NEW MEXICO Public Education Department	F.9 Integrated Science I - Grades 6-8		
PROVIDER/PUBLISHER / MATERIAL INFORMATION (TO BE COMPLETED BY PROVIDER/PUBLISHER)			
Provider/Publisher / Imprint:		Grade(s):	
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Section 1: Standards Review: Science									
Abbreviations for the Form F Standards Review Tab: • PE: Performance Expectation • DCI: Disciplinary Core Idea • SEP: Science and Engineering Practices • CONN: Connections • NM: NM STEM Ready Standard • CCSS: Common Core State Standards for ELA/Literacy in Science and Common Core State Standards for Math in Science as identified in the NGSS									
PUBLISHER/PROVIDER INSTRUCTIONS: • Publisher/Provider citations for this section will refer to the **Teacher Edition (teacher-facing core material).** The cited Teacher Edition should correspond with the title and ISBN entered on the Form F cover page, whether in print, online, or both. The review set submitted to the summer review institute should also correspond with what is cited on the Form F. If the review set is an online platform only, then that is what should be cited on the Form F and submitted for review by the review teams. If the review set is in print only, then that is what should be cited on the Form F and submitted for review by the review teams. • For this section, the publisher/provider will enter one citation per DCI, SEP, CCC, CONN, and NM standard in Column D. Each citation should direct the reviewer to a specific location in the materials that best meets the standard. The citations should be concise and should allow the reviewer to easily determine that all components of the standard have been met. Each citation should cover no more than 3 pages within the materials. ***Any cells grayed out do not require a citation.*** o **Column D:** Enter one citation in Column D from the **Teacher Edition (teacher-facing core material)**. Each citation should direct the reviewer to a specific location in the materials that best meets the standard. The cited material for each DCI, SEP, CCC, and CONN must directly relate to the PE under which they fall. • The material will be scored for alignment with each DCI, SEP, CCC, CONN, and NM standard within each PE as "Meets expectations", "Partially meets expectations", or "Does not meet expectations" based on the citations provided. A score for the PE will be derived from the related DCIs, SEPS, CCCs, CONNs, and NM Standards within the PE. **o NOTE: You may not use a citation more than once across ALL sections of the rubric.**									
Criteria #	**Standard Identifier**	**F.9 Integrated Science I Grades 6-8 Standards Review:**	Publisher/Provider Citation from Teacher Edition	Score	If Scored D: Reviewer's Evidence for Publisher Citation	Reviewer Citation from Student Edition/Workbook	Score	Required: Reviewer's Evidence	Comments, other citations, notes
Light Waves, Particles, Temperature, States of Matter, Thermal Energy Transfer									
1	**PE**	**MS-PS4-2. Students who demonstrate understanding can: Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.**							
2	**DCI**	**PS4.A: Wave Properties** A sound wave needs a medium through which it is transmitted. (MS-PS4-2)							
3	**DCI**	**PS4.B: Electromagnetic Radiation** • When light shines on an object, it is reflected, absorbed, or transmitted through the object, depending on the object's material and the frequency (color) of the light. (MS-PS4-2)							
4	**DCI**	**PS4.B: Electromagnetic Radiation** • The path that light travels can be traced as straight lines, except at surfaces between different transparent materials (e.g., air and water, air and glass) where the light path bends. (MS-PS4-2)							
5	**DCI**	**PS4.B: Electromagnetic Radiation** • A wave model of light is useful for explaining brightness, color, and the frequency-dependent bending of light at a surface between media. (MS-PS4-2)							
6	**DCI**	**PS4.B: Electromagnetic Radiation** • However, because light can travel through space, it cannot be a matter wave, like sound or water waves. (MS-PS4-2)							
7	**SEP**	**Developing and Using Models** *Modeling in 6–8 builds on K–5 and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.* • Develop and use a model to describe phenomena. (MS-PS4-2)							
8	**CCC**	**Structure and Function** Structures can be designed to serve particular functions by taking into account properties of different materials, and how materials can be shaped and used. (MS-PS4-2)							
9	**PE**	**MS-PS1-4. Students who demonstrate understanding can: Develop a model that predicts and describes changes in particle motion, temperature, and state of a pure substance when thermal energy is added or removed.**							
10	**DCI**	**PS1.A: Structure and Properties of Matter** • Gases and liquids are made of molecules or inert atoms that are moving about relative to each other. (MS-PS1-4)							

11	DCI	**PS1.A: Structure and Properties of Matter** • In a liquid, the molecules are constantly in contact with others; in a gas, they are widely spaced except when they happen to collide. In a solid, atoms are closely spaced and may vibrate in position but do not change relative locations. (MS-PS1-4)							
12	DCI	**PS1.A: Structure and Properties of Matter** • The changes of state that occur with variations in temperature or pressure can be described and predicted using these models of matter. (MS-PS1-4)							
13	DCI	**PS3.A: Definitions of Energy** • The term “heat” as used in everyday language refers both to thermal energy (the motion of atoms or molecules within a substance) and the transfer of that thermal energy from one object to another. In science, heat is used only for this second meaning; it refers to the energy transferred due to the temperature difference between two objects. (secondary to MS-PS1-4)							
14	DCI	**PS3.A: Definitions of Energy** • The temperature of a system is proportional to the average internal kinetic energy and potential energy per atom or molecule (whichever is the appropriate building block for the system’s material). The details of that relationship depend on the type of atom or molecule and the interactions among the atoms in the material. Temperature is not a direct measure of a system's total thermal energy. The total thermal energy (sometimes called the total internal energy) of a system depends jointly on the temperature, the total number of atoms in the system, and the state of the material. (secondary to MS-PS1-4)							
15	SEP	**Developing and Using Models** *Modeling in 6–8 builds on K–5 and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.* • Develop a model to predict and/or describe phenomena.(MS-PS1-4)							
16	CCC	**Cause and Effect** • Cause and effect relationships may be used to predict phenomena in natural or designed systems. (MS-PS1-4)							
17	PE	**MS-PS3-3. Students who demonstrate understanding can: Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer.**							
18	DCI	**PS3.A: Definitions of Energy** • Temperature is a measure of the average kinetic energy of particles of matter. The relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter present.							
19	DCI	**PS3.B: Conservation of Energy and Energy Transfer** • Energy is spontaneously transferred out of hotter regions or objects and into colder ones.							
20		**ETS1.A: Defining and Delimiting an Engineering Problem** • The more precisely a design task’s criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that is likely to limit possible solutions.							
21		**ETS1.B: Developing Possible Solutions** • A solution needs to be tested, and then modified on the basis of the test results in order to improve it. There are systematic processes for evaluating solutions with respect to how well they meet criteria and constraints of a problem.							

22	**SEP**	**Constructing Explanations and Designing Solutions** *Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.* • Apply scientific ideas or principles to design, construct, and test a design of an object, tool, process or system.							
23	**CCC**	**Energy and Matter** • The transfer of energy can be tracked as energy flows through a designed or natural system.							
24	**PE**	**MS-PS3-4. Students who demonstrate understanding can: Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample.**							
25	**DCI**	**PS3.A: Definitions of Energy** • Temperature is a measure of the average kinetic energy of particles of matter. The relationship between the temperature and the total energy of a system depends on the types, states, and amounts of matter present.							
26	**DCI**	**PS3.B: Conservation of Energy and Energy Transfer** • The amount of energy transfer needed to change the temperature of a matter sample by a given amount depends on the nature of the matter, the size of the sample, and the environment.							
27	**SEP**	**Planning and Carrying Out Investigations** *Planning and carrying out investigations to answer questions or test solutions to problems in 6–8 builds on K–5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or design solutions.* • Plan an investigation individually and collaboratively, and in the design: identify independent and dependent variables and controls, what tools are needed to do the gathering, how measurements will be recorded, and how many data are needed to support a claim.							
28	**CONN**	**Scientific Knowledge is Based on Empirical Evidence** • Science knowledge is based upon logical and conceptual connections between evidence and explanations							
29	**CCC**	**Scale, Proportion, and Quantity** • Proportional relationships (e.g. speed as the ratio of distance traveled to time taken) among different types of quantities provide information about the magnitude of properties and processes.							
30	**PE**	**MS-PS3-5. Students who demonstrate understanding can: Construct, use, and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.**							
31	**DCI**	**PS3.B: Conservation of Energy and Energy Transfer** • When the motion energy of an object changes, there is inevitably some other change in energy at the same time.							
32	**SEP**	**Engaging in Argument from Evidence** *Engaging in argument from evidence in 6–8 builds on K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed worlds.* • Construct, use, and present oral and written arguments supported by empirical evidence and scientific reasoning to support or refute an explanation or a model for a phenomenon.							
33	**CONN**	**Scientific Knowledge is Based on Empirical Evidence** • Science knowledge is based upon logical and conceptual connections between evidence and explanations							
34	**CCC**	**Energy and Matter** • Energy may take different forms (e.g. energy in fields, thermal energy, energy of motion).							

Water Cycling, Weather, Climate									
35	**PE**	**MS-ESS2-4. Students who demonstrate understanding can: Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.**							
36	**DCI**	**ESS2.C: The Roles of Water in Earth's Surface Processes** • Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land.							
37	**DCI**	**ESS2.C: The Roles of Water in Earth's Surface Processes** • Global movements of water and its changes in form are propelled by sunlight and gravity.							
38	**SEP**	**Developing and Using Models** *Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.* • Develop a model to describe unobservable mechanisms.							
39	**CCC**	**Energy and Matter** • Within a natural or designed system, the transfer of energy drives the motion and/or cycling of matter.							
40	**PE**	**MS-ESS2-5. Students who demonstrate understanding can: Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.**							
41	**DCI**	**ESS2.C: The Roles of Water in Earth's Surface Processes** • The complex patterns of the changes and the movement of water in the atmosphere, determined by winds, landforms, and ocean temperatures and currents, are major determinants of local weather patterns.							
42	**DCI**	**ESS2.D: Weather and Climate** • Because these patterns are so complex, weather can only be predicted probabilistically.							
43	**SEP**	**Planning and Carrying Out Investigations** *Planning and carrying out investigations in 6-8 builds on K-5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or solutions.* • Collect data to produce data to serve as the basis for evidence to answer scientific questions or test design solutions under a range of conditions.							
44	**CCC**	**Cause and Effect** • Cause and effect relationships may be used to predict phenomena in natural or designed systems.							
45	**PE**	**MS-ESS2-6. Students who demonstrate understanding can: Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.**							
46	**DCI**	**ESS2.C: The Roles of Water in Earth's Surface Processes** • Variations in density due to variations in temperature and salinity drive a global pattern of interconnected ocean currents.							
47	**DCI**	**ESS2.D: Weather and Climate** • Weather and climate are influenced by interactions involving sunlight, the ocean, the atmosphere, ice, landforms, and living things. These interactions vary with latitude, altitude, and local and regional geography, all of which can affect oceanic and atmospheric flow patterns.							
48	**DCI**	**ESS2.D: Weather and Climate** • The ocean exerts a major influence on weather and climate by absorbing energy from the sun, releasing it over time, and globally redistributing it through ocean currents.							

49	SEP	**Developing and Using Models** *Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.* • Develop and use a model to describe phenomena.							
50	CCC	**Systems and System Models** • Models can be used to represent systems and their interactions—such as inputs, processes and outputs—and energy, matter, and information flows within systems.							
Rock Cycling, Plate Tectonics									
51	PE	**MS-ESS2-1.Students who demonstrate understanding can: Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process.**							
52	DCI	**ESS2.A: Earth's Materials and Systems** • All Earth processes are the result of energy flowing and matter cycling within and among the planet's systems. This energy is derived from the sun and Earth's hot interior. The energy that flows and matter that cycles produce chemical and physical changes in Earth's materials and living organisms.							
53	SEP	**Developing and Using Models** *Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.* • Develop and use a model to describe phenomena.							
54	CCC	**Stability and Change** • Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and processes at different scales, including the atomic scale.							
55	PE	**MS-ESS2-2. Students who demonstrate understanding can: Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.**							
56	DCI	**ESS2.A: Earth's Materials and Systems** • The planet's systems interact over scales that range from microscopic to global in size, and they operate over fractions of a second to billions of years. These interactions have shaped Earth's history and will determine its future.							
57	DCI	**ESS2.C: The Roles of Water in Earth's Surface Processes** • Water's movements—both on the land and underground—cause weathering and erosion, which change the land's surface features and create underground formations.							
58	SEP	**Constructing Explanations and Designing Solutions** *Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.* • Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe nature operate today as they did in the past and will continue to do so in the future.							
59	CCC	**Scale Proportion and Quantity** •Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small.							
60	PE	**MS-ESS2-3. Students who demonstrate understanding can: Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.**							

61	DCI	**ESS1.C: The History of Planet Earth** • Tectonic processes continually generate new ocean sea floor at ridges and destroy old sea floor at trenches.							
62	DCI	**ESS2.B: Plate Tectonics and Large-Scale System Interactions** • Maps of ancient land and water patterns, based on investigations of rocks and fossils, make clear how Earth's plates have moved great distances, collided, and spread apart.							
63	SEP	**Analyzing and Interpreting Data** *Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.* • Analyze and interpret data to provide evidence for phenomena.							
64	CONN	**Scientific Knowledge is Open to Revision in Light of New Evidence** • Science findings are frequently revised and/or reinterpreted based on new evidence.							
65	CCC	**Patterns** • Patterns in rates of change and other numerical relationships can provide information about natural systems.							
66	PE	**MS-ESS1-4. Students who demonstrate understanding can: Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.**							
67	DCI	**ESS1.C: The History of Planet Earth** • The geologic time scale interpreted from rock strata provides a way to organize Earth's history. Analyses of rock strata and the fossil record provide only relative dates, not an absolute scale.							
68	SEP	**Constructing Explanations and Designing Solutions** *Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific ideas, principles, and theories.* • Construct a scientific explanation based on valid and reliable evidence obtained from sources (including the students' own experiments) and the assumption that theories and laws that describe the natural world operate today as they did in the past and will continue to do so in the future.							
69	CCC	**Scale, Proportion, and Quantity** • Time, space, and energy phenomena can be observed at various scales using models to study systems that are too large or too small.							
Natural Hazards									
70	PE	**MS-ESS3-2. Students who demonstrate understanding can: Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.**							
71	DCI	**ESS3.B: Natural Hazards** • Mapping the history of natural hazards in a region, combined with an understanding of related geologic forces can help forecast the locations and likelihoods of future events.							
72	SEP	**Analyzing and Interpreting Data** *Analyzing data in 6–8 builds on K–5 and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.* • Analyze and interpret data to determine similarities and differences in findings.							
73	CCC	**Patterns** • Graphs, charts, and images can be used to identify patterns in data.							

74	**CONN**	**Influence of Science, Engineering, and Technology on Society and the Natural World** • The uses of technologies and any limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. Thus technology use varies from region to region and over time.							
75	**PE**	**MS-PS4-1. Students who demonstrate understanding can: Use mathematical representations to describe a simple model for waves that includes how the amplitude of a wave is related to the energy in a wave.**							
76	**DCI**	**PS4.A: Wave Properties** • A simple wave has a repeating pattern with a specific wavelength, frequency, and amplitude.							
77	**SEP**	**Using Mathematics and Computational Thinking** *Mathematical and computational thinking at the 6–8 level builds on K–5 and progresses to identifying patterns in large data sets and using mathematical concepts to support explanations and arguments.* • Use mathematical representations to describe and/or support scientific conclusions and design solutions.							
78	**CONN**	**Scientific Knowledge is Based on Empirical Evidence** • Science knowledge is based upon logical and conceptual connections between evidence and explanations.							
79	**CCC**	**Patterns** • Graphs and charts can be used to identify patterns in data.							
Organism Growth, Cells, and Systems									
80	**PE**	**MS-LS1-1. Students who demonstrate understanding can: Conduct an investigation to provide evidence that living things are made of cells; either one cell or many different numbers and types of cells.**							
81	**DCI**	**LS1.A: Structure and Function** • All living things are made up of cells, which is the smallest unit that can be said to be alive. An organism may consist of one single cell (unicellular) or many different numbers and types of cells (multicellular).							
82	**SEP**	**Planning and Carrying Out Investigations** *Planning and carrying out investigations in 6-8 builds on K-5 experiences and progresses to include investigations that use multiple variables and provide evidence to support explanations or solutions.* • Conduct an investigation to produce data to serve as the basis for evidence that meet the goals of an investigation.							
83	**CCC**	**Scale, Proportion, and Quantity** • Phenomena that can be observed at one scale may not be observable at another scale.							
84	**CONN**	**Interdependence of Science, Engineering, and Technology** • Engineering advances have led to important discoveries in virtually every field of science, and scientific discoveries have led to the development of entire industries and engineered systems.							
85	**PE**	**MS-LS1-2. Students who demonstrate understanding can: Develop and use a model to describe the function of a cell as a whole and ways the parts of cells contribute to the function.**							
86	**DCI**	**LS1.A: Structure and Function** • Within cells, special structures are responsible for particular functions, and the cell membrane forms the boundary that controls what enters and leaves the cell.							
87	**SEP**	**Developing and Using Models** *Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.* • Develop and use a model to describe phenomena.							

88	CCC	**Structure and Function** • Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function.							
89	PE	**MS-LS1-3. Students who demonstrate understanding can: Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells.**							
90	DCI	**LS1.A: Structure and Function** • In multicellular organisms, the body is a system of multiple interacting subsystems. These subsystems are groups of cells that work together to form tissues and organs that are specialized for particular body functions.							
91	SEP	**Engaging in Argument from Evidence** *Engaging in argument from evidence in 6–8 builds on K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world(s).* • Use an oral and written argument supported by evidence to support or refute an explanation or a model for a phenomenon.							
92	CCC	**Systems and System Models** • Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems.							
93	CONN	**Science is a Human Endeavor** • Scientists and engineers are guided by habits of mind such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas.							
94	PE	**MS-LS1-8. Students who demonstrate understanding can: Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.**							
95	DCI	**LS1.D: Information Processing** • Each sense receptor responds to different inputs (electromagnetic, mechanical, chemical), transmitting them as signals that travel along nerve cells to the brain. The signals are then processed in the brain, resulting in immediate behaviors or memories.							
96	SEP	**Obtaining, Evaluating, and Communicating Information** *Obtaining, evaluating, and communicating information in 6-8 builds on K-5 experiences and progresses to evaluating the merit and validity of ideas and methods.* • Gather, read, and synthesize information from multiple appropriate sources and assess the credibility, accuracy, and possible bias of each publication and methods used, and describe how they are supported or not supported by evidence.							
97	CCC	**Cause and Effect** • Cause and effect relationships may be used to predict phenomena in natural systems.							
Engineering Design:									
98	PE	**MS-ETS1-1. Students who demonstrate understanding can: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.**							
99	DCI	**ETS1.A: Defining and Delimiting Engineering Problems** • The more precisely a design task's criteria and constraints can be defined, the more likely it is that the designed solution will be successful. Specification of constraints includes consideration of scientific principles and other relevant knowledge that are likely to limit possible solutions. (MS-ETS1-1)							

100	SEP	**Asking Questions and Defining Problems** *Asking questions and defining problems in grades 6–8 builds on grades K–5 experiences and progresses to specifying relationships between variables, and clarifying arguments and models.* ▪ Define a design problem that can be solved through the development of an object, tool, process or system and includes multiple criteria and constraints, including scientific knowledge that may limit possible solutions. (MS-ETS1-1)								
101	CCC	**Influence of Science, Engineering, and Technology on Society and the Natural World** ▪ All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment. (MS- ETS1-1)								
102	CCC	**Influence of Science, Engineering, and Technology on Society and the Natural World** ▪ The uses of technologies and limitations on their use are driven by individual or societal needs, desires, and values; by the findings of scientific research; and by differences in such factors as climate, natural resources, and economic conditions. (MS-ETS1-1)								
103	PE	**MS-ETS1-2. Students who demonstrate understanding can: Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.**								
104	DCI	**ETS1.B: Developing Possible Solutions** ▪ There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. (MS-ETS1-2)								
105	SEP	**Engaging in Argument from Evidence** *Engaging in argument from evidence in 6–8 builds on K–5 experiences and progresses to constructing a convincing argument that supports or refutes claims for either explanations or solutions about the natural and designed world.* ▪ Evaluate competing design solutions based on jointly developed and agreed-upon design criteria. (MS-ETS1-2)								
106	PE	**MS-ETS1-3. Students who demonstrate understanding can: Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solutions to better meet the criteria for success.**								
107	DCI	**ETS1.B: Developing Possible Solutions** ▪ There are systematic processes for evaluating solutions with respect to how well they meet the criteria and constraints of a problem. (MS-ETS1-3)								
108	DCI	**ETS1.B: Developing Possible Solutions** ▪ Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors. (MS-ETS1-3)								
109	DCI	**ETS1.C: Optimizing the Design Solution** ▪ Although one design may not perform the best across all tests, identifying the characteristics of the design that performed the best in each test can provide useful information for the redesign process—that is, some of those characteristics may be incorporated into the new design. (MS-ETS1-3)								
110	SEP	**Analyzing and Interpreting Data** *Analyzing data in 6–8 builds on K–5 experiences and progresses to extending quantitative analysis to investigations, distinguishing between correlation and causation, and basic statistical techniques of data and error analysis.* ▪ Analyze and interpret data to determine similarities and differences in findings. (MS-ETS1-3)								

111	**PE**	**MS-ETS1-4. Students who demonstrate understanding can: Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.**							
112	**DCI**	**ETS1.B: Developing Possible Solutions** • A solution needs to be tested, and then modified on the basis of the test results, in order to improve it. (MS-ETS1-4)							
113	**DCI**	**ETS1.B: Developing Possible Solutions** • Models of all kinds are important for testing solutions. (MS-ETS1-4)							
114	**DCI**	**ETS1.C: Optimizing the Design Solution** • The iterative process of testing the most promising solutions and modifying what is proposed on the basis of the test results leads to greater refinement and ultimately to an optimal solution. (MS-ETS1-4)							
115	**SEP**	**Developing and Using Models** *Modeling in 6–8 builds on K–5 experiences and progresses to developing, using, and revising models to describe, test, and predict more abstract phenomena and design systems.* • Develop a model to generate data to test ideas about designed systems, including those representing inputs and outputs. (MS-ETS1-4)							

CCSS for ELA/Literacy and Math in Grades 6-8 NGSS **• NOTE: The standards noted at the end of each CCSS (such as *(HS-ESS1-1), (HS-ESS1-2), (HS-ESS1-5)*) are the occurrences of the CCSS within the NGSS.**									
Grades 6-8 CCSS ELA/Literacy									
116	**CCSS ELA/ Literacy**	**RST.6-8.1** Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. *(MS-PS3-5), (MS-ESS2-5), (MS-ESS2-2), (MS-ESS2-3), (MS-ESS1-4), (MS-ESS3-2), (MS-ETS1-1), (MS-LS1-3), (MS-ETS1-2), (MS-ETS1-3)*							
117	**CCSS ELA/ Literacy**	**RST.6-8.3** Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. *(MS-PS3-3), (MS-PS3-4)*							
118	**CCSS ELA/ Literacy**	**RST.6-8.7** Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table). *(MS-PS1-4), (MS-ESS2-3), (MS-ESS3-2), (MS-LS1-1), (MS-ETS1-3)*							
119	**CCSS ELA/ Literacy**	**RST.6-8.9** Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic. *(MS-ESS2-5), (MS-ESS2-3), (MS-ETS1-2), (MS-ETS1-3)*							
120	**CCSS ELA/ Literacy**	**RI.6.8** Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not. *(MS-LS1-3)*							
121	**CCSS ELA/ Literacy**	**WHST.6-8.1** Write arguments focused on discipline content. *(MS-PS3-5), (MS-LS1-3)*							
122	**CCSS ELA/ Literacy**	**WHST.6-8.2** Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content. *(MS-ESS2-2), (MS-ESS1-4)*							

123	**CCSS ELA/ Literacy**	**WHST.6-8.7** Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related,focused questions that allow for multiple avenues of exploration. *(MS-PS3-3), (MS-ETS1-2), (MS-PS3-4)*							
124	**CCSS ELA/ Literacy**	**WHST.6-8.8** Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. *(MS-ESS2-5), (MS-LS1-8), (MS-ETS1-1)*							
125	**CCSS ELA/ Literacy**	**WHST.6-8.9** Draw evidence from informational texts to support analysis, reflection, and research. *(MS-ETS1-2)*							
126	**CCSS ELA/ Literacy**	**SL.8.5** Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest. *(MS-PS4-2), (MS-ESS2-6), (MS-ESS2-1), (MS-ESS2-2), (MS-PS4-1), (MS-LS1-2), (MS-ETS1-4)*							
Grades 6-8 CCSS Math									
127	**CCSS Math**	**MP.2** Reason abstractly and quantitatively. *(MS-PS3-4), (MS-PS3-5, (MS-ESS2-5), (MS-ESS2-2), (MS-ESS2-3), (MS-ESS3-2), (MS-PS4-1), (MS-ETS1-1), (MS-ETS1-2), (MS-ETS1-3), (MS-ETS1-4)*							
128	**CCSS Math**	**MP.4** Model with mathematics. *(MS-PS4-1)*							
129	**CCSS Math**	**6.RP.A.1** Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *(MS-PS3-5), (MS-PS4-1)*							
130	**CCSS Math**	**6.RP.A.3** Use ratio and rate reasoning to solve real-world and mathematical problems. *(MS-PS4-1)*							
131	**CCSS Math**	**7.RP.A.2** Recognize and represent proportional relationships between quantities. *(MS-PS3-5), (MS-PS4-1)*							
132	**CCSS Math**	**6.NS.C.5** Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, credits/debits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. *(MS-PS1-4), (MS-ESS2-5)*							
133	**CCSS Math**	**6.EE.B.6** Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. *(MS-ESS2-2), (MS-ESS2-3), (MS-ESS1-4), (MS-ESS3-2)*							
134	**CCSS Math**	**6.EE.C.9** Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. *(MS-LS1-1), (MS-LS1-2), (MS-LS1-3)*							

135	**CCSS Math**	**7.EE.B.3** Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. *(MS-ETS1-1),(MS-ETS1-2),(MS-ETS1-3)*							
136	**CCSS Math**	**7.EE.B.4** Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities. *(MS-ESS2-2), (MS-ESS2-3), (MS-ESS1-4), (MS-ESS3-2)*							
137	**CCSS Math**	**8.F.A.3** Interpret the equation y = mx + b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. *(MS-PS3-5), (MS-PS4-1)*							
138	**CCSS Math**	**6.SP.B.5** Summarize numerical data sets in relation to their context. *(MS-PS3-4)*							
139	**CCSS Math**	**7.SP.7** Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy. *(MS-ETS1-4)*							

Section 2: Science Content Review								
PROVIDER/PUBLISHER INSTRUCTIONS: • Publisher/provider citations for this section will refer to the **Teacher Edition (teacher-facing core material)** and/or **Student Edition/Student Workbook (student-facing core material)**. The cited Teacher Edition, Student Edition, and/or Student Workbook should correspond with titles and ISBNs entered on the Form F cover page, whether in print, online, or both. The review set submitted to the summer review institute should also correspond with what is cited on the Form F. If the review set is an online platform only, then that is what should be cited on the Form F and submitted for review by the review teams. If the review set is in print only, then that is what should be cited on the Form F and submitted for review by the review teams. • For this section, the publisher/provider will enter one citation per criterion (Column C). Each citation should direct the reviewer to a specific location in the materials that best meets the criterion. The citations should be concise and should allow the reviewer to easily determine that all components of the criterion have been met. Each citation should cover no more than 3 pages within the materials. o **Column C:** Enter one citation in Column C from either the **Teacher Edition (teacher-facing core material)** OR **Student Edition/Student Workbook (student-facing core material)**. Each citation should direct the reviewer to a specific location in the materials that best meets the criterion. • The material will be scored for alignment with each criterion as “Meets expectations”, “Partially meets expectations", or “Does not meet expectations” based on the citations provided. o **NOTE: You may not use a citation more than once across ALL sections of the rubric.**								
Criteria #	**Grade K-12 Science Content Criteria**	Publisher/Provider Citation	Score	If Scored D: Reviewer's Evidence for Publisher Citation	Reviewer Citation	Score	Required: Reviewer's Evidence	Comments, other citations, notes
FOCUS AREA 1: PHENOMENA-/PROBLEM-BASED AND THREE-DIMENSIONAL APPROACH **Instructional materials are centered around high quality phenomena and/or problems and require a three dimensional approach to make sense of the phenomena or to solve the problems.**								
1	Materials clearly integrate and describe the three-dimensional NM STEM Ready! Standards via appropriate grade-band, interdisciplinary progressions that center around the phenomena, utilizing aligned SEPs, CCCs, DCIs and the common core math and ELA standards' connections.							
2	Materials consistently support meaningful student sensemaking with the three dimensions, including discourse, that is appropriate to grade band progressions, instruction and assessment.							
3	Natural and designed phenomena and/or problems that are meaningful and apparent to students drive coherent lessons and activities in all three dimensions.							
FOCUS AREA 2: THREE-DIMENSIONAL ASSESSMENT **Assessments provide tools, guidance and support for teachers to collect, interpret and act on data about student progress toward the learning goals of the 3 dimensional standards.**								
4	Materials engage students in meaningful tasks as well as multiple assessment types and opportunities, across all dimensions, in order to make sense of phenomena and/or design solutions to problems.							
5	Materials include opportunities for students to obtain feedback from teachers and peers as well as opportunities for student self-reflection.							
FOCUS AREA 3: TEACHER SUPPORTS **Materials include opportunities for teachers to effectively plan and utilize materials.**								
6	Materials provide a comprehensive list of supplies and teacher guidance needed to support instructional activities in a safe manner.							
7	Materials provide teacher guidance for the use of embedded and meaningful technology to support and enhance student learning, when applicable.							
8	Materials and assessments include teacher guidance for students at, approaching, or exceeding grade level expectations.							
9	Materials provide teacher guidance for interpreting student evidence of learning, monitoring student progress and providing feedback to guide student learning and to modify instruction.							

FOCUS AREA 4: STUDENT CENTERED INSTRUCTION **Materials are designed for each student's regular and active participation in science content.**								
10	Materials provide opportunities to engage students' curiosity and participation in a way that pulls from their prior knowledge and connects their learning to relevant phenomena and problems.							
11	The flow of lessons from one unit to the next is coherent, meaningful, direct, and apparent to students.							
FOCUS AREA 5: EQUITY **Materials are designed for all learners.**								
12	Materials provide extensions and/or opportunities for all students to engage in learning grade-level/band science and engineering in greater depth.							
13	Materials and assessments are designed in an accessible manner and include multiple ways for all students to build and reflect on science knowledge; multiple ways for all students to access content (Universal Design for Learning); and multiple opportunities for student self-reflection.							

Section 2: All Content Review				
PROVIDERS/PUBLISHERS: • The All Content tab will be completed solely by the reviewers. They will score each criterion and provide evidence for their score from the material based on their overall review of the material. You will not provide any citations for this tab. • The material will be scored for alignment with each criterion as “Meets expectations", “Partially meets expectations", or “Does not meet expectations”.				
Criteria #	**All Content Criteria Review**	Score	Required: Reviewer's Evidence from Material	Comments, citations, notes
FOCUS AREA 1: COHERENCE **Instructional materials are coherent and consistent with the New Mexico Content Standards that all students should study in order to be college- and career-ready.**				
1	Instructional materials address the full content contained in the standards for all students by grade level.			
2	Instructional materials support students to show mastery of each standard.			
3	Instructional materials require students to engage at a level of maturity appropriate to the grade level under review.			
4	Instructional materials are coherent, making meaningful connections for students by linking the standards within a lesson and unit.			
FOCUS AREA 2: WELL-DESIGNED LESSONS **Instructional materials take into account effective lesson structure and pacing.**				
5	The Teacher Edition presents learning progressions to provide an overview of the scope and sequence of skills and concepts. The design of the assignments shows a purposeful sequencing of teaching and learning expectations.			
6	Within each lesson of the instructional materials, there are clear, measurable, standards-aligned content objectives.			
7	Within each lesson of the instructional materials, there are clear, measurable language objectives tied directly to the content objectives.			
8	Instructional materials provide focused resources to support students’ acquisition of both general academic vocabulary and content-specific vocabulary.			
9	The visual design of the instructional materials (whether in print or digital) maintains a consistent layout that supports student engagement with the subject.			

10	Instructional materials incorporate features that aid students and teachers in making meaning of the text.			
11	Instructional materials provide students with ongoing review and practice for the purpose of retaining previously acquired knowledge.			
FOCUS AREA 3: RESOURCES FOR PLANNING **Instructional materials provide teacher resources to support planning, learning, and understanding of the New Mexico Content Standards.**				
12	Instructional materials provide a list of lessons in the Teacher Edition (in print or clearly distinguished/ accessible as a teacher's edition in digital materials), cross-referencing the standards addressed and providing an estimated instructional time for each lesson, chapter, and unit.			
13	Instructional materials support teachers with instructional strategies to help guide students' academic development.			
14	Instructional materials include a teacher edition/ teacher-facing material with useful annotations and suggestions on how to present the content in the student edition/student-facing material and in the supporting material.			
15	Instructional materials integrate opportunities for digital learning, including interactive digital components.			
FOCUS AREA 4: ASSESSMENT **Instructional materials offer teachers a variety of assessment resources and tools to collect ongoing data about student progress related to the standards.**				
16	Instructional materials provide a variety of assessments that measure student progress in all strands of the standards for the content under review. *(Adopted New Mexico Content Standards for 2024: NM STEM Ready Science Standards)*			
17	Instructional materials provide multiple formative and summative assessments, clearly defining which standards are being assessed through content and language objectives.			
18	Instructional materials provide scoring guides for assessments that are aligned with the standards they address, and that offer teachers guidance in interpreting student performance and suggestions for further instruction, differentiation, remediation and/or acceleration.			

19	Instructional materials provide appropriate assessment alternatives for English Learners, Culturally and Linguistically Diverse students, advanced students, and special needs students.			
20	Instructional materials include opportunities to assess student understanding and knowledge of the standards using technology.			
FOCUS AREA 5: EXTENSIVE SUPPORT **Instructional materials give all students extensive opportunities and support to explore key concepts.**				
21	Instructional materials can be customized or adapted to meet the needs of different student populations.			
22	Instructional materials provide differentiated strategies and/or activities to meet the needs of students working below proficiency and those of advanced learners.			
23	Instructional materials provide appropriate linguistic support for English Learners and Culturally and Linguistically Diverse students, and accommodations and modifications for other special populations that will support their regular and active participation in learning content.			
24	Instructional materials provide strategies and resources for teachers to inform and engage parents, family members, and caregivers of all learners about the program and provide suggestions for how they can help support student progress and achievement.			
25	Instructional materials include opportunities for all students that encourage and support critical and creative thinking and effective problem-solving skills.			
FOCUS AREA 6: CULTURAL AND LINGUISTIC PERSPECTIVES **Instructional materials represent a variety of cultural and linguistic perspectives.**				
26	Instructional materials inform culturally and linguistically responsive pedagogy by affirming students' backgrounds in the materials themselves and in the student discussions.			
27	Instructional materials provide a collection of images, stories, and information, representing a broad range of demographic groups, and do not make generalizations or reinforce stereotypes.			

28	Instructional materials provide context, illustrations, and activities for students to make interdisciplinary connections and/or connections to real-life experiences and diverse cultural and linguistic backgrounds.			
FOCUS AREA 7: INCLUSION OF CULTURALLY AND LINGUISTICALLY RESPONSIVE LENS **Instructional materials highlight diversity in culture and language through multiple perspectives.**				
29	Instructional materials include tools and resources to relate the content area appropriately to diversity in culture and language.			
30	Instructional materials include tools and resources that demonstrate multiple perspectives in a specific concept.			
31	Instructional materials engage students in critical reflection about their own lives and societies, including cultures past and present in New Mexico.			
32	Instructional materials address multiple ethnic descriptions, interpretations, or perspectives of events and experiences.			