



9th-12th Grade PA Standards

English Language Arts	Social Studies	Science	Math
<p>CC.1.2.9-10.A Determine a central idea of a text and analyze 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.</p> <p>CC.1.2.9-10.B Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences and conclusions based on an author's explicit assumptions and beliefs about a subject.</p> <p>CC.1.2.9-10.C Apply appropriate strategies to analyze, interpret, and evaluate how an author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.</p> <p>CC.1.2.9-10.D Determine an author's particular point of view and analyze how rhetoric advances the point of view.</p> <p>CC.1.2.9-10.E Analyze in detail how an author's ideas or claims are developed and refined by particular sentences, paragraphs, or larger portions of a text.</p> <p>CC.1.2.9-10.F Analyze how words and phrases shape meaning and tone in texts.</p> <p>CC.1.2.9-10.J 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.</p> <p>CC.1.2.9-10.L Read and comprehend literary non-fiction and informational text on grade level, reading independently and proficiently.</p> <p>CC.1.3.9-10.A 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.</p>	<p>5.1.9.C Analyze the principles and ideals that shape United States government.</p> <p>Liberty / Freedom Democracy Justice Equality</p> <p>5.1.9.D Compare and contrast the basic principles and ideals found in significant documents:</p> <p>Declaration of Independence United States Constitution Bill of Rights Pennsylvania Constitution</p> <p>5.3.9.A Examine the process of checks and balances among the three branches of government, including the creation of law.</p> <p>5.3.9.C Explain how government agencies create, amend and enforce policies in local, state, and national governments.</p> <p>5.3.9.D Explain how citizens participate in choosing their leaders through political parties, campaigns, and elections.</p> <p>5.3.9.F Explain the Supreme Court's role in interpreting the U.S. Constitution.</p> <p>Individual rights States' rights Civil rights</p> <p>6.1.9.B Identify the origin of resources and analyze the impact on the production of goods and services.</p> <p>Analyze how unlimited wants and limited resources affect decision making.</p> <p>6.1.9.D Explain how incentives cause people to change their behavior in predictable ways.</p> <p>7.1.9.A Explain and illustrate how geographic tools are used to organize and interpret information about people, places, and environments.</p> <p>7.1.9.B</p>	<p>3.1.10.A5 Relate life processes to sub-cellular and cellular structures to their functions.</p> <p>3.1.10.A2 Explain cell processes in terms of chemical reactions and energy changes.</p> <p>3.4.10.E7 Evaluate structure design as related to function, considering such factors as style, convenience, safety, and efficiency.</p> <p>3.4.10.C1 Apply the components of the technological design process.</p> <p>3.4.10.C2 Analyze a prototype and/or create a working model to test a design concept by making actual observations and necessary adjustments.</p> <p>3.4.10.B1 Compare and contrast how the use of technology involves weighing the trade-offs between the positive and negative effects.</p> <p>3.4.10.B2 Demonstrate how humans devise technologies to reduce the negative consequences of other technologies.</p> <p>3.4.10.B4 Recognize that technological development has been evolutionary, the result of a series of refinements to a basic invention.</p> <p>3.4.12.B2 Illustrate how, with the aid of technology, various aspects of the environment can be monitored to provide information for decision making.</p> <p>3.4.10.C3 Illustrate the concept that not all problems are technological and not every problem can be solved using technology.</p> <p>-----</p> <p>CC.3.5.9-10.C Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.</p> <p>CC.3.5.9-10.B Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.</p> <p>CC.3.5.9-10.E</p>	<p>CC.2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>CC.2.1.HS.F.3 Apply quantitative reasoning to choose and Interpret units and scales in formulas, graphs and data displays.</p> <p>CC.2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>CC.2.2.HS.C.1 Use the concept and notation of functions to interpret and apply them in terms of their context.</p> <p>CC.2.2.HS.C.2 Graph and analyze functions and use their properties to make connections between the different representations.</p> <p>CC.2.2.HS.C.3 Write functions or sequences that model relationships between two quantities.</p> <p>CC.2.2.HS.C.4 Interpret the effects transformations have on functions and find the inverses of functions.</p> <p>CC.2.2.HS.C.6 Interpret functions in terms of the situation they model.</p> <p>CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.</p> <p>CC.2.3.HS.A.1 Use geometric figures and their properties to represent transformations in the plane.</p> <p>CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.</p> <p>G.1.3.2.1 Write, analyze, complete, or identify formal proofs (e.g., direct and/or indirect proofs/proofs by contradiction).</p> <p>CC.2.3.HS.A.14 Apply geometric concepts to model and solve real world problems.</p> <p>CC.2.4.HS.B.1 Summarize, represent, and interpret data on a single count or measurement variable.</p>

<p>CC.1.3.9-10.B Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences and conclusions based on an author's explicit assumptions and beliefs about a subject.</p> <p>CC.1.3.9-10.D Determine the point of view of the text and analyze the impact the point of view has on the meaning of the text.</p> <p>CC.1.3.9-10.E Analyze how an author's choices concerning how to structure a text, order events within it and manipulate time create an effect.</p> <p>CC.1.3.9-10.F Analyze how words and phrases shape meaning and tone in texts.</p> <p>CC.1.4.9-10.A Write informative/ explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately.</p> <p>CC.1.4.9-10.B Write with a sharp distinct focus identifying topic, task, and audience.</p> <p>CC.1.4.9-10.C Develop and analyze the topic with relevant, well-chosen, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic; include graphics and multimedia when useful to aiding comprehension.</p> <p>CC.1.4.9-10.D Organize ideas, concepts, and information to make important connections and distinctions; use appropriate and varied transitions to link the major sections of the text; include formatting when useful to aiding comprehension; provide a concluding statement or section.</p> <p>CC.1.4.9-10.E Write with an awareness of the stylistic aspects of composition. • Use precise language and domain-specific vocabulary to manage the complexity of the topic. • Establish and maintain a formal style and objective tone while attending to the norms of the discipline in which they are writing.</p> <p>CC.1.4.9-10.F Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</p> <p>CC.1.4.9-10.G Write arguments to support claims in an analysis of substantive topics.</p> <p>CC.1.4.9-10.J Create organization that establishes clear relationships among claim(s), counterclaims,</p>	<p>Explain and locate regions and their shared connections as defined by physical and human features.</p> <p>7.2.9.A Explain the physical characteristics of places and regions, including spatial patterns of Earth's physical systems.</p> <p>7.3.9.A Explain the human characteristics of places and regions using the following criteria:</p> <p>Population Culture Settlement Economic activities Political activities</p> <p>7.4.9.B Compare and contrast the effect of people on the physical region across regions of the United States</p> <p>8.1.9.B Compare the interpretation of historical events and sources, considering the use of fact versus opinion, multiple perspectives, and cause and effect relationships.</p> <p>8.1.9.C Construct research on a historical topic using a thesis statement and demonstrate use of appropriate primary and secondary sources. (Reference RWSL Standard 1.8.8 Research)</p> <p>8.1.9.A Compare patterns of continuity and change over time, applying context of events.</p> <p>CC.8.5.9-10.A Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.</p> <p>CC.8.5.9-10.B Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.</p> <p>CC.8.5.9-10.C Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them.</p> <p>CC.8.5.9-10.D Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social science.</p> <p>CC.8.5.9-10.E Analyze how a text uses structure to emphasize key points or advance an explanation or analysis.</p> <p>CC.8.5.9-10.H Assess the extent to which the reasoning and evidence in a text support the author's claims.</p>	<p>Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</p> <p>CC.3.5.9-10.H Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem.</p> <p>CC.3.5.9-10.I Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.</p> <p>CC.3.5.9-10.J By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently.</p> <p>CC.3.5.11-12.H Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.</p> <p>CC.3.5.11-12.I Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p>-----</p> <p>3.4.12.E1 Compare and contrast the emerging technologies of telemedicine, nanotechnology, prosthetics, and biochemistry as they relate to improving human health.</p> <p>3.4.12.D2 Verify that engineering design is influenced by personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly.</p> <p>3.4.12.C3 Apply the concept that many technological problems require a multi-disciplinary approach.</p> <p>3.4.12.C2 Apply the concept that engineering design is influenced by personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly.</p> <p>3.1.12.A9 Compare and contrast scientific theories. Know that both direct and indirect observations are used by scientists to study the natural world and universe. Identify questions and concepts that guide scientific investigations.</p>	
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<p>reasons, and evidence; Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims; provide a concluding statement or section that follows from and supports the argument presented.</p> <p>CC.1.4.9-10.H Write with a sharp distinct focus identifying topic, task, and audience. • Introduce the precise claim.</p> <p>CC.1.4.9-10.T Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <p>CC.1.4.9-10.U 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.</p> <p>CC.1.4.9-10.V Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</p> <p>CC.1.4.9-10.W Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.</p> <p>CC.1.4.9-10.X Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes and audiences.</p>	<p>CC.8.5.9-10.J By the end of grade 10, read and comprehend history/social studies texts in the grades 9–10 text complexity band independently and proficiently.</p> <p>CC.8.6.9-10.A Write arguments focused on discipline-specific content.</p> <p>Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</p> <p>Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns.</p> <p>Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</p> <p>Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</p> <p>Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>CC.8.6.9-10.B Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. • Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. • Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. • Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts. • Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers. • Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. • Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the</p>	<p>Formulate and revise explanations and models using logic and evidence.</p> <p>Recognize and analyze alternative explanations and models.</p> <p>Explain the importance of accuracy and precision in making valid measurements.</p> <p>Examine the status of existing theories.</p> <p>Evaluate experimental information for relevance and adherence to science processes.</p> <p>Judge that conclusions are consistent and logical with experimental conditions.</p> <p>Interpret results of experimental research to predict new information, propose additional investigable questions, or advance a solution.</p> <p>Communicate and defend a scientific argument.</p> <p>3.1.12.B6 Examine the status of existing theories.</p> <p>Evaluate experimental information for relevance and adherence to science processes.</p> <p>Judge that conclusions are consistent and logical with experimental conditions.</p> <p>Interpret results of experimental research to predict new information, propose additional investigable questions, or advance a solution.</p> <p>Communicate and defend a scientific argument.</p> <p>CC.3.6.9-10.A Write arguments focused on discipline-specific content. • Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. • Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. • Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. • Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. • Provide a concluding statement or section that follows from or supports the argument presented.</p> <p>CC.3.6.9-10.B Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. • Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; 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	<p>significance of the topic). Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>CC.8.6.9-10.C Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p> <p>CC.8.6.9-10.D Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <p>CC.8.6.9-10.F Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</p> <p>CC.8.6.9-10.H Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>CC.8.6.9-10.I Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</p>	<p>aiding comprehension. • Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. • Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts. • Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers. • Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. • Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.</p> <p>CC.3.6.9-10.F Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</p> <p>CC.3.6.9-10.G Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.</p>	
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