

Eighth Grade

Reading: Literature (A) - (Fiction) & Informational Text (B) - (Non-Fiction)

Standards Statement

1. **(A) (B)** Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.

Define textual evidence.

Analyze an author's words and tell the textual evidence that supports the explicit and the inferences.

Standards Statement

2. **(A) (B)** 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.

Identify the theme (central idea) and analyze its development through characters, setting, and plot.

Write an objective summary of the text.

Standards Statement

3. **(A)** Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.

Identify how particular lines in a story propels the action, reveals aspects of the character or provokes a decision.

Identify how incidents in a story propels the action, reveals aspects of the character or provokes a decision.

(B) Analyze how a text makes connections among and distinctions between individuals, ideas, or events (e.g., through comparisons, analogies, or categories).

Explain how a text makes connections among and distinctions between individuals, ideas, or events.

Standards Statement

4. **(A) (B)** 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.

Identify figurative and connotative meanings in a text.

Analyze the impact of word choices on the tone of a text.

Define and identify analogies and allusions in a to other texts.

Standards Statement

5. **(A)** Compare and contrast the structure of two or more texts and analyze how the differing structure of each text contributes to its meaning and style.

Compare and contrast the structure of two or more texts and explain how the structure affects the meaning and style.

Eighth Grade

Reading: Literature (A) - (Fiction) & Informational Text (B) - (Non-Fiction)- Cont.

(B) Analyze in detail the structure of a specific paragraph in a text, including the role of particular sentences in developing and refining a key concept.

Identify a specific paragraph and sentence that helps to develop a key concept.

Standards Statement

6. **(A)** 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.

Show how different points of view of the characters can create different effects such as suspense or humor.

(B) Determine an author's point of view or purpose in a text and analyze how the author acknowledges and responds to conflicting evidence or viewpoints.

Identify the author's point of view and explain any responses to conflicting evidence or viewpoints.

Standards Statement

7. **(A)** Analyze the extent to which a filmed or live production of a story or drama stays faithful to or departs from the text or script, evaluating the choices made by the director or actors.

Identify the similarities and the differences in the same story that is written, filmed or on stage.

(B) Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.

Evaluate the advantages and disadvantages of using different mediums to present a topic or idea.

Standards Statement

8. **(A)** (Not applicable to literature).

(B) Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced.

Examine and evaluate an author's claims as to the soundness of the reasoning and relevance of the evidence.

Standards Statement

9. **(A)** Analyze how a modern work of fiction draws on themes, patterns or events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new.

Identify a modern fiction story's theme has relationship to a past story (i.e. Bible, fairy tales).

Eighth Grade

Reading: Literature (A) - (Fiction) & Informational Text (B) - (Non-Fiction)- Cont.

(B) Analyze a case in which two or more texts provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation.

Show how two or more texts on the same topic can have different interpretations.

Standards Statement

10. **(A)** By the end of the year, read and comprehend literature, including stories, dramas, and poems, at the high end of grades 6-8 text complexity band independently and proficiently.

Read and comprehend literature at the high end of the 6-8 grade band.

(B) By the end of the year, read and comprehend literary nonfiction at the high end of the grades 6-8 text complexity band independently and proficiently.

Read and comprehend nonfiction at the high end of the 6-8 grade band.

Writing

Standards Statement

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

- a. Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
- b. Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text.
- c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
- d. Establish and maintain a formal style.
- e. Provide a concluding statement or section that follows from and supports the argument presented.

Write an argument using a formal style that includes logical reasoning, relevant evidence from credible, sources, smooth transitions, and a concluding statement.

Standards Statement

2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

- a. Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.
- b. Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.
- c. Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.
- d. Use precise language and domain-specific vocabulary to inform about or explain the topic.
- e. Establish and maintain a formal style.
- f. Provide a concluding statement or section that follows from and supports the information or explanation presented.

Eighth Grade

Writing – Cont.

Write an informative/explanatory text that examines a topic by providing an introduction, using organized ideas, supporting details and a logical conclusion.

Insert multimedia when appropriate.

Standards Statement

3. Write narratives to develop real or imagined experiences or events using effective technique, relevant descriptive details, and well-structured event sequences.
- a. Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters; organize an event sequence that unfolds naturally and logically.
 - b. Use narrative techniques, such as dialogue, pacing, description, and reflection, to develop experiences, events, and/or characters.
 - c. Use a variety of transition words, phrases, and clauses to convey sequence, signal shifts from one time frame or setting to another, and show the relationships among experiences and events.
 - d. Use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events.
 - e. Provide a conclusion that follows from and reflects on the narrated experiences or events.

Write a narrative, real or imagined, using effective techniques, descriptive details and events, and a conclusion.

Standards Statement

4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. (Grade-specific expectations for writing types are defined in standards 1-3.).

Write a clear and coherent piece that is appropriate to task, purpose and audience.

Standards Statement

5. With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.

Recognize when I need help from my peers and adults to strengthen my writing or use a new approach.

Standards Statement

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.

Use technology to help me with my writing as well to collaborate with others and publish my writing.

Eighth Grade

Writing – Cont.

Standards Statement

7. Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.

Through the use of several resources conduct a short resources project.

Standards Statement

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

Gather relevant information from both credible print and digital resources .

Avoid plagiarism through quotes or paraphrasing.

Follow the rules for creating a bibliography.

Standards Statement

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

a. Apply *grade 8 Reading standards* to literature (e.g., “Analyze how a modern work of fiction draws on themes, patterns of events, or character types from myths, traditional stories, or religious works such as the Bible, including describing how the material is rendered new”),

b. Apply *grade 8 Reading standards* to literary nonfiction (e.g., “Delineate and evaluate the argument and specific claims in a text, assessing whether the reasoning is sound and the evidence is relevant and sufficient; recognize when irrelevant evidence is introduced”).

Identify a modern fiction story’s theme has relationship to a past story (i.e. Bible, fairy tales).

Show how two or more texts on the same topic can have different interpretations.

Standards Statement

10. Write routinely over extended time frames (time for research, reflections, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.

Routinely write over extended periods of time for an assigned task.

Routinely write over short periods of time for an assigned task.

Eighth Grade

Speaking & Listening

Standards Statement

1. Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 8 topics, texts, and issues*, building on other's ideas and expressing their own clearly.
 - a. Come to discussions prepared having read or researched material under study; explicitly draw on that preparation by referring to evidence on the topic, text, or issue to probe and reflect on ideas under discussion,
 - b. Follow rules for collegial discussions and decision-making, track progress toward specific goals and deadlines, and define individual roles as needed,
 - c. Pose questions that connect the ideas of several speakers and respond to others' questions and comments with relevant evidence, observations, and ideas,
 - d. Acknowledge new information expressed by others, and, when warranted, qualify or justify their own views in light of the evidence presented.

Listen to suggestions to help my writing.

Follow the rules for friendly discussions.

Ask appropriate questions.

Analyze new information and when justified revisit my views.

Standards Statement

2. Analyze the purpose of information presented in diverse media and formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.

Analyze information found in diverse media and evaluate the reason for the presentation.

Standards Statement

3. Delineate a speaker's argument and specific claims, evaluating the soundness of the reasoning and relevance and sufficiency of the evidence and identifying when irrelevant evidence is introduced.

Listen to a speaker's argument and looking for sound reasoning and relevant evidence.

Identify irrelevant evidence in an argument.

Standards Statement

4. Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation.

Present the key points logically with relevant evidence using appropriate eye contact, adequate volume and clear pronunciation.

Eighth Grade

Speaking & Listening – Cont.

Standards Statement

5. Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.

Use multimedia and visual displays in my presentation when appropriate.

Standards Statement

6. Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.

Write a speech that is appropriate to its meaning and audience using formal English when necessary.

Language

Standards Statement

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

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

b. Form and use verbs in the active and passive voice,

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

d. Recognize and correct appropriate shifts in verb voice and mood.

Define gerunds and their function in a sentence.

Define participles and their function in a sentence.

Define infinitives and their function in a sentence.

Explain the difference between active and passive voice.

Use active and passive voice with accuracy.

Explain and give examples of verbs in the indicative mood.

Explain and give examples of verbs in the interrogative mood.

Explain and give examples of verbs in the conditional mood.

Explain and give examples of verbs in the subjunctive mood.

Identify and correct inappropriate shifts in verb voice and mood.

Eighth Grade

Language – Cont.

Standards Statement

2. Demonstrate command of the conventions of Standard English capitalization punctuation, and spelling when writing.
- a. Use punctuation (comma, ellipsis, dash) to indicate a pause or break,
 - b. Use an ellipsis to indicate an omission,
 - c. Spell correctly.

Use capitalization correctly.

Define ellipsis.

Use commas, ellipsis, and dashes to indicate a pause or break.

Correctly use ellipsis.

Spell grade-appropriate words correctly.

Standards Statement

3. Use knowledge of language and its conventions when writing, speaking, reading, or listening.
- a. Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects (e.g., emphasizing the actor or the action; expressing uncertainty or describing a state contrary to fact).

Know when to use active or passive voice to create a particular effect.

Standards Statement

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.
- 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,
 - b. Use common, grade-appropriate Greek or Latin affixes and roots as clues to the meaning of a word (e.g., *precede*, *recede*, *secede*),
 - c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning or its part of speech,
 - d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary).

Use context clues to help determine the meaning of a word or phrase.

Use Greek or Latin affixes or roots to help determine the meaning of a word.

Use dictionaries or reference materials to help determine or clarify the meaning of a word.

Verify the inferred meaning of a word by checking a dictionary or other reference material.

Eighth Grade

Language – Cont.

Standards Statement

5. Demonstrate understanding of figurative language, word relationships, and nuances in word meanings.
- a. Interpret figures of speech (e.g., verbal irony, puns) in context,
 - b. Use the relationship between particular words to better understand each of the words,
 - c. Distinguish among the connotations (associations) of words with similar denotations (definitions) (e.g., *bullheaded*, *willful*, *firm*, *persistent*, *resolute*).

Interpret figures of speech in context.

Understand the difference between connotations of words with similar denotations.

Standards Statements

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.

Accurately use grade-appropriate and domain-specific words or phrases.

Eighth Grade

Physical Earth (ESS)

Content Statement

1. The composition and properties of Earth's interior are identified by the behavior of seismic waves.

Understand how scientists know about the structure and composition of the interior of Earth without being able to see it.

Use seismic data, graphics, charts, digital displays and cross sections to study Earth's interior.

Use data from the refraction and reflection of seismic waves to demonstrate how scientists have determined the different layers of Earth's interior.

Explain what planetary differentiation is and when it occurred in order to form Earth and the other planets in the solar system.

Identify the different composition and consistency of each layer of Earth's interior (inner and outer core, upper and lower mantle, crust).

Research new discoveries and technological advances relating to understanding Earth's interior.

Identify plates and plate boundaries using volcanic activity, earthquakes, tsunamis, geysers, faults, oceanic vents, island arcs, hot springs and rift valleys.

Content Statement

2. Earth's crust consists of major and minor tectonic plates that move relative to each other.

Describe the general history of plate tectonics, including the early observations, discoveries and ideas that combined, that eventually lead to the modern theory of plate tectonics.

Differentiate between plate tectonics and continental drift.

Identify the standard geologic features or events that occur at each of the boundaries (e.g., oceanic trenches are formed at converging plate boundaries, oceanic ridges form at diverging plate boundaries).

Use physical maps, cross sections, models (virtual or 3D) and data to identify plate boundaries, movement at the boundary and the resulting feature or event.

Explore the relationship between heat from Earth's core, convection in the magma and plate movement.

Investigate world distribution of tectonic activity of possible interest (e.g., Ring of Fire, San Andreas Fault, Mid-Atlantic Ridge, Mariana Trench, Hawaiian Islands, New Madrid Fault System).

Eighth Grade

Physical Earth (ESS) – Cont.

Content Statement	
3.	A combination of constructive and destructive geologic processes formed Earth's surface.
<input type="checkbox"/>	Identify examples of destructive geologic processes (e.g., flooding, mass wasting, volcanic activity, glacial movement, earthquakes, tsunamis).
<input type="checkbox"/>	Describe the characteristics of rocks and soil, climate, location, topography and geologic processes.
<input type="checkbox"/>	Explain the interactions between the hydrosphere and lithosphere as they relate to erosional events (e.g., flooding, mass wasting).
<input type="checkbox"/>	Distinguish between major geologic processes (e.g., tectonic activity, erosion, deposition) and the resulting feature on Earth's surface.
<input type="checkbox"/>	Use topographic, physical and aerial maps, cross sections, field trips, virtual settings and other technologies to demonstrate the structure and formation of the features on the Earth's surface.
<input type="checkbox"/>	Study factors that affect the patterns and features associated with streams and floodplains (e.g., discharge rates, gradients, velocity, erosion, deposition), glaciers (e.g., moraines, outwash, tills, erratic, kettles, eskers), tectonic activity, coastlines, flooding and deserts.
<input type="checkbox"/>	Use technology (remote sensing, satellite data, LANDSAT) to access real-time photographs and graphics related to landforms and features.
Content Statement	
4.	Evidence of the dynamic changes of Earth's surface through time is found in the geologic record.
<input type="checkbox"/>	Describe the methods used by scientists to determine that the age of Earth is approximately 4.6 billion years.
<input type="checkbox"/>	Recognize the immensity of the geologic time scale.
<input type="checkbox"/>	Use superposition, crosscutting relationships and index fossils to understand relative age.
<input type="checkbox"/>	Describe radiometric dating and its role in absolute age.
<input type="checkbox"/>	Explain how uniformitarianism has helped scientists interpret the environmental conditions that existed throughout Earth's history.
<input type="checkbox"/>	Describe how scientists use fossil evidence to indicate specific environments and climate conditions that help interpret the geologic record.
<input type="checkbox"/>	Use ice core sampling and evidence from the geologic record to relate climate history to present-day climate issues.
<input type="checkbox"/>	Use actual data to generate geologic maps of local or statewide formations.

Eighth Grade

Physical Earth (ESS) – Cont.

- Use field studies and/or geologic research to identify local formations and the environment that existed at the time of the formation.
- Analyze and interpret data to draw conclusions about geologic history.

Species and Reproduction (LS)

Content Statement

5. Reproduction is necessary for the continuation of every species.

- Recognize that reproduction is necessary for the continuation of every species.
- Compare the end products of mitotic and meiotic cell divisions as they relate to asexual and sexual reproduction.
- Investigate and compare of offspring to parents in sexual and asexual reproduction.
- Describe the features of sexual and asexual reproduction.
- Explain why genetic variation is a survival advantage.

Content Statement

6. Diversity of species occurs through gradual processes over many generations. Fossil records provide evidence that changes have occurred in number and types of species.

- Describe how to determine the relative age of fossils found in sedimentary rock.
- Create a timeline that illustrates the relative ages of fossils of a particular organism in sedimentary rock layers.
- Explain why variation within a population can be advantageous for a population of organisms.
- Compare and contrast the ability of an organism to survive under different environmental conditions.
- Use data and evidence from the fossil record to develop further concepts of extinction, biodiversity and the diversity of species.
- Understand that the fossil record documents the variation in a species that may have resulted from changes in the environment.
- Explain how diversity can result from sexual reproduction.
- Use evidence from geologic and fossil records to infer what the environment was like the time of deposition.
- Explain how and why variations in appearance and behavior of an organism can be very different from their ancestors.

Eighth Grade

Species and Reproduction (LS) – Cont.

Content Statement

7. The characteristics of an organism are a result of inherited traits received from parent(s).

- Describe how genes, chromosomes and inherited traits are connected.
- Describe the characteristics and transfer of dominant and recessive traits.
- Compare the exchange of genetic information during sexual and asexual reproduction.
- Use a Punnett square to predict the genetic outcome of the offspring produced.
- Understand that traits are determined by instructions encoded in DNA, which forms genes.
- Demonstrate Mendel's two laws (Law of Segregation, Law of Independent Assortment) in a variety of organisms.
- Investigate dominant, recessive, and codominant traits.
- Conduct a pedigree analysis limited to dominant, recessive, or codominance of one trait.
- Conduct a long-term investigation to analyze and compare characteristics passed on from parent to offspring through sexual and asexual reproduction.
- Ask questions about the phenotypes that appear in the resulting generations and what they infer about genotypes of the offspring.

Forces and Motion (PS)

Content Statement

8. Forces between objects act when the objects are in direct contact or when they are not touching.

- Build an electromagnet to investigate magnetic properties and fields.
- Recognize that the electrical force increases as the electrical charges increase.
- Recognize that the electrical force decreases when the distance between the charges increases.
- Given a simple interaction between two objects that are not touching (e.g., a ball falling to the ground, a magnet and a steel cabinet, hair and brush experiencing static), identify the objects involved in the interaction and give the direction of the force on each object.
- Use the field model to explain why an apple will fall toward Earth.
- Represent the effect of charges and distance on gravitational forces graphically.
- Explain how mass affects gravitational forces on objects.
- Demonstrate the difference between mass and weight.
- Explain how generators and motors produce their own magnetic field when an electric current flows through it.

Eighth Grade

Forces and Motion (PS) – Cont.

Use a field model to explain how 2 objects can exert forces on each other without touching.

Explain how distance affects strength of a magnetic field.

Explain how objects attract and repel each other in a electric field, magnetic field and gravitational field.

Content Statement

9. Forces have magnitude and direction.

Create a force diagram to represent the forces acting on an object.

Describe the motion of an object based on different reference points (e.g., a pencil held in someone's hand may appear to be at rest, but to an observer in a car speeding by, the pencil may appear to be moving backward).

Recognize that an unbalanced force acted on an object changes that object's speed and/or direction.

Recognize that free fall results from the gravitational attraction between Earth and an object.

Predict the combined effect of several forces on an object at rest or an object moving in a straight line (e.g., speed up, slow down, turn left, turn right).

Investigate what happens to a stationary object when its net force equals zero.

Investigate what happens to a moving object when its net force equals zero.

Investigate what happens to a stationary object when its net force does not equal zero.

Investigate what happens to a moving object when its net force does not equal zero.

Experiment with kinetic friction and drag by using an object that has limited friction (e.g., a puck on an air hockey table, dry ice on a surface).

Content Statement

10. There are different types of potential energy.

Investigate to determine how height and mass of an object affect gravitational potential energy.

Experiment with an object to change its elastic potential energy.

Experiment with the different types of potential energy (gravitational potential, elastic potential, chemical potential, electrical potential and magnetic potential) to explore the relationship of energy transfer and springs, magnets or static electricity.

Describe the different types of potential energy.

Recognize that rearranging atoms into new positions to form new substances (chemical reaction) is evidence that the chemical potential energy has most likely changed.

Eighth Grade

History

Content Statement & Elaborations

1. Primary and secondary sources are used to examine events from multiple perspectives and to present and defend a position.

Analyze primary and secondary sources to describe the different perspectives on an issue relating to a historical event in U.S. history and to present and defend a position.

Content Statement & Elaborations

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

Explain the economic and religious reasons for the exploration and colonization of North America by Europeans.

Content Statement & Elaborations

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

Explain how competition for control of territory and resources in North America led to conflicts (e.g., King William's War, Queen Anne's War, King George's War, the French and Indian War) among colonizing powers (British, French, Spanish, Swedes, Dutch).

Content Statement & Elaborations

4. The practice of race-based slavery led to the forced migration of Africans to the American colonies. Their knowledge and traditions contributed to the development of those colonies and the United States.

Explain how the practice of race-based slavery led to the forced migration of Africans to the American colonies.

Content Statement & Elaborations

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.

Connect the ideas of the Enlightenment and dissatisfaction with colonial rule to the writing of the Declaration of Independence and launching of the American Revolution.

Content Statement & Elaborations

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

Analyze the new political, social and economic relationships for the American people that resulted from the American Revolution.

Eighth Grade

History – Cont.

Content Statement & Elaborations

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

Explain how the problems arising under the Articles of Confederation (maintaining national security, creating a stable economic system, paying war debts, collecting revenue, regulating trade, correcting flaws in the central government) led to debate over the adoption of the U.S. Constitution.

Content Statement & Elaborations

8. Actions of early presidential administrations established a strong federal government, provided peaceful transitions of power and repelled a foreign invasion.

Explain how the actions of early presidential administrations established a strong federal government, provided peaceful transitions of power and repelled a foreign invasion.

Content Statement & Elaborations

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

Describe how the United States added to its territory through treaties and purchases.

Content Statement & Elaborations

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

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

Content Statement & Elaborations

11. 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.

Distinguish between the positions of the sections of the United States on sectional issues of the 1820s through the 1850s.

Illustrate how disputes over the nature of federalism fed into sectional issues and helped lead to the American Civil War.

Content Statement & Elaborations

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

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

Eighth Grade

Geography

Content Statement & Elaborations

13. Modern and historical maps and other geographic tools are used to analyze how historic events are shaped by geography.

- Analyze the ways in which historical events are shaped by geography using modern and historical maps and other geographic tools.

Content Statement & Elaborations

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

- Analyze how the availability of natural resources contributed to the geographic and economic expansion of the United States and explain how this sometimes resulted in unintended environmental consequences.

Content Statement & Elaborations

15. 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.

- Describe the movement of people, products and ideas that resulted in new patterns of settlement and land use and analyze its impact on the political and economic development of the United States.

Content Statement & Elaborations

16. Cultural biases, stereotypes and prejudices had social, political and economic consequences for minority groups and the population as a whole.

- Explain how cultural biases, stereotypes and prejudices had social, political and economic consequences for minority groups and the population as a whole.

Content Statement & Elaborations

17. Americans began to develop a common national identity among its diverse regional and cultural populations based on democratic ideals.

- Identify the developments that helped bring about a common national identity for Americans and describe the democratic ideals around which that identity is based.

Government

Content Statement & Elaborations

18. Participation in social and civic groups can lead to the attainment of individual and public goals.

- Explain how participation in social and civic groups can lead to the attainment of individual and public goals.

Eighth Grade

Government – Cont.

Content Statement & Elaborations

19. Informed citizens understand how media and communication technology influence public opinion.

- Explain how media and communication technology influence public opinion.

Content Statement & Elaborations

20. The U.S. Constitution established a federal system of government, a representative democracy and a framework with separation of powers and checks and balances.

- Describe and give examples of how the U.S. Constitution created a federal system, representative democracy, separation of powers, and checks and balances.

Content Statement & Elaborations

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

- Describe and evaluate how the U.S. Constitution (including the Bill of Rights) protects citizens' rights by limiting the powers of government.

Economics

Content Statement & Elaborations

22. Choices made by individuals, businesses and governments have both present and future consequences.

- Analyze how choices made by individuals, businesses and governments have both present and future consequences. Including these historical decisions based in part on economic choices:
- Exploring new lands
 - Importing slaves to the Americas
 - Imposing new taxes on American colonies
 - Purchasing the Louisiana Territory
 - Building textile mills using water power
 - Setting up a ferry business or building a toll bridge
 - Imposing tariffs

Content Statement & Elaborations

23. The Industrial Revolution fundamentally changed the means of production as a result of improvements in technology, use of new power resources, the advent of interchangeable parts and the shift from craftwork to factory work.

- Analyze how the Industrial Revolution in the late 18th and early 19th centuries changed the means of production.

Eighth Grade

Economics – Cont.

Content Statement & Elaborations

24. Governments can impact markets by means of spending, regulations, taxes and trade barriers.

Explain the impact government can have on markets by spending, regulating, taxing and creating trade barriers.

Content Statement & Elaborations

25. The effective management of one's personal finances includes using basic banking services (e.g., savings accounts and checking accounts) and credit.

Demonstrate how effective management of one's personal finances includes using basic banking services (e.g., savings accounts, checking accounts) and credit.

Eighth Grade

The Number System

Cluster

1. Know that there are numbers that are not rational, and approximate them by rational numbers.

- Know that numbers that are not rational are called irrational.
- Understand informally that every number has a decimal expansion.
- Show, for rational numbers, that the decimal expansion repeats eventually.
- Convert a decimal expansion which repeats eventually into a rational number.
- Use rational approximations of irrational numbers to compare the size of irrational numbers.
- Locate irrational numbers approximately on a number line diagram.
- Estimate the value of irrational expressions (e.g., π^2). *For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.*

Expression & Equations

Cluster

2. Work with radicals and integer exponents.

- Know and apply the properties of integer exponents to generate equivalent numerical expressions. *For example, $3^2 \times 3^{-5} = 3^{-3} = 1/3^3 = 1/27$.*
- Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number.
- Evaluate square roots of small perfect squares and cube roots of small perfect cubes.
- Know that $\sqrt{2}$ is irrational.
- Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. *For example, estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9 , and determine that the world population is more than 20 times larger.*
- Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used.
- Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading).
- Interpret scientific notation that has been generated by technology.

Eighth Grade

Expression & Equations – Cont.

Cluster

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

- Graph proportional relationships, interpreting the unit rate as the slope of the graph.
- Compare two different proportional relationships represented in different ways. *For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.*
- Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane.
- Derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b .

Cluster

4. Analyze and solve linear equations and pairs of simultaneous linear equations.

- Solve linear equations in one variable.
 - 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).
 - b. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
- Analyze and solve pairs of simultaneous linear equations.
 - a. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.
 - b. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. *For example, $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6.*
 - c. Solve real-world and mathematical problems leading to two linear equations in two variables. *For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.*

Functions

Cluster

5. Define, evaluate, and compare functions.

- Understand that a function is a rule that assigns to each input exactly one output.

Eighth Grade

Functions – Cont.

- The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
- Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.*
- Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line.
- Give examples of functions that are not linear. *For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points $(1,1)$, $(2,4)$ and $(3,9)$, which are not on a straight line.*

Cluster

6. Use functions to model relationships between quantities.

- Construct a function to model a linear relationship between two quantities.
- Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph.
- Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
- Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear).
- Sketch a graph that exhibits the qualitative features of a function that has been described verbally.

Geometry

Cluster

7. Understand congruence and similarity using physical models, transparencies, or geometry software.

- Verify experimentally the properties of rotations, reflections, and translations:
 - a. Lines are compared to lines, and line segments to line segments of the same length.
 - b. Angles are compared to angles of the same measure.
 - c. Parallel lines are compared to parallel lines.
- 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.

Eighth Grade

Geometry – Cont.

- Describe the effect of dilations, translations, rotations, and reflections on two-dimensional figures using coordinates.
- 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 dilation.
- Given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.
- Use informal arguments to establish facts about the angle sum and exterior angle of triangles.
- Use informal arguments to establish facts about the angles created when parallel lines are cut by a transversal.
- Use informal arguments to establish facts about 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.*

Cluster

8. Understand and apply the Pythagorean Theorem.

- Explain a proof of the Pythagorean Theorem and its converse.
- Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
- Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.

Cluster

9. Solve real-world and mathematical problems involving volume of cylinders, cones, and spheres.

- Know the formulas for the volumes of cones, cylinders, and spheres and use them to solve-real world and mathematical problems.

Statistics & Probability

Cluster

10. Investigate patterns of association in bivariate data.

- Construct and interpret scatter plots for bivariate measurement data (data with two variables) to investigate patterns of association between two quantities.
- Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
- Know that straight lines are widely used to model relationships between two quantitative variables.

Eighth Grade

Statistics & Probability

- | | |
|--------------------------|---|
| <input type="checkbox"/> | Informally fit a straight line for scatter plots that suggest a linear association, and informally assess the model fit by judging the closeness of the data points to the line. |
| <input type="checkbox"/> | Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. <i>For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height.</i> |
| <input type="checkbox"/> | Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table (a table that displays data in two different categories). |
| <input type="checkbox"/> | Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. |
| <input type="checkbox"/> | Use relative frequencies calculated for rows or columns to describe possible association between the two variables. <i>For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?</i> |