SCIENCE GRADE SEVEN: COLLEGE & CAREER READINESS SKILLS

LITERACY	KNOW	UNDERSTAND	DO
	COMMON CORE STANDARDS ANCHOR READING STANDARD FOR LITERACY IN SCIENCE		
READING INFORMATION	*(Factual)*	*(Conceptual)*	*(Procedural, Application, Extended Thinking)*
RI.1. Grade 6-8: Cite specific textual evidence to support analysis of science and technical subjects.	• Informational text (science expository/technical texts) • How to cite specific textual evidence (e.g., data tables, scientific charts, case studies, quantitative(number based) research and other non-fiction resources) • How to analyze (e.g., bias, credibility, point of view, perspective) • Audience • Purpose • How to draw scientific conclusions • Background knowledge • Critical/analytical judgments • Explicitly stated information from the text(including strengths and limitations)	• Scientists and engineers include key details in informational texts which can help a reader develop and answer scientific questions. • Scientists and engineers make specific choices about the selection of informational text(s) relevant to their research. • Scientists and engineers analyze the reliability of the scientific information within a document/text.	• Use the combination of explicitly stated information, background knowledge, and connections to the text to answer questions they have as they read • Differentiate between quantitative and qualitative data • Describe the connection between the scientist's purpose and the text • Identify/cite and explain information from specific textual evidence (e.g., data tables, scientific charts, case studies, quantitative(number based) • Identify/cite appropriate text support for inferences, hypothesis and conclusions • Differentiate between strong and weak textual support • Develop scientific conclusions about theories in a text • Analyze sources for bias, credibility, point of view, perspective, and purpose for the scientific community • Cite specific textual evidence to support analysis of science and technical subjects.
RI.2. Grade 6-8: Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge opinions.	• Informational text (science, expository/technical texts) • How to explain (e.g., what and why) • Types of text structures (e.g. sequence/ chronological order, classification, definition, simple process, description, comparison) • Different purposes for graphic organizers, based on type of scientific data (quantitative/qualitative) • Difference between central/ main ideas and key details in an informational text • How to analyze scientific text • Characteristics of and how to write an effective summary for scientific text	• Writing in science and engineering follows a pattern or plan that includes key details in order to help readers make meaning of the text. • Good readers of science and engineering text use key details to identify the main topic. • Good readers of science and engineering develop effective summaries that are objective and capture the central idea(s) of informational text(s).	• Determine two or more central ideas in an informational text • Analyze how ideas are organized and developed in an informational text. • Describe or graphically represent the relationship between central ideas and supporting details • Explain how the central ideas are supported by key details • Summarize the main ideas objectively in an informational text, capturing the most important parts of the piece • Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge opinions.
RI.3. Grade 6-8: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.	• Asking questions and solving problems in both science and engineering • Developing and using models • Planning an carrying out an investigation • Analyzing and interpreting data • Using mathematics information and computer technology and computational thinking • Constructing explanations and designing solutions • Engaging in arguments from evidence • Obtaining, evaluating and communicating information	• Good readers/researchers analyze the development of individuals, events, ideas/concepts and steps/procedures in order to make meaning of what they read.	• Develop and test theories • Organize and interpret data through tabulating, graphing or statistical analysis • Collect and analyze large data sets, search for distinctive patterns and identify significant relationships and features • Provide explanations aimed a illuminating a particular phenomena predicting future events about past events • Provide reasoning and arguments to support scientific evidence • Use words, diagrams, tables, charts, graphs, etc. • Reading scientific and engineering text(s) • Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

KEY IDEAS AND DETAILS

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CRAFT & STRUCTURE

	KNOW *(Factual)*	UNDERSTAND *(Conceptual)*	DO *(Procedural, Application, Extended Thinking)*
RI.4. Grade 6-8: Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 6-8 texts and topics.*	• Informational text • How to analyze • Context clues • Literal meaning • Technical meaning	• Writers of science and engineering text(s) make purposeful choices to achieve an intended effect within informational text(s). • Good readers of science and engineering text(s) actively seek the meaning of unknown words/phrases to deepen their understanding of informational text(s).	• Read and reread other sentences, words, table(s), diagram(s) and graph(s) to identify context clues to help unlock the meaning of unknown words/phrases • Determine the appropriate definition of words that have more than one meaning • Identify and use scientific language • Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to *grades 6-8 texts and topics.*
RI.5. Grade 6-8: Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.	• Informational text (science expository/technical texts) • How to analyze • Various text structures (e.g., sentences, paragraph, chapter, section) • Various patterns of organization (e.g., sequence/chronological order, classification, definition, process, description, comparison, problem/ solution, simple cause/effect, conflict/resolution) • Various text features (e.g., title, author, cover, pictures, captions, maps, chapter headings, information from charts and graphs, illustrations, glossaries, indices) • Difference between text structure and text feature • Relationships between parts of text and whole text (as indicated by text features and structures)	• Writers of scientific and engineering text(s) use organizational patterns and features to chunk and arrange the information so readers can deconstruct the text. • Good readers of science and engineering text(s) understand the structures and features of a text, and use them to make sense of what they read.	• Identify text features (e.g., title, author, cover, pictures, captions, maps, chapter headings, information from charts and graphs, illustrations, glossaries, indices) • Identify text structures (e.g., sentences, paragraph, chapter, section) • Describe the relationship between text organization and development of ideas • Analyze the relationship between text organization and development of ideas • Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.
RI.6. Grade 6-8: Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.	• Informational text (both literary nonfiction and expository/technical texts) • How to analyze • The role and purpose for scientific text(s) (to inform, to persuade, to explain how) • The perspective, viewpoint, focus, attitude and bias of writers of scientific and engineering text(s) • Conflicting evidence or viewpoints • Responses to opposing viewpoints (e.g., acknowledge, concede, rebut)	• Authors in scientific and engineering text(s) achieve their purpose through the choices they make (e.g., acknowledging/responding to viewpoints, word choice, and presentation of data, supporting and conflicting arguments). • Authors in scientific and engineering text(s) distinguish their position, viewpoint, and attitude from that of others based on scientific evidence. • Good readers of scientific and engineering text(s) analyze the text in order to identify the difference between the author's viewpoint, focus, attitude and position from that of others based on scientific evidence.	• Explain the author's overall purpose for writing a text • Explain how the author's choices reflect his/her viewpoint, focus, attitude, position or bias • Identify the author's position in a text • Explain how the author controls what the reader knows in a text • Identify if and how conflicting evidence or viewpoints are addressed in a text • Analyze how the author acknowledges and responds to/ignores conflicting evidence or viewpoints • Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.

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INTEGRATION OF KNOWLEDGE AND IDEAS — **RI.8.** Grade 6-8: Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.	• Informational text (science expository/technical texts) • How to trace/delineate an author's argument and specific claims • Fact • Opinion • Arguments • Sound/logical/justified reasoning • Valid vs. invalid claims	• Good readers of science and engineering text(s) evaluate the reasons and evidence that authors use to support their arguments and specific claims in informational text(s).	• Identify fact • Identify opinion • Identify reasoned judgments based on scientific research • Differentiate between claims which are supported by reasons/evidence and those which are not • Differentiate between valid and invalid claims • Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.
RI.9. Grade 6-8: Compare and contrast the information gained from experiments, simulations, video or multimedia sources with that gained from reading a text on the same topic.	• Informational text (science expository/technical texts) • How to analyze • Compare/contrast • Scientist and engineer's viewpoint/ focus/ attitude/bias • Scientist and engineer's perspective (background) • Scientist and engineer's strategies for shaping presentations (e.g., collecting and interpreting data and research collected) • Fact vs. interpretation	• Authors of scientific and engineering text(s) make choices about what to include and how to present information and key details on topics depending on their purpose and evidence. • Good readers of scientific and engineering text(s) include information based on evidence. • Good readers consult a variety of sources when investigating a topic or an event.	• Plan and conduct experiments • Compare and contrast information from various sources. • Identify the scientist or engineer's positions in the text • Describe how the scientist or engineer's choices reflect their viewpoints, foci, attitudes, positions or biases based on scientific evidence • Compare and contrast the information gained from experiments, simulations, video or multimedia sources with that gained from reading a text on the same topic.