ESSENTIAL LEARNING *Standards*

English Language Arts

ENGLISH 9

CCSS.ELA-LITERACY.W.9-10.4
• Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.

CCSS.ELA-LITERACY.RL.9-10.2
• Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.

ENGLISH 10

CCSS.ELA-LITERACY.RL.9-10.4
• Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the cumulative impact of specific word choices on meaning and tone.

CCSS.ELA-LITERACY.RL.9-10.2
• Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details

ENGLISH 11

CCSS.ELA-LITERACY.CCRA.R.10 (RL.11-12.1).
• Read and comprehend literary and informational texts independently and proficiently.

CCSS.ELA-LITERACY.CCRA.W.10 (W.11-12.1).
• Write routinely over extended time frames and shorter time frames for a range of tasks, purposes, and audiences.

ENGLISH 12

CCSS.ELA-LITERACY. L.11-1. 12.5 (Language):
• Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCSS-ELA-LITERACY. W. 11-12.10 (Writing):

• Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of tasks, purposes, and audiences.

CCSS-ELA-LITERACY. RL. 11-12.10 (Reading)
• By the end of grade 12, read and comprehend literature, including stories, dramas, and poems.

AP LIT & COMP

Integration of Knowledge and Ideas: CCSS.ELA-LITERACY.RL.11-12.7
• Analyze multiple interpretations of a story, drama, or poem (e.g., recorded or live production of a play or recorded novel or poetry), evaluating how each version interprets the source text. (Include at least one play by Shakespeare and one play by an American dramatist.)

Text Types and Purposes: CCSS.ELA-LITERACY.W.11-12.1
• Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence.

AP LANG & COMP

CCSS.ELA-LITERACY.RI.11-12.5
• Analyze and evaluate the effectiveness of the structure an author uses in his or her exposition or argument, including whether the structure makes points clear, convincing, and engaging.

CCSS.ELA-LITERACY.RL.11-12.10
• By the end of grade 11, read and comprehend literature, including stories, dramas, and poems, in the grades 11-CCR text complexity band proficiently, with scaffolding as needed at the high end of the range.

Mathematics

ALGEBRA IA

Understand the connections between proportional relationships, lines, and linear equations.

CCSS.MATH.CONTENT.8.EE.B.5
• Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.

CCSS.MATH.CONTENT.8.EE.B.6
• Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b.

ALGEBRA 1

Convert between standard and factored form of Quadratic equations.

Graph a Quadratic function and identify key features

Find solutions using the Quadratic Formula

GEOMETRY

Introduction to trigonometry (review)

Relationships between special lines and circles

Area/volume

Review factoring

ALGEBRA II

Graph an exponential function and its transformation.

Write the rule of an exponential function given a table or situation.

Convert between logarithmic and exponential form.

Solve simple logarithmic and exponential equations by converting between logarithmic and exponential form.

PROBABILITY AND STATS

Testing a Claim (Inference Test - Single Sample)
- Significance Tests
- Test for a Proportion
- Test for a Mean

Comparing Two Populations (Inference Test - Two Samples)
- Difference Between Two Proportions
- Difference Between Two Means
- Difference Between Paired Data

PRE-CALCULUS

Solving trig equations

Trigonometry identities

Double and half angle relationships

Law of sines and cosines

AP CALCULUS AB

AP Exam Prep

Area between curves

Volume of solids

AP CALCULUS BC

Series

Taylor Polynomials

AP Exam Prep

Social Studies

WORLD HISTORY

H1.9-10.2 Assess how historical events and developments were shaped by unique circumstances of time and place as well as broader historical contexts.

H1.9-10.3 Design questions generated about individuals and groups that assess how the significance of their actions changes over time.

SSS4.9-12.2 Construct arguments using precise and knowledgeable claims, with evidence from multiple and reliable sources, while acknowledging counterclaims and evidentiary weaknesses.

US HISTORY

SSS4.9-12.2 Construct arguments using precise and knowledgeable claims, with evidence from multiple and reliable sources, while acknowledging counterclaims and evidentiary weaknesses

SSS4.9-12.1 Evaluate multiple reasons or factors to develop a position paper or presentation.

CWI

Explain how citizens and institutions address social and political problems at the local, state, tribal, national, and international level.

Explain the origins, functions, and structure of government.

Analyze citizens' and institutions' effectiveness in addressing social and political problems at the local, state, tribal, national and/or international level.

Science

PHYSICAL SCIENCE

HS-PS4-1. Use mathematical representations to support a claim regarding relationships among the frequency, wavelength, and speed of waves traveling in various media.

HS-PS1-1. Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms

HS-PS1-2. Construct and revise an explanation for the outcome of a simple chemical reaction based on the outermost electron states of atoms, trends in the periodic table, and knowledge of the patterns of chemical properties.

ADVANCED PHYSICAL SCIENCE

HS-PS2-1. Analyze data to support the claim that Newton's second law of motion describes the mathematical relationship among the net force on a macroscopic object, its mass, and its acceleration.

HS-PS2-2. Use mathematical representations to support the claim that the total momentum of a system of objects is conserved when there is no net force on the system

HS-PS3-1. Create a computational model to calculate the change in the energy of one component in a system when the change in energy of the other component(s) and energy flows in and out of the system are known.

BIOLOGY/LIFE SCIENCE

Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales.

Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

CHEMISTRY

PS1 Matter and Its Interactions
- PS1A Structure and Properties of Matter

PS2 Motion and Stability: Forces and Interactions
- PS2B Types of Interactions

PS3 Energy
- PS3D Energy and Chemical Processes in Everyday Life

PHYSICS

ENDURING UNDERSTANDING 6.A

A wave is a traveling disturbance that transfers energy and momentum.

• 6.A.1 Waves can propagate via different oscillation modes such as transverse and longitudinal.

a. Mechanical waves can be either transverse or longitudinal. Examples include waves on a stretched string and sound waves.

b. This includes, as part of the mechanism of “propagation,” the idea that the speed of a wave depends only on properties of the medium.

ENDURING UNDERSTANDING 1.B

Electric charge is a property of an object or a system that affects its interactions with other objects or systems containing charge.

• 1.B.1 Electric charge is conserved. The net charge of a system is equal to the sum of the charges of all the objects in the system.

a. An electrical current is a movement of charge through a conductor.

b. A circuit is a closed loop of electrical current. Relevant Equation: $\Delta q \; I \equiv \Delta t$