

8th Grade Standards Analysis

History-Social Science

Dimension 1: Developing Questions and Planning Inquiries	Dimension 2: Applying Disciplinary Tools and Concepts	Dimension 3: Evaluating Sources and Using Evidence	Dimension 4: Communicating Conclusions and Taking Informed Action
	8.1 Students understand the major events preceding the founding of the nation and relate their significance to the development of American constitutional democracy. 1. Describe the relationship between the moral and political ideas of the Great Awakening and the development of revolutionary fervor. 2. Analyze the philosophy of government expressed in the Declaration of Independence, with an emphasis on government as a means of securing individual rights (e.g., key phrases such as “all men are created equal, that they are endowed by their Creator with certain unalienable Rights”). 3. Analyze how the American Revolution affected other nations, especially France. 4. Describe the nation’s blend of civic republicanism, classical liberal principles, and English parliamentary traditions.		

Science



**Unless otherwise specified, "descriptions" referenced in the evidence statements could include but are not limited to written, oral, pictorial, and kinesthetic descriptions.*

MS-PS2-1 Motion and Stability: Forces and Interactions

Students who demonstrate understanding can:

- MS-PS2-1. Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.****[Clarification Statement: Examples of practical problems could include the impact of collisions between two cars, between a car and stationary objects, and between a meteor and a space vehicle.]*
[Assessment Boundary: Assessment is limited to vertical or horizontal interactions in one dimension.]

The performance expectation above was developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

Science and Engineering Practices

Constructing Explanations and Designing Solutions

Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.

- Apply scientific ideas or principles to design an object, tool, process or system.

Disciplinary Core Ideas

PS2.A: Forces and Motion

- For any pair of interacting objects, the force exerted by the first object on the second object is equal in strength to the force that the second object exerts on the first, but in the opposite direction (Newton's third law).

Crosscutting Concepts

Systems and System Models

- Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy and matter flows within systems.

Connections to Engineering, Technology, and Applications of Science

Influence of Science, Engineering, and Technology on Society and the Natural World

- The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions.

Observable features of the student performance by the end of the course:

1	Using scientific knowledge to generate design solutions												
a	Given a problem to solve involving a collision of two objects, students design a solution (e.g., an object, tool, process, or system). In their designs, students identify and describe*: <table border="1"> <tr><td>i.</td><td>The components within the system that are involved in the collision.</td></tr> <tr><td>ii.</td><td>The force that will be exerted by the first object on the second object.</td></tr> <tr><td>iii.</td><td>How Newton's third law will be applied to design the solution to the problem.</td></tr> <tr><td>iv.</td><td>The technologies (i.e., any human-made material or device) that will be used in the solution.</td></tr> </table>	i.	The components within the system that are involved in the collision.	ii.	The force that will be exerted by the first object on the second object.	iii.	How Newton's third law will be applied to design the solution to the problem.	iv.	The technologies (i.e., any human-made material or device) that will be used in the solution.				
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2	Describing* criteria and constraints, including quantification when appropriate												
a	Students describe* the given criteria and constraints, including how they will be taken into account when designing the solution. <table border="1"> <tr><td>i.</td><td>Students describe* how the criteria are appropriate to solve the given problem.</td></tr> <tr><td>ii.</td><td>Students describe* the constraints, which may include: <table border="1"> <tr><td>1.</td><td>Cost.</td></tr> <tr><td>2.</td><td>Mass and speed of objects.</td></tr> <tr><td>3.</td><td>Time.</td></tr> <tr><td>4.</td><td>Materials.</td></tr> </table> </td></tr> </table>	i.	Students describe* how the criteria are appropriate to solve the given problem.	ii.	Students describe* the constraints, which may include: <table border="1"> <tr><td>1.</td><td>Cost.</td></tr> <tr><td>2.</td><td>Mass and speed of objects.</td></tr> <tr><td>3.</td><td>Time.</td></tr> <tr><td>4.</td><td>Materials.</td></tr> </table>	1.	Cost.	2.	Mass and speed of objects.	3.	Time.	4.	Materials.
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3	Evaluating potential solutions												
a	Students use their knowledge of Newton's third law to systematically determine how well the design solution meets the criteria and constraints.												
b	Students identify the value of the device for society.												
c	Students determine how the choice of technologies that are used in the design is affected by the constraints of the problem and the limits of technological advances.												

Opinion Writing

Anchor Standard: CCSS.ELA-LITERACY.CCRA.W.1 - Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence.

7 th Grade:	8 th Grade:	9 th & 10 th Grade:
W.7.1 - Write arguments to support claims with clear reasons and relevant evidence.. <u>W.7.1.A</u> Introduce claim(s), acknowledge alternate or opposing claims, and organize the reasons and evidence logically. <u>W.7.1.B</u> - Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. <u>W.7.1.C</u> - Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), reasons, and evidence <u>W.7.1.D</u> - Establish and maintain a formal style. <u>W.7.1.E</u> - Provide a concluding statement or section that follows from and supports the argument presented.	W.8.1 - Write arguments to support claims with clear reasons and relevant evidence. <u>W.8.1.A</u> Introduce claim(s), acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically. <u>W.8.1.B</u> - Support claim(s) with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic or text. <u>W.8.1.C</u> - Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence. <u>W.8.1.D</u> - Establish and maintain a formal style <u>W.8.1.E</u> - Provide a concluding statement or section that follows from and supports the argument presented.	W.9/10.1 - Write arguments to support claims in an analysis of substantive topics or texts, using valid reasoning and relevant and sufficient evidence. <u>W.9/10.1.A</u> Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence. <u>W.9/10.1.B</u> - Develop claim(s) and counterclaims fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience’s knowledge level and concerns. <u>W.9/10.1.C</u> - 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. <u>W.9/10.1.D</u> - Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing <u>W.9/10.1.E</u> - Provide a concluding statement or section that follows from and supports the argument presented.

Sample Standards Analysis for Reading Standard 2

Anchor Standard: CCSS.ELA-LITERACY.CCRA.R.2 - Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas.

	7th Grade:	8th Grade:	9/10th Grade:
Informational Texts	<u>RI.7.2 –</u> - Determine two or more central ideas in a text and analyze their development over the course of the text; - provide an objective summary of the text.	<u>RI.8.2 –</u> - Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; - provide an objective summary of the text.	<u>RI.9/10.2 –</u> - 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.
Literary Texts (Literature)	<u>RL.7.2 –</u> - 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.	<u>RL.8.2 –</u> - 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.	<u>RL.9/10.2 –</u> - 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.

Using the Organization of the Reading Standards to Plan Questions and Instruction

<u>RI.8.1 -</u> Cite the textual evidence that most strongly supports an analysis of what the text says explicitly as well as inferences drawn from the text.	<u>RI.8.2 –</u> - Determine a central idea of a text and analyze its development over the course of the text, including its relationship to supporting ideas; - provide an objective summary of the text.	<u>RI.8.10-</u> 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.
Planning for Instruction:		