to prepare the basic ingredients for broth, consommé, purée, clear, and cream soups.
12	I can produce a broth, consommé, purée, clear, or cream soup.	● I can demonstrate production of different types of soup.
13	I can analyze the different cooking methods.	● I can describe how heat is transferred to food through conduction, convection, and radiation. ● I can identify dry heat, moist heat, and combination heat cooking methods. ● I can identify foods that are best suited for dry

		heat, moist heat, and combination heat cooking methods. ● I can describe the sous vide and microwave cooking techniques. ● I can determine when food is done cooking.
14-21	I can demonstrate different cooking methods.	● I can demonstrate the following cooking methods: Broil, grill, roast, bake, griddle, sauté, sear, stir-fry, pan-fry, deep-fry, simmer, poach, shallow poach, blanch, parcook, shock, steam, braise, pot roast, stew, sous vide
22	I can describe and analyze the baking process.	● I can identify and describe the main ingredients used in baking. ● I can calculate ingredient weights in a recipe using baker's percentages. ● I can convert to a new recipe yield using baker's percentages.
23	I can analyze and produce different types of cookies.	● I can identify the seven types of cookies. ● I can describe the creaming method used for producing cookies. ● I can produce different types of cookies using the creaming method.
24	I can analyze and produce quick breads.	● I can define quick breads and how they are prepared. ● I can demonstrate the preparation of quickbreads using the muffin method.
25	I can demonstrate the preparation of quickbreads using the biscuit method.	● I can perform the biscuit method for producing quickbreads.

Course Title:	Content Area:	Grade Level:	Credit (if applicable)
Intro to Allied Health	CTE	11-12	0.5

Course Description:

Introduction to Allied Health Professions is a half year course designed as an introduction to the field of Allied Health. Students are introduced to the various pathways (Diagnostic, Therapeutic, Health Informatics, Support Services, Biotechnology Research and Development) in the field of Allied Health, certifications and post-secondary choices for careers in allied health. Students will explore careers in therapeutics, health information, diagnostics, support services, and research and development. Guest speakers from diverse backgrounds will be invited from each of the pathways to share their experience in terms of education, training, and on the job experience. Students will also have the opportunity to experience each field by completing activities, projects, presentation and research. Students who successfully complete this course will receive 1.0 credits from the University of Connecticut.

Aligned Core Resources:	Connection to the *BPS Vision of the Graduate*
	HEALTH LITERACY • Obtain, interpret and understand basic health information and services and use such information and services in ways that enhance health. • Understand preventative physical and mental health measures, including proper diet, nutrition, exercise, risk avoidance and stress reduction. • Understand basic public health and safety issues
Additional Course Information: ***Knowledge/Skill Dependent courses/prerequisites***	**Link to *Completed Equity Audit***
	ECE Introduction to Allied Health Professions

Standard Matrix

National Health Science Standards
Advance CTE Standards: Healthcare

Common Career Technical Core Standards	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7
HL 4.1: Describe team member participation. • Communicate verbally and nonverbally with team colleagues to assure a best result for the client. • Collaborate with others to formulate team objectives. • Identify responsible actions of team members to complete assigned tasks in a timely and effective manner. • Recognize the importance of active listening to other team members. • Exercise leadership skills as appropriate. • Respect and value the expertise and contributions of all team members.	X	X	X	X	X	X	

• Recognize the importance of working collaboratively with persons from diverse backgrounds to accomplish a common goal. • Apply corrective action to an acknowledged conflict situation. • Exhibit a strong sense of team identity and commitment to purpose							
HL 5.1: Describe legal implications affecting health care workers. • Analyze legal responsibilities, limitations and implications of actions. • Use problem-solving techniques when confronted with legal dilemmas or issues. • Compare and contrast behaviors and practices that could result in malpractice, liability, or negligence. • Identify and comply with policies and requirements for documentation and record keeping. • Identify and comply with established risk management criteria and procedures. • Evaluate if an incident is reportable. • Identify and comply with non-discriminatory laws. • Identify and comply with institutional policy and procedures	X						
HL 5.2: Describe legal practices employed by health care workers. • Perform duties according to regulations, policies, laws and legislated rights of clients. • Manage clients' rights according to the Patients' Bill of Rights. • Manage confidentiality according to Health Information Portability Access Act (HIPAA). • Employ practices that adhere to licensure, certification, registration and legislated scope of practice. • Apply the doctrine of informed consent. • Evaluate technological threats to confidentiality. • Employ mandated standards for workplace safety, i.e., OSHA, CDC, CLIA. • Apply mandated standards for harassment, labor and employment laws.	X						

Unit Links

UNIT 1: Introduction to Allied Health Careers
UNIT 2: Therapeutic Pathway

UNIT 3: Diagnostic Pathway
UNIT 4: Health Informatics
UNIT 5: Support Services
UNIT 6: Biotechnology Research and Development
UNIT 7: Explore, Plan, Find

Unit Title:	
UNIT 1: Introduction to Allied Health Careers	
Relevant Standards: Bold indicates priority	
HL 4.1; HL 5.1	
Essential Question(s):	**Enduring Understanding(s):**
• What is allied health? • How do allied health professionals work together to support patients? • What is HIPAA and why is it important to all healthcare settings? • What legal rights do patients have? • Why is OSHA important in a healthcare setting?	Allied health professionals play a vital role in delivering essential preventive, therapeutic, diagnostic, and support services. Through collaborative efforts, these professionals enhance the accessibility of healthcare services, fostering a multidisciplinary approach to patient care. Compliance with regulatory standards is paramount in the allied health field. Adhering to guidelines set by organizations like HIPAA (Health Insurance Portability and Accountability Act) and OSHA (Occupational Safety and Health Administration) is imperative for allied health professionals. This commitment extends to maintaining patients' privacy, security, and confidentiality in accordance with HIPAA regulations.
Demonstration of Learning:	**Pacing for Unit**
Projects, Constructed Written Response,	9 Blocks
Family Overview (link below)	**Integration of Technology:**
5 Health Science Career Pathways HIPAA OSHA	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning.*
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Allied Health, Healthcare Delivery Systems, Safety Hazards, OSHA, Ergonomic Standards, HIPAA, Patient Bill of Rights, Therapeutic Pathway, Ethics, confidentiality, security, privacy, compliance, risks, mitigate	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Engagement: Comprehension	• Build contexts to prior knowledge. • Accentuate important information and how it relates to the learning goal. • Apply learning to new context.
Supporting Multilingual/English Learners	

Related *CELP standards*	Learning Targets:

The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.*

An EL can participate in grade appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.
I can write a reflection paper, summarizing the main purpose of the content presented by the healthcare profession from the Therapeutic Pathway.

- Level 1: With prompting and supports, an EL can:
  - Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  - Write a brief reflection paper summarizing the main purpose of the content presented.
  - Use basic vocabulary related to healthcare to express thoughts and ideas.
  - Respond to simple prompts or questions about the main purpose of the content.
- Level 2: With prompting and supports, an EL can:
  - Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  - Write a reflection paper summarizing the main purpose of the content presented with more detail.
  - Use academic and domain-specific vocabulary related to healthcare to express thoughts and ideas.
  - Respond to questions about the main purpose of the content with short explanations or examples.
- Level 3: With guidance and supports, an EL can:
  - Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare.
  - Write a reflection paper discussing the main purpose of the content presented, providing personal insights or reactions.
  - Use academic and domain-specific vocabulary to express ideas and opinions about healthcare topics.
  - Ask and answer relevant questions about the main purpose of the content.
  - Incorporate additional information or evidence to support reflections on the main purpose.
- Level 4: An EL can:
  - Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare with confidence.
  - Write a reflection paper analyzing the main purpose of the content presented, providing well-supported arguments or interpretations.
  - Use academic and domain-specific vocabulary effectively to convey ideas and perspectives on healthcare topics.
  - Support reflections with specific and relevant evidence from the content.
  - Engage in dialogue to clarify interpretations and conclusions.
- Level 5: An EL can:
  - Engage in extended discussions or written exchanges about the Therapeutic Pathway in healthcare with proficiency.
  - Write a reflective analysis that critically evaluates the main purpose of the content presented, offering nuanced insights and perspectives.
  - Use academic and domain-specific vocabulary fluently to articulate complex ideas and viewpoints on healthcare topics.
  - Provide thorough and compelling support for reflections with detailed evidence from the content and external sources.
  - Initiate and respond to inquiries that challenge assumptions and deepen understanding of the main purpose.

Lesson Sequence	Learning Target	Success Criteria/Assessment/Resources
1	I can collaborate with peers and develop a definition of allied health, including the key systems of health care delivery involved.	• I can define the term allied health. • I can identify healthcare professionals categorized as allied health professionals. • I can list the key systems in healthcare. • Using images, I can create a poster to articulate a

		working definition of allied healthcare and include the key systems of healthcare.
2	I can identify potential safety hazards in an allied health setting and design an appropriate response to a safety scenario.	• I can identify safety hazards in workplace settings. • I can recognize ways to mitigate safety risks. • I can design a healthcare setting of their choice that mitigates safety risks.
3	I can design an allied health space that meets ergonomic standards.	• I can define ergonomic standards and its impact on the wellbeing of healthcare professionals. • I can identify health issues that can arise from poor ergonomic conditions. • I can brainstorm and form an opinion of how to use resources in an allied health space to ergonomically support the wellbeing of healthcare professionals. • I can design an allied health setting of my choice, paying attention to ergonomic standards.
4	I can develop “HIPAA scenarios” that will demonstrate HIPAA compliance.	• I can identify and explain the major components of HIPAA (confidentiality, security, privacy). • I can critique case scenarios and identify breach of confidentiality, security, and privacy. • Working with a peer, I can create examples of confidentiality, security, and privacy compliance for a scenario that demonstrates HIPAA compliance.
5	I can develop a Patient Bill of Rights.	• I can brainstorm with a peer and form an opinion on the rights of patients in healthcare. • I can research the list of patients rights included in a patient Bill of Rights in Connecticut and name them. • I can work with a peer to develop a unique patient Bill of Rights. Research Assignment
6	I can converse with the allied healthcare profession so I can better understand their career/profession.	• I can research the different professions in Allied Health at BLS.GOV. • I can use BLS.GOV to better understand the role of healthcare professions in Allied Health. • I can construct questions to ask the healthcare profession from Allied Health visiting our class, that will generate feedback that provides further insight of the healthcare field.
7	I can write a reflection paper, summarizing the main purpose of the content presented by the Allied Health profession.	• I can document key facts from the Speaker’s presentation to help recall important points when writing a reflection paper. • I can use documented key points when writing a reflection paper on the speakers’ presentation, summarizing the main purpose of the presentation.
8	Workshop: Empathy I can recognize the difference between	• I can define the term empathy and sympathy, and recognize the difference.

	empathy and sympathy.	• Given scenarios from The Heart of Compassion video, I can create one -sentence responses illustrating empathy and sympathy. Resources: • Brene Brown empathy/sympathy video. • The Heart of Compassion video.
9	I can research the connection between empathy and improved patient outcomes.	• Working with a peer, I can research the definition of patient outcomes and provide two examples. • I can write a research paper discussing the importance of empathy in healthcare, including a case scenario of a healthcare provider showing empathy, which indicates how patients heal better when shown empathy by a healthcare provider. Resources/Assessment: • PPT on Empathy • Internet for research • Research Paper on Empathy in Healthcare

Unit Title:	
UNIT 2: Therapeutic Pathway	
Relevant Standards: Bold indicates priority	
HL 4.1; HL 5.2	
Essential Question(s):	**Enduring Understanding(s):**
• What allied health careers fall within the therapeutic pathway? • Why is empathy essential to the therapeutic pathway? • Why is it so important to get a good patient history? • What skills are common throughout the therapeutic pathway?	Empathy is crucial in the therapeutic pathway because it fosters a connection between healthcare professionals and patients. Understanding the patient's history helps identify potential risks or contraindications to certain treatments, ensuring patient safety. Allied Health professionals that fall within the Therapeutic Pathway require a set of essential skills such problem solving, cultural competence, and manual dexterity, that are integral to their success. These elements contribute to positive patient outcomes, effective treatment plans, and the overall well-being of individuals receiving therapeutic interventions.
Demonstration of Learning:	**Pacing for Unit**
Projects, Constructed Written Response,	10 Blocks
Family Overview (link below)	**Integration of Technology:**
Empathy and Sympathy Vital Signs Dementia	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning.*
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Empathy, Sympathy, Vital signs, Blood pressure, Pulse, Temperature, Therapeutic Services Pathway, Licensure, Certification, Dementia, Alzheimer's disease, Vascular dementia, Lewy body dementia	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Engagement: Comprehension	• Give explicit prompts for each step in a sequential process. • Introduce graduated scaffolds that support information processing strategies • “Chunk” information into smaller elements. • Progressively release information (e.g., sequential highlighting). • Remove unnecessary distractions unless they are

	essential to the instructional goal.
Supporting Multilingual/English Learners	
Related *CELP standards:*	**Learning Targets:**

The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.*

An EL can participate in grade appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.
I can write a reflection paper, summarizing the main purpose of the content presented by the healthcare profession from the Therapeutic Pathway.

- Level 1: With prompting and supports, an EL can:
  - Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  - Write a brief reflection paper summarizing the main purpose of the content presented.
  - Use basic vocabulary related to healthcare to express thoughts and ideas.
  - Respond to simple prompts or questions about the main purpose of the content.
- Level 2: With prompting and supports, an EL can:
  - Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  - Write a reflection paper summarizing the main purpose of the content presented with more detail.
  - Use academic and domain-specific vocabulary related to healthcare to express thoughts and ideas.
  - Respond to questions about the main purpose of the content with short explanations or examples.
- Level 3: With guidance and supports, an EL can:
  - Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare.
  - Write a reflection paper discussing the main purpose of the content presented, providing personal insights or reactions.
  - Use academic and domain-specific vocabulary to express ideas and opinions about healthcare topics.
  - Ask and answer relevant questions about the main purpose of the content.
  - Incorporate additional information or evidence to support reflections on the main purpose.
- Level 4: An EL can:
  - Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare with confidence.
  - Write a reflection paper analyzing the main purpose of the content presented, providing well-supported arguments or interpretations.
  - Use academic and domain-specific vocabulary effectively to convey ideas and perspectives on healthcare topics.
  - Support reflections with specific and relevant evidence from the content.
  - Engage in dialogue to clarify interpretations and conclusions.
- Level 5: An EL can:
  - Engage in extended discussions or written exchanges about the Therapeutic Pathway in healthcare with proficiency.
  - Write a reflective analysis that critically evaluates the main purpose of the content presented, offering nuanced insights and perspectives.
  - Use academic and domain-specific vocabulary fluently to articulate complex ideas and viewpoints on healthcare topics.
  - Provide thorough and compelling support for reflections with detailed evidence from the content and external sources.
  - Initiate and respond to inquiries that challenge assumptions and deepen understanding of the main purpose.

Lesson Sequence	**Learning Target**	**Success Criteria/Assessment/Resources**

1	I can articulate the effectiveness of empathetic versus sympathetic responses while reflecting on ways to enhance empathic communication in healthcare.	• I can define empathy and sympathy accurately, and differentiate between the two concepts. • I can identify examples that illustrate empathy and sympathy. • Given case scenarios, I can articulate the effectiveness of empathetic versus sympathetic responses while reflecting on ways to enhance empathic communication in healthcare. Resources: • Bene Brown: Empathy
2	I can analyze the impact of empathy versus sympathy on patient outcomes.	• I can define and provide examples of improved patient outcomes. • I can research the connection between empathy and improved patient outcomes. • Given case scenarios, I can analyze and discuss the impact of empathy versus sympathy on patient outcomes.
3	I explain the value of performing the baseline vital signs.	• I can identify the components of vital signs. • I can describe the methods for obtaining the different vital signs. • I can explain the value of performing the baseline vital signs. Resources/Assessments • *Chapter 16 Handout* • *PPT* • *Graphic Organizer*
4	I can demonstrate the skills involved in assessment of breathing.	• I can identify the attributes that should be obtained when assessing breathing. • I can demonstrate the skills involved in assessment of breathing. Resources/Assessments: • Chapter 16 Handout • PPT • Graphic Organizer
5	I can demonstrate the skills associated with obtaining blood pressure.	• I can define systolic and diastolic pressure and differentiate the difference. • I can explain the rationale for assessing blood pressure. • I can identify the normal and abnormal ranges of blood pressure. • I can demonstrate the skills associated with obtaining blood pressure. Resources/Assessments: • Chapter 16 Handout • PPT • Graphic Organizer
6	I can demonstrate the techniques associated with obtaining a pulse.	• I can identify the nine (9) pulse points and their location on the body. • I can differentiate between obtaining a pulse in an adult, child, and infant patient.

		• I can demonstrate the techniques associated with obtaining a pulse. <u>Resources/Assessments:</u> • Chapter 16 Handout • PPT • Graphic Organizer
7	I can interpret, compare, and explain temperature data.	• I can define temperature. • I can make graphs representing temperature data. • I can interpret, compare, and explain temperature data. <u>Resources/Assessments:</u> • Chapter 16 Handout • PPT • Graphic Organizer
8	I can create a PPT detailing the research findings on the role and functions, skills, salary, education requirements, licensure and certification of a career selected from the Therapeutic Services Pathway, and articulate my research findings to my peers.	• I can define the primary role of a selected career in the Therapeutic Pathway. • I can identify and investigate the selected career in the Therapeutic Pathway to determine the various skills needed, salary, education requirement, certification and/or licensure. • I can present my research findings on the health career in the Therapeutic Pathway to my peers. <u>Resources/Assessment</u> • Internet for research
9	I can converse with the allied healthcare profession from the Therapeutic Pathway, so I can better understand their career/profession.	• I can research the different professions in Therapeutic Pathway at BLS.GOV. • I can use BLS.GOV to better understand the role of healthcare professions in the Therapeutic Pathway. • I can construct questions to ask the healthcare profession from the Therapeutic Pathway visiting our class, that will generate feedback that provides further insight of the healthcare field.
9	I can write a reflection paper, summarizing the main purpose of the content presented by the healthcare profession from the Therapeutic Pathway.	• I can document key facts from the Speaker's presentation to help recall important points when writing a reflection paper. • I can use documented key points when writing a reflection paper on the speakers' presentation, summarizing the main purpose of the presentation.
10	I can identify the major types of dementia including Alzheimer's, Vascular, Lewy.	• I define Dementia and state the difference between dementia and Alzheimer's. • I can explain the common symptoms associated with the major types of dementia including Alzheimer's, Vascular, Lewy. • I can explain the progression of dementia. • Given case scenarios, I can identify the major types of dementia including Alzheimer's, Vascular, Lewy. <u>Resources/Assessments</u> • Dementia Care PPT • Dementia Care Assignment

Unit Title:	
UNIT 3: Diagnostic Pathway	
Relevant Standards: Bold indicates priority	
HL 4.1	
Essential Question(s):	**Enduring Understanding(s):**
• What is the Diagnostic Pathway? • What are examples of healthcare professionals who work in the Diagnostic Pathway? • What are examples of education and certifications needed to work in the Diagnostic Pathway? • How does someone in the Diagnostic Pathway work with other healthcare workers to treat patients?	Diagnostic Pathway generally refers to the process of diagnosing medical conditions and includes allied health professionals involved in reaching a diagnosis. Allied Health professionals in this pathway collaborate with other healthcare workers to treat patients, communicating findings. For example, Radiologists interpret medical images (X-rays, CT scans, MRIs) to aid in the diagnosis, and Pathologists examine tissues, organs, and bodily fluids to identify diseases. The required education and certifications vary by professions and include licensure and/or certification in the specific area of study.
Demonstration of Learning:	**Pacing for Unit**
Projects, Constructed Written Response,	6 Blocks
Family Overview (link below)	**Integration of Technology:**
Blood Typing	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning.*
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Electrocardiogram (ECG or EKG), Technician, Technologist, Immunohematologist, Blood typing, Transfusion, Differential diagnosis, Diagnostic Services Pathway, Rh Factor	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Executive Functions	• Guide appropriate goal setting. • Support planning and strategy development • Embed prompts to “stop and think” before acting as well as adequate space. • Provide guides for breaking long-term goals into reachable short-term objectives. • Facilitate managing information and resources.
Supporting Multilingual/English Learners	

Related *CELP standards*	Learning Targets:

The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.*

An EL can participate in grade appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.

I can write a reflection paper, summarizing the main purpose of the content presented by the healthcare profession from the Therapeutic Pathway.

- Level 1: With prompting and supports, an EL can:
  - Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  - Write a brief reflection paper summarizing the main purpose of the content presented.
  - Use basic vocabulary related to healthcare to express thoughts and ideas.
  - Respond to simple prompts or questions about the main purpose of the content.
- Level 2: With prompting and supports, an EL can:
  - Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  - Write a reflection paper summarizing the main purpose of the content presented with more detail.
  - Use academic and domain-specific vocabulary related to healthcare to express thoughts and ideas.
  - Respond to questions about the main purpose of the content with short explanations or examples.
- Level 3: With guidance and supports, an EL can:
  - Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare.
  - Write a reflection paper discussing the main purpose of the content presented, providing personal insights or reactions.
  - Use academic and domain-specific vocabulary to express ideas and opinions about healthcare topics.
  - Ask and answer relevant questions about the main purpose of the content.
  - Incorporate additional information or evidence to support reflections on the main purpose.
- Level 4: An EL can:
  - Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare with confidence.
  - Write a reflection paper analyzing the main purpose of the content presented, providing well-supported arguments or interpretations.
  - Use academic and domain-specific vocabulary effectively to convey ideas and perspectives on healthcare topics.
  - Support reflections with specific and relevant evidence from the content.
  - Engage in dialogue to clarify interpretations and conclusions.
- Level 5: An EL can:
  - Engage in extended discussions or written exchanges about the Therapeutic Pathway in healthcare with proficiency.
  - Write a reflective analysis that critically evaluates the main purpose of the content presented, offering nuanced insights and perspectives.
  - Use academic and domain-specific vocabulary fluently to articulate complex ideas and viewpoints on healthcare topics.
  - Provide thorough and compelling support for reflections with detailed evidence from the content and external sources.
  - Initiate and respond to inquiries that challenge assumptions and deepen understanding of the main purpose.

Lesson Sequence	Learning Target	Success Criteria/ Assessment	Resources

1	I can discover the role and functions, work environment, physical and environment requirements of an Electrocardiogram Technician.	• I can list the different healthcare professionals connected to the diagnostic pathway, focusing on the Electrocardiogram Technician. • I can discover the role and functions, work environment, physical and environment requirements of an Electrocardiogram Technician. Resources/Assessments: • Bureau of Labor Statistics • Career One Stop
2	I can explore the role of an Immunohematologist in blood typing and transfusion, and discover what happens if someone is given the wrong blood in a blood transfusion.	• I can explore the role of an Immunohematologist. • I can identify the various blood groups in the ABO and Rh blood group systems. • I can determine which antibodies and antigens that occur in the blood of different blood types. • I can determine which person can receive blood from another person in a blood transfusion. • I can discover what happens if someone is given the wrong blood in a blood transfusion. Resources/Assessments: • The Blood Typing Game • Worksheet
3	I can interpret diagnostic results and offer a plausible differential diagnosis.	• I can explain the term differential diagnosis and provide examples. • Given a case study, I can use previous knowledge learned about Vital Signs to determine abnormal vital ranges of the fictitious patient. • I can define and provide examples of chief complaints. • Given a case study, I can identify the chief complaint of the fictitious patient. • Working with a peer on a given case, I can research given diagnoses, determine the differential diagnosis of the fictitious patient , and identify diagnostic tests that would confirm or rule out the diagnosis. Resources/Assessments: • Case Study: Marie Taylor • Internet for Research
4	I can create a PPT detailing the research findings on the role and functions, skills, salary, education requirements, licensure and certification of a career selected from the Diagnostic Services Pathway, and articulate my research findings to my peers.	• I can define the primary role of a selected career in the Diagnostic Pathway. • I can identify and investigate the selected career in the Diagnostic Pathway to determine the various skills needed, salary, education requirement, certification and/or licensure. • I can present my research findings on the health career in the Diagnostic Pathway to my peers. Resources/Assessments:

		• BLS.GOV • Worksheet
5	I can converse with the allied healthcare profession from the Diagnostic Pathway, so I can better understand their career/profession.	• I can research the different professions in Diagnostic Pathway at BLS.GOV. • I can use BLS.GOV to better understand the role of healthcare professions in the Diagnostic Pathway. • I can construct questions to ask the healthcare profession from the Diagnostic Pathway visiting our class, that will generate feedback that provides further insight of the healthcare field.
6	I can write a reflection paper, summarizing the main purpose of the content presented by the healthcare profession from the Diagnostic Pathway.	• I can document key facts from the Speaker's presentation to help recall important points when writing a reflection paper. • I can use documented key points when writing a reflection paper on the speakers' presentation, summarizing the main purpose of the presentation.

Unit Title:	
UNIT 4: Health Informatics	
Relevant Standards: Bold indicates priority	
HL 4.1	
Essential Question(s):	**Enduring Understanding(s):**
• What allied health careers fall within the health informatics pathway? • Why did the CDC declare racism a public health issue? • Does local healthcare data support the CDC declaration? • How can we mitigate the inequities in the healthcare system locally/nationally?	The health informatics pathway includes various allied health careers who use technology and information systems to improve healthcare delivery, including Health Information Technologist, Medical Biller and Coder, and Medical Transcriptionist. The Centers for Disease Control and Prevention (CDC) declared racism a public health issue because of its negative effects on health outcomes and the manner in which it contributes to health disparities. Racism can lead to inequitable access to healthcare resources, which can result in adverse health outcomes for racial and ethnic minority populations. By acknowledging racism as a public health issue, the CDC aims to address the root causes of health disparities and work towards achieving health equity locally and nationally.
Demonstration of Learning:	**Pacing for Unit**
Projects, Constructed Written Response,	5 Blocks
Family Overview (link below)	**Integration of Technology:**
Health Disparities Health Disparities in Connecticut	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning.*
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Racial disparity, Health Informatics Pathway, Health disparities, Public health, data, information	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Comprehension	• Support the process of meaning-making through models, scaffolds, and feedback. • Accentuate important information and how it relates to the learning goal. • Apply learning to new contexts. • Give explicit prompts for each step in a sequential process

	• Provide options for organizational methods and approaches (tables and algorithms for processing mathematical operations) • "Chunk" information into smaller elements • Progressively release information (e.g., sequential highlighting)
Supporting Multilingual/English Learners	
Related *CELP standards*	**Learning Targets:**

The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.*
 	
An EL can participate in grade appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.
I can write a reflection paper, summarizing the main purpose of the content presented by the healthcare profession from the Therapeutic Pathway.
• Level 1: With prompting and supports, an EL can:
  ○ Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  ○ Write a brief reflection paper summarizing the main purpose of the content presented.
  ○ Use basic vocabulary related to healthcare to express thoughts and ideas.
  ○ Respond to simple prompts or questions about the main purpose of the content.
• Level 2: With prompting and supports, an EL can:
  ○ Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  ○ Write a reflection paper summarizing the main purpose of the content presented with more detail.
  ○ Use academic and domain-specific vocabulary related to healthcare to express thoughts and ideas.
  ○ Respond to questions about the main purpose of the content with short explanations or examples.
• Level 3: With guidance and supports, an EL can:
  ○ Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare.
  ○ Write a reflection paper discussing the main purpose of the content presented, providing personal insights or reactions.
  ○ Use academic and domain-specific vocabulary to express ideas and opinions about healthcare topics.
  ○ Ask and answer relevant questions about the main purpose of the content.
  ○ Incorporate additional information or evidence to support reflections on the main purpose.
• Level 4: An EL can:
  ○ Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare with confidence.
  ○ Write a reflection paper analyzing the main purpose of the content presented, providing well-supported arguments or interpretations.
  ○ Use academic and domain-specific vocabulary effectively to convey ideas and perspectives on healthcare topics.
  ○ Support reflections with specific and relevant evidence from the content.
  ○ Engage in dialogue to clarify interpretations and conclusions.
• Level 5: An EL can:
  ○ Engage in extended discussions or written exchanges about the Therapeutic Pathway in healthcare with proficiency.
  ○ Write a reflective analysis that critically evaluates the main purpose of the content presented, offering nuanced insights and perspectives.
  ○ Use academic and domain-specific vocabulary fluently to articulate complex ideas and viewpoints on healthcare topics.
  ○ Provide thorough and compelling support for reflections with detailed evidence from the content and external sources.
  ○ Initiate and respond to inquiries that challenge assumptions and deepen understanding of the main purpose.	

Lesson Sequence	Learning Target	Success Criteria/Assessment/Resources
1	I can analyze public health data to identify health disparities related to access to healthcare.	• I can identify different types of public data for secondary use in healthcare. • I can use Google to access public health data to identify health disparities related to access to healthcare. • I can abstract the proper information from a given set of public health data and identify the health disparities related to access to healthcare.
2	I can create a poster that communicates an intentional awareness of the issue of racial disparity in health.	• I can define racial disparity and provide examples of racial disparities in health. • I can collaborate with peers to determine a course of action to raise awareness about racial disparity. • I can create a layout and presentation and include relevant information to communicate an intentional awareness of the issue of racial disparity in health.
3	I can create a PPT detailing the research findings on the role and functions, skills, salary, education requirements, licensure and certification of a career selected from the Health Informatics Pathway, and articulate my research findings to my peers.	• I can define the primary role of a selected career in the Health Informatics Pathway. • I can identify and investigate the selected career in the Health Informatics Pathway to determine the various skills needed, salary, education requirement, certification and/or licensure. • I can present my research findings on the health career in the Health Informatics Pathway to my peers.
4	I can converse with the allied healthcare profession from the Health Informatics Pathway, so I can better understand their career/profession.	• I can use BLS.GOV to determine the different professions in the Health Informatics Pathway. • I can use BLS.GOV to better understand the role of healthcare professions in the Health Informatics Pathway. • I can construct questions to ask the healthcare profession from the Health Informatics Pathway visiting our class, that will generate feedback that provides further insight of the healthcare field.
5	I can write a reflection paper, summarizing the main purpose of the content presented by the healthcare profession from the Health Informatics Pathway.	• I can document key facts from the Speaker's presentation to help recall important points when writing a reflection paper. • I can use documented key points when writing a reflection paper on the speakers' presentation, summarizing the main purpose of the presentation.

Unit Title:	
UNIT 5: Support Services	
Relevant Standards: Bold indicates priority	
HL 4.1	
Essential Question(s):	**Enduring Understanding(s):**
• What allied health careers fall within the Support Services pathway? • What are the five steps in the Chain of Infection? • How is the Chain of Infection relevant to every healthcare field? • How can we stop the spread of infection?	• Effective support services are integral to ensuring the functional operation and delivery of quality care, enhancing patient experience, and optimizing patient outcomes. • Provides a framework for understanding the transmission and prevention of diseases. • Emphasizes the interconnectedness of the five steps in the Chain of Infection (Pathogen, Reservoir, Portal of Exit, Mode of Transmission, Portal of Entry) • Highlights the importance of any interruptions along the chain of infection which prevents the transmission of disease.
Demonstration of Learning:	**Pacing for Unit**
Projects, Constructed Written Response,	6 Blocks
Family Overview (link below)	**Integration of Technology:**
Chain of Infection Cholera	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning.*
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Chain of Infection, transmission, susceptible host, reservoir, exit portal, entry portal, donning, doffing, Cholera, Support Services Pathway, infection, nosocomial, Hospital Acquired Infection (HAI)	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Representation: Comprehension	• Guide information processing and visualization. • Provide interactive models that guide exploration and new understandings. • Anchor instruction by linking to and activating relevant prior knowledge (e.g., using visual imagery, concept anchoring, or concept mastery routines). • Pre-teach critical prerequisite concepts through demonstration or models.

	● Bridge concepts with relevant analogies.
Supporting Multilingual/English Learners	
Related *CELP standards*	**Learning Targets:**

The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.*

An EL can participate in grade appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.
I can write a reflection paper, summarizing the main purpose of the content presented by the healthcare profession from the Therapeutic Pathway.

- Level 1: With prompting and supports, an EL can:
  - Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  - Write a brief reflection paper summarizing the main purpose of the content presented.
  - Use basic vocabulary related to healthcare to express thoughts and ideas.
  - Respond to simple prompts or questions about the main purpose of the content.
- Level 2: With prompting and supports, an EL can:
  - Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  - Write a reflection paper summarizing the main purpose of the content presented with more detail.
  - Use academic and domain-specific vocabulary related to healthcare to express thoughts and ideas.
  - Respond to questions about the main purpose of the content with short explanations or examples.
- Level 3: With guidance and supports, an EL can:
  - Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare.
  - Write a reflection paper discussing the main purpose of the content presented, providing personal insights or reactions.
  - Use academic and domain-specific vocabulary to express ideas and opinions about healthcare topics.
  - Ask and answer relevant questions about the main purpose of the content.
  - Incorporate additional information or evidence to support reflections on the main purpose.
- Level 4: An EL can:
  - Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare with confidence.
  - Write a reflection paper analyzing the main purpose of the content presented, providing well-supported arguments or interpretations.
  - Use academic and domain-specific vocabulary effectively to convey ideas and perspectives on healthcare topics.
  - Support reflections with specific and relevant evidence from the content.
  - Engage in dialogue to clarify interpretations and conclusions.
- Level 5: An EL can:
  - Engage in extended discussions or written exchanges about the Therapeutic Pathway in healthcare with proficiency.
  - Write a reflective analysis that critically evaluates the main purpose of the content presented, offering nuanced insights and perspectives.
  - Use academic and domain-specific vocabulary fluently to articulate complex ideas and viewpoints on healthcare topics.
  - Provide thorough and compelling support for reflections with detailed evidence from the content and external sources.
  - Initiate and respond to inquiries that challenge assumptions and deepen understanding of the main purpose.

Lesson Sequence	**Learning Target**	**Success Criteria/Assessment/Resources**

1	I can identify the chain of infection in terms of cholera and discuss ways to break its transmission.	• I can define the chain of infection and list the six steps of the chain of infection. • I can explain what cholera is and how it is transmitted. • I can critique an event that causes a cholera outbreak, explain the chain of infection in terms of cholera, and discuss ways to break its transmission. • I can design a village illustrating the chain of infection of cholera, and ways to break the transmission of cholera within the village. <u>Resources/Assessments:</u> • Cholera video (Youtube) • Cholera Case Study
2	I can demonstrate proper techniques in donning and doffing gloves.	• I can explain the correct technique when donning and doffing gloves, and explain their role in infection prevention. • I can demonstrate proper techniques in donning and doffing gloves.
3	I can explain proper handwashing techniques in decreasing nosocomial infections.	• I can demonstrate proper handwashing techniques. • I can define nosocomial infections and provide examples. • I can explain proper handwashing techniques in decreasing nosocomial infections • I can understand the principles of infection control through observation of the spread of simulated germs using Glo Germ. • I can predict an outcome of germ transmission if a step in the chain of infection is not interrupted when using the application of Glo Germ. <u>Resources/Assessments</u> • Handwashing Demonstration Checklist • Glo Germ Activity • Case Study
4	I can create a PPT detailing the research findings on the role and functions, skills, salary, education requirements, licensure and certification of a career selected from the Support Services Pathway, and articulate my research findings to my peers.	• I can define the primary role of a selected career in the Support Services Pathway. • I can identify and investigate the selected career in the Support Services Pathway to determine the various skills needed, salary, education requirement, certification and/or licensure. • I can present my research findings on the health career in the Support Services Pathway to my peers.
5	I can converse with the allied healthcare profession from the Support Services Pathway, so I can better understand their	• I can use BLS.GOV to determine the different professions in the Support Services Pathway. • I can use BLS.GOV to better understand the role of healthcare professions in the Support Services

	career/profession.	Pathway. ● I can construct questions to ask the healthcare profession from the Support Services Pathway visiting our class, that will generate feedback that provides further insight of the healthcare field.
6	I can write a reflection paper, summarizing the main purpose of the content presented by the healthcare profession from the Support Services Pathway.	● I can document key facts from the Speaker's presentation to help recall important points when writing a reflection paper. ● I can use documented key points when writing a reflection paper on the speakers' presentation, summarizing the main purpose of the presentation. <u>Resources/Assessments:</u> ● Reflection Paper Worksheet

Unit Title:	
UNIT 6: Biotechnology Research and Development	
Relevant Standards: Bold indicates priority	
HL 4.1	
Essential Question(s):	**Enduring Understanding(s):**
• What allied health careers fall within the biotechnology research and development pathway? • What is the history of genetic engineering? • How is biotechnology already used in medicine? • What are the ethical considerations of genetic engineering? • What are ethical considerations that may arise in biotechnology research and development that should be addressed?	Biotechnology research and development is that it emperors us to harness the power of living organisms.
Demonstration of Learning:	**Pacing for Unit**
Projects, Constructed Written Response,	5 Blocks
Family Overview (link below)	**Integration of Technology:**
Bacterial Transformation	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning.*
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Genetic engineering, Bacteria transformation, DNA, Ethics	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Engagement: Recruiting Interest	• Create cooperative learning groups with clear goals, roles, and responsibilities • Create expectations for group work (e.g., rubrics, norms, etc.) • Use prompts or scaffolds for visualizing desired outcome
Action and Expression: Executive Function	• Provide models or examples of the process and product of goal-setting • Provide guides and checklists for scaffolding goal-setting • Remove unnecessary distractions unless they are essential to the instructional goals

Representation: Comprehension	• Give explicit prompts for each step in a sequential process • "Chunk" information into smaller elements
Supporting Multilingual/English Learners	
Related *CELP standards*	**Learning Targets:**

The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.*

An EL can participate in grade appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions.
I can write a reflection paper, summarizing the main purpose of the content presented by the healthcare profession from the Therapeutic Pathway.

- Level 1: With prompting and supports, an EL can:
  - Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  - Write a brief reflection paper summarizing the main purpose of the content presented.
  - Use basic vocabulary related to healthcare to express thoughts and ideas.
  - Respond to simple prompts or questions about the main purpose of the content.
- Level 2: With prompting and supports, an EL can:
  - Listen to presentations or discussions about the Therapeutic Pathway in healthcare.
  - Write a reflection paper summarizing the main purpose of the content presented with more detail.
  - Use academic and domain-specific vocabulary related to healthcare to express thoughts and ideas.
  - Respond to questions about the main purpose of the content with short explanations or examples.
- Level 3: With guidance and supports, an EL can:
  - Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare.
  - Write a reflection paper discussing the main purpose of the content presented, providing personal insights or reactions.
  - Use academic and domain-specific vocabulary to express ideas and opinions about healthcare topics.
  - Ask and answer relevant questions about the main purpose of the content.
  - Incorporate additional information or evidence to support reflections on the main purpose.
- Level 4: An EL can:
  - Participate in discussions or written exchanges about the Therapeutic Pathway in healthcare with confidence.
  - Write a reflection paper analyzing the main purpose of the content presented, providing well-supported arguments or interpretations.
  - Use academic and domain-specific vocabulary effectively to convey ideas and perspectives on healthcare topics.
  - Support reflections with specific and relevant evidence from the content.
  - Engage in dialogue to clarify interpretations and conclusions.
- Level 5: An EL can:
  - Engage in extended discussions or written exchanges about the Therapeutic Pathway in healthcare with proficiency.
  - Write a reflective analysis that critically evaluates the main purpose of the content presented, offering nuanced insights and perspectives.
  - Use academic and domain-specific vocabulary fluently to articulate complex ideas and viewpoints on healthcare topics.
  - Provide thorough and compelling support for reflections with detailed evidence from the content and external sources.
  - Initiate and respond to inquiries that challenge assumptions and deepen understanding of the main purpose.

Lesson Sequence	Learning Target	Success Criteria/ Assessment	Resources

1	I can demonstrate knowledge of the steps involved in a typical bacterial transformation experiment, including preparation of bacterial cells.	• I can define bacterial transformation and explain its significance in genetic engineering. • I can describe the process of introducing foreign DNA into bacteria and its implications for biotechnology. • Working with peers, I can demonstrate knowledge of the steps in a typical bacterial transformation simulation experiment, including preparation of bacterial cells. Resources/Assessments: • Transforming Bacteria Simulation Lab • Bacterial Transformation Simulation Lab Instructions
2	I can discuss ethical considerations related to genetic engineering and bacterial transformation, including potential risks and benefits.	• I can identify and state potential risks associated with genetic engineering and bacterial transformation. • I can also recognize potential benefits associated with genetic engineering and bacterial transformation. • I can engage in constructive discussions and debates about controversial ethical issues related to genetic engineering, fostering open dialogue and respectful exchange of ideas. Resources/Assessments: • Bacterial Transformation Exit Ticket
3	I can create a PPT detailing the research findings on the role and functions, skills, salary, education requirements, licensure and certification of a career selected from the Biotechnology Research and Development Pathway, and articulate my research findings to my peers.	• I can define the primary role of a selected career in the Biotechnology Research and Development Pathway. • I can identify and investigate the selected career in the Biotechnology Research and Development Pathway to determine the various skills needed, salary, education requirement, certification and/or licensure. • I can present my research findings on the health career in the Biotechnology Research and Development Pathway to my peers.
4	I can converse with the allied healthcare profession from the Biotechnology Research and Development Pathway, so I can better understand their career/profession.	• I can use BLS.GOV to determine the different professions in the Biotechnology Research and Development Pathway. • I can use BLS.GOV to better understand the role of healthcare professions in the Biotechnology Research and Development Pathway. • I can construct questions to ask the healthcare profession from the Biotechnology Research and DevelopmentPathway visiting our class, that will generate feedback that provides further insight of the healthcare field.
5	I can write a reflection paper, summarizing the main purpose of the	• I can document key facts from the Speaker's presentation to help recall important points when

	content presented by the healthcare profession from the Biotechnology Research and Development Pathway.	writing a reflection paper. • I can use documented key points when writing a reflection paper on the speakers' presentation, summarizing the main purpose of the presentation.

Unit Title:	
UNIT 7: Explore, Plan, Find	
Relevant Standards: Bold indicates priority	
Essential Question(s):	**Enduring Understanding(s):**
• What can a career assessment tell you? • What specific skills are most wanted in employees? • What is a resume and cover letter and what are their purposes? • Which healthcare career pathway seems best suited to your interest? • What educational requirements will you need to meet for the career of your choice?	Career assessments serve as guiding principles for individuals navigating their career development and decision-making processes. Career assessments provide insights into employability skills needed to pursue a career and to determine whether those skills are already acquired. Resumes and cover letters display qualifications, education, and skillset. Exploration of healthcare pathways identifies areas of interest, strengths, providing an informed guidance for career decisions.
Demonstration of Learning:	**Pacing for Unit**
Projects, Constructed Written Response,	5
Family Overview (link below)	**Integration of Technology:**
CareerOneStop Career Exploration	*Intentionally aligned use of digital tools and resources to support acquisition of content, researching, organizing and communicating learning.*
Unit-specific Vocabulary:	**Aligned Unit Materials, Resources, and Technology (beyond core resources):**
Resume, Cover letter, SMART goals, salary, skills	
Differentiation through *Universal Design for Learning*	
UDL Indicator	**Teacher Actions:**
Executive Functions	• Guide appropriate goal setting. • Support planning and strategy development • Facilitate managing information and resources.
Supporting Multilingual/English Learners	
Related *CELP standards*	**Learning Targets:**
The CELP guidance is to **support the development of language; access to course content expectations should not change as a result of MLL status.* An EL can participate in grade appropriate oral and written exchanges of information, ideas, and analyses, responding to peer, audience, or reader comments and questions. **I can create an effective resume.** • Level 1: With prompting and supports, an EL can:	

- Identify basic components of a resume, such as contact information and educational background.
- Create a simple resume with assistance, including basic details about skills and experiences.
- Use basic language and vocabulary to describe qualifications and job history.
- Respond to simple questions about the content of the resume.

- Level 2: With prompting and supports, an EL can:
  - Identify key sections of a resume, such as objective statements, work experience, and education.
  - Create a resume with more detail, including relevant skills and accomplishments.
  - Use academic and domain-specific vocabulary related to job-seeking and employment.
  - Respond to questions about the purpose and effectiveness of the resume.
- Level 3: With guidance and supports, an EL can:
  - Construct a resume that effectively highlights qualifications and experiences for specific job opportunities.
  - Organize resume sections logically and prioritize information relevant to the target position.
  - Use appropriate language and tone to convey professionalism and competence.
  - Seek feedback and make revisions to improve the clarity and impact of the resume.
- Level 4: An EL can:
  - Develop a well-organized and tailored resume that demonstrates a clear understanding of job requirements and employer expectations.
  - Customize resume content to effectively showcase relevant skills, experiences, and achievements.
  - Utilize advanced language and vocabulary to articulate qualifications and accomplishments concisely and persuasively.
  - Collaborate with peers or mentors to review and refine the resume for accuracy and effectiveness.
- Level 5: An EL can:
  - Craft a sophisticated and compelling resume that effectively communicates unique strengths and contributions to potential employers.
  - Strategically integrate keywords and industry-specific terminology to optimize resume visibility and relevance.
  - Demonstrate mastery of formatting and design principles to create a visually appealing and professional document.
  - Engage in reflective practice to continually refine and adapt the resume for different career opportunities and audiences.

Lesson Sequence	Learning Target	Success Criteria/ Assessment	Resources
1	I can create an effective cover letter.	• I can state the purpose of a cover letter. • I can identify the essential elements of a cover letter. • I can create an effective cover letter outlining interests in applying for a given employment.	
2	I can create an effective resume.	• I can identify the essential elements of a resume. • I can explain how an effective resume increases the possibility of securing an interview. • I can create an effective resume that communicates my experience, education, and qualifications.	
3	I can use the SMART goal concept to achieve an identified goal.	• I can state the meaning of the acronym SMART, and define each criterion. • I can identify a specific goal and incorporate the SMART goal concept to increase the chances of	

		achieving the identified goal.
4	I can create a PPT detailing the research findings on the role and functions, skills, salary, education requirements, licensure and certification of a career selected from one of the Pathways, and articulate my research findings to my peers for my Final Portfolio.	• I can select, then investigate, a selected career from one of the five Pathways to determine the various skills needed, salary, education requirement, certification and/or licensure. • I can create a PPT detailing the research and present my research findings to my peers.

ESSER ARP Update by Priority and Project as of 4.16.24

Priority	*Project*	SUM of ORIG ALLOCATION	SUM of 12.13.22 REVISED	SUM of Spent	SUM of Projection	SUM of Forecasted balance
		$ -	$ -	$ -	$ -	$ -
Total		$ -	$ -	$ -	$ -	$ -
Building Safe and Healthy Schools	AC projects	$ 10,452,417.00	$ 2,241,113.14	$ 853,341.86	$ -	$ 1,387,771.28
	Cleaning Equipment	$ 250,000.00	$ 305,000.00	$ 302,621.92	$ -	$ 2,378.08
	Furniture needs	$ 725,000.00	$ 375,874.97	$205,511.10	$ -	$ 170,363.87
	Necessary technology	$ -	$ 72,754.58	$ 72,754.58	$ -	$ -
	Sitework	$ 225,000.00	$ 8,024,411.83	$ 8,024,411.83	$ -	$ -
	Tech PD	$ 275,460.00	$ 250,000.00	$ 250,000.00	$ -	$ -
	Transportation needs	$ -	$ 68,000.00	$ 68,000.00	$ -	$ -
Building Safe and Healthy Schools Total		$ 11,927,877.00	$ 11,337,154.52	$ 9,776,641.29	$ -	$ 1,560,513.23
Family and Community connections	After School Advantage	$ 33,880.00	$ 20,246.25	$ 18,287.15	$ 681.00	$ 1,278.10
	FRC support	$ 109,650.00	$ 8,232.32	$ 8,232.32	$ -	$ -
	Transportation needs	$ -	$ 62,000.00	$ 51,101.80	$ -	$ 10,898.20
Family and Community connections Total		$ 143,530.00	$ 90,478.57	$ 77,621.27	$ 681.00	$ 12,176.30
Learning Acceleration		$ -	$ 66.18	$66.18	$ -	$ -
	After School Advantage	$ 359,218.90	$ 185,976.58	$ 98,254.51	$ 80,403.48	$ 7,318.59
	Bilingual support	$ 37,006.20	$ -	$ -	$ -	$ -
	Creative Hearts	$ 201,157.00	$ 203,288.23	$ 203,288.24	$ -	$ (0.01)
	ESY Summer School	$ -	$ 101,117.10	$ -	$ 101,117.10	$ (0.00)
	Field trips, scholarships, camps and breaks	$ -	$ 640.00	$ 640.00	$ -	$ -
	Furniture needs	$ -	$ 2,333.98	$ 2,333.98	$ -	$ -
	Gen Ed Summer School	$ -	$ 143,491.73	$ -	$ 143,491.73	$ (0.00)
	Homeless support	$ 23,363.00	$ 23,363.00	$ 23,363.00	$ -	$ -

	On the Right Track (College and Career)	$ 316,736.00	$ 382,312.87	$ 376,520.84	$ -	$ 5,792.03
	Power Up Health and wellness	$ 289,994.00	$ 292,021.91	$ 292,021.91	$ -	$ -
	Project READ	$ 591,831.00	$ 799,397.02	$ 795,951.36	$ -	$ 3,445.66
	Special Serivces needs	$ -	$ 128,359.46	$ 128,359.46	$ -	$ -
	Special services PL	$ -	$ 13,440.55	$13,440.55	$ -	$ -
	STEM step up	$ 134,698.10	$ 137,250.45	$ 137,250.45	$ -	$ (0.00)
	Substitutes	$ -	$ 6,000.00	$ 834.88	$ -	$ 5,165.12
	Technology for Students	$ -	$ 11,560.00	$11,560.00	$ -	$ -
	Transportation needs	$ -	$ 2,800.00	$ 2,800.00	$ -	$ -
	Wraparound services	$ 279,874.80	$ 123,811.48	$ 107,976.78	$ 15,810.47	$ 24.22
Learning Acceleration Total		$ 2,233,879.00	$ 2,557,230.54	$ 2,194,662.13	$ 340,822.78	$ 21,745.62
Social, Emotional, Mental Health	Field trips, scholarships, camps and breaks	$ 289,200.00	$ 100,180.63	$ 75,154.63	$ 25,026.00	$ 0.00
	Kulture City	$ 22,707.00	$ 30,729.94	$ 30,729.94	$ -	$ -
	SEL PD	$ 90,900.00	$ 168,065.79	$ 121,210.98	$ 46,854.81	$ 0.00
Social, Emotional, Mental Health Total		$ 402,807.00	$ 298,976.36	$ 227,095.55	$ 71,880.81	$ 0.00
Strategic Use of Tech, Staff Dev.	Class size reduction	$ 1,909,800.00	$ 1,909,601.38	$ 1,909,601.38	$0.00	$ 0.00
	Grant staffing	$ 85,582.00	$ 138,207.11	$ 117,708.02	$ 16,962.95	$3,536.14
	Necessary technology	$ 1,151,542.00	$ 1,357,719.39	$ 1,357,719.39	$ -	$ (0.00)
	Para support	$ -	$ 140,820.67	$ 140,820.67	$ -	$ -
	SEL PD	$ 66,000.00	$ 8,621.27	$ 6,687.45	$ -	$ 1,933.82
	Special Serivces needs	$ -	$ 5,837.90	$ 5,837.90	$ -	$ -
	Substitutes	$ -	$ 278,493.83	$ 278,493.83	$ -	$ 0.00
	Tech PD	$ 196,170.00	$ 14,012.98	$ 14,012.98	$ -	$ -
	Technology for Students	$ 111,966.00	$ 91,998.48	$91,998.48	$ -	$ (0.00)
Strategic Use of Tech, Staff Dev. Total		$ 3,521,060.00	$ 3,945,313.01	$ 3,922,880.10	$16,962.95	$ 5,469.96

Grand Total		**$ 18,229,153.00**	**$ 18,229,153.00**	**$ 16,198,900.34**	**$430,347.54**	**$ 1,599,905.11**