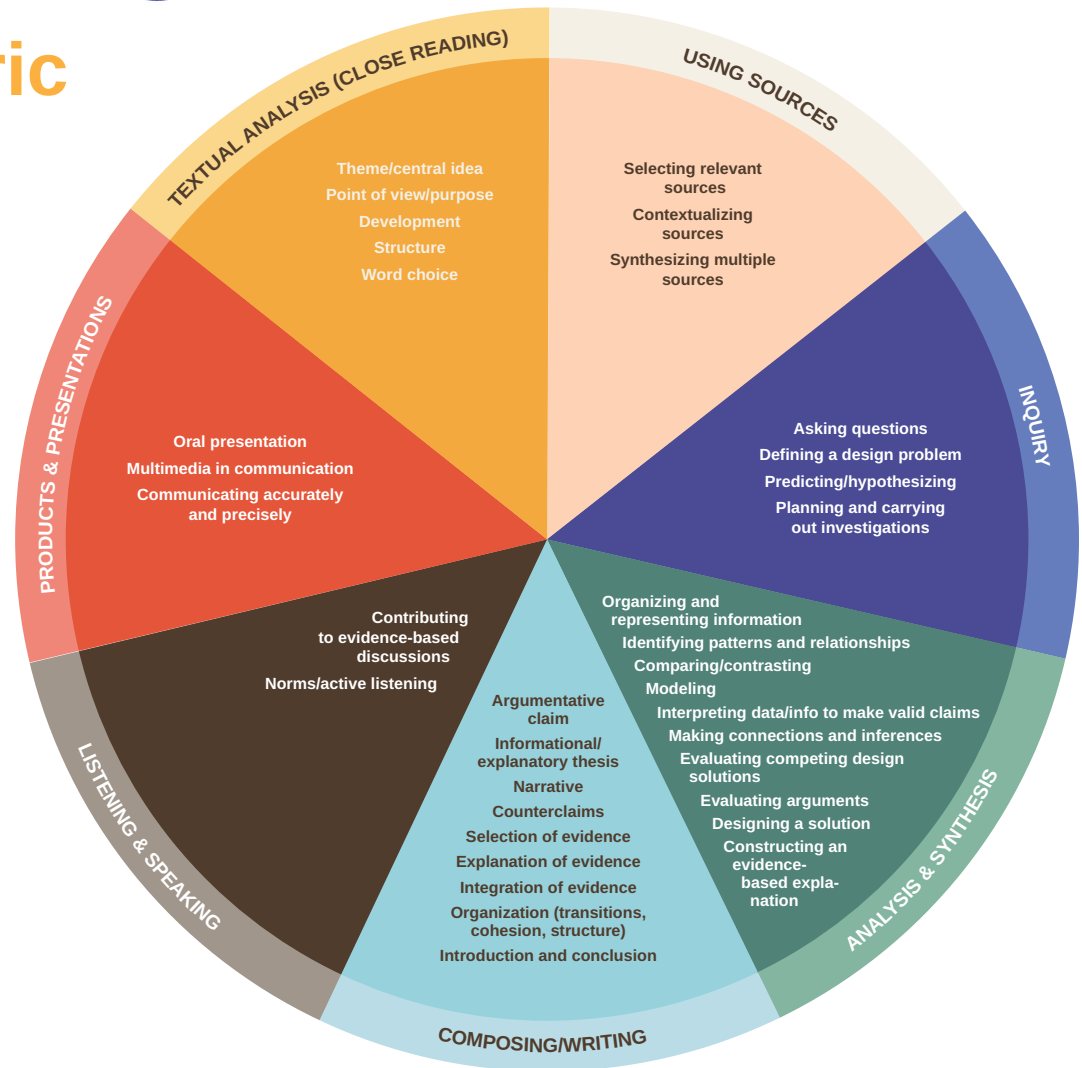


SUMMIT LEARNING™

Cognitive Skills Rubric

The Summit Learning Cognitive Skills Rubric is an assessment and instruction tool that outlines the continuum of skills that are necessary for college and career readiness. Cognitive Skills are interdisciplinary skills that require higher-order thinking and application, such as Making Connections and Inferences and Evaluating Arguments. The rubric includes 36 skills and 8 score levels applicable to students in grades 3 through 12.

Through Summit Learning, students practice and develop Cognitive Skills in every subject and in every grade level. The use of a common analytic rubric for assessment of project-based learning allows for targeted, standards-aligned feedback to students and supports the development of key skills over time.



Cognitive Skills Standards Alignment

The Summit Cognitive Skills Rubric — developed in partnership with the Stanford Center for Assessment, Learning & Equity (SCALE) — is aligned to the Common Core State Standards (CCSS), Next Generation Science Standards (NGSS), and C3 Social Studies Framework.

Skill Domain	Skill Dimension	High-Level Description	References to Standards
Textual Analysis (Close Reading)	Theme/Central Idea	Determining theme(s)/central idea(s) using details.	CCSS.ELA-LITERACY.RL.x.2 CCSS.ELA-LITERACY.RI.x.2
	Point of View/Purpose	Analyzing the point of view or purpose of a character, narrator, and/or author/speaker and how that point of view influences the message or meaning of the text.	CCSS.ELA-LITERACY.RL.x.6 CCSS.ELA-LITERACY.RI.x.6 CCSS.ELA-LITERACY.SL.x.2 C3 D2.His.4 C3 D2.His.5 C3 D2.His.6
	Development	Explaining how the author uses details to develop the elements of a story, or the individuals, events, or ideas in a non-fiction text.	CCSS.ELA-LITERACY.RL.x.3 CCSS.ELA-LITERACY.RI.x.3
	Structure	Identifying the features and elements that together create a text's structure, and analyzing the underlying meanings and effects conveyed through the author's structural choices.	CCSS.ELA-LITERACY.RL.x.5 CCSS.ELA-LITERACY.RI.x.5
	Word Choice	Analyzing how the author's word choice impacts the meaning, tone, or mood of a text, and explaining how word choice relates to context or medium.	CCSS.ELA-LITERACY.RL.x.4 CCSS.ELA-LITERACY.RI.x.4

Using Sources	Selecting Relevant Sources	Selecting sources that support answering a particular research question with relevant, credible information that distinguishes between fact and opinion.	<p>CCSS.ELA-LITERACY.RI.x.7 CCSS.ELA-LITERACY.W.x.1 CCSS.ELA-LITERACY.W.x.7 CCSS.ELA-LITERACY.W.x.8 CCSS.ELA-LITERACY.W.x.9</p> <p>C3 D1.5 C3 D2.His.9-13 C3 D3.1-2</p> <p>NGSS Science Practice 8: Obtaining, Evaluating, and Communicating Information</p>
	Contextualizing Sources	Identifying how a source is situated within the world of its origin (e.g., time period, location, socio-political climate, cultural conditions, etc.) and explaining how the perspectives within the source shape and/or are shaped by those conditions.	C3 D2.His.4-9
	Synthesizing Multiple Sources	Integrating information across multiple sources to support an argument or explanation.	<p>CCSS.ELA-LITERACY.RL.x.7 CCSS.ELA-LITERACY.RI.x.7 CCSS.ELA-LITERACY.W.x.8</p> <p>C3 D2.His.16</p> <p>NGSS Science Practice 8: Obtaining, Evaluating, and Communicating Information</p>

Inquiry	Asking Questions	Developing focused, answerable inquiry and research questions.	CCSS.ELA-LITERACY.W.x.7 C3 D1.1-4 NGSS Science Practice 1: Asking Questions and Defining Problems
	Defining a Design Problem	Defining the criteria and constraints for addressing a real-world problem through engineering design.	NGSS Science Practice 1: Asking Questions and Defining Problems
	Predicting/Hypothesizing	Developing hypotheses and predictions related to the inquiry, research question, or investigation.	NGSS Science Practice 1: Asking Questions and Defining Problems NGSS Science Practice 3: Planning and Carrying Out Investigations
	Planning and Carrying Out Investigations	Planning and carrying out investigations that provide evidence to support explanations, design solutions, and/or models.	NGSS Science Practice 3: Planning and Carrying Out Investigations
Analysis & Synthesis	Organizing and Representing Information	Organizing and representing information (e.g., numerical and visual data).	NGSS Science Practice 4: Analyzing and Interpreting Data NGSS Science Practice 5: Using Mathematics and Computational Thinking
	Identifying Patterns and Relationships	Analyzing information to identify patterns and/or relationships relevant to understanding a phenomenon or to solve a design problem.	C3 D2.Geo.1-12 C3 D2.His.1-2 C3 D2.His.14-15 NGSS Science Practice 4: Analyzing and Interpreting Data NGSS Science Practice 5: Using Mathematics and Computational Thinking
	Comparing/Contrasting	Identifying and describing similarities and differences and using them to support an argument or explanation.	CCSS.ELA-LITERACY.RL.x.7 CCSS.ELA-LITERACY.RL.x.9 CCSS.ELA-LITERACY.RI.x.7 C3 D2.His.9-10

Analysis & Synthesis	Modeling	Developing, using, and revising models (e.g., diagrams, physical replicas, mathematical representations, analogies, and computer simulations) to describe and predict phenomena or represent and test design solutions.	NGSS Science Practices 2: Developing and Using Models
	Interpreting Data/ Information to Make Valid Claims	Interpreting data/information from sources and making valid, credible claims about a phenomenon, model, or design solution.	NGSS Science Practice 4: Analyzing and Interpreting Data
	Making Connections and Inferences	Connecting ideas and making inferences based on evidence or reasoning.	CCSS.ELA-LITERACY.RL.x.1 CCSS.ELA-LITERACY.RI.x.1
	Evaluating Competing Design Solutions	Evaluating competing design solutions for a relevant problem, accounting for criteria and constraints, and drawing on empirical evidence, including the student's own generated evidence.	NGSS Science Practice 7: Engaging in Argument from Evidence
	Evaluating Arguments	Evaluating arguments or explanations. FOR NGSS: When possible, students should be asked to evaluate competing or alternate arguments/explanations and apply the same analytic lens to evaluate multiple arguments/explanations.	CCSS.ELA-LITERACY.RI.x.8 C3 D2.His.17 C3 D4.4 C3 D4.5 NGSS Science Practice 7: Engaging in Argument from Evidence
	Designing a Solution	Designing a solution (e.g., an object, tool, process or system) that is supported by scientific ideas and meets criteria and constraints; evaluating and refining the solution through analysis of empirical evidence.	NGSS Science Practice 6: Constructing Explanations and Designing Solutions
	Constructing an Evidence-based Explanation	Explaining a phenomenon using empirical evidence, disciplinary ideas, and logical reasoning.	C3 D4.6 NGSS Science Practice 6: Construction Explanations and Designing Solutions

Composing/ Writing	Argumentative Claim	Developing a strong opinion/argument through clear, well-sequenced claims.	CCSS.ELA-LITERACY.W.x.1 C3 D2.His.16 C3 D3.4 C3 D4.1 NGSS Science Practice 7: Engaging in Argument from Evidence
	Informational/ Explanatory Thesis	Constructing explanations or conveying ideas and information through clear, well-organized, relevant ideas.	CCSS.ELA-LITERACY.W.x.2 C3 D4.2
	Narrative	Developing an oral or written narrative that relates connected experiences, events, procedural steps, or the like (whether they are real or imagined).	CCSS.ELA-LITERACY.W.x.3 CCSS English Language Arts Appendix A
	Counterclaims	Acknowledging and developing alternate or opposing positions.	CCSS.ELA-LITERACY.W.x.1 C3 D3.4 NGSS Science Practice 7: Engaging in Argument from Evidence
	Selection of Evidence	Using relevant and sufficient evidence to support claims.	CCSS.ELA-LITERACY.W.x.1 CCSS.ELA-LITERACY.W.x.2 C3 D3.3 NGSS Science Practice 7: Engaging in Argument from Evidence
	Explanation of Evidence	Analyzing how the selected evidence support the writer's statements (e.g., claims, controlling ideas).	CCSS.ELA-LITERACY.W.x.1.B CCSS.ELA-LITERACY.W.x.2.B CCSS English Language Arts Appendix A, Definitions of the Standards' Three Text Types NGSS Science Practice 6: Constructing Explanations and Designing Solutions NGSS Science Practice 7: Engaging in Argument from Evidence

Composing/ Writing	Integration of Evidence	Representing evidence accurately and including evidence in text.	CCSS.ELA-LITERACY.W.x.8
	Organization (Transitions, Cohesion, Structure)	Using text structure and transitions to communicate with clarity and coherence.	CCSS.ELA-LITERACY.W.x.4
	Introduction and Conclusion	Framing a composition with a relevant introduction and conclusion.	CCSS.ELA-LITERACY.W.x.1 CCSS.ELA-LITERACY.W.x.2
Listening & Speaking	Contributing to Evidence-Based Discussions	Contributing to a discussion or task with clear, relevant, and substantive content, prepared with appropriate evidence and details.	CCSS.ELA-LITERACY.SL.x.1.A CCSS.ELA-LITERACY.SL.x.1.C
	Norms/Active Listening	Demonstrating active listening and openness to diverse perspectives. Using roles and norms to support collegial discussions and completion of group work.	CCSS.ELA-LITERACY.SL.x.1.B CCSS.ELA-LITERACY.SL.x.1.D
Products & Presentations	Oral Presentation	Using appropriate public speaking strategies to engage the audience and communicate points.	CCSS.ELA-LITERACY.SL.x.4 CCSS.ELA-LITERACY.SL.x.6
	Multimedia in Communication	Integrating multimedia and/or technology into all forms of communication, oral and written.	CCSS.ELA-LITERACY.SL.x.5 CCSS.ELA-LITERACY.W.x.6
	Communicating Accurately and Precisely	Expressing, integrating, and applying specific content and/or conventions with accuracy and precision.	Standards alignment will vary by project.

Summit Learning Cognitive Skills Rubric

DOMAIN: TEXTUAL ANALYSIS (CLOSE READING)					DIMENSION: THEME/CENTRAL IDEA			
High-Level Description: Determining theme(s)/central idea(s) using details.								
0	1	2	3	4	5	6	7	8
No evidence of identifying a theme/central idea in a text.	Identifies a theme/central idea in a text and provides few key details.	Identifies a theme/central idea in a text and uses key details to explain the theme/central idea .	Identifies a theme/central idea in a text using key details, AND Elaborates on how key details support the central idea. OR Uses key details to describe how characters/ speakers view events/topics.	Identifies a theme/central idea in a text and provides brief explanation of how specific details support development of the theme/central idea.	Identifies a major theme/central idea in a text and provides an accurate explanation of how specific details support the development of the theme/central idea. OR Provides some explanation of how the theme/central idea interacts with supporting ideas or other elements in the text (e.g., setting, plot, character).	Identifies multiple themes/central ideas in a text, when relevant, and provides an accurate analysis of their development and interaction with each other and with supporting ideas or other elements in the text (e.g., setting, plot, character).	Identifies multiple themes/central ideas in a text, when relevant, and provides a thorough, accurate analysis of their development and interaction with each other and with supporting ideas or other elements in the text (e.g., setting, plot, character). When relevant, interprets theme/central idea through a critical lens or framework.	Identifies multiple themes/central ideas in a text, when relevant, and provides a sophisticated analysis of their development and interaction with each other and with supporting ideas or other elements in the text, including an evaluation of which theme/central idea is the most significant and why. When relevant, persuasively interprets theme/central idea through a critical lens or framework.

High-Level Description: Analyzing the point of view or purpose of a character, narrator, and/or author/speaker and how that point of view influences the message or meaning of the text.

0	1	2	3	4	5	6	7	8
No evidence of identifying the point of view of an author/narrator/speaker.	Identifies the author/narrator/speaker's point of view, and distinguishes it from own point of view.	Describes author/narrator/speaker's points of view and identifies whether it is a first, second, or third person point of view.	Describes how an author/narrator/speaker's point of view influences the meaning of the text and how events are described. When relevant, compares and contrasts the points of view represented in multiple accounts of the same event or topic.	Describes author's/speaker's point of view or purpose and clearly explains how that point of view or purpose is conveyed and developed through the use of relevant details in the text to, as applicable, impact the meaning. Explains how author's point of view differs from others and, when relevant, how the author acknowledges and responds to conflicting evidence or viewpoints.	Accurately describes author's/speaker's point of view or purpose and analyzes how that point of view or purpose is conveyed and developed through the use of relevant details in the text to, as applicable, impact the meaning. Explains how author's point of view differs from others, including the limitations or biases of the author's/speaker's point of view. When relevant, explains how the author acknowledges and responds to conflicting evidence or viewpoints.	Analyzes author's/speaker's point of view, including its development, limitations, biases, impact on the meaning of the text, and differences from and responses to other points of view. Explains how author/speaker uses rhetoric or differences in point of view to create specific effects.	Analyzes author's/speaker's point of view, including its development, limitations, biases, impact on the meaning of the text, and differences from and responses to other points of view. Analyzes author's/speaker's use of rhetoric or differences in point of view to create specific effects. Analyzes the effect of cultural experience on author's/speaker's point of view.	All of Level 7, plus: Identifies cases where the rhetoric or the development of point of view is particularly effective and analyzes how the point of view and/or rhetoric contributes to the power, persuasiveness, or beauty of the text.

High-Level Description: Explaining how an author uses details to develop the elements of a story, or the individuals, events, or ideas in a non-fiction text.

0	1	2	3	4	5	6	7	8
<p>No evidence of describing how author makes choices to develop elements of a story, or an individual event or idea in a non-fiction text.</p>	<p>Describes characters in a story and explains how their actions contribute to the sequence of events.</p> <p>OR</p> <p>Recounts key details of a non-fiction text. When relevant, describes the relationship between events, ideas/ concepts, or steps in a procedure using language that pertains to time sequence or cause/ effect.</p>	<p>Uses specific details in a text to describe in depth a character, setting, or event in a story.</p> <p>OR</p> <p>Uses specific details in a text to explain an event, idea/ concept, or procedure in a non-fiction text. When relevant, explains what happened and why.</p>	<p>Uses specific details in a text to explain the relationship or interactions between two or more characters, settings, or events in a story.</p> <p>OR</p> <p>Uses specific details in a text to explain the relationship or interactions between two or more events or ideas/ concepts in a non-fiction text.</p>	<p>Analyzes the impact of the author's choices on the development of elements of a story, including how the elements interact (e.g., how setting shapes characters or plot).</p> <p>OR</p> <p>Analyzes the interactions between individuals, events, and ideas in a non-fiction text, including how different elements influence each other.</p>	<p>Analyzes the impact of the author's choices on the development of elements of a story, including the interaction of story elements (e.g., setting, character, plot), and how specific dialogue or incidents in the story propel the action, reveal aspects of a character, or provoke a decision.</p> <p>OR</p> <p>Analyzes how an individual, event, or idea is developed in the course of a non-fiction text, including the role of supporting ideas and how the text connects or distinguishes individuals, events, or ideas.</p>	<p>Analyzes in detail the impact of the author's choices on the development of elements of a story (e.g., the sequence and timing of events and actions, and how characters are introduced and interact).</p> <p>OR</p> <p>Analyzes in detail how an individual, event, or idea is introduced, developed, and refined by specific details in a non-fiction text, and how the author draws connections among ideas or events.</p>	<p>Analyzes clearly and accurately the impact of the author's choices on the development of key elements of a story (e.g., the setting, sequence of actions, and how characters are introduced and developed).</p> <p>OR</p> <p>Analyzes with clear and accurate details how two or more individuals, events, or complex ideas are introduced in a non-fiction text, build on one another and interact to produce a complex analysis of relationships.</p>	<p>Analyzes clearly and accurately the impact of the author's choices on the development of key elements of a story, (e.g., the setting, sequence of actions, and how characters are introduced and developed). Evaluates the effectiveness of the author's choices.</p> <p>OR</p> <p>Analyzes with clear and accurate details how two or more individuals, events, or complex ideas are introduced in a non-fiction text, build on one another and interact to produce a complex analysis of relationships. Evaluates the effectiveness of the author's choices.</p>

High-Level Description: Identifying the features and elements that together create a text's structure, and analyzing the underlying meanings and effects conveyed through the author's structural choices.

0	1	2	3	4	5	6	7	8
<p>No evidence of analysis of author's structural writing choices.</p>	<p>Identifies parts of a story, drama, or poem using terms such as chapter, scene, and stanza; describes how each successive part builds on earlier sections.</p> <p>OR</p> <p>Uses key organizing features in a text to identify the main idea or locate relevant information.</p>	<p>Uses correct language to describe structural elements of a story (e.g., plot, setting), poem (e.g., verse, rhythm, meter), or drama (e.g., casts of characters, settings, descriptions, dialogue, stage directions).</p> <p>OR</p> <p>Describes the overall structure in a non-fiction text and uses structural clues to determine the relationship between events, concepts/ ideas, or information within the text (e.g., chronology, comparison, cause/effect, problem/ solution).</p>	<p>All of Level 2, plus: Explains how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.</p> <p>OR</p> <p>Describes the overall structure in a non-fiction text and explains how the structure clarifies the relationship between events, concepts/ideas, or information within the text (e.g., chronology, comparison, cause/effect, problem/ solution).</p>	<p>Accurately describes the overall structure of a story, drama, or poem and analyzes how a particular section fits into the overall structure and how a particular structure (e.g., plot, dialogue, meter) contributes to the development of specific elements or overall meaning.</p> <p>OR</p> <p>Accurately describes key organizing features and sections in a non-fiction text, and analyzes the importance of a particular sentence, paragraph, chapter, or section in supporting or clarifying a key idea.</p>	<p>Accurately describes the overall structure of a story, drama, or poem, and analyzes the impact of the author's structural choices on overall meaning and style.</p> <p>OR</p> <p>Accurately describes key organizing features and sections in a non-fiction text and analyzes in detail how the structure of a specific paragraph (including specific sentences) supports understanding of a key concept.</p>	<p>Accurately describes the author's use of structures in a story, drama, or poem to create particular effects and evaluates the impact of these choices on the overall meaning and style.</p> <p>OR</p> <p>Accurately describes key organizing features and sections in a non-fiction text and evaluates the effectiveness of particular sections (e.g., sentences, paragraphs, sections, or chapters) in developing the argument or explanation.</p>	<p>Accurately and concisely describes how a story, drama, or poem has been structured, and evaluates the impact of these author's choices on the story's overall meaning, style, and reader appeal.</p> <p>OR</p> <p>Accurately describes key organizing features and sections in a non-fiction text, and evaluates the impact of the structure on how clear and compelling the argument or explanation is.</p>	<p>Accurately and concisely describes key structural features and sections of a story, drama, or poem, and evaluates the impact of these author's choices on the story's overall meaning, style, and reader appeal. When relevant, proposes structural changes that could improve the development of the story, drama, or poem.</p> <p>OR</p> <p>Accurately and concisely describes key organizing features and sections in a non-fiction text, and evaluates the impact of the structure on how clear and compelling the argument or explanation is. When relevant, proposes structural changes that could improve the development of the argument or explanation.</p>

High-Level Description: Analyzing how the author’s word choice impacts the meaning, tone, or mood of a text, and explaining how word choice relates to context or medium.

0	1	2	3	4	5	6	7	8
No evidence of analysis of author’s word choice.	Identifies and defines academic, domain-specific words and phrases in the text relevant to understanding the topic or meaning of the text (e.g., literal or nonliteral language).	Identifies and explains the meaning of academic, domain-specific words and phrases and/or literary allusions that impact the meaning or tone of the text.	Identifies and accurately explains the meaning of academic, domain-specific words and phrases and/or literary allusions that impact the meaning or tone of the text (e.g., figurative language such as metaphors and similes).	Identifies words and phrases that impact the meaning and/ or tone of the text; clearly and accurately explains the meaning of those words and phrases as they are used in the text (e.g., figurative, connotative, and technical meanings). Explains the impact of those word choices on meaning and/ or tone in the text.	Identifies words and phrases that impact the meaning and tone of the text; clearly and accurately explains the meaning of those words and phrases as they are used in the text (e.g., figurative, connotative, and technical meanings). Clearly explains the impact of those specific word choices on the meaning and/ or tone of the text. Generally explains how specific word choices relate to context or medium.	Identifies words and phrases that impact the meaning and tone of the text; clearly and accurately explains the meaning of those words and phrases as they are used in the text (e.g., figurative, connotative, and technical meanings). Explains the cumulative impact of those specific word choices on the meaning and/ or tone of the entire text. Clearly explains how specific word choices relate to context or medium.	Accurately describes the overall structure of a story, drama, or poem, and analyzes the impact of the author’s structural choices on overall meaning and style. OR Accurately describes key organizing features and sections in a non-fiction text and analyzes in detail how the structure of a specific paragraph and/or specific sentences supports understanding of a key concept.	Identifies words and phrases that impact the meaning and tone of the text; clearly and accurately explains the meaning of those words and phrases as they are used in the text (e.g., figurative, connotative, and technical meanings). Analyzes the impact of a pattern of word choices on meaning and tone and the relationship between word choice and context or medium. When relevant, clearly analyzes how an author uses or refines the meaning of a key term/concept over the course of a text.

DOMAIN: USING SOURCES

DIMENSION: SELECTING RELEVANT SOURCES

High-Level Description: Selecting sources that support answering a particular research question with relevant, credible information that distinguishes between fact and opinion.

0	1	2	3	4	5	6	7	8
No evidence of selecting sources that are relevant to a research question.	<p>“Accurately describes the overall structure of a story, drama, or poem, and analyzes the impact of the author’s structural choices on overall meaning and style.</p> <p>OR</p> <p>Accurately describes key organizing features and sections in a non-fiction text and analyzes in detail how the structure of a specific paragraph and/or specific sentences supports understanding of a key concept.</p>	Selects information relevant to the research question from provided sources of varied format (e.g., charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages).	Selects sources that provide key evidence relevant to the research question. When relevant, sources vary in format.	Selects sources that provide credible information relevant to the research question. When relevant, sources vary in perspective and/or format.	Selects sources that provide detailed, credible information relevant to the research question. When relevant, sources vary in perspective and/or format.	Selects sources that provide detailed, comprehensive, credible information relevant to the research question. When relevant, sources vary in perspective and/or format.	Selects sources that provide nuanced, comprehensive, credible information relevant to the research question. When relevant, sources vary in perspective and/or format. Any gaps or limitations in sources are noted.	Selects sources that provide nuanced, comprehensive, credible information relevant to the research question at a level of detail and complexity appropriate to the audience and purpose of the research. When relevant, sources vary in perspective and/or format. Any gaps or limitations in sources are noted and the impact of those gaps and limitations is discussed.

DOMAIN: USING SOURCES

DIMENSION: CONTEXTUALIZING SOURCES

High-Level Description: Identifying how a source is situated within the world of its origin (time period, location, socio-political climate, cultural conditions, etc.) and explaining how the perspectives within the source shape and/or are shaped by those conditions

0	1	2	3	4	5	6	7	8
No evidence of contextualizing sources.	Identifies a source's time and place of origin.	Provides information about a source's time or place of origin. Includes basic information about the maker.	Provides information about a source's time and place of origin. Includes information about the maker, the maker's perspective, and intended audience or purpose.	Provides accurate information about a source's time and place of origin. Includes some information about the historical, scientific, political, economic, social, and/ or cultural conditions of the source's origin.	Provides accurate information about the historical, scientific, political, economic, social, and/ or cultural conditions of the source's origin. Makes connections between these conditions and the contents of the source.	Provides accurate, relevant information about the historical, scientific, political, economic, social, and/ or cultural conditions of the source's origin, including events and conditions leading up to or immediately following the source's creation, when relevant. Generally explains how these conditions shape the meaning or significance of the source.	Provides accurate, relevant information about the historical, scientific, political, economic, social, and/ or cultural conditions of the source's origin, including events and conditions leading up to or immediately following the source's creation, when relevant. Clearly explains how these conditions shape the meaning or significance of the source.	Provides thorough, relevant information about the historical, scientific, political, economic, social, and/ or cultural conditions of the source's origin, including events and conditions leading up to or immediately following the source's creation, when relevant. Uses analysis of these conditions to strengthen and refine an argument or explanation.

DOMAIN: USING SOURCES

DIMENSION: SYNTHESIZING MULTIPLE SOURCES

High-Level Description: Integrating information across multiple sources to support an argument or explanation.

0	1	2	3	4	5	6	7	8
No evidence of synthesizing information from multiple sources.	Identifies key points or details from two sources on the same topic.	Integrates information from two sources on the same topic by comparing information.	Integrates information from several sources on the same topic by sorting and comparing information.	Connections among sources are made by comparing information from multiple sources and/ or comparing the type of sources (e.g., format, genre, time period, etc.).	Connections among sources are made by grouping similar information/ positions from multiple sources or identifying significant differences between sources, in content and/or type.	Information from multiple sources is compared and grouped to deepen or extend an argument or explanation.	Information from multiple sources is compared, grouped, and synthesized with the student's own claims or ideas to form a cohesive, supported argument or explanation.	Significant and nuanced connections are made among the sources and synthesized with the student's own claims or ideas to form a cohesive, supported, compelling argument or explanation.

High-Level Description: Developing focused, answerable inquiry and research questions.

0	1	2	3	4	5	6	7	8
No evidence of developing inquiry or research questions that support understanding of a given topic.	Questions are relevant to a specific topic.	Questions are relevant to a specific topic and are based on the described problem or situation.	Questions are relevant to a specific topic, are testable or researchable, and build on prior knowledge about the topic.	Questions are relevant to a specific topic, are testable or researchable, and build on disciplinary knowledge about the topic.	Questions are valid , testable or researchable, and based on observed patterns and/or research.	Questions are valid , focused, testable or researchable, and based on observed patterns, current research, and/or a specific model or theory.	Questions are valid, precise , testable or researchable, and based on observable patterns, specific evidence from current research, and/or a specific model or theory.	Questions are valid, precise, testable or researchable, based on patterns/ observations, specific evidence from current research and/or a specific model or theory, and push standard thinking on a given topic or in a particular discipline.

High-Level Description: Defining the criteria and constraints for addressing a real-world problem through engineering design.

0	1	2	3	4	5	6	7	8
No evidence of defining a design problem.	Begins to define a simple design problem with incomplete description of criteria or constraints.	Definition of a simple design problem is mostly complete . Representation of criteria for success and constraints is general .	Definition of a simple design problem is complete . Includes several criteria and practical constraints (e.g., materials, time, or cost).	Definition of the problem or design statement is complete. Identifies relevant criteria and constraints.	Definition of the problem or design statement is complete and includes rationale . Addresses multiple criteria and constraints relevant to the problem .	Definition of the problem or design statement is complete and includes rationale. Addresses multiple criteria and constraints, including one or more social, technical or scientific constraints relevant to the problem.	Definition of the problem or design statement is thorough and includes rationale. Fully addresses criteria and important social, technical and/or scientific constraints relevant to the problem.	Definition of the problem or design statement is thorough, precise , and includes rationale. Fully addresses all criteria and the complex interactions among important social, technical, and scientific factors relevant to the problem. When relevant, addresses unknowns and raises relevant questions to more clearly define the problem.

High-Level Description: Developing hypotheses and predictions related to the inquiry or research question, or to the investigation.

0	1	2	3	4	5	6	7	8
No evidence of hypothesis or prediction.	Makes a prediction that is partially relevant to the inquiry question with little or no reasoning.	Makes a prediction related to the inquiry question. Supports reasoning for prediction with prior observations or experiences.	Makes a reasonable prediction related to the inquiry question that involves changing a variable. Begins to explain reasoning for prediction by relating it to prior knowledge such as cause and effect relationships.	Makes a reasonable prediction related to the inquiry question that involves changing a variable. Hypothesis relates to prior research about the topic.	Constructs a testable hypothesis about the investigated question, with a basic description of the variables. Hypothesis relates to observation, research, or scientific principle.	Constructs a clear, testable hypothesis about the investigated question, with an accurate definition of the independent and dependent variables. Hypothesis is based on observation, research, scientific principle, model, or theory.	Constructs a precise, testable hypothesis about the investigated question, with an accurate definition and explanation of the relationship between the independent and dependent variables. Hypothesis is based on observation, research, scientific principle, model, or theory.	Constructs a precise, testable, and insightful hypothesis about the investigated question, with accurate definition and thorough explanation of the relationship between independent and dependent variables. Hypothesis is based on observation, research, scientific principle, model, or theory.

High-Level Description: Planning and carrying out investigations that provide evidence to support explanations, design solutions, and/or models.

0	1	2	3	4	5	6	7	8
<p>No evidence of procedures to investigate a question or test a model or design/solution.</p>	<p>Identifies a general approach to investigate a question or test a design with minimal description of procedures.</p>	<p>Provides a set of procedures that is partially aligned to the objectives of the inquiry/ design criteria.</p> <p>Lists some tools/instruments and types of observations/measurements to be gathered.</p>	<p>Provides a set of procedures that is aligned to the objectives of the inquiry/ design criteria and is likely to produce some evidence/data relevant to the purpose.</p> <p>Lists tools/ instruments and types of observations/ measurements to be gathered.</p> <p>Includes controls when relevant.</p>	<p>Provides a set of procedures that is aligned to the objectives of the inquiry/ design criteria and is likely to produce some evidence/data relevant to the purpose.</p> <p>Lists tools/ instruments and types of observations/ measurements to be gathered.</p> <p>Considers the amount of data needed to answer the inquiry question/ evaluate the design and includes controls when relevant.</p>	<p>Provides an orderly, mostly replicable set of procedures that is likely to produce evidence that is aligned with the objectives of the inquiry/ design criteria.</p> <p>Describes tools/ instruments and types of observations/ measurements to be gathered.</p> <p>Considers the amount of measurements/ data needed to answer the inquiry question or evaluate the design with accuracy and includes controls when relevant.</p>	<p>Provides a clear and orderly, replicable set of procedures that will produce relevant and sufficient evidence aligned to the objectives of the inquiry/ design criteria and/or to test a model.</p> <p>Describes tools/ instruments and types/amount of measurements/ data to be gathered needed to produce reliable measurements and describes controls when relevant.</p>	<p>Provides a detailed, clear, and replicable set of procedures that will produce relevant and sufficient evidence aligned to the objectives of the inquiry/ design criteria and/or to test a model.</p> <p>Describes tools/ instruments and the types/ amount of measurements/ data needed to produce reliable measurements and describes the role of controls when relevant.</p> <p>Identifies some possible contingencies.</p>	<p>Provides a detailed, clear, and replicable set of procedures that will produce sufficient and accurate evidence precisely matched to the objectives of the inquiry/ design criteria and to test and revise a model.</p> <p>Describes tools/ instruments and the types/ amount of measurements/ data needed to produce reliable measurements, and limitations of the data.</p> <p>Describes the role of controls when relevant.</p> <p>Includes contingency plans to address failure points or when a redesign may be needed.</p>

High-Level Description: Organizing and representing information (e.g., numerical and visual data).

0	1	2	3	4	5	6	7	8
No evidence of organizing information.	Attempts to organize information into a structure. The selected form is inappropriate for the purpose and type of data.	Organizes information into a simple and appropriate structure (e.g., table, bar graph, pictograph, and/or pie chart).	Organizes information into a simple and appropriate structure (e.g., table, bar graph, pictograph, and/or pie chart). Formatting, labeling, and data representation are generally accurate.	Organizes information into structures appropriate for the grade level (e.g., table, chart, graph, formula). Data representations are accurate , with mostly accurate formatting or labeling.	Organizes information into structures appropriate for the data and grade level (e.g., data arrays , tables, charts, graphs, formulas). Data representations are accurate, with mostly accurate formatting or labeling.	Organizes information into structures appropriate for the data, purpose , and grade level (e.g., data arrays, tables, charts, graphs, formulas). Data representations are accurate, with mostly accurate formatting or labeling.	Organizes information into structures appropriate for the data, purpose, and grade level (e.g., data arrays, tables, charts, graphs, formulas). Data representations are accurate, complete , and are accurately formatted and labeled.	Organizes and synthesizes various sources of information into structures appropriate for the data, purpose, and grade level (e.g., data arrays, tables, charts, graphs, formulas). Data representations are accurate, complete, and are accurately formatted and labeled.

High-Level Description: Analyzing information to identify patterns and/or relationships relevant to understanding a phenomenon or to solve a design problem.

0	1	2	3	4	5	6	7	8
<p>No evidence of analyzing information to identify patterns and/or relationships.</p>	<p>Identifies simple connections or patterns from information or observations that are relevant to understanding a phenomenon or solving a design problem.</p>	<p>Identifies patterns in the data or makes qualitative observations using logical reasoning.</p> <p>Patterns are relevant to understanding a phenomenon or solving a design problem.</p>	<p>Identifies and explains patterns in the data or makes qualitative observations using logical reasoning.</p> <p>Patterns are relevant to understanding a phenomenon or solving a design problem.</p> <p>FOR NGSS:</p> <p>Applies mathematics, and/or computation.</p> <p>When relevant, compares similarities and differences in data collected by different groups in the class.</p>	<p>Analyzes patterns and relationships among variables/ data with minor errors or omissions, applying logical reasoning.</p> <p>FOR NGSS:</p> <p>Applies a basic statistics/probability concept (e.g., mean, median, mode, and variability) or a mathematical concept (e.g., ratio, rate, percent, basic operations, and simple algebra).</p> <p>When relevant, compares similarities and differences in findings across different trials and/or groups.</p>	<p>Analyzes patterns and relationships among variables/ data accurately, applying logical reasoning.</p> <p>FOR NGSS:</p> <p>Applies a basic statistics/probability concept (e.g., mean, median, mode, and variability) or a mathematical concept (e.g., ratio, rate, percent, basic operations, and simple algebra).</p> <p>When relevant, compares similarities and differences in findings across different trials and/or groups.</p>	<p>Analyzes and explains observed patterns and relationships among variables/data with general accuracy, applying logical reasoning and relevant quantitative reasoning when appropriate.</p> <p>FOR NGSS:</p> <p>Applies relevant statistics/probability concepts or mathematical, computational, and/or algorithmic representations.</p> <p>When relevant, identifies similarities and differences in different types and/or sources of data in terms of the consistency of measurements or observations.</p>	<p>Accurately analyzes and explains patterns and relationships among variables/ data, applying logical reasoning and relevant quantitative reasoning when appropriate.</p> <p>FOR NGSS:</p> <p>Applies relevant statistics/probability concepts or mathematical, computational, and/or algorithmic representations.</p> <p>When relevant, uses data from across different types and/or sources to triangulate analyses of data and to identify (in) consistency of measurement or findings.</p>	<p>Accurately and thoroughly analyzes and explains patterns and relationships among variables/ data, applying logical reasoning and relevant quantitative reasoning when appropriate.</p> <p>FOR NGSS:</p> <p>Applies relevant statistics/probability concepts or mathematical, computational, and/or algorithmic representations.</p> <p>When relevant, uses data from across different types and/or sources to triangulate analysis of data and to evaluate and explain (in)consistency of measurement or findings.</p>

High-Level Description: Identifying and describing similarities and differences and using them to support an argument or explanation.

0	1	2	3	4	5	6	7	8
No evidence of comparing/contrasting.	Identifies a similarity or difference relevant to a claim/main idea.	Identifies similarities and differences relevant to a specific claim/main idea.	Identifies significant similarities and differences relevant to a specific claim/main idea.	Describes significant similarities and differences relevant to a specific claim/main idea/thesis.	Describes significant similarities and differences relevant to a specific claim/main idea/thesis. Explains in a limited way why the similarities/differences are meaningful within the frame of reference (i.e., the claim/main idea/thesis).	Analyzes or evaluates significant similarities and differences relevant to a specific claim/main idea/thesis. Thoroughly explains why the similarities/differences are meaningful within the frame of reference. Organizes points of comparison in a logical way.	Analyzes or evaluates significant similarities and differences relevant to a specific claim/main idea/thesis. Explains how the similarities/differences support a specific claim/main idea/thesis. Organizes points of comparison in a way that supports understanding and analysis.	Analyzes or evaluates significant similarities and differences relevant to a specific claim/main idea/thesis. Explains how the similarities/differences refine or sharpen a specific claim/main idea/thesis. Organizes points of comparison in a way that best highlights and frames similarities and differences for analysis and understanding.

High-Level Description: Developing, using, and revising models (i.e., diagrams, physical replicas, mathematical representations, analogies, and computer simulations) to describe and predict phenomena or represent and test design solutions.

0	1	2	3	4	5	6	7	8
No evidence of developing, using, or revising models to describe a phenomenon or design solution.	Develops/ uses a simple, partial model to describe a phenomenon or design solution. Model includes significant errors.	Develops/ uses a simple, partial model based on observations or prior knowledge to describe a phenomenon or design solution. Model includes minor errors.	Develops/ uses a mostly complete model based on evidence to describe a phenomenon. Also identifies limitation(s) of the model. OR Develops a partially complete diagram or simple physical prototype of proposed object, tool, or process.	Develops/ uses a complete model based on evidence to predict and/ or describe phenomenon. Also identifies limitation(s) of the model. OR Develops a complete diagram or simple physical prototype of proposed object, tool, or process that is specific enough to show and potentially test cause-and-effect relationships.	Develops/uses a complete model based on evidence to predict and/ or describe phenomenon/ unobservable mechanisms, including specific relationships between variables. Also identifies limitation(s) of the model. OR Develops a complete diagram or simple physical prototype of proposed object, tool, or process that is specific enough to generate some data to predict and explain phenomena or design solutions. Also evaluates limitation(s) of the model of proposed object or tool.	Develops/uses a complete model based on evidence to predict and/ or describe phenomenon/ unobservable mechanisms, including specific relationships between variables. Also identifies merits and limitation(s) of the model. OR Develops a complete diagram or simple physical prototype of proposed object, tool, or process that is specific enough to generate all data needed to predict and explain phenomena or design solutions. Also evaluates merits and limitation(s) of the model of proposed object or tool.	Develops/uses a complete model based on evidence to predict and/ or describe phenomenon, including specific relationships within and between systems. Also evaluates merits and limitation(s) of the model in order to evaluate validity of the model. OR Develops a complete model (including computational representations) of a proposed object, tool, or process that is specific enough to generate all data needed to predict and explain phenomena or design solutions. Also evaluates merits and limitation(s) of the model of proposed object or tool in order to evaluate validity of model.	Develops/uses a complete model based on evidence to predict and/ or describe phenomenon, including specific relationships within and between systems. Also evaluates merits and limitation(s) of the model and compares to other models in order to select best model. OR Develops a complete model (including computational representations) of a proposed object, tool, or process that is specific enough to generate all data needed to predict and explain phenomena or design solutions. Also evaluates merits and limitation(s) of the model of proposed object or tool and compares to other models in order to select best model.

High-Level Description: Interpreting data/information from sources and making valid, credible claims about a phenomenon, model, or design solution.

0	1	2	3	4	5	6	7	8
No evidence of interpreting data/information.	Interpretation of data/information is inaccurate or inconsistent in relation to the data or evidence about a phenomenon or design solution.	Interpretation of data/information partially supports claims about a phenomenon or design solution.	Interpretation of data/information supports accurate claims about a phenomenon or design solution.	Interpretation of data/information supports accurate claims about a phenomenon or design solution. Discusses some limitations of the findings.	Interpretation of data/information supports accurate claims about a phenomenon or design solution. Discusses possible errors and limitations of findings. When possible, follows through on a plan to improve the accuracy of results (e.g., by increasing the number of trials).	Interpretation of data/information supports accurate claims about a phenomenon, model , or design solution. Discusses possible sources of errors and limitations of findings. When possible, follows through on a plan to improve the accuracy of results (e.g., by increasing the number of trials).	Interpretation of data/information provides complete and credible support for accurate claims about a phenomenon, model, or design solution. Discusses possible sources of errors, limitations, and/or outliers . When possible, follows through on a plan to improve the accuracy of results (e.g., by increasing the number of trials).	Interpretation and synthesis of data/information from varied sources provides complete and credible support for precise claims about a phenomenon, model, or design solution. Discusses possible sources of errors, limitations, and/or outliers. Follows through on a plan to improve the accuracy of results and evaluates the effectiveness of those procedures .

High-Level Description: Connecting ideas and making inferences based on evidence or reasoning.

0	1	2	3	4	5	6	7	8
No evidence of connecting ideas or making inferences.	Demonstrates a basic understanding of a text based on explicit details in the text. Refers to a specific example relevant to that understanding.	Makes an inference based on evidence. Refers to a specific example relevant to the inference.	Makes relevant inferences based on evidence. Makes clear connections between two or more specific examples relevant to the inferences.	Makes relevant inferences based on evidence and identifies the larger significance of the inference. Connections between a specific example and the larger idea are clear and appropriate.	Makes clear and relevant inferences based on evidence and partially explains the larger significance of the inference. Connections to the larger idea are made through multiple examples but may have some gaps in explanation or may not be fully developed.	Makes clear, relevant, thoughtful inferences and explains their larger significance. When relevant, identifies limitations of inferences based on gaps in evidence. Connections to the larger idea are clearly made through multiple examples.	Makes clear, highly relevant and thoughtful inferences and thoroughly explains their larger significance. When relevant, identifies limitations of inferences based on gaps in evidence. Uses inferences as the basis for predictions or broader generalizations. Connections to the larger idea are clearly made through multiple examples, including attempts at non- or counter-examples.	Makes clear, highly relevant, insightful inferences and thoroughly explains their larger significance with sophisticated insight or originality of interpretation. When relevant, identifies limitations of inferences based on gaps in evidence. Uses inferences as the basis for predictions or broader generalizations. Connections to the larger idea are clearly made through multiple examples, including non- or counter-examples.

High-Level Description: Evaluating competing design solutions for a relevant problem, accounting for criteria and constraints, and drawing on empirical evidence, including the student’s own generated evidence.

0	1	2	3	4	5	6	7	8
No evidence of evaluating a design solution.	Makes a claim about the merit of a solution to a problem by discussing generally how it meets the criteria or constraints of the problem with minimal reference to evidence.	Makes a claim about the merit of a solution to a problem by discussing how it meets specific criteria and constraints of the problem with some reference to evidence.	Makes a claim about the merit of a solution to a problem by discussing how it meets specific criteria and constraints of the problem with clear citation of empirical evidence.	Makes a claim that compares and evaluates competing design solutions to a real-world problem based on empirical evidence and scientific reasoning or analysis.	Makes a claim that compares and evaluates competing design solutions to a real-world problem based on empirical evidence and scientific reasoning or analysis. For the selected design solution, explains whether empirical evidence satisfies design criteria and constraints.	Makes a claim that compares and evaluates competing design solutions to a real-world problem based on empirical evidence and scientific principles or disciplinary ideas. For the selected design solution, explains how well empirical evidence demonstrates that design criteria and constraints are satisfied.	Makes a claim that compares and evaluates competing design solutions to a real-world problem based on empirical evidence, scientific or disciplinary ideas and principles, and logical arguments regarding relevant factors (e.g. economic, societal, environmental, ethical considerations). For each design solution, explains how well empirical evidence demonstrates that design criteria and constraints are satisfied.	Makes a claim that compares and evaluates competing design solutions to a real-world problem based on empirical evidence, scientific or disciplinary ideas and principles, and logical arguments regarding relevant factors (e.g. economic, societal, environmental, ethical considerations). For each design solution, explains how well empirical evidence demonstrates that design criteria and constraints are satisfied. Explains limitations of the empirical evidence or trade-offs of different solutions, and determines what additional information is required to make a more informed choice.

High-Level Description: Evaluating arguments or explanations. For NGSS: When possible, students should be asked to evaluate competing or alternate arguments/explanations and apply the same analytic lens to evaluate multiple arguments/explanations.

0	1	2	3	4	5	6	7	8
No evidence of evaluating an argument.	Restates an argument/ explanation. OR States an opinion on the argument/ explanation with minimal reference to evidence.	Summarizes an argument/ explanation. States an opinion on the argument/ explanation and rationale based on the relevance of the evidence. FOR NGSS: Considers whether the evidence is empirical.	Accurately summarizes an argument/ explanation or specific claims. Evaluates the logic of the reasoning and the relevance/ nature of the evidence. FOR NGSS: Considers whether empirical evidence is based on research and distinguishes among facts and opinions.	Accurately summarizes an argument/ explanation and specific claims. Evaluates the argument based on the logic of the reasoning, relevance, and credibility of the evidence. FOR NGSS: Considers whether interpretation of empirical evidence is scientifically reasonable.	Explains an argument/ explanation and specific claims. Evaluates the argument based on the logic of the reasoning, relevance, and credibility of the evidence. When relevant, identifies false statements and fallacious reasoning (i.e., logical fallacies). FOR NGSS: Considers whether interpretation of empirical evidence is scientifically reasonable and whether it supports or refutes a scientific explanation or model.	Clearly explains an argument/ explanation and specific claims. Evaluates the argument by thoroughly assessing the logic of the reasoning and relevance, credibility, and sufficiency of the evidence. When relevant, identifies false statements and fallacious reasoning (i.e., logical fallacies). FOR NGSS: Considers the sufficiency and consistency of the empirical evidence, including the student's own generated evidence, and limitations of the empirical evidence.	Clearly explains an argument/ explanation and specific claims. Evaluates the argument by thoroughly assessing the logic of the reasoning and the relevance, credibility, and consistency of evidence. When relevant, identifies false statements and fallacious reasoning (i.e., logical fallacies) and explains alternate claims or evidence to improve the logic of the argument/ explanation. FOR NGSS: Considers currently accepted explanations or models , the sufficiency and consistency of empirical evidence, including the student's own generated evidence, and limitations of empirical evidence.	Clearly explains an argument/explanation and specific claims. Evaluates the argument by thoroughly assessing the logic of the reasoning and the relevance, credibility, sufficiency, and consistency of evidence. Identifies false statements and fallacious reasoning (i.e., logical fallacies) and explains alternate claims or evidence to improve the logic of the argument/ explanation. Determines what additional information is required to resolve contradictions. FOR NGSS: Considers currently accepted explanations and models, new evidence , the sufficiency and consistency of empirical evidence, including the student's own generated evidence, and limitations of empirical evidence.

Dimension: Designing a solution (e.g., an object, tool, process or system) that is supported by scientific ideas and meets criteria and constraints; evaluating and refining the solution through analysis of empirical evidence.

0	1	2	3	4	5	6	7	8
No evidence of an appropriate design solution.	Designs a solution to address a problem with little or no connection to criteria or constraints.	Designs a solution that meets one or more criteria and constraints of the problem. Evaluation of the solution and the refined solution reflect minimal attention to empirical evidence.	Designs a solution that refers to a scientific idea and meets core criteria and constraints. Evaluation of the solution and the refined solution refer to empirical evidence.	Designs a solution that refers to and applies a relevant scientific idea and meets core and additional specific criteria and constraints. Evaluation of the solution and the refined solution refer to and are consistent with empirical evidence.	Designs a solution that refers to and accurately applies relevant scientific idea(s) and makes trade-offs to satisfy prioritized criteria and meet constraints. Evaluation of the solution and the refined solution reflect analysis of empirical evidence.	Designs a solution to a complex real-world problem; solution is explicitly and accurately supported with relevant scientific ideas and makes trade-offs to satisfy prioritized criteria and meets most constraints. Evaluation of the solution and the refined solution reflect accurate analysis of empirical evidence.	Designs a solution to a complex real-world problem; solution is explicitly and accurately supported with relevant scientific ideas and/or models and optimizes trade-offs to satisfy prioritized criteria and fully meet constraints. Solution takes into account possible unanticipated effects. Evaluation of the solution and the refined solution clearly reflect accurate analysis of empirical evidence collected by the student.	Designs a sophisticated solution to a complex real-world problem; solution is explicitly and accurately supported with relevant scientific ideas and/or models and optimizes trade-offs to satisfy prioritized criteria and fully meet constraints. Solution takes into account possible unanticipated effects. Evaluation of the solution and the refined solution clearly reflect accurate analysis of empirical evidence collected by the student and, when available, credible secondary sources.

High-Level Description: Explaining a phenomenon using empirical evidence, disciplinary ideas, and logical reasoning.

0	1	2	3	4	5	6	7	8
No evidence of an appropriate explanation.	Explanation is not consistent with empirical evidence or disciplinary ideas.	Constructs an explanation to describe a phenomenon with minimal reference to empirical evidence.	Constructs an explanation about observed relationships to describe a phenomenon based on empirical evidence. FOR NGSS: Explanations are based on empirical data (e.g., measurements, observations, patterns) and are used to make predictions.	Constructs an explanation about a phenomenon based on empirical evidence and makes a connection to a disciplinary idea. FOR NGSS: Explains the relationship among variables based on empirical data and a scientific principle, theory, or model.	Constructs an explanation about a phenomenon based on empirical evidence and makes a connection to a disciplinary idea. When relevant, identifies limitations of the evidence. FOR NGSS: Explains the relationship among variables based on empirical data and a scientific principle, theory, or model.	Constructs an explanation about a phenomenon, supported by logical reasoning , empirical evidence, and making connection to a disciplinary idea. When relevant, identifies limitations of the evidence. FOR NGSS: Explains the relationship among variables; explanations are supported by a brief discussion of empirical data and scientific principles, theories, or models.	Constructs a complete and credible explanation about a phenomenon, supported by logical reasoning, empirical evidence, and/or explanations of disciplinary concepts. When relevant, describes limitations of the evidence. FOR NGSS: Accurately and completely explains the relationship among variables; explanations are supported by a discussion of empirical data and scientific principles, theories, or models.	Constructs a complete and credible explanation about a phenomenon, supported by a synthesis of logical reasoning, empirical evidence, and/or explanations of disciplinary concepts. When relevant, explains limitations of the evidence and/or alternate explanations/ approaches. FOR NGSS: Accurately and completely explains the relationship among variables; explanations are supported by a synthesis of empirical data from a variety of data sources, including students' own investigations , scientific theories, models, simulations, and/or peer review.

High-Level Description: Developing a strong opinion/argument through clear, well-sequenced claims.

0	1	2	3	4	5	6	7	8
No evidence of opinion/claim.	Introduces an opinion/claim and provides reasons that support student's point of view.	Introduces a clear opinion/claim and provides reasons that support student's point of view.	Introduces a clear opinion/claim and provides logically ordered reasons that support student's point of view.	Claims and subclaims are clearly introduced throughout writing and organized so that relationships between claims and subclaims are evident.	Claims and subclaims are clearly introduced and organized in a way that makes relationships among claims and subclaims clear and supports the reader's understanding. Some attention is given to the significance of claims.	Claims and subclaims are clear, focused, and consistent throughout the writing; the sequencing of the claims and subclaims builds the reader's understanding throughout the writing. The significance of the claims is clearly established.	Claims and subclaims are clear, precise, and consistent throughout the writing with some nuance ; the sequencing of the claims and subclaims creates a coherent structure that builds the reader's understanding throughout the writing. The significance of the claims is clearly established and developed.	Claims and subclaims are clear, precise, and nuanced throughout the writing; the sequencing of the claims and subclaims creates a complex and coherent structure that builds the reader's understanding throughout the writing. The significance of the claims is clear and persuasive.

High-Level Description: Constructing explanations or conveying ideas and information through clear, well-organized, relevant ideas.

0	1	2	3	4	5	6	7	8
No evidence of topic or main idea.	Topic is evident with an unclear main idea.	Main idea is clear, on-topic, and focused. Some supporting ideas are provided.	Main idea is clear, on-topic, and focused. Supporting ideas are relevant to main idea.	Main idea/thesis is clear and focused. Supporting ideas are relevant and organized so that relationships between main idea and supporting ideas are evident.	Main idea/thesis is clear, focused, and consistent throughout the writing. Supporting ideas are relevant, organized in a way that makes relationships among ideas clear, and that supports the reader's understanding.	Main idea/thesis is clear and complex. Relevant, sufficient supporting ideas are explicitly connected to main idea and organized logically to create a coherent structure that builds the reader's understanding throughout the writing.	Main idea/thesis is complex, focused, and consistent. Highly relevant supporting ideas are tightly connected to the main idea and with each other to create a complex and coherent structure that builds the reader's understanding throughout the writing.	Main idea/thesis is complex, precise, and consistent. Significant, highly relevant supporting ideas build on the main idea and on one another in an elegant progression to create a complex and coherent structure that builds the reader's understanding throughout the writing.

High-Level Description: Developing an oral or written narrative that relates connected experiences, events, procedural steps, or the like (whether they are real or imagined).

0	1	2	3	4	5	6	7	8
No evidence of developing an oral or written narrative.	Establishes a situation and organizes a sequence of events using temporal words and phrases. Introduces a narrator and/or characters and provides a sense of closure. Uses limited details and a narrow set of narrative techniques such as description of actions, thoughts, and feelings or dialogue to develop characters and plot, but they are unevenly developed.	Establishes a situation and organizes a sequence of events using some transitional words and phrases. Introduces a narrator and/or characters and provides a logical conclusion . Uses concrete words and phrases, sensory details, and some narrative techniques, such as description of actions, thoughts, and feelings, and dialogue, to develop characters and plot .	Establishes a situation and organizes a sequence of events using a variety of transitional words, phrases, and clauses . Introduces a narrator and/or characters and provides a logical conclusion. Uses concrete words and phrases, sensory details, and narrative technique, such as description of actions, thoughts, and feelings, and pacing , to develop characters and plot.	Clearly establishes an orientation, storyline, and/or organization of experiences, events, and/or steps. Organizational sequence is logical, coherent, and/or unfolds naturally ; where appropriate, multiple narrative techniques are used (e.g., description, dialogue, pacing, or reflection). Description includes some precise vocabulary and some details and/or sensory language; conclusion generally follows from the narrated experiences/events/steps.	Clearly establishes an orientation, storyline, and/or organization of experiences, events, and/or steps. Organizational sequence is logical, coherent, and/or unfolds naturally and smoothly ; where appropriate, multiple narrative techniques are used effectively (e.g., description, dialogue, pacing, or reflection). Description includes precise vocabulary and, when relevant, vivid details and sensory language; conclusion clearly follows from the narrated experiences/events/steps.	All of Level 5, plus: Uses a variety of techniques to sequence experiences/events/steps so that they build on one another to create a coherent whole, a particular tone and/or mood, and/or a specific outcome.	All of Level 6, plus: Uses narrative techniques to provide deep insight into the content (personalities and motivations, significance of events, etc.) Develops multiple plots, storylines, or sequences of events/steps.	All of Level 7, plus: Manipulates pace and other narrative elements to highlight the significance of experience/events/steps or create specific effects.

DOMAIN: COMPOSING/WRITING

DIMENSION: COUNTERCLAIMS

High-Level Description: Acknowledging and developing alternate or opposing positions.

0	1	2	3	4	5	6	7	8
No evidence of acknowledging or developing alternate positions.	Acknowledges that there is disagreement without identifying a specific counterclaim.	Identifies a specific counterclaim.	Describes a specific counterclaim.	Describes specific counterclaims and clearly distinguishes them from claims.	Clearly distinguishes claim from counterclaim, develops counterclaims with some evidence or detail, and points out their limitations.	Develops counterclaims fairly with sufficient evidence or detail, pointing out their strengths and limitations in a way that anticipates the audience's knowledge level and concerns.	Develops counterclaims fairly and thoroughly with sufficient evidence or detail, pointing out their strengths and limitations in a way that anticipates the audience's knowledge level, concerns, values, and possible biases.	Develops counterclaims fairly and thoroughly with highly relevant evidence or detail. Refutes counterclaims thoroughly and strategically, conceding points where appropriate to strengthen the writer's own argument.

DOMAIN: COMPOSING/WRITING

DIMENSION: SELECTION OF EVIDENCE

High-Level Description: Using relevant and sufficient evidence to support claims.

0	1	2	3	4	5	6	7	8
No evidence or evidence is completely unrelated to statements.	Selects evidence with minimal relevance to main claim(s).	Selects evidence relevant to main claim(s).	Selects relevant evidence that generally supports main claim(s). Evidence for subclaims is limited or weakly related.	Selects relevant evidence that generally supports both main claim(s) and subclaims.	Selects a variety of relevant evidence that is sufficient to support main claim(s). Evidence still only generally supports subclaims.	Selects a variety of detailed, relevant evidence that is sufficient to support both main claim(s) and subclaims.	Selects a variety of detailed, significant evidence that is sufficient to support and develop both main claim(s) and subclaims.	Selects the most significant evidence that is highly appropriate to the audience's knowledge of the topic or other concerns to persuasively support and develop both claim(s) and subclaims.

High-Level Description: Analyzing how the selected evidence support the writer’s statements (e.g., claims, controlling ideas).

0	1	2	3	4	5	6	7	8
No evidence of explaining how evidence supports the writer’s statements.	Includes relevant facts, definitions, and/or details (and relevant illustrations, when appropriate).	Includes relevant facts, definitions, concrete details, and quotations, and/or examples (and illustrations or multimedia, when appropriate) that support the main idea.	Explains relevant facts, definitions, concrete details, and/or quotations, and examples (and illustrations or multimedia, when appropriate) that support the opinion/main idea.	Provides relevant analysis that explains how the selected evidence supports claims or statements. Analysis stays rooted in the evidence but at times may be vague, illogical, or overly general.	Provides clear analysis that accurately explains how the selected evidence supports claims or statements.	Provides insightful and clear analysis that thoroughly and accurately explains how the evidence supports claims or statements. When relevant, analysis acknowledges some weakness(es) or gaps in the evidence.	Provides insightful, clear, compelling analysis that thoroughly and accurately explains how the evidence supports claims or statements. When relevant, analysis addresses weakness(es) or gaps in the evidence.	Provides insightful, compelling analysis that thoroughly, accurately, and concisely explains how the evidence supports claims or statements. When relevant, analysis clearly addresses weakness(es) or gaps in the evidence. Analysis is elegant in its precision and/or sophistication and originality.

High-Level Description: Representing evidence accurately and including evidence in text.

0	1	2	3	4	5	6	7	8
No evidence of including evidence from sources, or evidence is presented inaccurately.	Presents information from experiences or sources in brief notes taken in a provided organizer.	Presents relevant evidence from experiences or sources in notes organized by categories, or at appropriate places in the text.	Presents relevant evidence from experiences or sources through accurate summary or paraphrase at appropriate places within the text.	Evidence from sources is presented objectively and accurately and inserted at appropriate points in the text to support an argument, explanation, or analysis.	Evidence is presented objectively and accurately, positioned appropriately in the text, and contextualized with introductory and/or explanatory phrases or statements.	Evidence is presented objectively and accurately, positioned and contextualized appropriately, and purposefully excerpted, paraphrased, or summarized to highlight the aspects that are most relevant or important to the argument, explanation, or analysis.	Evidence is presented objectively and accurately, positioned and contextualized appropriately, and excerpted, paraphrased, or summarized strategically. Evidence is integrated into the text in a variety of ways (e.g., breakout quotes, combination of summary and direct quote) that support the argument, explanation, or analysis and develop a consistent tone appropriate to the purpose.	Evidence is presented objectively and accurately and integrated seamlessly and strategically into the text in a variety of ways that support the argument, explanation, or analysis and develop a consistent and sophisticated tone appropriate to the purpose.

High-Level Description: Using text structure and transitions to communicate with clarity and coherence.

0	1	2	3	4	5	6	7	8
<p>No evidence of appropriate use of text structure and transitions.</p>	<p>Groups related information together related to claim/main idea.</p> <p>Uses linking words to connect ideas/claims.</p>	<p>Organizes paragraphs or sections around claim/ideas.</p> <p>Uses words and phrases to link ideas within categories of information/claims.</p>	<p>Organizes paragraphs or sections logically to support the main idea or claim.</p> <p>Uses words, phrases, and clauses to link ideas within and across categories/claims.</p>	<p>Paragraphs and/or sections are connected and sequenced to support understanding of ideas.</p> <p>Transitions are varied and are mostly appropriate and effectively used.</p>	<p>Paragraphs and/or sections are connected and logically build upon one another to deepen understanding of ideas and clarify relationships among ideas.</p> <p>Transitions are varied and appropriately and effectively used.</p>	<p>Paragraphs and/or sections are connected and clearly and logically build upon one another to deepen understanding of complex ideas and to clarify relationships among those ideas.</p> <p>Transitions are varied and appropriately and effectively used.</p> <p>Sequencing of paragraphs and use of transitions help build cohesion.</p>	<p>Sequencing of paragraphs and/or sections creates a coherent whole that deepens understanding of the content and builds toward a particular outcome.</p> <p>Transitions are appropriate, effective, and varied in their structure and location.</p>	<p>Sequencing of paragraphs or sections creates a coherent whole that deepens understanding of the content and clearly guides the reader toward a particular outcome.</p> <p>Transitions are appropriate, effective, and varied in their structure and location.</p> <p>Sequencing of ideas and transitions is seamless and fluid, and enhances the purpose of the writing.</p>

High-Level Description: Framing a composition with a relevant introduction and conclusion.

0	1	2	3	4	5	6	7	8
No evidence of a relevant introduction and conclusion.	Introduces the topic and includes main idea or claim. Provides a concluding statement or section.	Introduces the topic and a clear main idea or claim; focus on the main idea or claim is mostly maintained. Provides a concluding statement or conclusion that relates to the main idea or claim.	Introduces the topic and a clear main idea or claim; maintains a consistent focus on the main idea or claim. Provides a concluding statement or conclusion that relates to the main idea or claim.	Introduction includes related background or context information about the topic and introduces the main idea(s) or claim(s). Conclusion logically follows from the content presented and ties back to main idea(s) or claim(s).	Introduction includes relevant background or context information about the topic, introduces main idea(s) or claim(s), and establishes purpose for writing. Conclusion summarizes the content presented and pulls multiple ideas together in relation to the main idea(s) or claim(s).	Introduction includes relevant and sufficient background or context information about the topic, introduces main idea(s) or claim(s), and establishes purpose for writing; introduction is engaging. Conclusion summarizes, pulls ideas together, and highlights important points of the content presented; when appropriate, conclusion considers some implication(s) of the content presented.	Introduction clearly contextualizes the topic, and clearly establishes the main idea(s) or claim(s) and purpose for writing; introduction is engaging. Conclusion summarizes, highlights, and/or extends ideas as appropriate; when appropriate, conclusion addresses implications or significance of the content presented.	Introduction clearly and concisely contextualizes the topic and establishes the main idea(s) or claim(s); introduction clearly establishes the purpose and outlines the structure of the content that follows; introduction is engaging and inviting. Conclusion strongly supports the content presented by clearly summarizing, highlighting, and/or extending ideas as appropriate; when appropriate, conclusion clearly addresses implications/ significance of and/or acknowledges questions that arise from the content presented.

High-Level Description: Contributing to a discussion or task with clear, relevant, and substantive content, prepared with appropriate evidence and details.

0	1	2	3	4	5	6	7	8
No evidence of appropriate contribution to discussions/ tasks.	Makes comments that are on-topic and has some connection to prior comments. OR Poses questions to learn more about the topic. OR Comes to discussion prepared with ideas about the topic.	Makes comments relevant to the topic and connected to others' comments. OR Poses questions to check own understanding of information . OR Shows preparation by referencing information from assigned readings or prior knowledge .	Makes comments that review key ideas of the discussion, restate or clarify others' comments. OR Poses questions to understand the ideas of others. OR Shows preparation by referencing information from assigned readings and prior knowledge.	Makes comments that review key ideas of the topic and/or poses questions relevant to the topic . OR Shows preparation by referencing specific and relevant information from assigned readings.	Expresses own ideas clearly and/or poses questions relevant to the topic and in response to others' ideas . Contributions to discussion reflect preparation by drawing on specific and relevant evidence from sources and personal experiences/ observations to support own ideas or questions .	Expresses own ideas clearly and/or poses relevant broadly connected to the topic/ theme to propel the discussion in different but related areas . Contributions to discussion reflect preparation by drawing on specific and relevant examples from texts and other research on the topic to support own ideas or questions.	Expresses own ideas clearly and persuasively and/or poses relevant and knowledgeable questions to propel the discussion in different but related directions. Contributions to discussion reflect preparation by drawing on substantive or citing evidence from texts and other research on the topic to support own ideas or questions.	Expresses own ideas clearly and persuasively and/or poses relevant, original questions to propel the discussion in novel or creative directions. Contributions to discussion reflect thorough preparation by drawing frequently on substantive examples and citing evidence from texts and other research on the topic to support own ideas and questions.

High-Level Description: Demonstrating active listening and openness to diverse perspectives. Using roles and norms to support collegial discussions and completion of group work.

0	1	2	3	4	5	6	7	8
No evidence of appropriate active listening and adherence to roles and norms.	Participates minimally in discussions. OR Follows agreed-upon norms.	Listens carefully and takes making comments that link to previous comments. OR Asks questions to check understanding of information shared by others. OR Follows agreed-upon rules and carries out assigned roles.	“Demonstrates active listening by making comments that link to previous comments and asking questions to clarify others’ ideas or follow up on information. Follows agreed-upon rules and deadlines. Carries out assigned roles.	Demonstrates active listening by reviewing or elaborating on key points made by others and asking questions to solicit ideas from others. Mostly adheres to established norms for collegial discussions. Tracks progress toward specific goals and deadlines. Enacts individual roles independently.	Demonstrates active listening by making connections to others’ ideas, responding to their questions and comments, and/or acknowledging different perspectives. Adheres to teacher-enforced collegial discussion norms. Facilitates progress toward specific goals and deadlines. Attempts to establish individual roles within the group as needed.	Demonstrates active listening by making connections or responding to others’ ideas or questions, and acknowledging different perspectives. Adheres to teacher- and group-enforced collegial discussion norms. Effectively facilitates progress toward specific goals and deadlines. Establishes appropriate individual roles within the group as needed.	Demonstrates active listening by responding to or incorporating others’ ideas or seeking diverse perspectives. Adheres to and helps enforce collegial discussion norms. Sets clear goals and deadlines and facilitates conversation and interaction to meet them. Manages individual roles within the group as needed.	Demonstrates active listening by responding to or incorporating others’ ideas and seeking divergent/creative perspectives. Resolves conflicting ideas when possible; raises unanswered questions and directions for additional research to resolve disagreements. Applies collegial discussion norms. Sets clear and detailed goals and deadlines and effectively facilitates conversation/interaction to meet them. Efficiently manages individual roles and partnerships within the group as needed.

High-Level Description: Using appropriate public speaking strategies to engage the audience and communicate points.

0	1	2	3	4	5	6	7	8
No evidence of use of appropriate speaking strategies.	Makes irregular eye contact with audience. Speaks in a low volume and/or at a pace that makes the presentation difficult to understand.	Makes eye contact with audience. Shows variable body posture and speaks at a volume and pace that does not interfere with audience understanding of the presentation.	Makes regular eye contact with audience. Shows appropriate body posture and speaks at a volume and pace that does not interfere with audience understanding of the presentation.	Makes regular eye contact with audience. Shows appropriate body posture and speaks at an adequate volume and pace with clear pronunciation.	Uses confident , consistently appropriate eye contact , adequate volume, clear pronunciation, and consistently appropriate body posture (e.g., calm, confident).	Demonstrates consistent control of eye contact, volume, pronunciation, and body posture. Uses some variation in volume and inflection to emphasize key points. Uses some body movements to enhance articulation.	Demonstrates strong control of eye contact, pronunciation, and body posture. Varies volume and inflection to maintain audience interest and emphasize key points. Uses fluid body movements to help audience visualize ideas. May use additional engagement techniques such as humor, anecdotes, rhetorical questions, etc. as appropriate to the context.	Demonstrates strong control of eye contact, pronunciation, and body posture. Varies volume and inflection to maintain audience interest and emphasize key points. Uses fluid body movements to help audience visualize ideas. Demonstrates a particularly engaging voice or style of presentation.

High-Level Description: Integrating multimedia and/or technology into all forms of communication, oral and written.

0	1	2	3	4	5	6	7	8
<p>No evidence of integrating multimedia or technology into writing products or visual displays.</p>	<p>With guidance and support, attempts to use multimedia and/or technology tools to produce writing or visual displays that are related to the intended message.</p> <p>Is still learning how to use assigned tools and techniques.</p>	<p>With guidance and support, uses multimedia and/or technology tools to produce writing products and/or visual displays to illustrate or emphasize certain facts or details.</p> <p>Uses assigned tools and techniques with mostly appropriate elements.</p>	<p>With some guidance and support, uses multimedia and/or technology tools to produce writing products and/or visual displays to develop and elaborate on ideas.</p> <p>Uses assigned tools and techniques with mostly appropriate elements.</p>	<p>With some guidance and support, uses multimedia and/or technology tools to produce writing products and/or visual displays to clarify information and emphasize specific points.</p> <p>Uses assigned tools and techniques appropriately.</p>	<p>Uses multimedia and/or technology tools to produce writing products and/or visual displays in purposeful ways to clarify information, strengthen claims, and engage the audience.</p> <p>Selects and uses tools and techniques appropriate for the purpose.</p>	<p>Uses multimedia and/or technology tools to produce writing products and/or visual displays in strategic ways to strengthen claims and evidence, and enhance audience engagement and understanding of the intended messages.</p> <p>Selects and uses tools and techniques appropriate for the purpose.</p>	<p>Uses multimedia and/or technology tools to produce writing products and/or visual displays in strategic and efficient ways to strengthen claims, evidence, and reasoning, and enhance audience engagement and understanding of the intended messages.</p> <p>Selects and uses tools and techniques skillfully to achieve the intended purpose.</p>	<p>Uses multimedia and/or technology tools to produce writing products and/or visual displays in strategic, efficient, and creative ways to strengthen claims, evidence, and reasoning, and enhance audience engagement and understanding of the intended messages.</p> <p>Selects and integrates tools and techniques skillfully and seamlessly to achieve the intended purpose.</p>

High-Level Description: Expressing, integrating, and applying specific content and/or conventions with accuracy and precision.

Minimal/no evidence	Not yet meeting expectations	Partially meeting expectations	Mostly meeting expectations	Fully meeting expectations
No evidence of accurately integrating content or information.	Demonstrates weak application of content and/or conventions; may include major errors or omissions .	Demonstrates basic or uneven application of content and/or conventions; may include minor errors or omissions .	Demonstrates proficient application of content and/or conventions; may include minor inconsistencies .	Demonstrates consistently accurate and precise application of content and/or conventions.