Grade-level Typing Standards Index



Table of Contents

1st Grade	
2nd Grade	
3rd Grade	
4th Grade	
5th Grade	
6th Grade	
7th Grade	
8th Grade	

10th Grade	
------------	--



12th Grade 178-204

1



Typing

CCSS.ELA-LITERACY.W.1.6

With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.

Phonics and Word Recognition

CCSS.ELA-LITERACY.RF.1.3

Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.1.3.B Decode regularly spelled one-syllable words.

CCSS.ELA-LITERACY.RF.1.3.C

Know final -e and common vowel team conventions for representing long vowel sounds.

CCSS.ELA-LITERACY.RF.1.3.G

Recognize and read grade-appropriate irregularly spelled words.

Conventions of Standard English

CCSS.ELA-LITERACY.L.1.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.1.2.B

Use end punctuation for sentences.



Conventions of Standard English

CCSS.ELA-LITERACY.L.1.2.D

Use conventional spelling for words with common spelling patterns and for frequently occurring irregular words.



Typing

CCSS.ELA-LITERACY.W.2.6

With guidance and support from adults, use a variety of digital tools to produce and publish writing, including in collaboration with peers.

Phonics and Word Recognition

CCSS.ELA-LITERACY.RF.2.3

Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.2.3.B

Know spelling-sound correspondences for additional common vowel teams.

CCSS.ELA-LITERACY.RF.2.3.D

Decode words with common prefixes and suffixes.

CCSS.ELA-LITERACY.RF.2.3.E

Recognize and read grade-appropriate irregularly spelled words. **CCSS.ELA-LITERACY.RF.2.3.F**

Recognize and read grade-appropriate irregularly spelled words.

Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.2.4

Determine or clarify the meaning of unknown and multiplemeaning words and phrases based on grade 2 reading and content, choosing flexibly from an array of strategies.

CCSS.ELA-LITERACY.L.2.4.B

Determine the meaning of the new word formed when a known prefix is added to a known word.



Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.2.4.C

Use a known root word as a clue to the meaning of an unknown word with the same root.

CCSS.ELA-LITERACY.L.2.4.D

Use knowledge of the meaning of individual words to predict the meaning of compound words.

CCSS.ELA-LITERACY.L.2.5

Demonstrate understanding of word relationships and nuances in word meanings.

CCSS.ELA-LITERACY.L.2.5.A

Identify real-life connections between words and their use. CCSS.ELA-LITERACY.L.2.5.B

Distinguish shades of meaning among closely related verbs and closely related adjectives.

Conventions of Standard English

CCSS.ELA-LITERACY.L.2.1

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.2.1.A

Use collective nouns.

CCSS.ELA-LITERACY.L.2.1.B

Form and use frequently occurring irregular plural nouns.

CCSS.ELA-LITERACY.L.2.1.C

Use reflexive pronouns.

CCSS.ELA-LITERACY.L.2.1.D

Form and use the past tense of frequently occurring irregular verbs.



Conventions of Standard English

CCSS.ELA-LITERACY.L.2.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.2.2.A

Capitalize holidays, product names, and geographic names. CCSS.ELA-LITERACY.L.2.2.C

Use an apostrophe to form contractions and frequently occurring possessives.

Geometry

CCSS.MATH.CONTENT.2.G.A.1

Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces.1 Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.

Number & Operations in Base Ten

CCSS.MATH.CONTENT.2.NBT.A.1

Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones.

CCSS.MATH.CONTENT.2.NBT.A.1.B

The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).

CCSS.MATH.CONTENT.2.NBT.A.2

Count within 1000; skip-count by 5s, 10s, and 100s.



Number & Operations in Base Ten

CCSS.MATH.CONTENT.2.NBT.A.3

Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.

Measurement & Data

CCSS.MATH.CONTENT.2.MD.C.8

Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately.

Empowered Learner

ISTE 1.1

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

ISTE 1.1.d

Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

Digital Citizen

ISTE 1.2

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

7



Digital Citizen

ISTE 1.2.b

Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.d

Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Knowledge Constructor

ISTE 1.3

Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

ISTE 1.3.a

Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

ISTE 1.3.b

Students evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.

Creative Communicator

ISTE 1.6

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.



Creative Communicator

ISTE 1.6.b

Students create original works or responsibly repurpose or remix digital resources into new creations.

Matter and Its Interactions

NGSS 2-PS1-1

Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.

NGSS 2-PS1-2

Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.

NGSS 2-PS1-3

Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.

NGSS 2-PS1-4

Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.

Earth's Place in the Universe

NGSS 2-ESS1-1

Use information from several sources to provide evidence that Earth



Earth's Systems

NGSS 2-ESS2-2

Develop a model to represent the shapes and kinds of land and bodies of water in an area.

NGSS 2-ESS2-3

Obtain information to identify where water is found on Earth and that it can be solid or liquid.

Ecosystems: Interactions, Energy, and Dynamics

NGSS 2-LS2-1

Plan and conduct an investigation to determine if plants need sunlight and water to grow.

NGSS 2-LS2-2

Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

Biological Evolution: Unity and Diversity

NGSS 2-LS4-1

Make observations of plants and animals to compare the diversity of life in different habitats.

My Community and Other Communities

New York 2.1

A community is a population of various individuals in a common location. It can be characterized as urban, suburban, or rural. Population density and use of the land are some characteristics that define and distinguish types of communities.



My Community and Other Communities

New York 2.2

People share similarities and differences with others in their own community and with other communities.

People Who Make a Difference

California 2.1

Students differentiate between things that happened long ago and things that happened yesterday.

California 2.5

Students understand the importance of individual action and character and explain how heroes from long ago and the recent past have made a difference in others' lives.

K-1 Standards Included in this Course

CCSS.ELA-LITERACY.L.K.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.K.2.A

Capitalize the first word in a sentence and the pronoun I.

CCSS.ELA-LITERACY.L.1.1

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.1.1.C

Use singular and plural nouns with matching verbs in basic sentences.

11



K-1 Standards Included in this Course

CCSS.ELA-LITERACY.L.1.1.D Use personal, possessive, and indefinite pronouns. CCSS.ELA-LITERACY.L.1.1.E

Use verbs to convey a sense of past, present, and future.



Typing

CCSS.ELA-LITERACY.W.3.6

With guidance and support from adults, use technology to produce and publish writing (using keyboarding skills) as well as to interact and collaborate with others.

Phonics and Word Recognition

CCSS.ELA-LITERACY.RF.3.3

Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.3.3.A

Identify and know the meaning of the most common prefixes and derivational suffixes.

CCSS.ELA-LITERACY.RF.3.3.B Decode words with common Latin suffixes.

CCSS.ELA-LITERACY.RF.3.3.C

Decode multisyllable words.

CCSS.ELA-LITERACY.RF.3.3.D

Read grade-appropriate irregularly spelled words.

Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.3.4

Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.



Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.3.4.B

Determine the meaning of the new word formed when a known affix is added to a known word.

CCSS.ELA-LITERACY.L.3.4.C

Use a known root word as a clue to the meaning of an unknown word with the same root.

CCSS.ELA-LITERACY.L.3.5

Demonstrate understanding of figurative language, word relationships and nuances in word meanings.

CCSS.ELA-LITERACY.L.3.5.A

Distinguish the literal and nonliteral meanings of words and phrases in context.

CCSS.ELA-LITERACY.L.3.5.B

Identify real-life connections between words and their use.

CCSS.ELA-LITERACY.L.3.5.C

Distinguish shades of meaning among related words that describe states of mind or degrees of certainty.

Conventions of Standard English

CCSS.ELA-LITERACY.L.3.1

Demonstrate command of the conventions of standard English

grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.3.1.A

Explain the function of nouns, pronouns, verbs, adjectives, and adverbs in general and their functions in particular sentences.

CCSS.ELA-LITERACY.L.3.1.B

Form and use regular and irregular plural nouns.

CCSS.ELA-LITERACY.L.3.1.C

Use abstract nouns.



Conventions of Standard English

CCSS.ELA-LITERACY.L.3.1.D

Form and use regular and irregular verbs. **CCSS.ELA-LITERACY.L.3.1.E**

Form and use the simple verb tenses.

CCSS.ELA-LITERACY.L.3.1.F

Ensure subject-verb and pronoun-antecedent agreement.

CCSS.ELA-LITERACY.L.3.1.G

Form and use comparative and superlative adjectives and adverbs, and choose between them depending on what is to be modified.

CCSS.ELA-LITERACY.L.3.1.I

Produce simple, compound, and complex sentences.

CCSS.ELA-LITERACY.L.3.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.3.2.C

Use commas and quotation marks in dialogue. **CCSS.ELA-LITERACY.L.3.2.D**

Form and use possessives.

Operations & Algebraic CCSS.MATH.CONTENT.3.OA.C.7

Thinking

Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.

Number & Operations in Base Ten

CCSS.MATH.CONTENT.3.NBT.A.1

Use place value understanding to round whole numbers to the nearest 10 or 100.

Empowered Learner

ISTE 1.1

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

ISTE 1.1.d

Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

Digital Citizen

ISTE 1.2

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

ISTE 1.2.a

Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

Digital Citizen

ISTE 1.2.b

Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.d

Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Knowledge Constructor I

ISTE 1.3

Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

ISTE 1.3.a

Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

ISTE 1.3.b

Students evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.

Creative Communicator

ISTE 1.6

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.



Creative Communicator

ISTE 1.6.a

Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

ISTE 1.6.b

Students create original works or responsibly repurpose or remix digital resources into new creations.

Earth's Systems

NGSS 3-ESS2-1

Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

NGSS 3-ESS2-2

Obtain and combine information to describe climates in different regions of the world.

Earth and Human Activity NGSS 3-ESS3-1

Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.

From molecules to Organisms: Structures and Processes

NGSS 3-LS1-1

Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.



Biological Evolution: Unity and Diversity

NGSS 3-LS4-1

Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

NGSS 3-LS4-3

Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

NGSS 3-LS4-4

Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

Heredity: Inheritance and Variation of Traits

NGSS 3-LS3-1

Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.

NGSS 3-LS3-2

Use evidence to support the explanation that traits can be influenced by the environment.

Motion and Stability: Forces and Interactions

NGSS 3-PS2-1

Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

NGSS 3-PS2-2

Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.



Motion and Stability: Forces and Interactions

NGSS 3-PS2-3

Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.

NGSS 3-PS2-4

Define a simple design problem that can be solved by applying scientific ideas about magnets.

Continuity and Change

California 3.4

Students understand the role of rules and laws in our daily lives and the basic structure of the U.S. government.

California 3.4.1

Determine the reasons for rules, laws, and the U.S. Constitution; the role of citizenship in the promotion of rules and laws; and the consequences for people who violate rules and laws.

California 3.4.6

Describe the lives of American heroes who took risks to secure our freedoms.

Communities around theNWorldG

New York 3.1

Geographic regions have unifying characteristics and can be studied using a variety of tools.

New York 3.1a

Earth is comprised of water and large land masses that can be divided into distinct regions.



Communities around the World

New York 3.5

Communities share cultural similarities and differences across the world.

New York 3.5b

Communities around the world can be diverse in terms of their members, languages spoken, customs and traditions, and religious beliefs and practices. People in world communities celebrate various holidays and festivals.

2nd Grade Standard Included in this Course

CCSS.ELA-LITERACY.RF.2.3

Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.2.3.D

Decode words with common prefixes and suffixes.



Typing

CCSS.ELA-LITERACY.W.4.6

With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of one page in a single sitting.

Phonics and Word Recognition

CCSS.ELA-LITERACY.RF.4.3

Know and apply grade-level phonics and word analysis skills in decoding words.

CCSS.ELA-LITERACY.RF.4.3.A

Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology (e.g., roots and affixes) to read accurately unfamiliar multisyllabic words in context and out of context.

Vocabulary Acquisition

CCSS.ELA-LITERACY.L.3.4

Determine or clarify the meaning of unknown and multiple-meaning word and phrases based on grade 3 reading and content, choosing flexibly from a range of strategies.

and Use

CCSS.ELA-LITERACY.L.3.4.B

Determine the meaning of the new word formed when a known affix is added to a known word.



Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.4.5

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCSS.ELA-LITERACY.L.4.5.A

Explain the meaning of simple similes and metaphors (e.g., as pretty as a picture) in context.

CCSS.ELA-LITERACY.L.4.5.B

Recognize and explain the meaning of common idioms, adages, and proverbs.

CCSS.ELA-LITERACY.L.4.5.C

Demonstrate understanding of words by relating them to their opposites (antonyms) and to words with similar but not identical meanings (synonyms).

Conventions of Standard English

CCSS.ELA-LITERACY.L.4.1

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.4.1.A Use relative pronouns and relative adverbs. CCSS.ELA-LITERACY.L.4.1.B

Form and use the progressive verb tenses.

CCSS.ELA-LITERACY.L.4.1.C

Use modal auxiliaries to convey various conditions.

CCSS.ELA-LITERACY.L.4.1.E

Form and use prepositional phrases.

CCSS.ELA-LITERACY.L.4.1.G

Correctly use frequently confused words



Conventions of Standard English

CCSS.ELA-LITERACY.L.4.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.4.2.C

Use a comma before a coordinating conjunction in a compound sentence.

Knowledge of Language

CCSS.ELA-LITERACY.L.4.3

Use knowledge of language and its conventions when writing, speaking, reading, or listening.

CCSS.ELA-LITERACY.L.4.3.B

Choose punctuation for effect.

Number & Operations in Base Ten

CCSS.MATH.CONTENT.4.NBT.A.2

Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two

multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

CCSS.MATH.CONTENT.4.NBT.A.3

Use place value understanding to round multi-digit whole numbers to any place.



Number & Operations -Fractions

CCSS.MATH.CONTENT.4.NF.C.5

Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.2 For example, express 3/10 as 30/100, and add 3/10 + 4/100 = 34/100.

CCSS.MATH.CONTENT.4.NF.C.6

Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.

Empowered Learner

ISTE 1.1

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

ISTE 1.1.d

Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

Digital Citizen

ISTE 1.2

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.



ISTE 1.2.a

Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

ISTE 1.2.b

Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.d

Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Knowledge Constructor

ISTE 1.3

Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

ISTE 1.3.a

Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.

ISTE 1.3.b

Students evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.



Creative Communicator

ISTE 1.6

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

ISTE 1.6.a

Students choose the appropriate platforms and tools for meeting the desired objectives of their creation or communication.

ISTE 1.6.b

Students create original works or responsibly repurpose or remix digital resources into new creations.

From molecules to Organisms: Structures and Processes

NGSS 4-LS1-1

Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

NGSS 4-LS1-2

Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

Energy

NGSS 4-PS3-1

Use evidence to construct an explanation relating the speed of an object to the energy of that object. NGSS 4-PS3-2

Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.



Energy

NGSS 4-PS3-4

Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.

Waves and Their Applications in Technologies for Information Transfer

NGSS 4-PS4-1

Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move.

NGSS 4-PS4-2

Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.

NGSS 4-PS4-3

Generate and compare multiple solutions that use patterns to transfer information.

Earth's Place in the Universe

NGSS 4-ESS1-1

Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in a landscape

over time.



Earth's Systems

NGSS 4-ESS2-1

Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation.

NGSS 4-ESS2-2

Analyze and interpret data from maps to describe patterns of Earth's features.

Earth and Human Activity

NGSS 4-ESS3-1

Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment.

NGSS 4-ESS3-2

Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.

New York State and Local History and Government

New York 4.1

Geography of New York States: New York State has a diverse geography. Various maps can be used to represent and examine the geography of New York State.

New York 4.1b

New York State can be represented using a political map that shows cities, capitals, and boundaries.



New York State and Local History and Government

New York 4.2

Native American Groups and the Environment: Native American groups, chiefly the Haudenosaunee (Iroquois) and Algonquianspeaking groups, inhabited the region that became New York State. These people interacted with the environment and developed unique cultures.

New York 4.2a

Geographic factors often influenced locations of early settlements. People made use of the resources and the lands around them to meet their basic needs of food, clothing, and shelter.

New York 4.2c

Each Native American group developed a unique way of life with a shared set of customs, beliefs, and values.

New York 4.3

Colonial and Revolutionary Period in New York: European exploration led to the colonization of the region that became New York State. Beginning in the early 1600s, colonial New York was home to people from many different countries. Colonial New York was important during the Revolutionary Period.

New York 4.3a

Europeans in search of a route to Asia explored New York's waterways. Early settlements began as trading posts or missions. **New York 4.3d**

Growing conflicts between England and the 13 colonies over issues of political and economic rights led to the American Revolution. New York played a significant role during the Revolution, in part due to its geographic location.



New York State and Local History and Government

New York 4.5

In Search of Freedom and a Call For Change: Different groups of people did not have equal rights and freedoms. People worked to bring about change. The struggle for rights and freedoms was one factor in the division of the United States that resulted in the Civil War.

New York 4.5a

There were slaves in New York State. People worked to fight against slavery and for change.

New York 4.5c

The United States became divided over several issues, including slavery, resulting in the Civil War. New York State supported the Union and played an important role in this war.

People and Events

Louisiana 4.2.1

Explain how early explorations affected the expansion of boundaries and development in the United States.



Louisiana 4.4.3

Identify the states of each of the five regions of the United States.

History

Texas 4.b.4.A

Describe the impact of the Civil War and Reconstruction on Texas.



History

Texas 4.b.5.A

Explain the impact of various events on life in Texas such as the Great Depression, the Dust Bowl, and World War II.

Economics

Idaho 3.1 Explain basic economic concepts.

Idaho 4.SS.3.1.2Explain the concepts of supply and demand and scarcityIdaho 4.SS.3.1.3Explain the concepts of specialization and division of labor.

Idaho 3.4 Explain the concepts of personal finance.

Idaho 4.SS.3.4.1

Define entrepreneurship, and identify reasons for starting a business.



Typing

CCSS.ELA-LITERACY.W.5.6

With some guidance and support from adults, use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of two pages in a single sitting.

Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.5.4

Determine or clarify the meaning of unknown and multiplemeaning words and phrases based on grade 5 reading and content, choosing flexibly from a range of strategies.

CCSS.ELA-LITERACY.L.5.4.B

Use common, grade-appropriate Greek and Latin affixes and roots as clues to the meaning of a word (e.g., photograph, photosynthesis).

CCSS.ELA-LITERACY.L.5.4.C

Consult reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation and determine or clarify the precise meaning of key words and phrases.

CCSS.ELA-LITERACY.L.5.5

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCSS.ELA-LITERACY.L.5.5.A

Interpret figurative language, including similes and metaphors, in context.



Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.5.5.B

Recognize and explain the meaning of common idioms, adages, and proverbs.

CCSS.ELA-LITERACY.L.5.5.C

Use the relationship between particular words to better understand each of the words.

CCSS.ELA-LITERACY.L.5.6

Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, including those that signal contrast, addition, and other logical relationships.

Conventions of Standard English

CCSS.ELA-LITERACY.L.5.1

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.5.1.A

Explain the function of conjunctions, prepositions, and interjections in general and their function in particular sentences.

CCSS.ELA-LITERACY.L.5.1.B

Form and use the perfect verb tenses.

CCSS.ELA-LITERACY.L.5.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.5.2.A

Use punctuation to separate items in a series.

CCSS.ELA-LITERACY.L.5.2.B

Use a comma to separate an introductory element from the rest of the sentence.



Conventions of Standard English

CCSS.ELA-LITERACY.L.5.2.C

Use a comma to set off the words yes and no, to set off a tag question from the rest of the sentence, and to indicate direct address.

Range of Reading and Level of Text Complexity

CCSS.ELA-LITERACY.RL.5.10

By the end of the year, read and comprehend literature, including stories, dramas, and poetry, at the high end of the grades 4-5 text complexity band independently and proficiently.

Operations & Algebraic Thinking

CCSS.MATH.CONTENT.5.OA.A.1

Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

CCSS.MATH.CONTENT.5.OA.A.2

Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.

Number & Operations in Base Ten

CCSS.MATH.CONTENT.5.NBT.A.1

Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.



Number & Operations in Base Ten

CCSS.MATH.CONTENT.5.NBT.A.3

Read, write, and compare decimals to thousandths.

CCSS.MATH.CONTENT.5.NBT.A.3.A

Read and write decimals to thousandths using base-ten numerals, number names, and expanded form.

CCSS.MATH.CONTENT.5.NBT.A.3.B

Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons.

CCSS.MATH.CONTENT.5.NBT.A.4

Use place value understanding to round decimals to any place.

Empowered Learner

ISTE 1.1

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

ISTE 1.1.d

Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot

current technologies and are able to transfer their knowledge to explore emerging technologies.


Digital Citizen

ISTE 1.2

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

STE 1.2.a

Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

ISTE 1.2.b

Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.c

Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

ISTE 1.2.d

Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Knowledge Constructor

ISTE 1.3

Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

ISTE 1.3.a

Students plan and employ effective research strategies to locate information and other resources for their intellectual or creative pursuits.



Knowledge Constructor

ISTE 1.3.b

Students evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.

Creative Communicator

ISTE 1.6

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

ISTE 1.6.b

Students create original works or responsibly repurpose or remix digital resources into new creations.

Earth's Place in the Universe

NGSS 5-ESS1-1

Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from the Earth.

NGSS 5-ESS1-2

Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.



Motion and Stability: Forces and Interactions

NGSS 5-PS2-1

Support an argument that the gravitational force exerted by Earth on objects is directed down.

From Molecules to Organisms: Structures and Processes

NGSS 5-LS1-1

Support an argument that plants get the materials they need for growth chiefly from air and water.

Energy

NGSS 5-PS3-1

Use models to describe that energy in animals' food (used for body repair, growth, and motion and to maintain body warmth) was once energy from the sun.

Ecosystems: Interactions, Energy, and Dynamics

NGSS 5-LS2-1

Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

Earth and Human Activity NGSS 5-ESS3-1

Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environment.



Matter and Its Interactions

NGSS 5-PS1-1

Develop a model to describe that matter is made of particles too small to be seen.

NGSS 5-PS1-2

Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.

NGSS 5-PS1-3

Make observations and measurements to identify materials based on their properties.

NGSS 5-PS1-4

Conduct an investigation to determine whether the mixing of two or more substances results in new substances.

Earth's Systems

NGSS 5-ESS2-1

Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.

NGSS 5-ESS2-2

Describe and graph the amounts of salt water and fresh water in various reservoirs to provide evidence about the distribution of water on Earth.



United States History and Geography

California 5.5

Students explain the causes of the American Revolution.

California 5.5.1

Understand how political, religious, and economic ideas and interests brought about the Revolution.

California 5.8

Students trace the colonization, immigration, and settlement patterns of the American people from 1789 to the mid-1800s, with emphasis on the role of economic incentives, effects of the physical and political geography, and transportation systems.

California 5.8.2

Name the states and territories that existed in 1850 and identify their locations and major geographical features.

California 5.9

Students know the location of the current 50 states and the names of their capitals.

New York 5.1 The Western Hemisphere

Early Peoples of the Americas: The first humans in the Western Hemisphere modified their physical environment as well as adapted to their environment. Their interactions with their environment led to various innovations and to the development of unique cultures.

The Western Hemisphere New York 5.1a

Various forms of scientific evidence suggest that humans came to North America approximately 25,000 to 14,000 years ago and spread southward to South America.

New York 5.3

European Exploration and its Effects: Various European powers explored and eventually colonized the Western Hemisphere. This had a profound effect on Native Americans and led to the transatlantic slave trade.

New York 5.3a

Europeans traveled to the Americas in search of new trade routes, including a northwest passage, and resources. They hoped to gain wealth, power, and glory.

New York 5.6

Government: The political systems of the Western Hemisphere vary in structure and organization across time and place.

New York 5.6a

Government structures, functions, and founding documents vary from place to place in the countries of the Western Hemisphere.

New York 5.6b

Legal, political, and historic documents define the values, beliefs,

and principles of constitutional democracy.

Knowledge and Skills

Texas 5.b.4

History. The student understands political, economic, and social changes that occurred in the United States during the 19th century.



Knowledge and Skills

Texas 5.b.4.D

Explain the central role of the expansion of slavery in causing sectionalism, disagreement over states' rights, and the Civil War.

Texas 5.b.4.E

Explain the effects of the Civil War, including Reconstruction and the 13th, 14th, and 15th amendments to the U.S. Constitution.

Texas 5.b.5

History. The student understands important issues, events, and individuals in the United States during the 20th and 21st centuries.

Texas 5.b.5.A

Explain the significance of issues and events of the 20th century such as industrialization, urbanization, the Great Depression, the world wars, the civil rights movement, and military actions.



Typing

CCSS.ELA-LITERACY.W.6.6

Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.

Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.6.4

Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 6 reading and content, choosing flexibly from a range of strategies.

CCSS.ELA-LITERACY.L.6.4.B

Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., audience, auditory, audible).

CCSS.ELA-LITERACY.L.6.5

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCSS.ELA-LITERACY.L.6.5.A

Interpret figures of speech (e.g., personification) in context. **CCSS.ELA-LITERACY.L.6.5.C**

Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., stingy, scrimping, economical, unwasteful, thrifty).

CCSS.ELA-LITERACY.L.6.6

Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.





Conventions of Standard English

CCSS.ELA-LITERACY.L.6.1

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.6.1.A

Ensure that pronouns are in the proper case (subjective, objective, possessive).

CCSS.ELA-LITERACY.L.6.1.B

Use intensive pronouns (e.g., myself, ourselves).

CCSS.ELA-LITERACY.L.6.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.6.2.A

Use punctuation (commas, parentheses, dashes) to set off nonrestrictive/parenthetical elements.

Craft and Structure

CCSS.ELA-LITERACY.RL.6.6

Explain how an author develops the point of view of the narrator or speaker in a text.

Text Types and Purposes

CCSS.ELA-LITERACY.W.6.1

Write arguments to support claims with clear reasons and relevant evidence.

CCSS.ELA-LITERACY.W.6.1.A

Introduce claim(s) and organize the reasons and evidence clearly.



Statistics & Probability

CCSS.MATH.CONTENT.6.SP.A.1

Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers.

CCSS.MATH.CONTENT.6.SP.B.5

Summarize numerical data sets in relation to their context.

CCSS.MATH.CONTENT.6.SP.B.5.C

Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered.

Ratios & Proportional Relationships

CCSS.MATH.CONTENT.6.RP.A.1

Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities.

CCSS.MATH.CONTENT.6.RP.A.2

Understand the concept of a unit rate a/b associated with a ratio a:b with $b \neq 0$, and use rate language in the context of a ratio relationship.

Expressions & Equations

CCSS.MATH.CONTENT.6.EE.A.2

Write, read, and evaluate expressions in which letters stand for numbers.



Expressions & Equations

CCSS.MATH.CONTENT.6.EE.A.2.A

Write expressions that record operations with numbers and with letters standing for numbers.

CCSS.MATH.CONTENT.6.EE.A.2.B

Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity.

CCSS.MATH.CONTENT.6.EE.A.2.C

Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving wholenumber exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations).

CCSS.MATH.CONTENT.6.EE.A.3

Apply the properties of operations to generate equivalent expressions.

CCSS.MATH.CONTENT.6.EE.A.4

Identify when two expressions are equivalent.

CCSS.MATH.CONTENT.6.EE.B.5

Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or

inequality true.

CCSS.MATH.CONTENT.6.EE.B.6

Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.



Expressions & Equations

CCSS.MATH.CONTENT.6.EE.C.9

Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation.

The Number System

CCSS.MATH.CONTENT.6.NS.B.4

Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1-100 with a common factor as a multiple of a sum of two whole numbers with no common factor.

Empowered Learner

ISTE 1.1

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals,

informed by the learning sciences.

ISTE 1.1.d

Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.



Digital Citizen

ISTE 1.2

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

STE 1.2.a

Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

ISTE 1.2.b

Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.c

Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

ISTE 1.2.d

Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Knowledge Constructor

ISTE 1.3

Students critically curate a variety of resources using digital tools to construct knowledge, produce creative artifacts and make meaningful learning experiences for themselves and others.

ISTE 1.3.b

Students evaluate the accuracy, perspective, credibility and relevance of information, media, data or other resources.



Creative Communicator

ISTE 1.6

Students communicate clearly and express themselves creatively for a variety of purposes using the platforms, tools, styles, formats and digital media appropriate to their goals.

ISTE 1.6.b

Students create original works or responsibly repurpose or remix digital resources into new creations.

Engineering Design

NGSS MS-ETS1-1

Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

NGSS MS-ETS1-2

Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

NGSS MS-ETS1-3

Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

NGSS MS-ETS1-4

Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.



From Molecules to Organisms: Structures & Processes

NGSS MS-LS1-1

Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

NGSS MS-LS1-2

Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function.

NGSS MS-LS1-3

Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

NGSS MS-LS1-4

Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

NGSS MS-LS1-5

Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

NGSS MS-LS1-6

Construct a scientific explanation based on evidence for the role of

photosynthesis in the cycling of matter and flow of energy into and out of organisms.

NGSS MS-LS1-7

Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

From Molecules to Organisms: Structures & Processes

NGSS MS-LS1-8

Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

Heredity: Inheritance & Variation of Traits

NGSS MS-LS3-1

Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

NGSS MS-LS3-2

Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.

Biological Evolution: Unity & Diversity

NGSS MS-LS4-1

Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.

NGSS MS-LS4-2

Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.



Biological Evolution: Unity & Diversity

NGSS MS-LS4-3

Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.

NGSS MS-LS4-4

Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

NGSS MS-LS4-5

Gather and synthesize information about technologies that have changed the way humans influence the inheritance of desired traits in organisms.

NGSS MS-LS4-6

Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

Earth's Place in the

NGSS MS-ESS1-1

Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.

Universe

NGSS MS-ESS1-2

Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.



Earth's Place in the Universe

NGSS MS-ESS1-3

Analyze and interpret data to determine scale properties of objects in the solar system.

NGSS MS-ESS1-4

Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.

Earth's Systems

NGSS MS-ESS2-1

Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

NGSS MS-ESS2-2

Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

NGSS MS-ESS2-3

Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

NGSS MS-ESS2-4

Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.

NGSS MS-ESS2-5

Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.



Earth's Systems

NGSS MS-ESS2-6

Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.

Earth and Human Activity NG

NGSS MS-ESS3-1

Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

NGSS MS-ESS3-2

Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.

NGSS MS-ESS3-3

Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

NGSS MS-ESS3-4

Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources

impact Earth's systems.

NGSS MS-ESS3-5

Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.



Earth's Systems

NGSS MS-ESS2-6

Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.

Earth and Human Activity NG

NGSS MS-ESS3-1

Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

NGSS MS-ESS3-2

Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.

NGSS MS-ESS3-3

Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

NGSS MS-ESS3-4

Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources

impact Earth's systems.

NGSS MS-ESS3-5

Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.



Matter & its Interactions

NGSS MS-PS1-1

Develop models to describe the atomic composition of simple molecules and extended structures.

NGSS MS-PS1-2

Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.

NGSS MS-PS1-3

Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

NGSS MS-PS1-4

Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

NGSS MS-PS1-5

Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.

NGSS MS-PS1-6

Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical



Motion and Stability: Forces & Interactions

NGSS MS-PS2-1

Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.



Motion and Stability: Forces & Interactions

NGSS MS-PS2-2

Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

NGSS MS-PS2-3

Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.

NGSS MS-PS2-4

Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

NGSS MS-PS2-5

Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.

Energy

NGSS MS-PS3-1

Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object

speed of an object.

NGSS MS-PS3-2

Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

Energy

NGSS MS-PS3-3

Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.

NGSS MS-PS3-4

Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.

NGSS MS-PS3-5

Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

Waves and their Applications in Technologies for Information Transfer

NGSS MS-PS4-1

Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

NGSS MS-PS4-2

Develop and use a model to describe that waves are reflected,

absorbed, or transmitted through various materials.

NGSS MS-PS4-3

Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.

Geography

Florida SS.6.G.2.3

Analyze the relationship of physical geography to the development of ancient river valley civilizations.

Ohio G.PR.5

Regions can be determined, classified and compared using data related to various criteria including landform, climate, population, and cultural and economic characteristics

Economics

Florida SS.6.E.1.3

Describe the following economic concepts as they relate to early civilization: scarcity, opportunity cost, supply and demand, barter, trade, productive resources (land, labor, capital, entrepreneurship).

Florida SS.6.E.3.4

Describe the relationship among civilizations that engage in trade, including the benefits and drawbacks of voluntary trade.

Ohio E.S.13

The fundamental questions of economics include what to produce, how to produce and for whom to produce.

Ohio E.S.14

When regions and/or countries specialize, global trade occurs.

Ohio E.DM.12

The choices made by individuals and governments have both present and future consequences. The evaluation of choices is relative and may differ across individuals and societies.



Economics

Ohio E.M.15

The interaction of supply and demand, influenced by competition, helps to determine price in a market. This interaction also determines the quantities of outputs produced and the quantities of productive resources used.

Ohio E.FL.16

When selecting items to buy, individuals can weigh costs and benefits and compare the price and quality of available goods and services.

Texas 6A

Describe ways in which the factors of production (natural resources, labor, capital, and entrepreneurs) influence the economies of various contemporary societies

Texas 6C

Explain the impact of the distribution of resources on international trade and economic interdependence among and within societies.

Texas 8A

Define and give examples of agricultural, retail, manufacturing (goods), and service industries.

Government

Ohio G.RS.10

Governments can be categorized as monarchies, theocracies, dictatorships or democracies, but categories may overlap and labels may not accurately represent how governments function. The extent of citizens' liberties and responsibilities varies according to limits on governmental authority.

Government

California 6.4

Students analyze the geographic, political, economic, religious, and social structures of the early civilizations of Ancient Greece.

California 6.7

Students analyze the geographic, political, economic, religious, and social structures during the development of Rome.

Florida SS.6.CG.1

Demonstrate an understanding of the origins and purposes of government, law and the American political system.

Florida SS.6.CG.1.1

Analyze how democratic concepts developed in ancient Greece served as a foundation for the United States' constitutional republic.

Florida SS.6.CG.1.2

Analyze the influence of ancient Rome on the United States' constitutional republic.

Florida SS.6.CG.1.3

Examine rule of law in the ancient world and its influence on the United States' constitutional republic.

Texas 9

The student understands the concepts of limited and unlimited governments.

Texas 10

The student understands various ways in which people organize governments.



World History

Florida SS.6.W.2.2

Describe how the developments of agriculture and metallurgy related to settlement, population growth, and the emergence of civilization.

Florida SS.6.W.2.3 Identify the characteristics of civilization.

Florida SS.6.W.2.5 Summarize important achievements of Egyptian civilization.

Florida SS.6.W.3.5 Summarize the important achievements and contributions of ancient Greek civilization.

Florida SS.6.W.3.14

Describe the key achievements and contributions of Roman civilization.

Florida SS.6.W.4.3

Recognize the political and cultural achievements of the Mauryan and Gupta empires.

Florida SS.6.W.4.5

Summarize the important achievements and contributions of ancient Indian civilization.

Florida SS.6.W.4.8

Describe the contributions of classical and post classical China.

Florida SS.6.W.4.10

Explain the significance of the silk roads and maritime routes across the Indian Ocean to the movement of goods and ideas among Asia, East Africa, and the Mediterranean Basin.



World History

Florida SS.6.W.2.2

Describe how the developments of agriculture and metallurgy related to settlement, population growth, and the emergence of civilization.

Florida SS.6.W.2.3 Identify the characteristics of civilization.

Florida SS.6.W.2.5 Summarize important achievements of Egyptian civilization.

Florida SS.6.W.3.5 Summarize the important achievements and contributions of ancient Greek civilization.

Florida SS.6.W.3.14

Describe the key achievements and contributions of Roman civilization.

Florida SS.6.W.4.3

Recognize the political and cultural achievements of the Mauryan and Gupta empires.

Florida SS.6.W.4.5

Summarize the important achievements and contributions of ancient Indian civilization.

Florida SS.6.W.4.8

Describe the contributions of classical and post classical China.

Florida SS.6.W.4.10

Explain the significance of the silk roads and maritime routes across the Indian Ocean to the movement of goods and ideas among Asia, East Africa, and the Mediterranean Basin.



World History

California 6.2

Students analyze the geographic, political, economic, religious, and social structures of the early civilizations of Mesopotamia, Egypt, and Kush.

California 6.5

Students analyze the geographic, political, economic, religious, and social structures of the early civilizations of India.

California 6.6

Students analyze the geographic, political, economic, religious, and social structures of the early civilizations of China.

Ohio H.EC.2

Early civilizations (India, Egypt, China and Mesopotamia) had unique governments, economic systems, social structures, religions, technologies and agricultural practices and products. The cultural practices and products of these early civilizations can be used to help understand the Eastern Hemisphere today.

Texas 1

The student understands that historical events influence contemporary events.

Texas 2

The student understands the influences of individuals and groups

from various cultures on various historical and contemporary societies.



Typing

CCSS.ELA-LITERACY.W.7.6

Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.

Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.7.4

Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade 7 reading and content, choosing flexibly from a range of strategies.

CCSS.ELA-LITERACY.L.7.4.A

Use context (e.g., the overall meaning of a sentence or paragraph; a word's position or function in a sentence) as a clue to the meaning of a word or phrase.

CCSS.ELA-LITERACY.L.7.4.B

Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., belligerent, bellicose, rebel).

CCSS.ELA-LITERACY.L.7.5

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCSS.ELA-LITERACY.L.7.5.B

Use the relationship between particular words (e.g., synonym/ antonym, analogy) to better understand each of the words. **CCSS.ELA-LITERACY.L.7.5.C**

Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., refined, respectful, polite, diplomatic, condescending).



Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.7.6

Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Conventions of Standard English

CCSS.ELA-LITERACY.L.7.1

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.7.1.A

Explain the function of phrases and clauses in general and their function in specific sentences.

CCSS.ELA-LITERACY.L.7.1.B

Choose among simple, compound, complex, and compoundcomplex sentences to signal differing relationships among ideas.

CCSS.ELA-LITERACY.L.7.1.C

Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.

CCSS.ELA-LITERACY.L.7.2

Demonstrate command of the conventions of standard English

capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.7.2.A

Use a comma to separate coordinate adjectives.



Key Ideas and Details

CCSS.ELA-LITERACY.RL.7.1

Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

CCSS.ELA-LITERACY.RL.7.2

Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text.

Statistics & Probability

CCSS.MATH.CONTENT.7.SP.A.1

Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences.

CCSS.MATH.CONTENT.7.SP.A.2

Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.

CCSS.MATH.CONTENT.7.SP.B.3

Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability.



Statistics & Probability

CCSS.MATH.CONTENT.7.SP.B.4

Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.

Expressions & Equations

CCSS.MATH.CONTENT.7.EE.A.1

Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

CCSS.MATH.CONTENT.7.EE.A.2

Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.

CCSS.MATH.CONTENT.7.EE.B.3

Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.

CCSS.MATH.CONTENT.7.EE.B.4

Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

The Number System

CCSS.MATH.CONTENT.7.NS.A.2.A

Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (-1)(-1) = 1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.

CCSS.MATH.CONTENT.7.NS.A.2.B

Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then -(p/q) = (-p)/q = p/(-q). Interpret quotients of rational numbers by describing realworld contexts.

CCSS.MATH.CONTENT.7.NS.A.2.C

Apply properties of operations as strategies to multiply and divide rational numbers.

Empowered Learner

ISTE 1.1

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals,

informed by the learning sciences.

ISTE 1.1.d

Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

Digital Citizen

ISTE 1.2

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

STE 1.2.a

Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

ISTE 1.2.b

Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.c

Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

ISTE 1.2.d

Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Engineering Design

NGSS MS-ETS1-1

Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.



Engineering Design

NGSS MS-ETS1-2

Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

NGSS MS-ETS1-3

Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

NGSS MS-ETS1-4

Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

From Molecules to Organisms: Structures & Processes


From Molecules to Organisms: Structures & Processes

NGSS MS-LS1-4

Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

NGSS MS-LS1-5

Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

NGSS MS-LS1-6

Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

NGSS MS-LS1-7

Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

NGSS MS-LS1-8

Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

Ecosystems: Interactions, Energy, and Dynamics

MS-LS2-1

Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.



Ecosystems: Interactions, Energy, and Dynamics

MS-LS2-2

Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

MS-LS2-3

Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

MS-LS2-4

Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

MS-LS2-5

Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

Heredity: Inheritance & Variation of Traits

NGSS MS-LS3-1

Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

NGSS MS-LS3-2

Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.

Biological Evolution: Unity & Diversity

NGSS MS-LS4-1

Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.

NGSS MS-LS4-2

Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.

NGSS MS-LS4-3

Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.

NGSS MS-LS4-4

Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

NGSS MS-LS4-5

Gather and synthesize information about technologies that have changed the way humans influence the inheritance of desired traits in organisms.

NGSS MS-LS4-6

Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

Earth's Place in the Universe

NGSS MS-ESS1-1

Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.

NGSS MS-ESS1-2

Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.

NGSS MS-ESS1-3

Analyze and interpret data to determine scale properties of objects in the solar system.

NGSS MS-ESS1-4

Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.

Earth's Systems

NGSS MS-ESS2-1

Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

NGSS MS-ESS2-2

Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

NGSS MS-ESS2-3

Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.



Earth's Systems

NGSS MS-ESS2-4

Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.

NGSS MS-ESS2-5

Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.

NGSS MS-ESS2-6

Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.

Earth and Human Activity

NGSS MS-ESS3-1

Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

NGSS MS-ESS3-2

Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.

NGSS MS-ESS3-3

Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

NGSS MS-ESS3-4

Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.



Earth and Human Activity

NGSS MS-ESS3-5

Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

Matter & its Interactions

NGSS MS-PS1-1

Develop models to describe the atomic composition of simple molecules and extended structures.

NGSS MS-PS1-2

Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.

NGSS MS-PS1-3

Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

NGSS MS-PS1-4

Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

NGSS MS-PS1-5

Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.

NGSS MS-PS1-6

Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.



Motion and Stability: Forces & Interactions

NGSS MS-PS2-1

Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.

NGSS MS-PS2-2

Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

NGSS MS-PS2-3

Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.

NGSS MS-PS2-4

Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

NGSS MS-PS2-5

Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.



NGSS MS-PS3-1

Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.



Energy

NGSS MS-PS3-2

Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

NGSS MS-PS3-3

Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.

NGSS MS-PS3-4

Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.

NGSS MS-PS3-5

Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

Waves and their Applications in

NGSS MS-PS4-1

Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

Technologies for Information Transfer

NGSS MS-PS4-2

Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.

Waves and their Applications in Technologies for Information Transfer

NGSS MS-PS4-3

Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.

Geography

Florida SS.6.G.1

Understand how to use maps and other geographic representations, tools and technology to report information.

Florida SS.7.G.2

Understand physical and cultural characteristics of places.

Florida SS.7.G.3

Understand the relationships between the Earth's ecosystems and the populations that dwell within them.

Economics

Ohio E.DM.19

Individuals, governments and businesses must analyze costs and benefits when making economic decisions. A cost-benefit analysis consists of determining the potential costs and benefits of an action and then balancing the costs against the benefits.

Ohio E.S.20

The variability in the distribution of productive resources in the various regions of the world contributed to specialization, trade and interdependence.



Economics

Ohio E.M.21

The growth of cities and empires fostered the growth of markets. Market exchanges encouraged specialization and the transition from barter to monetary economies.

Government

Florida SS.7.CG.1

Demonstrate an understanding of the origins and purposes of government, law and the American political system.

Florida SS.7.CG.1.1

Analyze the influences of ancient Greece and ancient Rome on America's constitutional republic.

Florida SS.7.CG.2

Evaluate the roles, rights and responsibilities of U.S. citizens, and determine methods of active participation in society, government and the political system.

Florida SS.7.CG.3

Demonstrate an understanding of the principles, functions and organization of government.

World History

California 7.1

Students analyze the causes and effects of the vast expansion and ultimate disintegration of the Roman Empire.



World History

California 7.2

Students analyze the geographic, political, economic, religious, and social structures of the civilizations of Islam in the Middle Ages.

California 7.3

Students analyze the geographic, political, economic, religious, and social structures of the civilizations of China in the Middle Ages.

California 7.4

Students analyze the geographic, political, economic, religious, and social structures of the sub-Saharan civilizations of Ghana and Mali in Medieval Africa.

California 7.5

Students analyze the geographic, political, economic, religious, and social structures of the civilizations of Medieval Japan.

California 7.6

Students analyze the geographic, political, economic, religious, and social structures of the civilizations of Medieval Europe.

California 7.7

Students compare and contrast the geographic, political, economic, religious, and social structures of the Meso-American and Andean civilizations.

California 7.8

Students analyze the origins, accomplishments, and geographic diffusion of the Renaissance.



Typing

CCSS.ELA-LITERACY.W.8.6

Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others.

Vocabulary Acquisition and Use

CCSS.ELA-LITERACY.L.8.4

Determine or clarify the meaning of unknown and multiple-meaning words or phrases based on grade 8 reading and content, choosing flexibly from a range of strategies.

CCSS.ELA-LITERACY.L.8.4.B

Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., precede, recede, secede).

CCSS.ELA-LITERACY.L.8.5

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCSS.ELA-LITERACY.L.8.5.A

Interpret figures of speech (e.g. verbal irony, puns) in context.

CCSS.ELA-LITERACY.L.8.5.C

Distinguish among the connotations (associations) of words with

similar denotations (definitions) (e.g., bullheaded, willful, firm, persistent, resolute).

CCSS.ELA-LITERACY.L.8.6

Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.



Conventions of Standard English

CCSS.ELA-LITERACY.L.8.1

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.8.1.A

Explain the function of verbals (gerunds, participles, infinitives) in general and their function in particular sentences.

CCSS.ELA-LITERACY.L.8.1.B

Form and use verbs in the active and passive voice.

CCSS.ELA-LITERACY.L.8.1.C

Form and use verbs in the indicative, imperative, interrogative, conditional, and subjunctive mood.

CCSS.ELA-LITERACY.L.8.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.8.2.A

Use punctuation (comma, ellipsis, dash) to indicate a pause or break.

CCSS.ELA-LITERACY.L.8.2.B

Use an ellipsis to indicate an omission.

Key Ideas and Details

CCSS.ELA-LITERACY.RL.8.2

Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.



Craft and Structure

CCSS.ELA-LITERACY.RL.8.4

Determine the meaning of words and phrases as they are used in a text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including analogies or allusions to other texts.

CCSS.ELA-LITERACY.RL.8.6

Analyze how differences in the points of view of the characters and the audience or reader (e.g., created through the use of dramatic irony) create such effects as suspense or humor.

The Number System

CCSS.MATH.CONTENT.8.NS.A.1

Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number.

Expressions & Equations CCSS.MATH.CONTENT.8.EE.C.7

Solve linear equations in one variable.

CCSS.MATH.CONTENT.8.EE.C.7.a

Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x = a, a = a, or a = b results (where a and b are different numbers).



Expressions & Equations

CCSS.MATH.CONTENT.8.EE.C.7.b

Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.

CCSS.MATH.CONTENT.8.EE.C.8

Analyze and solve pairs of simultaneous linear equations.

CCSS.MATH.CONTENT.8.EE.C.8.b

Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection.

Geometry

CCSS.MATH.CONTENT.8.G.A.1

Verify experimentally the properties of rotations, reflections, and translations:

CCSS.MATH.CONTENT.8.G.A.1.a

Lines are taken to lines, and line segments to line segments of the same length.

CCSS.MATH.CONTENT.8.G.A.2

Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them.

CCSS.MATH.CONTENT.8.G.A.3

Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.



Geometry

CCSS.MATH.CONTENT.8.G.A.4

Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two dimensional figures, describe a sequence that exhibits the similarity between them.

CCSS.MATH.CONTENT.8.G.A.5

Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so.

Empowered Learner

ISTE 1.1

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

ISTE 1.1.d

Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.



Digital Citizen

ISTE 1.2

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

STE 1.2.a

Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

ISTE 1.2.b

Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.c

Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

ISTE 1.2.d

Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Engineering Design

NGSS MS-ETS1-1

Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

Engineering Design

NGSS MS-ETS1-2

Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.

NGSS MS-ETS1-3

Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

NGSS MS-ETS1-4

Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

From Molecules to Organisms: Structures & Processes

NGSS MS-LS1-1

Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

NGSS MS-LS1-2

Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function.

NGSS MS-LS1-3

Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

From Molecules to Organisms: Structures & Processes

NGSS MS-LS1-4

Use argument based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

NGSS MS-LS1-5

Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

NGSS MS-LS1-6

Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.

NGSS MS-LS1-7

Develop a model to describe how food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism.

NGSS MS-LS1-8

Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.

Ecosystems: Interactions, Energy, and Dynamics

MS-LS2-1

Analyze and interpret data to provide evidence for the effects of resource availability on organisms and populations of organisms in an ecosystem.



Ecosystems: Interactions, Energy, and Dynamics

MS-LS2-2

Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.

MS-LS2-3

Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem.

MS-LS2-4

Construct an argument supported by empirical evidence that changes to physical or biological components of an ecosystem affect populations.

MS-LS2-5

Evaluate competing design solutions for maintaining biodiversity and ecosystem services.

Heredity: Inheritance & Variation of Traits

NGSS MS-LS3-1

Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

NGSS MS-LS3-2

Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.

Biological Evolution: Unity & Diversity

NGSS MS-LS4-1

Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past.

NGSS MS-LS4-2

Apply scientific ideas to construct an explanation for the anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships.

NGSS MS-LS4-3

Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.

NGSS MS-LS4-4

Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.

NGSS MS-LS4-5

Gather and synthesize information about technologies that have changed the way humans influence the inheritance of desired traits in organisms.

NGSS MS-LS4-6

Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.

Earth's Place in the Universe

NGSS MS-ESS1-1

Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.

NGSS MS-ESS1-2

Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.

NGSS MS-ESS1-3

Analyze and interpret data to determine scale properties of objects in the solar system.

NGSS MS-ESS1-4

Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.

Earth's Systems

NGSS MS-ESS2-1

Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.

NGSS MS-ESS2-2

Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.

NGSS MS-ESS2-3

Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.



Earth's Systems

NGSS MS-ESS2-4

Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.

NGSS MS-ESS2-5

Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.

NGSS MS-ESS2-6

Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.

Earth and Human Activity

NGSS MS-ESS3-1

Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.

NGSS MS-ESS3-2

Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.

NGSS MS-ESS3-3

Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

NGSS MS-ESS3-4

Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.



Earth and Human Activity

NGSS MS-ESS3-5

Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.

Matter & its Interactions

NGSS MS-PS1-1

Develop models to describe the atomic composition of simple molecules and extended structures.

NGSS MS-PS1-2

Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.

NGSS MS-PS1-3

Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.

NGSS MS-PS1-4

Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.

NGSS MS-PS1-5

Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.

NGSS MS-PS1-6

Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.



Motion and Stability: Forces & Interactions

NGSS MS-PS2-1

Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.

NGSS MS-PS2-2

Plan an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.

NGSS MS-PS2-3

Ask questions about data to determine the factors that affect the strength of electric and magnetic forces.

NGSS MS-PS2-4

Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.

NGSS MS-PS2-5

Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.



NGSS MS-PS3-1

Construct and interpret graphical displays of data to describe the relationships of kinetic energy to the mass of an object and to the speed of an object.

Energy

NGSS MS-PS3-2

Develop a model to describe that when the arrangement of objects interacting at a distance changes, different amounts of potential energy are stored in the system.

NGSS MS-PS3-3

Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.

NGSS MS-PS3-4

Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.

NGSS MS-PS3-5

Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.

Waves and their Applications in

NGSS MS-PS4-1

Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.

Technologies for Information Transfer

NGSS MS-PS4-2

Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.



Waves and their Applications in Technologies for Information Transfer

NGSS MS-PS4-3

Integrate qualitative scientific and technical information to support the claim that digitized signals are a more reliable way to encode and transmit information than analog signals.

Geography

California 8.6

Students analyze the divergent paths of the American people from 1800 to the mid-1800s and the challenges they faced, with emphasis on the Northeast.

California 8.7

Students analyze the divergent paths of the American people in the South from 1800 to the mid-1800s and the challenges they faced.

California 8.8

Students analyze the divergent paths of the American people in the West from 1800 to the mid-1800s and the challenges they faced.

California 8.9

Students analyze the early and steady attempts to abolish slavery and to realize the ideals of the Declaration of Independence.

California 8.10

Students analyze the multiple causes, key events, and complex consequences of the Civil War.

Florida SS.8.G.2

Understand physical and cultural characteristics of places.



Geography

Florida SS.8.G.3

Understand the relationships between the Earth's ecosystems and the populations that dwell within them.

Florida SS.8.G.4

Understand the characteristics, distribution, and migration of human populations.

Florida SS.8.G.5

Understand how human actions can impact the environment.

Ohio G.HS.16

The availability of natural resources contributed to the geographic and economic expansion of the United States, sometimes resulting in unintended environmental consequences.

Ohio G.HS.17

The movement of people, products and ideas resulted in new patterns of settlement and land use that influenced the political and economic development of the United States.

Government & Civics

California 8.2

Students analyze the political principles underlying the U.S. Constitution and compare the enumerated and implied powers of the federal government.

California 8.3

Students understand the foundation of the American political system and the ways in which citizens participate in it.



Government & Civics

California 8.4

Students analyze the aspirations and ideals of the people of the new nation.

Florida SS.8.CG.1.1

Compare the views of Patriots, Loyalists and other colonists on limits of government authority, inalienable rights and resistance to tyranny.

Florida SS.8.CG.2.1

Identify the constitutional provisions for establishing citizenship.

Florida SS.8.CG.2.2

Compare the responsibilities of citizens at the local, state and national levels.

Florida SS.8.CG.2.5

Analyze how the Bill of Rights guarantees civil rights and liberties to citizens.

Florida SS.8.C.1

The student will evaluate the roles, rights, and responsibilities of United States citizens and determine methods of active participation in society, government, and the political system.

Florida SS.8.C.2

The student will demonstrate an understanding of the principles, functions, and organization of government.

Ohio GOV.RS.22

The U.S. Constitution established a federal republic, providing a framework for a national government with elected representatives, separation of powers, and checks and balances.



Government & Civics

Ohio GOV.RS.23

The U.S. Constitution protects citizens' rights by limiting the powers of government.

Economics

California 8.12

Students analyze the transformation of the American economy and the changing social and political conditions in the United States in response to the Industrial Revolution.

Florida SS.8.FL.1 Earning Income

Florida SS.8.FL.2 Buying Goods and Services

Florida SS.8.FL.3 Saving

Florida S.8.FL.4 Using Credit

Florida S.8.FL.5 Financial Investing

Florid S.8.FL.6

Protecting and Insuring



American History

Florida SS.8.A.2

Examine the causes, course, and consequences of British settlement in the American colonies.

Florida SS.8.A.3

Demonstrate an understanding of the causes, course, and consequences of the American Revolution and the founding principles of our nation.

Florida SS.8.A.4

Demonstrate an understanding of the domestic and international causes, course, and consequences of westward expansion.

Florida SS.8.A.5

Examine the causes, course, and consequence of the Civil War and Reconstruction including its effects on American peoples.

California 8.1

Students understand the major events preceding the founding of the nation and relate their significance to the development of American constitutional democracy.

California 8.4

Students analyze the aspirations and ideals of the people of the new nation.

California 8.5

Students analyze U.S. foreign policy in the early Republic.

California 8.6

Students analyze the divergent paths of the American people from 1800 to the mid-1800s and the challenges they faced, with emphasis on the Northeast.



American History

California 8.7

Students analyze the divergent paths of the American people in the South from 1800 to the mid-1800s and the challenges they faced.

California 8.8

Students analyze the divergent paths of the American people in the West from 1800 to the mid-1800s and the challenges they faced.

California 8.10

Students analyze the multiple causes, key events, and complex consequences of the Civil War.

California 8.11

Students analyze the character and lasting consequences of Reconstruction

Ohio H.CI.2

North America, originally inhabited by American Indians, was explored and colonized by Europeans for economic and religious reasons.

Ohio H.CI.3

Competition for control of territory and resources in North America led to conflicts among colonizing powers.

Ohio H.CI.5

The ideas of the Enlightenment and dissatisfaction with colonial rule led English colonists to write the Declaration of Independence and launch the American Revolution.

Ohio H.CI.6

Key events and significant figures in American history influenced the course and outcome of the American Revolution.



American History

Ohio H.NN.7

The outcome of the American Revolution was national independence and new political, social and economic relationships for the American people.

Ohio H.E.10

The United States added to its territory through treaties and purchases.

Ohio H.E.11

Westward expansion contributed to economic and industrial development, debates over sectional issues, war with Mexico and the displacement of American Indians.

Ohio H.CWR.12

Disputes over the nature of federalism, complicated by economic developments in the United States, resulted in sectional issues, including slavery, which led to the American Civil War.

Ohio H.CWR.13

Key events and significant figures in American history influenced the course and outcome of the Civil War.

Ohio H.CWR.14

The Reconstruction period resulted in changes to the U.S. Constitution, an affirmation of federal authority and lingering social

and political differences.

Ohio H.NN.8

Problems arising under the Articles of Confederation led to debate over the adoption of the U.S. Constitution.



Typing

CCSS.ELA-LITERACY.W.9.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Vocabulary Acquisition & Use

CCSS.ELA-LITERACY.L.9-10.4

Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies.

CCSS.ELA-LITERACY.L.9-10.4.A

Use context as a clue to the meaning of a word or phrase. CCSS.ELA-LITERACY.L.9-10.4.B

Identify and correctly use patterns of word changes that indicate different meanings or parts of speech.

CCSS.ELA-Literacy.L.9-10.5

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCSS.ELA-Literacy.L.9-10.5.A

Interpret figures of speech in context and analyze their role in the

text.



Vocabulary Acquisition & Use

CCSS.ELA-LITERACY.L.9-10.6

Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Conventions of Standard English

CCSS.ELA-LITERACY.L.9-10.1

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.9-10.1.A

Use parallel structure. CCSS.ELA-LITERACY.L.9-10.1.B

Use various types of phrases and clauses to convey specific meanings and add variety and interest to writing or presentations.

CCSS.ELA-LITERACY.L.9-10.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.9-10.2.A

Use a semicolon to link two or more closely related independent clauses.

CCSS.ELA-LITERACY.L.9-10.2.B

Use a colon to introduce a list or quotation.



Key Ideas & Details

CCSS.ELA-LITERACY.RL.9-10.1

Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

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.

Integration of Knowledge & Ideas

CCSS.ELA-LITERACY.RI.9-10.9

Analyze seminal U.S. documents of historical and literary significance, including how they address related themes and concepts.

Seeing Structure in Expressions

CCSS.HSA-SSE.A Interpret the structure of expressions.

CCSS.HSA-SSE.A.1

Interpret expressions that represent a quantity in terms of its context.

CCSS.HSA-SSE.A.1.a

Interpret parts of an expression, such as terms, factors, and coefficients.


Reasoning with Equations CCSS.HSA-REI.B

Solve equations and inequalities in one variable.

CCSS.HSA-REI.B.3

Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.

Empowered Learner

& Inequalities

ISTE 1.1

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

ISTE 1.1.d

Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.



STE 1.2.a

Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.



Digital Citizen

ISTE 1.2.b

Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.c

Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

ISTE 1.2.d

Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Engineering Design

NGSS HS-ETS1-1

Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.

NGSS HS-ETS1-2

Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

NGSS HS-ETS1-3

Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.



Engineering Design

NGSS HS-ETS1-4

Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

From Molecules to Organisms: Structures & Processes

NGSS MS-LS1-1

Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

NGSS MS-LS1-2

Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function.

NGSS MS-LS1-3

Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

NGSS HS-LS1-4

Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

NGSS HS-LS1-5

Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.



From Molecules to Organisms: Structures & Processes

NGSS HS-LS1-6

Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbonbased molecules.

NGSS HS-LS1-7

Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.

Ecosystems: Interactions, Energy, & Dynamics

NGSS HS-LS2-1

Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.

NGSS HS-LS2-2

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

NGSS HS-LS2-3

Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.

NGSS HS-LS2-4

Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.



Ecosystems: Interactions, Energy, & Dynamics

NGSS HS-LS2-5

Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

NGSS HS-LS2-6

Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

NGSS HS-LS2-7

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

NGSS HS-LS2-8

Evaluate evidence for the role of group behavior on individual and species' chances to survive and reproduce.

Heredity: Inheritance & Variation of Traits

NGSS HS-LS3-1

Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

NGSS HS-LS3-2

Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/ or (3) mutations caused by environmental factors.



Heredity: Inheritance & Variation of Traits

NGSS HS-LS3-3

Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

Biological Evolution: Unity & Diversity

NGSS HS-LS4-1

Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.

NGSS HS-LS4-2

Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.

NGSS HS-LS4-3

Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.

NGSS HS-LS4-4

Construct an explanation based on evidence for how natural selection leads to adaptation of populations.



Biological Evolution: Unity & Diversity

NGSS HS-LS4-5

Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

NGSS HS-LS4-6

Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

Earth's Place in the Universe

NGSS HS-ESS1-1

Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.

NGSS HS-ESS1-2

Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.

NGSS HS-ESS1-3

Communicate scientific ideas about the way stars, over their life cycle, produce elements.

NGSS HS-ESS1-4

Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.

NGSS HS-ESS1-5

Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.



Earth's Place in the Universe

NGSS HS-ESS1-6

Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.

Earth's Systems

NGSS HS-ESS2-1

Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.

NGSS HS-ESS2-2

Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

NGSS HS-ESS2-3

Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.

NGSS HS-ESS2-4

Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

NGSS HS-ESS2-5

Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.

NGSS HS-ESS2-6

Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.



Earth's Systems

NGSS HS-ESS2-7

Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth.

Earth & Human Activity

NGSS HS-ESS3-1

Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

NGSS HS-ESS3-2

Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

NGSS HS-ESS3-3

Create a computational simulation to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.

NGSS HS-ESS3-4

Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

NGSS HS-ESS3-5

Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth's systems.

NGSS HS-ESS3-6

Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.



Matter & its Interactions

NGSS S-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.

NGSS 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.

NGSS HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

NGSS HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

NGSS HS-PS1-5

Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

NGSS HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

NGSS HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.



Matter & its Interactions

NGSS HS-PS1-8

Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.

Motion & Stability: Forces & Interactions

NGSS 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.

NGSS 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.

NGSS HS-PS2-3

Apply science and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

NGSS HS-PS2-4

Use mathematical representations of Newton's Law of Gravitation

and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.

NGSS HS-PS2-5

Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.



Motion & Stability: Forces & Interactions

NGSS HS-PS2-6

Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

Energy

NGSS 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.

NGSS HS-PS3-2

Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative positions of particles (objects).

NGSS HS-PS3-3

Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

NGSS HS-PS3-4

Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

Energy

HS-PS3-5

Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.

Waves & their Applications in Technologies for Information Transfer

NGSS HS-PS4-1

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

NGSS HS-PS4-2

Evaluate questions about the advantages of using digital transmission and storage of information.

NGSS HS-PS4-3

Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

NGSS HS-PS4-4

Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.

NGSS HS-PS4-5

Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.



Geography

Florida SS.912.G.4

Understand the characteristics, distribution, and migration of human populations.

Florida SS.912.G.4.1

Interpret population growth and other demographic data for any given place.

Ohio G.ST.1

Properties and functions of geographic representations affect how they can be used to represent, analyze and interpret geographic patterns and processes.

Ohio G.ST.2

Geographic representations and geospatial technologies are used to investigate, analyze and communicate the results of geographic problem solving.

Ohio G.R.14

Regions are used as a basis to analyze global geographic issues.

Texas 7

The student understands the growth, distribution, movement, and characteristics of world population.

Texas 7a

Construct and analyze population pyramids and use other data, graphics, and maps to describe the population characteristics of different societies and to predict future growth trends.

Florida SS.912.G.4

Understand the characteristics, distribution, and migration of human populations.



Geography

Florida SS.912.G.4.1

Interpret population growth and other demographic data for any given place.

Ohio G.ST.1

Properties and functions of geographic representations affect how they can be used to represent, analyze and interpret geographic patterns and processes.

Ohio G.ST.2

Geographic representations and geospatial technologies are used to investigate, analyze and communicate the results of geographic problem solving.

Ohio G.R.14

Regions are used as a basis to analyze global geographic issues.

Texas WG.7

The student understands the growth, distribution, movement, and characteristics of world population.

Texas WG.7A

Analyze population pyramids and use other data, graphics, and maps to describe the population characteristics of different societies and to predict future population trends.

Texas WG.11

The student understands how geography influences economic activities.

Texas WG.11B

Identify the factors affecting the location of different types of economic activities, including subsistence and commercial agriculture, manufacturing, and service industries.



Geography

Texas WG.20

The student understands how current technology affects human interaction.

Texas WG.20A

Describe the impact of new information technologies such as the Internet, Global Positioning System (GPS), or Geographic Information Systems (GIS).

Government & Civics

Florida SS.912.CG.1

Demonstrate an understanding of the origins and purposes of government, law and the American political system.

Florida SS.912.CG.2

Evaluate the roles, rights and responsibilities of U.S. citizens and determine methods of active participation in society, government and the political system.

Florida SS.912.CG.3

Demonstrate an understanding of the principles, functions and organization of government.

Ohio GOV.BP.5

As the supreme law of the land, the U.S. Constitution incorporates basic principles that help define the government of the United States as a federal republic including its structure, powers and relationship with the governed.

Ohio GOV.BP.7

Constitutional government in the United States has changed over time as a result of amendments to the U.S. Constitution, Supreme Court decisions, legislation and informal practices.



Government & Civics

Ohio GOV.BP.9

The constitutional amendments known collectively as the Reconstruction Amendments extended new constitutional protections to African Americans, though the struggle to fully achieve equality would continue.

Ohio GOV.BP.10

Constitutional amendments have provided for civil rights such as suffrage for disenfranchised groups.

Ohio GOV.BP.11

Constitutional amendments have altered provisions for the structure and functions of the federal government.

Ohio GOV.SF.12

Law and public policy are created and implemented by three branches of government; each functions with its own set of powers and responsibilities.

Ohio GOV.SF.13

The political process creates a dynamic interaction among the three branches of government in addressing current issues.

Texas G.1

The student understands how constitutional government, as developed in America and expressed in the Declaration of

Independence, the Articles of Confederation, and the U.S. Constitution, has been influenced by ideas, people, and historical documents.

Texas G.6

The student understands the American beliefs and principles reflected in the U.S. Constitution and why these are significant.



Government & Civics

Texas G.7

The student understands the structure and functions of the government created by the U.S. Constitution.

California HSS-PoAD.12.4

Students analyze the unique roles and responsibilities of the three branches of government as established by the U.S. Constitution.

Economics

Florida SS.912.E.1

Understand the fundamental concepts relevant to the development of a market economy.

Florida SS.912.E.2

Understand the fundamental concepts relevant to the institutions, structure, and functions of a national economy.

Texas E.1

The student understands the concepts of scarcity and opportunity costs.

Texas E.2

The student understands the interaction of supply, demand, and

price.

Texas E.8

The student understands types of market structures.

California HSS-PoE.12.1.1

Principles of Economics: Students understand common economic

terms and concepts and economic reasoning.



American History

Florida SS.912.A.2

Understand the causes, course, and consequences of the Civil War and Reconstruction and its effects on the American people.

Florida SS.912.A.3

Analyze the transformation of the American economy and the changing social and political conditions in response to the Industrial Revolution.

Ohio AH.FD.4

The Declaration of Independence elaborates on the rights and role of the people in building the foundations of the American nation through the principles of unalienable rights and consent of the people.

Ohio AH.FD.5

The Northwest Ordinance elaborates on the rights and role of the people in building the foundations of the American nation through its establishment of natural rights and setting up educational institutions.

Ohio AH.FD.6

The U.S. Constitution established the foundations of the American nation and the relationship between the people and their government.

Ohio AH.FD.7

The debate presented by the Federalist and Anti-Federalist Papers over protections for individuals and limits on government power resulted in the Bill of Rights. The Bill of Rights provides constitutional protections for individual liberties and limits on governmental power.



American History

Ohio AH.IP.8

The rise of corporations, heavy industry, mechanized farming and technological innovations transformed the American economy from an agrarian to an increasingly urban industrial society.

Ohio AH.IP.9

The rise of industrialization led to a rapidly expanding workforce. Labor organizations grew amidst unregulated working conditions, laissez-faire policies toward big business, and violence toward supporters of organized labor.

Ohio AH.IP.10

Immigration, internal migration and urbanization transformed American life.

Ohio AH.IP.11

Continued settlement by Americans in the West intensified conflict with American Indians and reinforced the policy of the reservation system.

Ohio AH.IP.12

Following Reconstruction, old political and social structures reemerged and racial discrimination was institutionalized.

Ohio AH.IP.13

The Progressive era was an effort to address the ills of

American society stemming from industrial capitalism, urbanization and political corruption.

California HSS-11.2

Students analyze the relationship among the rise of industrialization, large-scale rural-to-urban migration, and massive immigration from Southern and Eastern Europe.



World History

Florida SS.912.W.1 Utilize historical inquiry skills and analytical processes.

Florida SS.912.W.2 Recognize significant events, figures, and contributions of medieval civilizations.

Florida SS.912.W.3

Recognize significant events, figures, and contributions of Islamic civilizations.

Ohio WH.HT.1

The use of primary and secondary sources of information includes an examination of the credibility of each source.

Ohio WH.HT.2

Historians develop theses and use evidence to support or refute positions.

Ohio WH.HT.3

Historians analyze cause, effect, sequence, and correlation in historical events, including multiple causation and long- and shortterm causal relations.

Texas WH.1A

The student understands traditional historical points of reference in

world history.

Texas WH.3

The student understands the contributions and influence of classical civilizations from 500 BC to AD 600 on subsequent civilizations.



World History

Texas WH.4

The student understands how, after the collapse of classical empires, new political, economic, and social systems evolved and expanded from 600 to 1450.

California HSS-10.1

Students relate the moral and ethical principles in ancient Greek and Roman philosophy, in Judaism, and in Christianity to the development of Western political thought.



Typing

CCSS.ELA-LITERACY.W.9-10.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.

Vocabulary Acquisition & Use

CCSS.ELA-LITERACY.L.9-10.4

Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies.

CCSS.ELA-LITERACY.L.9-10.4.A

Use context as a clue to the meaning of a word or phrase. CCSS.ELA-LITERACY.L.9-10.4.B

Identify and correctly use patterns of word changes that indicate different meanings or parts of speech.

CCSS.ELA-Literacy.L.9-10.5

Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.

CCSS.ELA-Literacy.L.9-10.5.A

Interpret figures of speech in context and analyze their role in the

text.



Vocabulary Acquisition & Use

CCSS.ELA-LITERACY.L.9-10.6

Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.

Conventions of Standard English

CCSS.ELA-LITERACY.L.9-10.1

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.9-10.1.A

Use parallel structure. CCSS.ELA-LITERACY.L.9-10.1.B

Use various types of phrases and clauses to convey specific meanings and add variety and interest to writing or presentations.

CCSS.ELA-LITERACY.L.9-10.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.9-10.2.A

Use a semicolon to link two or more closely related independent clauses.

CCSS.ELA-LITERACY.L.9-10.2.B

Use a colon to introduce a list or quotation.



Key Ideas & Details

CCSS.ELA-LITERACY.RL.9-10.1

Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

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.

Integration of Knowledge & Ideas

CCSS.ELA-LITERACY.RI.9-10.9

Analyze seminal U.S. documents of historical and literary significance, including how they address related themes and concepts.

Congruence

CCSS.HSG-CO.A Experiment with transformations in the plane.

CCSS.HSG-CO.A.1

Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc.

CCSS.HSG-CO.4

Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.



Congruence

CCSS.HSG-CO.9

Prove theorems about lines and angles. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.

CCSS.HSG-CO.10

Prove theorems about triangles. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.

CCSS.HSG-CO.11

Prove theorems about parallelograms. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.

Similarity, Right Triangles, and **CCSS.HSG-SRT.B** Prove theorems involving similarity.



CCSS.HSG-SRT.B.4

Prove theorems about triangles. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.



Empowered Learner

ISTE 1.1

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

ISTE 1.1.d

Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

Digital Citizen

ISTE 1.2

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

STE 1.2.a

Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

ISTE 1.2.b

Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.c

Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.



Digital Citizen

ISTE 1.2.d

Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Engineering Design

NGSS HS-ETS1-1

Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.

NGSS HS-ETS1-2

Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

NGSS HS-ETS1-3

Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

NGSS HS-ETS1-4

Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

From Molecules to Organisms: Structures & Processes

NGSS MS-LS1-1

Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

NGSS MS-LS1-2

Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function.

NGSS MS-LS1-3

Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

NGSS HS-LS1-4

Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

NGSS HS-LS1-5

Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

NGSS HS-LS1-6

Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

NGSS HS-LS1-7

Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.

Ecosystems: Interactions, Energy, & Dynamics

NGSS HS-LS2-1

Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.

NGSS HS-LS2-2

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

NGSS HS-LS2-3

Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.

NGSS HS-LS2-4

Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.

NGSS HS-LS2-5

Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

NGSS HS-LS2-6

Evaluate claims, evidence, and reasoning that the complex

interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

NGSS HS-LS2-7

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



Ecosystems: Interactions, Energy, & Dynamics

NGSS HS-LS2-8

Evaluate evidence for the role of group behavior on individual and species' chances to survive and reproduce.

Heredity: Inheritance & Variation of Traits

NGSS HS-LS3-1

Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

NGSS HS-LS3-2

Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

NGSS HS-LS3-3

Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

Biological Evolution: Unity & Diversity

NGSS HS-LS4-1

Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.



Biological Evolution: Unity & Diversity

NGSS HS-LS4-2

Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.

NGSS HS-LS4-3

Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.

NGSS HS-LS4-4

Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

NGSS HS-LS4-5

Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

NGSS HS-LS4-6

Create or revise a simulation to test a solution to mitigate adverse

impacts of human activity on biodiversity.

Earth's Place in the Universe

NGSS HS-ESS1-1

Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.



Earth's Place in the Universe

NGSS HS-ESS1-2

Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.

NGSS HS-ESS1-3

Communicate scientific ideas about the way stars, over their life cycle, produce elements.

NGSS HS-ESS1-4

Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.

NGSS HS-ESS1-5

Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.

NGSS HS-ESS1-6

Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.

Earth's Systems

NGSS HS-ESS2-1

Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.

NGSS HS-ESS2-2

Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other



Earth's Systems

NGSS HS-ESS2-3

Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.

NGSS HS-ESS2-4

Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

NGSS HS-ESS2-5

Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.

NGSS HS-ESS2-6

Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.

NGSS HS-ESS2-7

Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth.

Earth & Human Activity

NGSS HS-ESS3-1

Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

NGSS HS-ESS3-2

Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

Earth & Human Activity

NGSS HS-ESS3-3

Create a computational simulation to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.

NGSS HS-ESS3-4

Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

NGSS HS-ESS3-5

Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth's systems.

NGSS HS-ESS3-6

Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.

Matter & its Interactions

NGSS S-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.

NGSS 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.



Matter & its Interactions

NGSS HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

NGSS HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

NGSS HS-PS1-5

Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

NGSS HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

NGSS HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

NGSS HS-PS1-8

Develop models to illustrate the changes in the composition of the

nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.


Motion & Stability: Forces & Interactions

NGSS 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.

NGSS 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.

NGSS HS-PS2-3

Apply science and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

NGSS HS-PS2-4

Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.

NGSS HS-PS2-5

Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.

NGSS HS-PS2-6

Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.



Energy

NGSS 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.

NGSS HS-PS3-2

Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative positions of particles (objects).

NGSS HS-PS3-3

Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

NGSS HS-PS3-4

Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

HS-PS3-5

Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.



Waves & their Applications in Technologies for Information Transfer

NGSS HS-PS4-1

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

NGSS HS-PS4-2

Evaluate questions about the advantages of using digital transmission and storage of information.

NGSS HS-PS4-3

Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

NGSS HS-PS4-4

Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.

NGSS HS-PS4-5

Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.

Economics

Florida SS.912.E.3

Understand the fundamental concepts and interrelationships of the United States economy in the international marketplace.

Ohio E.FE.3

People cannot have all the goods and services they want and, as a

result, must choose some things and give up others.



Economics

Ohio E.FE.3

People cannot have all the goods and services they want and, as a result, must choose some things and give up others.

Ohio E.FE.4

Different economic systems (traditional, market, command, and mixed) utilize different methods to allocate limited resources.

Texas E.3

The student understands the reasons for international trade and its importance to the United States and the global economy.

Texas E.4

The student understands free enterprise, socialist, and communist economic systems.

Texas E.5

The student understands the basic characteristics and benefits of the U.S. free enterprise system.

California HSS-PoE.12.3

Students analyze the influence of the federal government on the American economy.

California HSS-PoE.12.4

Students analyze the elements of the U.S. labor market in a global

setting.

California HSS-PoE.12.5

Students analyze the aggregate economic behavior of the U.S. economy.



Economics

California HSS-PoE.12.6

Students analyze issues of international trade and explain how the U.S. economy affects, and is affected by, economic forces beyond the United States's borders.

Geography

Florida SS.912.G.3.2

Use geographic terms and tools to explain how weather and climate influence the natural character of a place.

Florida SS.912.G.3.4

Use geographic terms and tools to explain how the Earth's internal changes and external changes influence the character of places.

Florida SS.912.G.3.5

Use geographic terms and tools to explain how hydrology influences the physical character of a place.

Florida SS.912.G.5.6

Analyze case studies to predict how a change to an environmental factor can affect an ecosystem.

Texas G.3

The student understands how physical processes shape patterns in the physical environment.

Texas G.3.A

Explain weather conditions and climate in relation to annual changes in Earth-Sun relationships.

Government & Civics

Florida SS.912.CG.1

Demonstrate an understanding of the origins and purposes of government, law and the American political system.

Florida SS.912.CG.1.3

Explain arguments presented in the Federalist Papers in support of ratifying the U.S. Constitution and a republican form of government.

Florida SS.912.CG.1.4

Analyze how the ideals and principles expressed in the founding documents shape America as a constitutional republic.

Florida SS.912.CG.1.5

Explain how the U.S. Constitution and its amendments uphold the following political principles: checks and balances, consent of the governed, democracy, due process of law, federalism, individual rights, limited government, representative government, republicanism, rule of law and separation of powers.

Florida SS.912.CG.3

Demonstrate an understanding of the principles, functions and organization of government.

Florida SS.912.CG.3.6

Explain expressed, implied, concurrent and reserved powers in the

U.S. Constitution.

Florida SS.912.CG.3.12

Analyze the concept of federalism in the United States and its role in establishing the relationship between the state and national governments.



Government & Civics

Ohio GOV.BP.5

As the supreme law of the land, the U.S. Constitution incorporates basic principles that help define the government of the United States as a federal republic including its structure, powers and relationship with the governed.

Ohio GOV.BP.6

The Federalist Papers and the Anti-Federalist Papers framed the national debate over the basic principles of government encompassed by the Constitution of the United States.

Ohio GOV.BP.7

Constitutional government in the United States has changed over time as a result of amendments to the U.S. Constitution, Supreme Court decisions, legislation and informal practices.

Ohio GOV.BP.8

The Bill of Rights was drafted in response to the national debate over the ratification of the Constitution of the United States.

Ohio GOV.SF.12

Law and public policy are created and implemented by three branches of government; each functions with its own set of powers and responsibilities.

Ohio GOV.SF.13

The political process creates a dynamic interaction among the three branches of government in addressing current issues.

Texas G.7

The student understands the structure and functions of the government created by the U.S. Constitution.

Texas G.8

The student understands the concept of federalism.



American History

Florida SS.912.A.3

Analyze the transformation of the American economy and the changing social and political conditions in response to the Industrial Revolution.

Ohio AH.IP.8

The rise of corporations, heavy industry, mechanized farming and technological innovations transformed the American economy from an agrarian to an increasingly urban industrial society.

Ohio AH.IP.9

The rise of industrialization led to a rapidly expanding workforce. Labor organizations grew amidst unregulated working conditions, laissez-faire policies toward big business, and violence toward supporters of organized labor.

Ohio AH.IP.10

Immigration, internal migration and urbanization transformed American life.

Ohio AH.IP.13

The Progressive era was an effort to address the ills of American society stemming from industrial capitalism, urbanization and political corruption.

Texas AH.3

The student understands the political, economic, and social changes in the United States from 1877 to 1898.

Texas AH.4

The student understands the emergence of the United States as a world power between 1898 and 1920.



American History

Texas AH.5

The student understands the effects of reform and third-party movements in the early 20th century.

California HSS-11.2

Students analyze the relationship among the rise of industrialization, larges cale rural-to-urban migration, and massive immigration from Southern and Eastern Europe.

California HSS-11.4

Students trace the rise of the United States to its role as a world power in the twentieth century.

World History

Florida SS.912.W.2

Recognize significant events, figures, and contributions of medieval civilizations (Byzantine Empire, Western Europe, Japan).

Florida SS.912.W.3

Recognize significant events, figures, and contributions of Islamic, Meso and South American, and Sub-Saharan African civilizations.

Florida SS.912.W.4

Analyze the causes, events, and effects of the Renaissance, Reformation, Scientific Revolution, and Age of Exploration.

Texas WH.5

The student understands the causes, characteristics, and impact of the European Renaissance and the Reformation from 1450 to 1750.

World History

Texas WH.6

The student understands the characteristics and impact of the Maya, Inca, and Aztec civilizations.

California HSS-10.1

Students relate the moral and ethical principles in ancient Greek and Roman philosophy, in Judaism, and in Christianity to the development of Western political thought.



Typing

CCSS.ELA-LITERACY.W.11-12.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

Vocabulary Acquisition & Use

CCSS.ELA-LITERACY.L.11-12.4

Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful.

Conventions of Standard English

CCSS.ELA-LITERACY.L.11-12.1

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.11-12.1.A

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contested.

CCSS.ELA-LITERACY.L.11-12.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.11-12.2.A

Observe hyphenation conventions.



Key Ideas & Details

CCSS.ELA-LITERACY.RL.11-12.1

Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

CCSS.ELA-LITERACY.RL.11-12.2

Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.

CCSS.ELA-LITERACY.RL.11-12.6

Analyze a case in which grasping point of view requires distinguishing what is directly stated in a text from what is really meant.

CCSS.ELA-LITERACY.RL.11-12.9

Analyze seventeenth-, eighteenth-, and nineteenth-century foundational U.S. documents of historical and literary significance for their themes, purposes, and rhetorical features.

Arithmetic with CCSS.HSA-APR.D

Polynomials and Rational Rewrite rational expressions. **Expressions**

CCSS.HSA-APR.D.6

Rewrite simple rational expressions in different forms; write a(x)/b(x) in the form q(x) + r(x)/b(x), where a(x), b(x), q(x), and r(x) are polynomials with the degree of r(x) less than the degree of b(x), using inspection, long division, or, for the more complicated examples, a computer algebra system.

Arithmetic with Polynomials and Rational Expressions

CCSS.HSA-APR.D.7

Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.

Empowered Learner

ISTE 1.1

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.

ISTE 1.1.d

Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

Digital Citizen

ISTE 1.2

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

STE 1.2.a

Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.



Digital Citizen

ISTE 1.2.b

Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.c

Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

ISTE 1.2.d

Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.

Engineering Design

NGSS HS-ETS1-1

Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.

NGSS HS-ETS1-2

Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

NGSS HS-ETS1-3

Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.



Engineering Design

NGSS HS-ETS1-4

Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

From Molecules to Organisms: Structures & Processes

NGSS MS-LS1-1

Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

NGSS MS-LS1-2

Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function.

NGSS MS-LS1-3

Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

NGSS HS-LS1-4

Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

NGSS HS-LS1-5

Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.



From Molecules to Organisms: Structures & Processes

NGSS HS-LS1-6

Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

NGSS HS-LS1-7

Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.

Ecosystems: Interactions, Energy, & Dynamics

NGSS HS-LS2-1

Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.

NGSS HS-LS2-2

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

NGSS HS-LS2-3

Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.

NGSS HS-LS2-4

Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.



Ecosystems: Interactions, Energy, & Dynamics

NGSS HS-LS2-5

Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

NGSS HS-LS2-6

Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

NGSS HS-LS2-7

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

NGSS HS-LS2-8

Evaluate evidence for the role of group behavior on individual and species' chances to survive and reproduce.

Heredity: Inheritance & Variation of Traits

NGSS HS-LS3-1

Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

NGSS HS-LS3-2

Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.

Heredity: Inheritance & Variation of Traits

NGSS HS-LS3-3

Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

Biological Evolution: Unity & Diversity

NGSS HS-LS4-1

Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.

NGSS HS-LS4-2

Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.

NGSS HS-LS4-3

Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.

NGSS HS-LS4-4

Construct an explanation based on evidence for how natural selection leads to adaptation of populations.



Biological Evolution: Unity & Diversity

NGSS HS-LS4-5

Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

NGSS HS-LS4-6

Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

Earth's Place in the Universe

NGSS HS-ESS1-1

Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.

NGSS HS-ESS1-2

Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.

NGSS HS-ESS1-3

Communicate scientific ideas about the way stars, over their life cycle, produce elements.

NGSS HS-ESS1-4

Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.

NGSS HS-ESS1-5

Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.



Earth's Place in the Universe

NGSS HS-ESS1-6

Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.

Earth's Systems

NGSS HS-ESS2-1

Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.

NGSS HS-ESS2-2

Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

NGSS HS-ESS2-3

Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.

NGSS HS-ESS2-4

Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

NGSS HS-ESS2-5

Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.

NGSS HS-ESS2-6

Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.





Earth's Systems

NGSS HS-ESS2-7

Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth.

Earth & Human Activity

NGSS HS-ESS3-1

Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

NGSS HS-ESS3-2

Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

NGSS HS-ESS3-3

Create a computational simulation to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.

NGSS HS-ESS3-4

Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

NGSS HS-ESS3-5

Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth's systems.

NGSS HS-ESS3-6

Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.



Matter & its Interactions

NGSS S-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.

NGSS 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.

NGSS HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

NGSS HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

NGSS HS-PS1-5

Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.

NGSS HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

NGSS HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.



Matter & its Interactions

NGSS HS-PS1-8

Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.

Motion & Stability: Forces & Interactions

NGSS 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.

NGSS 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.

NGSS HS-PS2-3

Apply science and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.

NGSS HS-PS2-4

Use mathematical representations of Newton's Law of Gravitation

and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.

NGSS HS-PS2-5

Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.



Motion & Stability: Forces & Interactions

NGSS HS-PS2-6

Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

Energy

NGSS 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.

NGSS HS-PS3-2

Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative positions of particles (objects).

NGSS HS-PS3-3

Design, build, and refine a device that works within given constraints to convert one form of energy into another form of energy.

NGSS HS-PS3-4

Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

Energy

HS-PS3-5

Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.

Waves & their Applications in Technologies for Information Transfer

NGSS HS-PS4-1

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

NGSS HS-PS4-2

Evaluate questions about the advantages of using digital transmission and storage of information.

NGSS HS-PS4-3

Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

NGSS HS-PS4-4

Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.

NGSS HS-PS4-5

Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.



Economics

Florida SS.912.E.3

Understand the fundamental concepts and interrelationships of the United States economy in the international marketplace.

Ohio E.GE.9

When regions and nations use comparative advantage to produce at the lowest cost and then trade with others, production, consumption and interdependence increase.

Texas E.3

The student understands the reasons for international trade and its importance to the United States and the global economy.

California HSS-PoE.12.2

Students analyze the elements of America's market economy in a global setting.

California HSS-PoE.12.4

Students analyze the elements of the U.S. labor market in a global setting.

California HSS-PoE.12.6

Students analyze issues of international trade and explain how the U.S. economy affects, and is affected by, economic forces beyond the United States's borders.



Florida SS.912.G.3

Understand the relationships between the Earth's ecosystems and the populations that dwell within them.



Geography

Florida SS.912.G.5

Understand how human actions can impact the environment.

Ohio WG.ES.3

Human modifications of the physical environment in one place often lead to changes in other places.

Ohio WG.ES.6

There are costs and benefits of using renewable, nonrenewable, and flow resources.

Ohio WG.ES.7

Human interaction with the environment is affected by cultural characteristic.

Texas G.4

The student understands the patterns and characteristics of major landforms, climates, and ecosystems of Earth and the interrelated processes that produce them.

Texas G.8

The student understands how people, places, and environments are connected and interdependent.

Texas STS.19

The student understands the impact of technology and human

modifications on the physical environment.

Government & Civics

Florida SS.912.CG.3

Demonstrate an understanding of the principles, functions and organization of government.



Government & Civics

Florida SS.912.CG.4

Demonstrate an understanding of contemporary issues in world affairs and evaluate the role and impact of U.S. foreign policy.

Ohio.GOV.GE.20

The federal government uses spending and tax policy to maintain economic stability and foster economic growth. Regulatory actions carry economic costs and benefits.

Texas.E.4

The student understands the roles played by local, state, and national governments in both the public and private sectors of the U.S. free enterprise system.

Texas.E.4.B

Compare the role of government in the U.S. free enterprise system and other economic systems.

Texas.G.11

The student understands the similarities and differences that exist among the U.S. system of government and other political systems.

Texas.G.11.A

Compare the U.S. constitutional republic to historical and contemporary forms of government such as monarchy, a classical republic, authoritarian, socialist, direct democracy, theocracy, tribal,

and other republics.

American History

Florida SS.912.A.4

Demonstrate an understanding of the changing role of the United States in world affairs through the end of World War I.



American History

Florida SS.912.A.5

Analyze the effects of the changing social, political, and economic conditions of the Roaring Twenties and the Great Depression.

Florida SS.912.A.6

Understand the causes and course of World War II, the character of the war at home and abroad, and its reshaping of the United States role in the post-war world.

Ohio.AH.FA.14

As a result of overseas expansion, the Spanish-American War and World War I, the United States emerged as a world power.

Ohio.AH.PD.17

An improved standard of living for many, combined with technological innovations in communication, transportation and industry, resulted in social and cultural changes and tensions.

Ohio.AH.PD.18

Movements such as the Harlem Renaissance, AfricanAmerican migration, women's suffrage and Prohibition all contributed to social change.

Ohio.AH.PD.19

The Great Depression was caused, in part, by the federal government's monetary policies, stock market speculation, and increasing consumer debt. The role of the federal government expanded as a result of the Great Depression.

Ohio.AH.IWW.20.

During the 1930s, the U.S. government attempted to distance the country from earlier interventionist policies in the Western Hemisphere as well as retain an isolationist approach to events in Europe and Asia until the beginning of World War II.



American History

Ohio.AH.IWW.21

United States policy and mobilization of its economic and military resources during World War II affected American society. Despite mistreatment, marginalized groups played important roles in the war effort while continuing to protest unfair treatment.

Texas.H.4

The student understands the emergence of the United States as a world power between 1898 and 1920.

Texas.H.6

The student understands significant events, social issues, and individuals of the 1920s.

Texas.H.7

The student understands the domestic and international impact of U.S. participation in World War II.

California HSS-11.5

Students analyze the major political, social, economic, technological, and cultural developments of the 1920s.

California HSS-11.6

Students analyze the different explanations for the Great Depression and how the New Deal fundamentally changed the role of the federal government.

California HSS-11.7

Students analyze America's participation in World War II.



World History

Florida SS.912.W.2.15

Determine the factors that contributed to the growth of a modern economy.

FloridaSS.912.W.2.16

Trace the growth and development of a national identity in the countries of England, France, and Spain.

Florida SS.912.W.6

Understand the development of Western and non-Western nationalism, industrialization and imperialism, and the significant processes and consequences of each.

Florida SS.912.W.6.1

Describe the agricultural and technological innovations that led to industrialization in Great Britain and its subsequent spread to continental Europe, the United States, and Japan.

Florida SS.912.W.6.2

Summarize the social and economic effects of the Industrial Revolution.

Florida SS.912.W.6.6

Analyze the causes and effects of imperialism.

Florida SS.912.W.6.7

Identify major events in China during the 19th and early 20th centuries related to imperialism.

Florida SS.912.W.7

Recognize significant causes, events, figures, and consequences of the Great War period and the impact on worldwide balance of power.



Florida SS.912.W.7.1

Analyze the causes of World War I including the formation of European alliances and the roles of imperialism, nationalism, and militarism.

Florida SS.912.W.7.2

Describe the changing nature of warfare during World War I.

Florida SS.912.W.7.3

Summarize significant effects of World War I.

Ohio.WH.AC.12

Advances in technology, communication and transportation improved lives, but also had negative consequences.

Ohio.WH.AC.13

The causes of World War I included militarism, imperialism, nationalism and alliances.

Ohio.WH.AC.14

The consequences of World War I and the worldwide depression set the stage for the Russian Revolution, the rise of totalitarianism, aggressive Axis expansion and the policy of appeasement which in turn led to World War II.

Texas.H.8

The student understands the causes and the global impact of the Industrial Revolution and European imperialism from 1750 to 1914.

Texas.H.10

The student understands the causes and impact of World War I.

California HSS-10.5

Students analyze the causes and course of the First World War.



Grade-Level Typing Course Standards | Grade 11

World History

California HSS-10.6

Students analyze the effects of the First World War.

California HSS-10.7

Students analyze the rise of totalitarian governments after World War I.





Typing

CCSS.ELA-LITERACY.W.11-12.6

Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

Vocabulary Acquisition & Use

CCSS.ELA-LITERACY.L.11-12.4

Determine the meaning of words and phrases as they are used in the text, including figurative and connotative meanings; analyze the impact of specific word choices on meaning and tone, including words with multiple meanings or language that is particularly fresh, engaging, or beautiful.

Conventions of Standard English

CCSS.ELA-LITERACY.L.11-12.1

Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

CCSS.ELA-LITERACY.L.11-12.1.A

Apply the understanding that usage is a matter of convention, can change over time, and is sometimes contested.

CCSS.ELA-LITERACY.L.11-12.2

Demonstrate command of the conventions of standard English capitalization, punctuation, and spelling when writing.

CCSS.ELA-LITERACY.L.11-12.2.A

Observe hyphenation conventions.



Key Ideas & Details

CCSS.ELA-LITERACY.RL.11-12.1

Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text, including determining where the text leaves matters uncertain.

CCSS.ELA-LITERACY.RL.11-12.2

Determine two or more themes or central ideas of a text and analyze their development over the course of the text, including how they interact and build on one another to produce a complex account; provide an objective summary of the text.

CCSS.ELA-LITERACY.RL.11-12.6

Analyze a case in which grasping point of view requires distinguishing what is directly stated in a text from what is really meant.

CCSS.ELA-LITERACY.RL.11-12.9

Analyze seventeenth-, eighteenth-, and nineteenth-century foundational U.S. documents of historical and literary significance for their themes, purposes, and rhetorical features.

Statistics and Probability

CCSS.HHS-IC.A

Understand and evaluate random processes underlying statistical experiments

HHS-IC.A.1

Understand statistics as a process for making inferences about population parameters based on a random sample from that population.



Statistics and Probability

HSS-IC.A.2

Decide if a specified model is consistent with results from a given data-generating process.

HSS-IC.B

Make inferences and justify conclusions from sample surveys, experiments, and observational studies.

HSS-IC.B.3

Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.

HSS-IC.B.4

Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.

HSS-IC.B.5

Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.

Empowered Learner

ISTE 1.1

Students leverage technology to take an active role in choosing, achieving, and demonstrating competency in their learning goals, informed by the learning sciences.


Empowered Learner

ISTE 1.1.d

Students understand the fundamental concepts of technology operations, demonstrate the ability to choose, use and troubleshoot current technologies and are able to transfer their knowledge to explore emerging technologies.

Digital Citizen

ISTE 1.2

Students recognize the rights, responsibilities and opportunities of living, learning and working in an interconnected digital world, and they act and model in ways that are safe, legal and ethical.

STE 1.2.a

Students cultivate and manage their digital identity and reputation and are aware of the permanence of their actions in the digital world.

ISTE 1.2.b

Students engage in positive, safe, legal and ethical behavior when using technology, including social interactions online or when using networked devices.

ISTE 1.2.c

Students demonstrate an understanding of and respect for the rights and obligations of using and sharing intellectual property.

ISTE 1.2.d

Students manage their personal data to maintain digital privacy and security and are aware of data-collection technology used to track their navigation online.



Engineering Design

NGSS HS-ETS1-1

Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.

NGSS HS-ETS1-2

Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.

NGSS HS-ETS1-3

Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.

NGSS HS-ETS1-4

Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

From Molecules to Organisms: Structures & Processes

NGSS MS-LS1-1

Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.

NGSS MS-LS1-2

Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function.





From Molecules to Organisms: Structures & Processes

NGSS MS-LS1-3

Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.

NGSS HS-LS1-4

Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.

NGSS HS-LS1-5

Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.

NGSS HS-LS1-6

Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.

NGSS HS-LS1-7

Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed, resulting in a net transfer of energy.

Ecosystems: Interactions, Energy, & Dynamics

NGSS HS-LS2-1

Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.

Ecosystems: Interactions, Energy, & Dynamics

NGSS HS-LS2-2

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

NGSS HS-LS2-3

Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.

NGSS HS-LS2-4

Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.

NGSS HS-LS2-5

Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.

NGSS HS-LS2-6

Evaluate claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.

NGSS HS-LS2-7

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

NGSS HS-LS2-8

Evaluate evidence for the role of group behavior on individual and species' chances to survive and reproduce.



Heredity: Inheritance & Variation of Traits

NGSS HS-LS3-1

Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

NGSS HS-LS3-2

Make and defend a claim based on evidence that inheritable genetic variations may result from (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/ or (3) mutations caused by environmental factors.

NGSS HS-LS3-3

Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.

Biological Evolution: Unity & Diversity

NGSS HS-LS4-1

Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.

NGSS HS-LS4-2

Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment.

NGSS HS-LS4-3

Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait.



Biological Evolution: Unity & Diversity

NGSS HS-LS4-4

Construct an explanation based on evidence for how natural selection leads to adaptation of populations.

NGSS HS-LS4-5

Evaluate the evidence supporting claims that changes in environmental conditions may result in (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

NGSS HS-LS4-6

Create or revise a simulation to test a solution to mitigate adverse impacts of human activity on biodiversity.

Earth's Place in the Universe

NGSS HS-ESS1-1

Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.

NGSS HS-ESS1-2

Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.

NGSS HS-ESS1-3

Communicate scientific ideas about the way stars, over their life cycle, produce elements.

NGSS HS-ESS1-4

Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.





Earth's Place in the Universe

NGSS HS-ESS1-5

Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.

NGSS HS-ESS1-6

Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.

Earth's Systems

NGSS HS-ESS2-1

Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.

NGSS HS-ESS2-2

Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.

NGSS HS-ESS2-3

Develop a model based on evidence of Earth's interior to describe

the cycling of matter by thermal convection.

NGSS HS-ESS2-4

Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.

NGSS HS-ESS2-5

Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.



Earth's Systems

NGSS HS-ESS2-6

Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.

NGSS HS-ESS2-7

Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth.

Earth & Human Activity

NGSS HS-ESS3-1

Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.

NGSS HS-ESS3-2

Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.

NGSS HS-ESS3-3

Create a computational simulation to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.

NGSS HS-ESS3-4

Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.

NGSS HS-ESS3-5

Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth's systems.





Earth & Human Activity

NGSS HS-ESS3-6

Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.

Matter & its Interactions

NGSS S-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.

NGSS 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.

NGSS HS-PS1-3

Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles.

NGSS HS-PS1-4

Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends upon the changes in total bond energy.

NGSS HS-PS1-5

Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs.





Matter & its Interactions

NGSS HS-PS1-6

Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.

NGSS HS-PS1-7

Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.

NGSS HS-PS1-8

Develop models to illustrate the changes in the composition of the nucleus of the atom and the energy released during the processes of fission, fusion, and radioactive decay.

Motion & Stability: Forces & Interactions

NGSS 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.

NGSS 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.

NGSS HS-PS2-3

Apply science and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.



Motion & Stability: Forces & Interactions

NGSS HS-PS2-4

Use mathematical representations of Newton's Law of Gravitation and Coulomb's Law to describe and predict the gravitational and electrostatic forces between objects.

NGSS HS-PS2-5

Plan and conduct an investigation to provide evidence that an electric current can produce a magnetic field and that a changing magnetic field can produce an electric current.

NGSS HS-PS2-6

Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.

Energy

NGSS 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.

NGSS HS-PS3-2

Develop and use models to illustrate that energy at the macroscopic scale can be accounted for as a combination of energy associated with the motion of particles (objects) and energy associated with the relative positions of particles (objects).

NGSS HS-PS3-3

Design, build, and refine a device that works within given constraints to convert one form of energy into another form of



Energy

NGSS HS-PS3-4

Plan and conduct an investigation to provide evidence that the transfer of thermal energy when two components of different temperature are combined within a closed system results in a more uniform energy distribution among the components in the system (second law of thermodynamics).

HS-PS3-5

Develop and use a model of two objects interacting through electric or magnetic fields to illustrate the forces between objects and the changes in energy of the objects due to the interaction.

Waves & their Applications in Technologies for Information Transfer

NGSS HS-PS4-1

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

NGSS HS-PS4-2

Evaluate questions about the advantages of using digital transmission and storage of information.

NGSS HS-PS4-3

Evaluate the claims, evidence, and reasoning behind the idea that electromagnetic radiation can be described either by a wave model or a particle model, and that for some situations one model is more useful than the other.

NGSS HS-PS4-4

Evaluate the validity and reliability of claims in published materials of the effects that different frequencies of electromagnetic radiation have when absorbed by matter.





Waves & their Applications in Technologies for Information Transfer

NGSS HS-PS4-5

Communicate technical information about how some technological devices use the principles of wave behavior and wave interactions with matter to transmit and capture information and energy.

Economics

Florida SS.912.E.3

Understand the fundamental concepts and interrelationships of the United States economy in the international marketplace.

Ohio E.9

When regions and nations use comparative advantage to produce at the lowest cost and then trade with others, production, consumption and interdependence increase.

Texas E.3

The student understands the reasons for international trade and its importance to the United States and the global economy.

California HSS-PoE.12.4

Students analyze the elements of the U.S. labor market in a global setting.

California HSS-PoE.12.6

Students analyze issues of international trade and explain how the U.S. economy affects, and is affected by, economic forces beyond the United States's borders.

Geography

Florida SS.912.G.2.1

Identify the physical characteristics and the human characteristics that define and differentiate regions.

Florida SS.912.G.2.2

Describe the factors and processes that contribute to the differences between developing and developed regions of the world.

Florida SS.912.G.4.1

Interpret population growth and other demographic data for any given place.

Florida SS.912.G.4.2

Use geographic terms and tools to analyze the push/pull factors contributing to human migration within and among places.

Florida SS.912.G.4.3

Use geographic terms and tools to analyze the effects of migration both on the place of origin and destination, including border areas.

Florida SS.912.G.4.4

Use geographic terms and tools to analyze case studies of issues in globalization.

Florida SS.912.G.4.7

Use geographic terms and tools to explain cultural diffusion throughout places, regions, and the world.

Ohio WG.8

Physical, cultural, economic, and political factors contribute to human migrations.



Geography

Ohio WG.11

Criteria are used to organize regions and as the criteria change, the identified regions change.

Ohio WG.12

The characteristics of regions change over time and there are consequences related to those changes.

Ohio WG.13

There are interconnections within and among physical and human regions.

Ohio WG.14

Regions are used as a basis to analyze global geographic issues.

Ohio WG.17

Globalization has shaped new cultural, economic, and political ideas and entities.

Texas 113.43.c.1

The student understands how geography and processes of spatial exchange (diffusion) influenced events in the past and helped to shape the present.

Texas 113.43.c.5

The student understands how political, economic, and social

processes shape cultural patterns and characteristics in various places and regions.

Texas 113.43.c.7

The student understands the growth, distribution, movement, and characteristics of world population.



Geography

Texas 113.43.c.9

The student understands the concept of region as an area of Earth's surface with related geographic characteristics.

Texas 113.43.c.17

The student understands the distribution, patterns, and characteristics of different cultures.

Government & Civics

Florida SS.912.CG.2.7

Analyze the impact of civic engagement as a means of preserving or reforming institutions.

Florida SS.912.CG.2.8

Explain the impact of political parties, interest groups, media and individuals on determining and shaping public policy.

Florida SS.912.CG.3.7

Analyze the structures, functions and processes of the judicial branch as described in Article III of the U.S. Constitution.

Florida SS.912.CG.3.8

Describe the purpose and function of judicial review in the

American constitutional government.

Florida SS.912.CG.3.11

Evaluate how landmark Supreme Court decisions affect law, liberty and the interpretation of the U.S. Constitution. Students will recognize landmark Supreme Court cases.

Government & Civics

Florida SS.912.CG.4.2

Explain how the United States uses foreign policy to influence other nations.

Florida SS.912.CG.4.3

Explain how U.S. foreign policy supports democratic principles and protects human rights around the world.

Ohio AG.1

Opportunities for civic engagement within the structures of government are made possible through political and public policy processes.

Ohio AG.2

Political parties, interest groups and the media provide opportunities for civic involvement through various means.

Ohio AG.3

Issues can be analyzed through the critical use of credible sources.

Ohio AG.7

Constitutional government in the United States has changed over time as a result of amendments to the U.S. Constitution, Supreme Court decisions, legislation and informal practices.

Ohio AG.12

Law and public policy are created and implemented by three branches of government; each functions with its own set of powers and responsibilities.

Ohio AG.13

The political process creates a dynamic interaction among the three branches of government in addressing current issues.



Government & Civics

Ohio AG.18

A variety of entities within the three branches of government, at all levels, address public policy issues that arise in domestic and international affairs.

Ohio AG.19

Individuals and organizations play a role within federal, state and local governments in helping to determine public (domestic and foreign) policy.

Texas 113.44.c.2

The student understands the roles played by individuals, political parties, interest groups, and the media in the U.S. political system, past and present.

Texas 113.44.d.7

The student understands the structure and functions of the government created by the U.S. Constitution.

Texas 113.44.d.10

The student understands the role of political parties in the U.S. system of government.

Texas 113.44.d.12

The student understands the rights that are protected and secured by the U.S. Constitution and Bill of Rights.

California HSS-PoAD.12.4

Students analyze the unique roles and responsibilities of the three branches of government as established by the U.S. Constitution.

California HSS-PoAD.12.7

Students analyze and compare the powers and procedures of the national, state, tribal, and local governments.



Government & Civics

California HSS-PoAD.12.8

Students evaluate and take and defend positions on the influence of the media on American political life.

American History

Florida SS.912.A.7.1

Identify causes for Post-World War II prosperity and its effects on American society.

Florida SS.912.A.7.4

Evaluate the success of 1960s era presidents' foreign and domestic policies.

Florida SS.912.A.7.5

Compare nonviolent and violent approaches utilized by groups (African Americans, women, Native Americans, Hispanics) to achieve civil rights.

Florida SS.912.A.7.9

Examine the similarities of social movements (Native Americans, Hispanics, women, anti-war protesters) of the 1960s and 1970s.

Florida SS.912.A.7.10

Analyze the significance of Vietnam and Watergate on the government and people of the United States.

Florida SS.912.A.7.11

Analyze the foreign policy of the United States as it relates to Africa, Asia, the Caribbean, Latin America, and the Middle East.

Florida SS.912.A.7.13

Analyze the attempts to extend New Deal legislation through the Great Society and the successes and failures of these programs to promote social and economic stability.



American History

Florida SS.912.A.7.16

Examine changes in immigration policy and attitudes toward immigration since 1950.

Ohio AH.22

Use of atomic weapons changed the nature of war, altered the balance of power and began the nuclear age.

Ohio AH.23

The United States followed a policy of containment during the Cold War in response to the spread of communism.

Ohio AH.25

The Cold War and conflicts in Korea and Vietnam influenced domestic and international politics.

Ohio AH.26

The collapse of communist governments in Eastern Europe and the U.S.S.R. brought an end to the Cold War.

Ohio AH.27

Following World War II, the United States experienced a struggle for racial and gender equality and the extension of civil rights.

Ohio AH.28

The postwar economic boom and advances in science and

technology, produced changes in American life.

Texas 113.41.d.8

The student understands the impact of significant national and international decisions and conflicts in the Cold War on the United States.



American History

Texas 113.41.d.9

The student understands the impact of the American civil rights movement.

Texas 113.41.d.10

The student understands the impact of political, economic, and social factors in the U.S. from the 1970s through 1990.

California HSS-11.8

Students analyze the economic boom and social transformation of post–World War II America.

California HSS-11.9

Students analyze U.S. foreign policy since World War II.

California HSS-11.10

Students analyze the development of federal civil rights and voting rights.

California HSS-11.11

Students analyze the major social problems and domestic policy issues in contemporary American society.

World History

Florida SS.912.W.7.5

Describe the rise of authoritarian governments in the Soviet Union, Italy, Germany, and Spain, and analyze the policies and main ideas of Vladimir Lenin, Joseph Stalin, Benito Mussolini, Adolf Hitler, and Francisco Franco.

World History

Florida SS.912.W.7.6

Analyze the restriction of individual rights and the use of mass terror against populations in the Soviet Union, Nazi Germany, and occupied territories.

Florida SS.912.W.7.7

Trace the causes and key events related to World War II.

Florida SS.912.W.7.8

Explain the causes, events, and effects of the Holocaust (1933-1945) including its roots in the long tradition of anti-Semitism, 19th century ideas about race and nation, and Nazi dehumanization of the Jews and other victims.

Florida SS.912.W.7.10

Summarize the causes and effects of President Truman's decision to drop the atomic bombs on Japan.

Florida SS.912.W.7.11

Describe the effects of World War II.

Florida SS.912.W.8.1

Identify the United States and Soviet aligned states of Europe, and contrast their political and economic characteristics.

Florida SS.912.W.8.2

Describe characteristics of the early Cold War.

Florida SS.912.W.8.4

Summarize the causes and effects of the arms race and proxy wars in Africa, Asia, Latin America, and the Middle East.

Florida SS.912.W.8.5

Identify the factors that led to the decline and fall of communism in the Soviet Union and Eastern Europe.



World History

Florida SS.912.W.9.1

Identify major scientific figures and breakthroughs of the 20th century, and assess their impact on contemporary life.

Florida SS.912.W.9.2

Describe the causes and effects of post-World War II economic and demographic changes.

Ohio MWH.14

The consequences of World War I and the worldwide depression set the stage for the Russian Revolution, the rise of totalitarianism, aggressive Axis expansion and the policy of appeasement which in turn led to World War II.

Ohio MWH.15

Oppression and discrimination resulted in the Holocaust during World War II.

Ohio MWH.16

World War II devastated most of Europe and Asia, led to the occupation of Eastern Europe and Japan, and began the atomic age.

Ohio MWH.17

The United States and the Soviet Union became superpowers and competed for global influence.

Ohio MWH.18

Treaties and agreements at the end of World War II changed national boundaries and created multinational organizations.

Ohio MWH.20

Postwar global politics led to the rise of nationalist movements in Africa and Southeast Asia.



World History

113.42.c.12

The student understands the causes and impact of World War II.

113.42.c.13

The student understands the impact of major events associated with the Cold War and independence movements.

California HSS-10.8

Students analyze the causes and consequences of World War II.

California HSS-10.9

Students analyze the international developments in the post–World War II world.

