



F.14 Earth and Space Science - Grades 9-12

PUBLISHER/PROVIDER MATERIAL INFORMATION (TO BE COMPLETED BY PUBLISHER/PROVIDER)

Publisher/Provider Name/Imprint:	McGraw Hill LLC	Grade(s):	9-12
Title of Student Edition:	Inspire Science New Mexico Earth Comprehensive Student Bundle with Actively Learn Science, 6-year subscription	Student Edition ISBN:	9781266204319
Title of Teacher Edition:	Inspire Science Earth Teacher Edition	Teacher Edition ISBN:	9780076884650
Title of SE Workbook:		SE Workbook ISBN:	

PUBLISHER/PROVIDER CITATION VIDEO: Reviewer must view video before starting the review of this set of materials.

Citation Video Link:			
Citation video certification:			
Digital Material Log In (if applicable):			

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
- CCC: Crosscutting Concepts
- 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

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Earth's Place in the Universe

1	PE	HS-ESS1-1. Students who demonstrate understanding can: Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy in the form of radiation.							
2	DCI	ESS1.A: The Universe and Its Stars • The star called the sun is changing and will burn out over a lifespan of approximately 10 billion years.	TE: Unit 7, Module 23, Lesson 3, p. 653						
3	DCI	PS3.D: Energy in Chemical Processes and Everyday Life • Nuclear fusion processes in the center of the sun release the energy that ultimately reaches Earth as radiation.	TE: Unit 7, Module 23, Lesson 1, p. 639, Energy production in the Sun						
4	SEP	Developing and Using Models <i>Modeling in 9–12 builds on K–8 experiences and progresses to using, synthesizing, and developing models to predict and show relationships among variables between systems and their components in the natural and designed world(s).</i> • Develop a model based on evidence to illustrate the relationships between systems or between components of a system.	Online Resources: Unit 7, Module 23, Lesson 3, Explore and Explain: Applying Practices Answer Key: The Sun's Energy Formation and Radiation						
5	CCC	Scale, Proportion, and Quantity • The significance of a phenomenon is dependent on the scale, proportion, and quantity at which it occurs.	TE: Unit 7, Module 23, Lesson 1, p. 639 (Paragraph 3)						
6	PE	HS-ESS1-2. Students who demonstrate understanding can: Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.							
7	DCI	ESS1.A: The Universe and Its Stars • The study of stars' light spectra and brightness is used to identify compositional elements of stars, their movements, and their distances from Earth.	TE: Unit 7, Module 23, Lesson 1, pp. 640–641 and Online Resources: Unit 7, Module 24, Lesson 3, Explore and Explain: Applying Practices Answer Key: The Big Bang Theory (Process #2)						
8	DCI	ESS1.A: The Universe and Its Stars • The Big Bang theory is supported by observations of distant galaxies receding from our own, of the measured composition of stars and non-stellar gases, and of the maps of spectra of the primordial radiation (cosmic microwave background) that still fills the universe.	TE: Unit 7, Module 24, Lesson 3, pp. 679–681						

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		Grades 9-12 Earth and Space Science Standards Review:							
9	DCI	ESS1.A: The Universe and Its Stars • Other than the hydrogen and helium formed at the time of the Big Bang, nuclear fusion within stars produces all atomic nuclei lighter than and including iron, and the process releases electromagnetic energy. Heavier elements are produced when certain massive stars achieve a supernova stage and explode.	TE: Unit 7, Module 23, Lesson 3, p. 652 and TE: Unit 7, Module 23, Lesson 3, p. 657						
10	DCI	PS4.B: Electromagnetic Radiation • Atoms of each element emit and absorb characteristic frequencies of light. These characteristics allow identification of the presence of an element, even in microscopic quantities.	TE: Inspire Earth Science, Module 23, Lesson 1, pp. 640–641						
11	SEP	Constructing Explanations and Designing Solutions <i>Constructing explanations and designing solutions in 9–12 builds on K–8 experiences and progresses to explanations and designs that are supported by multiple and independent student-generated sources of evidence consistent with scientific ideas, principles, and theories.</i> • Construct an explanation based on valid and reliable evidence obtained from a variety of sources (including students' own investigations, theories, simulations, peer review) 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.	Online Resources: Unit 7, Module 24, Lesson 3, Explore and Explain: Applying Practices Answer Key: The Big Bang Theory						
12	CONN	Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena • A scientific theory is a substantiated explanation of some aspect of the natural world, based on a body of facts that have been repeatedly confirmed through observation and experiment and the science community validates each theory before it is accepted. If new evidence is discovered that the theory does not accommodate, the theory is generally modified in light of this new evidence.	Online Resources: Unit 7, Module 24, Lesson 3, Explore and Explain: Applying Practices Answer Key: The Big Bang Theory						
13	CCC	Energy and Matter • Energy cannot be created or destroyed—only moved between one place and another place, between objects and/or fields, or between systems.	Online Resources: Unit 7, Module 24, Lesson 3, Explore and Explain: Applying Practices Answer Key: The Big Bang Theory						
14	CONN	Interdependence of Science, Engineering, and Technology • Science and engineering complement each other in the cycle known as research and development (R&D). Many R&D projects may involve scientists, engineers, and others with wide ranges of expertise.	Online Resources: Unit 7, Module 24, Lesson 3, Explore and Explain: Applying Practices Answer Key: The Big Bang Theory, p. 1, Resources						
15	CONN	Scientific Knowledge Assumes an Order and Consistency in Natural Systems • Scientific knowledge is based on the assumption that natural laws operate today as they did in the past and they will continue to do so in the future.	Online Resources: Unit 7, Module 24, Lesson 3, Explore and Explain: Applying Practices Answer Key: The Big Bang Theory						

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16	CONN	Scientific Knowledge Assumes an Order and Consistency in Natural Systems • Science assumes the universe is a vast single system in which basic laws are consistent.	Online Resources: Unit 7, Module 24, Lesson 3, Explore and Explain: Applying Practices Answer Key: The Big Bang Theory						
17	PE	HS-ESS1-3. Students who demonstrate understanding can: Communicate scientific ideas about the way stars, over their life cycle, produce elements.							
18	DCI	ESS1.A: The Universe and Its Stars • The study of stars' light spectra and brightness is used to identify compositional elements of stars, their movements, and their distances from Earth.	Online Resources: Unit 7, Module 23, Lesson 1, GeoLAB Answer Key: Identify Stellar Spectral Lines p.1 and TE: Inspire Earth Science, Module 23, Lesson 2, pp. 645						
19	DCI	ESS1.A: The Universe and Its Stars • Other than the hydrogen and helium formed at the time of the Big Bang, nuclear fusion within stars produces all atomic nuclei lighter than and including iron, and the process releases electromagnetic energy. Heavier elements are produced when certain massive stars achieve a supernova stage and explode.	Online Resources: Unit 7, Module 23, Lesson 1, Explore and Explain: Applying Practices Answer Key: Element Production in Stars						
20	SEP	Obtaining, Evaluating, and Communicating Information <i>Obtaining, evaluating, and communicating information in 9–12 builds on K–8 experiences and progresses to evaluating the validity and reliability of the claims, methods, and designs.</i> • Communicate scientific ideas (e.g., about phenomena and/or the process of development and the design and performance of a proposed process or system) in multiple formats (including orally, graphically, textually, and mathematically).	Online Resources: Unit 7, Module 23, Lesson 1, Explore and Explain: Applying Practices Answer Key: Element Production in Stars						
21	CCC	Energy and Matter • In nuclear processes, atoms are not conserved, but the total number of protons plus neutrons is conserved.	TE: Unit 7, Module 23, Lesson 3, p. 655 (Crosscutting Concepts)						
22	PE	HS-ESS1-4. Students who demonstrate understanding can: Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.							
23	DCI	ESS1.B: Earth and the Solar System • Kepler's laws describe common features of the motions of orbiting objects, including their elliptical paths around the sun. Orbits may change due to the gravitational effects from, or collisions with, other objects in the solar system.	TE: Unit 7, Module 22, Lesson 1, pp. 610–612 and TE: Unit 7, Module 22, Lesson 3, p. 625 (Question 4)						

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24	SEP	Using Mathematical and Computational Thinking <i>Mathematical and computational thinking in 9–12 builds on K–8 experiences and progresses to using algebraic thinking and analysis, a range of linear and nonlinear functions including trigonometric functions, exponentials and logarithms, and computational tools for statistical analysis to analyze, represent, and model data. Simple computational simulations are created and used based on mathematical models of basic assumptions.</i> • Use mathematical or computational representations of phenomena to describe explanations.	Online Resources: Unit 7, Module 22, Lesson 1, Explore and Explain: Design Your Own Answer Key: Relating Gravitational Force and Orbits, p. 5						
25	CCC	Scale, Proportion, and Quantity • Algebraic thinking is used to examine scientific data and predict the effect of a change in one variable on another (e.g., linear growth vs. exponential growth).	TE: Unit 7, Module 22, Lesson 1, p. 611 (Crosscutting Concepts)						
26	CONN	Interdependence of Science, Engineering, and Technology • Science and engineering complement each other in the cycle known as research and development (R&D). Many R&D projects may involve scientists, engineers, and others with wide ranges of expertise.	Online Resources: Unit 7, Module 22, Module Opener: Launch Lab Answer Key: What can be learned from space mission?						
27	PE	HS-ESS1-5. Students who demonstrate understanding can: Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.							
28	DCI	ESS1.C: The History of Planet Earth • Continental rocks, which can be older than 4 billion years, are generally much older than the rocks of the ocean floor, which are less than 200 million years old.	TE: Inspire Earth Science, Module 13, Lesson 2, p. 351						
29	DCI	ESS2.B: Plate Tectonics and Large-Scale System Interactions • Plate tectonics is the unifying theory that explains the past and current movements of the rocks at Earth's surface and provides a framework for understanding its geologic history.	TE: Unit 4, Module 13, Lesson 3, p. 356						
30	DCI	PS1.C: Nuclear Processes • Spontaneous radioactive decays follow a characteristic exponential decay law. Nuclear lifetimes allow radiometric dating to be used to determine the ages of rocks and other materials.	Online Resources: Unit 4, Module 13, Lesson 3, Explore and Explain: Applying Practices Answer Key: How old are crustal rocks? (Process #3)						

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31	SEP	Engaging in Argument from Evidence <i>Engaging in argument from evidence in 9–12 builds on K–8 experiences and progresses to using appropriate and sufficient evidence and scientific reasoning to defend and critique claims and explanations about the natural and designed world(s). Arguments may also come from current scientific or historical episodes in science.</i> • Evaluate evidence behind currently accepted explanations or solutions to determine the merits of arguments.							
32	CCC	Patterns • Empirical evidence is needed to identify patterns.							
33	PE	HS-ESS1-6. Students who demonstrate understanding can: Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.							
34	DCI	ESS1.C: The History of Planet Earth • Although active geologic processes, such as plate tectonics and erosion, have destroyed or altered most of the very early rock record on Earth, other objects in the solar system, such as lunar rocks, asteroids, and meteorites, have changed little over billions of years. Studying these objects can provide information about Earth's formation and early history.			TE: Unit 5, Module 18, Lesson 1, p. 472				
35	DCI	PS1.C: Nuclear Processes • Spontaneous radioactive decays follow a characteristic exponential decay law. Nuclear lifetimes allow radiometric dating to be used to determine the ages of rocks and other materials			TE: Unit 5, Module 17, Lesson 3, p. 457–459				
36	SEP	Constructing Explanations and Designing Solutions <i>Constructing explanations and designing solutions in 9–12 builds on K–8 experiences and progresses to explanations and designs that are supported by multiple and independent student-generated sources of evidence consistent with scientific ideas, principles, and theories.</i> • Apply scientific reasoning to link evidence to the claims to assess the extent to which the reasoning and data support the explanation or conclusion.			Online Resources: Unit 5, Module 18, Lesson 1, Explore and Explain: Applying Practices Answer Key: Earth's Formation and Early History				
37	CONN	Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena • A scientific theory is a substantiated explanation of some aspect of the natural world, based on a body of facts that have been repeatedly confirmed through observation and experiment, and the science community validates each theory before it is accepted. If new evidence is discovered that the theory does not accommodate, the theory is generally modified in light of this new evidence.			TE: Unit 5, Module 18, Lesson 2, p. 484				

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38	CONN	Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena • Models, mechanisms, and explanations collectively serve as tools in the development of a scientific theory.			TE: Unit 5, Module 18, Lesson 2, p. 484					
39	CCC	Stability and Change • Much of science deals with constructing explanations of how things change and how they remain stable.			TE: Unit 5, Module 18, Lesson 2, p. 483 (Crosscutting Concepts)					
Earth's Systems										
40	PE	HS-ESS2-1. Students who demonstrate understanding can: Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.								
41	DCI	ESS2.A: Earth's Materials and Systems • Earth's systems, being dynamic and interacting, cause feedback effects that can increase or decrease the original changes.			TE: Unit 4, Module 13, Lesson 3, p. 357–358					
42	DCI	ESS2.B: Plate Tectonics and Large-Scale System Interactions • Plate tectonics is the unifying theory that explains the past and current movements of the rocks at Earth's surface and provides a framework for understanding its geologic history. Plate movements are responsible for most continental and ocean-floor features and for the distribution of most rocks and minerals within Earth's crust.			TE: Unit 4, Module 13, Lesson 3, p. 357–358					
43	SEP	Developing and Using Models <i>Modeling in 9–12 builds on K–8 experiences and progresses to using, synthesizing, and developing models to predict and show relationships among variables between systems and their components in the natural and designed world(s).</i> • Develop a model based on evidence to illustrate the relationships between systems or between components of a system.			Online Resources: Unit 4, Module 16, Lesson 3, Explore and Explain: Applying Practices Answer Key: Modeling Earth's Internal and Surface Processes					
44	CCC	Stability and Change • Change and rates of change can be quantified and modeled over very short or very long periods of time. Some system changes are irreversible.			TE: Unit 4, Module 13, Lesson 3, p. 358 (Crosscutting Concepts)					
45	PE	HS-ESS2-2. Students who demonstrate understanding can: Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.								
46	DCI	ESS2.A: Earth's Materials and Systems • Earth's systems, being dynamic and interacting, cause feedback effects that can increase or decrease the original changes.			Online Resources: Unit 3, Module 11, Lesson 3, Explore and Explain: Applying Practices Answer Key: How can feedback cause changes to Earth's system?					

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		Grades 9-12 Earth and Space Science Standards Review:							
47	DCI	ESS2.D: Weather and Climate • The foundation for Earth's global climate systems is the electromagnetic radiation from the sun, as well as its reflection, absorption, storage, and redistribution among the atmosphere, ocean, and land systems, and this energy's re-radiation into space.	TE: Unit 3, Module 11, Lesson 1, p. 279						
48	SEP	Analyzing and Interpreting Data <i>Analyzing data in 9–12 builds on K–8 experiences and progresses to introducing more detailed statistical analysis, the comparison of data sets for consistency, and the use of models to generate and analyze data.</i> • Analyze data using tools, technologies, and/or models (e.g., computational, mathematical) in order to make valid and reliable scientific claims or determine an optimal design solution.	Online Resources: Unit 3, Module 11, Lesson 3, Explore and Explain: Applying Practices Answer Key: How can feedback cause changes to Earth's system?						
49	CCC	Stability and Change • Feedback (negative or positive) can stabilize or destabilize a system.	Online Resources: Unit 3, Module 11, Lesson 3, Explore and Explain: Applying Practices Answer Key: How can feedback cause changes to Earth's system?						
50	CONN	Influence of Engineering, Technology, and Science on Society and the Natural World • New technologies can have deep impacts on society and the environment, including some that were not anticipated. Analysis of costs and benefits is a critical aspect of decisions about technology.	Online Resources: Unit 3, Module 11, Lesson 3, Explore and Explain: Applying Practices Answer Key: Careers in Earth Science: Climatologist						
51	PE	HS-ESS2-3. Students who demonstrate understanding can: Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.							
52	DCI	ESS2.A: Earth Materials and Systems • Evidence from deep probes and seismic waves, reconstructions of historical changes in Earth's surface and its magnetic field, and an understanding of physical and chemical processes lead to a model of Earth with a hot but solid inner core, a liquid outer core, a solid mantle and crust. Motions of the mantle and its plates occur primarily through thermal convection, which involves the cycling of matter due to the outward flow of energy from Earth's interior and gravitational movement of denser materials toward the interior.	TE: Unit 4, Module 15, Lesson 2, pp. 401–403 and TE: Unit 4, Module 13, Lesson 4, pp. 362–364						
53	DCI	ESS2.B: Plate Tectonics and Large-Scale System Interactions • The radioactive decay of unstable isotopes continually generates new energy within Earth's crust and mantle, providing the primary source of the heat that drives mantle convection. Plate tectonics can be viewed as the surface expression of mantle convection.	TE: Unit 4, Module 13, Lesson 4, p. 363						

Section 1: Standards Review: Science

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54	SEP	Developing and Using Models <i>Modeling in 9–12 builds on K–8 experiences and progresses to using, synthesizing, and developing models to predict and show relationships among variables between systems and their components in the natural and designed world(s).</i> • Develop a model based on evidence to illustrate the relationships between systems or between components of a system.	Online Resources: Unit 4, Module 13, Lesson 4, Explore and Explain: Applying Practices Answer Key: The Cycling of Matter Through Thermal Convection						
55	CONN	Scientific Knowledge is Based on Empirical Evidence • Science knowledge is based on empirical evidence.	TE: Unit 4, Module 13, Lesson 4, p. 363, Writing Support						
56	CONN	Scientific Knowledge is Based on Empirical Evidence • Science disciplines share common rules of evidence used to evaluate explanations about natural systems.	TE: Unit 4, Module 15, Lesson 2, p. 402, Activity: Images of Unknown Structures						
57	CONN	Scientific Knowledge is Based on Empirical Evidence • Science includes the process of coordinating patterns of evidence with current theory.	TE: Unit 4, Module 13, Scientific Breakthroughs, p. 365, New Discoveries						
58	CCC	Energy and Matter • Energy drives the cycling of matter within and between systems.	TE: Unit 4, Module 13, Lesson 4, p. 363, Figure 22						
59	CONN	Interdependence of Science, Engineering, and Technology • Science and engineering complement each other in the cycle known as research and development (R&D). Many R&D projects may involve scientists, engineers, and others with wide ranges of expertise.	TE: Unit 4, Module 15, Lesson 1, p. 396						
60	PE	HS-ESS2-4. Students who demonstrate understanding can: Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.							
61	DCI	ESS1.B: Earth and the Solar System • Cyclical changes in the shape of Earth's orbit around the sun, together with changes in the tilt of the planet's axis of rotation, both occurring over hundreds of thousands of years, have altered the intensity and distribution of sunlight falling on the earth. These phenomena cause a cycle of ice ages and other gradual climate changes.	TE: Unit 3, Module 11, Lesson 3, pp. 292–293						
62	DCI	ESS2.A: Earth Materials and System • The geological record shows that changes to global and regional climate can be caused by interactions among changes in the sun's energy output or Earth's orbit, tectonic events, ocean circulation, volcanic activity, glaciers, vegetation, and human activities. These changes can occur on a variety of time scales from sudden (e.g., volcanic ash clouds) to intermediate (ice ages) to very long-term tectonic cycles.	TE: Unit 3, Module 11, Lesson 3, pp. 292–294 and TE: Unit 3, Module 11, Lesson 3, pp. 295						

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63	DCI	ESS2.D: Weather and Climate • The foundation for Earth's global climate systems is the electromagnetic radiation from the sun, as well as its reflection, absorption, storage, and redistribution among the atmosphere, ocean, and land systems, and this energy's re-radiation into space.	TE: Unit 3, Module 11, Lesson 4, pp. 296						
64	SEP	Developing and Using Models <i>Modeling in 9–12 builds on K–8 experiences and progresses to using, synthesizing, and developing models to predict and show relationships among variables between systems and their components in the natural and designed world(s).</i> • Use a model to provide mechanistic accounts of phenomena.	Online Resources: Unit 3, Module 11, Lesson 3, Explore and Explain: Applying Practices Answer Key: Variations in Albedo						
65	CONN	Scientific Knowledge is Based on Empirical Evidence • Science arguments are strengthened by multiple lines of evidence supporting a single explanation.	TE: Unit 3, Module 11, Lesson 3, pp. 292 (Paragraph 1)						
66	CCC	Cause and Effect • Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects.	Online Resources: Unit 3, Module 11, Lesson 3, Explore and Explain: Applying Practices Answer Key: Variations in Albedo						
67	PE	HS-ESS2-5. Students who demonstrate understanding can: Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes. [
68	DCI	ESS2.C: The Roles of Water in Earth's Surface Processes • The abundance of liquid water on Earth's surface and its unique combination of physical and chemical properties are central to the planet's dynamics. These properties include water's exceptional capacity to absorb, store, and release large amounts of energy, transmit sunlight, expand upon freezing, dissolve and transport materials, and lower the viscosities and melting points of rocks.	TE: Unit 19, Module 19, Lesson 4, pp. 529–530 and TE: Unit 2, Module 7, Lesson 1, p. 168						
69	SEP	Planning and Carrying Out Investigations <i>Planning and carrying out investigations in 9-12 builds on K-8 experiences and progresses to include investigations that provide evidence for and test conceptual, mathematical, physical, and empirical models.</i> • Plan and conduct an investigation individually and collaboratively to produce data to serve as the basis for evidence, and in the design: decide on types, how much, and accuracy of data needed to produce reliable measurements and consider limitations on the precision of the data (e.g., number of trials, cost, risk, time), and refine the design accordingly.	Online Resources: Unit 2, Module 6, Lesson 3, Design Your Own Answer Key: Analysis of Glacial Till, pp. 1–2						

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70	CCC	Structure and Function • The functions and properties of natural and designed objects and systems can be inferred from their overall structure, the way their components are shaped and used, and the molecular substructures of its various materials.	TE: Unit 2, Module 7, Lesson 2, p. 171 (Crosscutting Concepts)						
71	PE	HS-ESS2-6. Students who demonstrate understanding can: Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.							
72	DCI	ESS2.D: Weather and Climate • Gradual atmospheric changes were due to plants and other organisms that captured carbon dioxide and released oxygen.	TE: Unit 5, Module 18, Lesson 2, p. 480						
73	DCI	ESS2.D: Weather and Climate • Changes in the atmosphere due to human activity have increased carbon dioxide concentrations and thus affect climate.	TE: Unit 6, Module 20, Lesson 3, p. 564						
74	SEP	Developing and Using Models <i>Modeling in 9–12 builds on K–8 experiences and progresses to using, synthesizing, and developing models to predict and show relationships among variables between systems and their components in the natural and designed world(s).</i> • Develop a model based on evidence to illustrate the relationships between systems or between components of a system.	Online Resources: Unit 6, Module 20, Lesson 3, Applying Practices Answer Key: Carbon Cycling Through the Earth's Spheres- Climate Change						
75	CCC	Energy and Matter • The total amount of energy and matter in closed systems is conserved.	TE: Unit 6, Module 19, Lesson 3, p. 524 (Paragraph 1)						
76	PE	HS-ESS2-7. Students who demonstrate understanding can: Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth.							
77	DCI	ESS2.D: Weather and Climate • Gradual atmospheric changes were due to plants and other organisms that captured carbon dioxide and released oxygen.	Online Resources: Unit 5, Module 18, Lesson 2, Applying Practices Answer Key: The Coevolution of Living Things and the Atmosphere						
78	DCI	ESS2.E Biogeology • The many dynamic and delicate feedbacks between the biosphere and other Earth systems cause a continual coevolution of Earth's surface and the life that exists on it.	Online Resources: Unit 5, Module 18, Lesson 2, Applying Practices Answer Key: The Coevolution of Living Things and the Atmosphere						

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79	SEP	Engaging in Argument from Evidence <i>Engaging in argument from evidence in 9–12 builds on K–8 experiences and progresses to using appropriate and sufficient evidence and scientific reasoning to defend and critique claims and explanations about the natural and designed world(s). Arguments may also come from current scientific or historical episodes in science.</i> • Construct an oral and written argument or counter-arguments based on data and evidence.							
80	CCC	Stability and Change • Much of science deals with constructing explanations of how things change and how they remain stable.							

Earth and Human Activity

81	PE	HS-ESS3-1. Students who demonstrate understanding can: Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity.							
82	DCI	ESS3.A: Natural Resources • Resource availability has guided the development of human society.							
83	DCI	ESS3.B: Natural Hazards • Natural hazards and other geologic events have shaped the course of human history; [they] have significantly altered the sizes of human populations and have driven human migrations.							
84	SEP	Constructing Explanations and Designing Solutions <i>Constructing explanations and designing solutions in 9–12 builds on K–8 experiences and progresses to explanations and designs that are supported by multiple and independent student-generated sources of evidence consistent with scientific knowledge, principles, and theories.</i> • Construct an explanation based on valid and reliable evidence obtained from a variety of sources (including students' own investigations, models, theories, simulations, peer review) 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.							

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85	CCC	Cause and Effect • Empirical evidence is required to differentiate between cause and correlation and make claims about specific causes and effects.	Online Resources: Unit 4, Module 15, Lesson 2, Explore and Explain: Applying Practices Answer Key: Natural Hazards and Human History						
86	CONN	Influence of Science, Engineering, and Technology on Society and the Natural World • Modern civilization depends on major technological systems.	Online Resources: Unit 4, Module 15, Lesson 2, Explore and Explain: Applying Practices Answer Key: Natural Hazards and Human History						
87	PE	HS-ESS3-2. Students who demonstrate understanding can: Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.							
88	DCI	ESS3.A: Natural Resources • All forms of energy production and other resource extraction have associated economic, social, environmental, and geopolitical costs and risks as well as benefits. New technologies and social regulations can change the balance of these factors.	Online Resources: Unit 6, Module 19, Lesson 5, Explore and Explain: Applying Practices Answer Key: Costs and Benefits of Energy Production and Resource Extraction						
89	DCI	ETS1.B: Developing Possible Solutions • When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, and environmental impacts.	Online Resources: Unit 6, Module 19, Lesson 1, Explore and Explain: Applying Practices Answer Key: Environmental Consulting: Finding Solutions						
90	SEP	Engaging in Argument from Evidence <i>Engaging in argument from evidence in 9–12 builds on K–8 experiences and progresses to using appropriate and sufficient evidence and scientific reasoning to defend and critique claims and explanations about natural and designed world(s). Arguments may also come from current scientific or historical episodes in science.</i> • Evaluate competing design solutions to a real-world problem based on scientific ideas and principles, empirical evidence, and logical arguments regarding relevant factors (e.g., economic, societal, environmental, ethical considerations).	Online Resources: Unit 6, Module 19, Lesson 1, Explore and Explain: Applying Practices Answer Key: Environmental Consulting: Finding Solutions						

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91	CONN	Influence of Science, Engineering, and Technology on Society and the Natural World • Engineers continuously modify these technological systems by applying scientific knowledge and engineering design practices to increase benefits while decreasing costs and risks.	Online Resources: Unit 6, Module 19, Lesson 5, Explore and Explain: Applying Practices Answer Key: Costs and Benefits of Energy Production and Resource Extraction						
92	CONN	Influence of Science, Engineering, and Technology on Society and the Natural World • Analysis of costs and benefits is a critical aspect of decisions about technology.	Online Resources: Unit 6, Module 19, Lesson 5, Explore and Explain: Applying Practices Answer Key: Costs and Benefits of Energy Production and Resource Extraction						
93	CONN	Science Addresses Questions About the Natural and Material World • Science and technology may raise ethical issues for which science, by itself, does not provide answers and solutions.	Online Resources: Unit 6, Module 19, Lesson 5, Explore and Explain: Applying Practices Answer Key: Costs and Benefits of Energy Production and Resource Extraction						
94	CONN	Science Addresses Questions About the Natural and Material World • Science knowledge indicates what can happen in natural systems — not what should happen. The latter involves ethics, values, and human decisions about the use of knowledge.	Online Resources: Unit 6, Module 19, Lesson 5, Explore and Explain: Applying Practices Answer Key: Costs and Benefits of Energy Production and Resource Extraction						
95	CONN	Science Addresses Questions About the Natural and Material World • Many decisions are not made using science alone, but rely on social and cultural contexts to resolve issues.	Online Resources: Unit 6, Module 19, Lesson 1, Explore and Explain: Applying Practices Answer Key: Environmental Consulting: Finding Solutions						
96	PE	HS-ESS3-3. Students who demonstrate understanding can: Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.							
97	DCI	ESS3.C: Human Impacts on Earth Systems • The sustainability of human societies and the biodiversity that supports them requires responsible management of natural resources.	TE: Unit 6, Module 19, Lesson 2, p. 519						

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		Grades 9-12 Earth and Space Science Standards Review:							
98	SEP	Using Mathematics and Computational Thinking <i>Mathematical and computational thinking in 9–12 builds on K–8 experiences and progresses to using algebraic thinking and analysis; a range of linear and nonlinear functions including trigonometric functions, exponentials and logarithms; and computational tools for statistical analysis to analyze, represent, and model data. Simple computational simulations are created and used based on mathematical models of basic assumptions.</i> • Create a computational model or simulation of a phenomenon, designed device, process, or system.	Online Resources: Unit 6, Module 20, Lesson 5, Explore and Explain: Applying Practices Answer Key: Responsible Management of Natural Resources						
99	CCC	Stability and Change • Change and rates of change can be quantified and modeled over very short or very long periods of time. Some system changes are irreversible.	Online Resources: Unit 6, Module 20, Lesson 5, Explore and Explain: Applying Practices Answer Key: Responsible Management of Natural Resources						
100	CONN	Influence of Science, Engineering, and Technology on Society and the Natural World • Modern civilization depends on major technological systems.	Online Resources: Unit 6, Module 20, Lesson 5, Explore and Explain: Applying Practices Answer Key: Responsible Management of Natural Resources						
101	CONN	Influence of Science, Engineering, and Technology on Society and the Natural World • New technologies can have deep impacts on society and the environment, including some that were not anticipated.	Online Resources: Unit 6, Module 20, Lesson 5, Explore and Explain: Applying Practices Answer Key: Responsible Management of Natural Resources						
102	CONN	Science is a Human Endeavor • Science is a result of human endeavors, imagination, and creativity.	Online Resources: Unit 6, Module 20, Lesson 5, Explore and Explain: Applying Practices Answer Key: Responsible Management of Natural Resources						
103	PE	HS-ESS3-4. Students who demonstrate understanding can: Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.							

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
- CCC: Crosscutting Concepts
- 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

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Criteria #	Standard Identifier	F.14 Grades 9-12 Earth and Space Science 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
104	DCI	ESS3.C: Human Impacts on Earth Systems • Scientists and engineers can make major contributions by developing technologies that produce less pollution and waste and that preclude ecosystem degradation.	Online Resources: Unit 6, Module 20, Lesson 5, Explore and Explain: Applying Practices Answer Key: Developing Technologies that Preclude Environmental Degradation						
105	DCI	ETS1.B: Developing Possible Solutions • When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, and environmental impacts.	Online Resources: Unit 6, Module 20, Lesson 5, Explore and Explain: Applying Practices Answer Key: Developing Technologies that Preclude Environmental Degradation						
106	SEP	Constructing Explanations and Designing Solutions <i>Constructing explanations and designing solutions in 9–12 builds on K–8 experiences and progresses to explanations and designs that are supported by multiple and independent student-generated sources of evidence consistent with scientific knowledge, principles and theories.</i> • Design or refine a solution to a complex real-world problem based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and tradeoff considerations.	Online Resources: Unit 6, Module 20, Lesson 5, Explore and Explain: Applying Practices Answer Key: Developing Technologies that Preclude Environmental Degradation						
107	CCC	Stability and Change • Feedback (negative or positive) can stabilize or destabilize a system.	Online Resources: Unit 6, Module 20, Lesson 5, Explore and Explain: Applying Practices Answer Key: Developing Technologies that Preclude Environmental Degradation						
108	CONN	Influence of Science, Engineering, and Technology on Society and the Natural World • Engineers continuously modify these technological systems by applying scientific knowledge and engineering design practices to increase benefits while decreasing costs and risks.	Online Resources: Unit 6, Module 20, Lesson 5, Explore and Explain: Applying Practices Answer Key: Developing Technologies that Preclude Environmental Degradation						
109	PE	HS-ESS3-5. Students who demonstrate understanding can: Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.							

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		Grades 9-12 Earth and Space Science Standards Review:							
110	DCI	ESS3.D: Global Climate Change • Though the magnitudes of human impacts are greater than they have ever been, so too are human abilities to model, predict, and manage current and future impacts.	TE: Inspire Earth Science, Unit 3, Module 11, Lesson 4, p. 298, Environmental efforts						
111	SEP	Analyzing and Interpreting Data <i>Analyzing data in 9–12 builds on K–8 experiences and progresses to introducing more detailed statistical analysis, the comparison of data sets for consistency, and the use of models to generate and analyze data.</i> • Analyze data using computational models in order to make valid and reliable scientific claims.	Online Resources: Unit 3, Module 11, Explore and Explain: Applying Practices Answer Key: Forecasting Climate Change						
112	CONN	Scientific Investigations Use a Variety of Methods • Science investigations use diverse methods and do not always use the same set of procedures to obtain data.	Online Resources: Unit 3, Module 11, Lesson 4, Explore and Explain: Applying Practices Answer Key: Analyze Geoscience Data - Climate Data						
113	CONN	Scientific Investigations Use a Variety of Methods • New technologies advance scientific knowledge.	Online Resources: Unit 3, Module 11, Lesson 4, Explore and Explain: Applying Practices Answer Key: Analyze Geoscience Data - Climate Data						
114	CONN	Scientific Knowledge is Based on Empirical Evidence • Science knowledge is based on empirical evidence.	Online Resources: Unit 3, Module 11, Explore and Explain: Applying Practices Answer Key: Forecasting Climate Change						
115	CONN	Scientific Knowledge is Based on Empirical Evidence • Science arguments are strengthened by multiple lines of evidence supporting a single explanation.	Online Resources: Unit 3, Module 11, Explore and Explain: Applying Practices Answer Key: Forecasting Climate Change						
116	CCC	Stability and Change • Change and rates of change can be quantified and modeled over very short or very long periods of time. Some system changes are irreversible.	Online Resources: Unit 3, Module 11, Explore and Explain: Applying Practices Answer Key: Forecasting Climate Change						
117	PE	HS-ESS3-6. Students who demonstrate understanding can: Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.							

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		Grades 9-12 Earth and Space Science Standards Review:							
118	DCI	ESS2.D: Weather and Climate • Current models predict that, although future regional climate changes will be complex and varied, average global temperatures will continue to rise. The outcomes predicted by global climate models strongly depend on the amounts of human-generated greenhouse gases added to the atmosphere each year and by the ways in which these gases are absorbed by the ocean and biosphere.	TE: Unit 3, Module 11, Lesson 4, p. 297, Get It?						
119	DCI	ESS3.D: Global Climate Change • Through computer simulations and other studies, important discoveries are still being made about how the ocean, the atmosphere, and the biosphere interact and are modified in response to human activities.	Online Resources: Unit 3, Module 11, Lesson 4, Explore and Explain: Applying Practices Answer Key: Exploring Relationships: Climate Change and Human Activity						
120	SEP	Using Mathematics and Computational Thinking <i>Mathematical and computational thinking in 9–12 builds on K–8 experiences and progresses to using algebraic thinking and analysis; a range of linear and nonlinear functions including trigonometric functions, exponentials and logarithms; and computational tools for statistical analysis to analyze, represent, and model data. Simple computational simulations are created and used based on mathematical models of basic assumptions.</i> • Use a computational representation of phenomena or design solutions to describe and/or support claims and/or explanations.	TE: Unit 3, Module 11, Science & Society, p. 299, Use Computational Representations						
121	CCC	Systems and System Models • When investigating or describing a system, the boundaries and initial conditions of the system need to be defined and their inputs and outputs analyzed and described using models.	Online Resources: Unit 3, Module 11, Lesson 4, Explore and Explain: Applying Practices Answer Key: Exploring Relationships: Climate Change and Human Activity						
122	NM	HS-SS-1 NM. • Obtain and communicate information about the role of New Mexico in nuclear science and 21st century innovations including how the national laboratories have contributed to theoretical, experimental, and applied science; have illustrated the interdependence of science, engineering, and technology; and have used systems involving hardware, software, production, simulation, and information flow.	This element is beyond the scope of Inspire Earth Science.						

Engineering Design:

123	PE	HS-ETS1-1. Students who demonstrate understanding can: Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.							
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		Grades 9-12 Earth and Space Science Standards Review:							
124	DCI	ETS1.A: Defining and Delimiting Engineering Problems • Criteria and constraints also include satisfying any requirements set by society, such as taking issues of risk mitigation into account, and they should be quantified to the extent possible and stated in such a way that one can tell if a given design meets them.				Online Resources: Course Materials: Applying Practices Answer Key: Analyze a Major Global Challenge, p. 1, Project Overview			
125	DCI	ETS1.A: Defining and Delimiting Engineering Problems • Humanity faces major global challenges today, such as the need for supplies of clean water and food or for energy sources that minimize pollution, which can be addressed through engineering. These global challenges also may have manifestations in local communities.				Online Resources: Course Materials: Applying Practices Answer Key: Analyze a Major Global Challenge, p.2, Analyze a Major Global Challenge			
126	SEP	Asking Questions and Defining Problems <i>Asking questions and defining problems in 9–12 builds on K–8 experiences and progresses to formulating, refining, and evaluating empirically testable questions and design problems using models and simulations.</i> • Analyze complex real-world problems by specifying criteria and constraints for successful solutions.				Online Resources: Course Materials: Applying Practices Answer Key: Analyze a Major Global Challenge, p.2, Brainstorm Solutions!			
127	CONN	Influence of Science, Engineering, and Technology on Society and the Natural World • New technologies can have deep impacts on society and the environment, including some that were not anticipated. Analysis of costs and benefits is a critical aspect of decisions about technology.				Online Resources: Course Materials: Applying Practices Answer Key: Analyze a Major Global Challenge, p. 3, Work Through It!			
128	PE	HS-ETS1-2. Students who demonstrate understanding can: Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering.							
129	DCI	ETS1.C: Optimizing the Design Solution • Criteria may need to be broken down into simpler ones that can be approached systematically, and decisions about the priority of certain criteria over others (tradeoffs) may be needed.				Online Resources: Course Materials: Applying Practices Answer Key: Design a Solution, p. 1, Objective			
130	SEP	Constructing Explanations and Designing Solutions <i>Constructing explanations and designing solutions in 9–12 builds on K–8 experiences and progresses to explanations and designs that are supported by multiple and independent student-generated sources of evidence consistent with scientific ideas, principles and theories.</i> • Design a solution to a complex real-world problem based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and tradeoff considerations.				Online Resources: Course Materials: Applying Practices Answer Key: Design a Solution, pp. 2-3			

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		Grades 9-12 Earth and Space Science Standards Review:								
131	PE	HS-ETS1-3. Students who demonstrate understanding can: Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts.								
132	DCI	ETS1.B: Developing Possible Solutions • When evaluating solutions, it is important to take into account a range of constraints, including cost, safety, reliability, and aesthetics, and to consider social, cultural, and environmental impacts.		Online Resources: Course Materials: Applying Practices Answer Key: Evaluate a Solution, p. 1, Project Overview, Objective						
133	SEP	Constructing Explanations and Designing Solutions <i>Constructing explanations and designing solutions in 9–12 builds on K–8 experiences and progresses to explanations and designs that are supported by multiple and independent student-generated sources of evidence consistent with scientific ideas, principles and theories.</i> • Evaluate a solution to a complex real-world problem, based on scientific knowledge, student-generated sources of evidence, prioritized criteria, and tradeoff considerations.		Online Resources: Course Materials: Applying Practices Answer Key: Evaluate a Solution, pp. 2-3						
134	CONN	Influence of Science, Engineering, and Technology on Society and the Natural World • New technologies can have deep impacts on society and the environment, including some that were not anticipated. Analysis of costs and benefits is a critical aspect of decisions about technology.		Online Resources: Course Materials: Applying Practices Answer Key: Evaluate a Solution, pp. 2-3						
135	PE	HS-ETS1-4. Students who demonstrate understanding can: Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.								
136	DCI	ETS1.B: Developing Possible Solutions • Both physical models and computers can be used in various ways to aid in the engineering design process. Computers are useful for a variety of purposes, such as running simulations to test different ways of solving a problem or to see which one is most efficient or economical; and in making a persuasive presentation to a client about how a given design will meet his or her needs.		Online Resources: Course Materials: Applying Practices Answer Key: Use a Computer Simulation, p. 1, Project Overview						

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137	SEP	Using Mathematics and Computational Thinking <i>Mathematical and computational thinking in 9-12 builds on K-8 experiences and progresses to using algebraic thinking and analysis, a range of linear and nonlinear functions including trigonometric functions, exponentials and logarithms, and computational tools for statistical analysis to analyze, represent, and model data. Simple computational simulations are created and used based on mathematical models of basic assumptions.</i> • Use mathematical models and/or computer simulations to predict the effects of a design solution on systems and/or the interactions between systems.	Online Resources: Course Materials: Applying Practices Answer Key: Use a Computer Simulation, pp. 2-3						
138	CCC	Systems and System Models • Models (e.g., physical, mathematical, computer models) can be used to simulate systems and interactions — including energy, matter, and information flows — within and between systems at different scales.	Online Resources: Course Materials: Applying Practices Answer Key: Use a Computer Simulation, pp. 2-3						

CCSS for ELA/Literacy and Math in Grades 9-12 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 9-12 CCSS ELA/Literacy

139	CCSS ELA/Literacy	RST.11-12.1 Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. (HS-ESS1-1), (HS-ESS1-2), (HS-ESS1-5), (HS-ESS1-6), (HS-ESS2-2), (HS-ESS2-3), (HS-ESS3-1), (HS-ESS3-2), (HS-ESS3-4), (HS-ESS3-5)	TE: Unit 3, Module 12, Lesson 3, p. 336 (Question 4)						
140	CCSS ELA/Literacy	RST.11-12.2 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms. (HS-ESS2-2), (HS-ESS3-5)	TE: Skillbuilder Handbook, Analyze Information, p. 688						
141	CCSS ELA/Literacy	RST.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. (HS-ESS3-5), (HS-ETS1-1), (HS-ETS1-3)	TE: Unit 4, Module 15: Science & Society, p. 417						
142	CCSS ELA/Literacy	RST.11-12.8 Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. (HS-ESS1-5), (HS-ESS1-6), (HS-ESS3-2), (HS-ESS3-4), (HS-ETS1-1), (HS-ETS1-3)	TE: Skillbuilder Handbook, Analyze Media Sources, p. 692						

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
- CCC: Crosscutting Concepts
- 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

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Criteria #	Standard Identifier	F.14		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
		Grades 9-12 Earth and Space Science Standards Review:							
143	CCSS ELA/Literacy	RST.11-12.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. <i>(HS-ETS1-1), (HS-ETS1-3)</i>	TE: Skillbuilder Handbook, Synthesize Information, p. 689						
144	CCSS ELA/Literacy	WHST.9-12.1 Write arguments focused on discipline-specific content. <i>(HS-ESS1-6), (HS-ESS2-7)</i>	TE: Unit 6, Module 19, Science & Society, p. 546						
145	CCSS ELA/Literacy	WHST.9-12.2 Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. <i>(HS-ESS1-2), (HS-ESS1-3), (HS-ESS1-5), (HS-ESS3-1)</i>	TE: Unit 6, Module 19, Lesson 5, p. 537, SEP Quick Practice						
146	CCSS ELA/Literacy	WHST.9-12.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. <i>(HS-ESS2-5)</i>	Online Resources: Unit 7, Module 24, Lesson 2, GeoLAB Answer Key: Classify Galaxies pp. 1–3						
147	CCSS ELA/Literacy	SL.11-12.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume, and clear pronunciation. <i>(HS-ESS1-3)</i>	TE: Skillbuilder Handbook, Debate Skills, p. 694						
148	CCSS ELA/Literacy	SL.11-12.5 Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. <i>(HS-ESS2-1), (HS-ESS2-3), (HS-ESS2-4)</i>	TE: Unit 7, Module 21, Science & Society, p. 601 and TE: Unit 7, Module 24, Scientific Breakthroughs, p. 683						
Grades 9-12 CCSS Math									
149	CCSS Math	MP.2 Reason abstractly and quantitatively. <i>(HS-ESS1-1), (HS-ESS1-2), (HS-ESS1-3), (HS-ESS1-4), (HS-ESS1-5), (HS-ESS1-6), (HS-ESS2-1), (HS-ESS2-2), (HS-ESS2-3), (HS-ESS2-4), (HS-ESS2-6), (HS-ETS1-3), (HS-ETS1-4), (HS-ESS3-1), (HS-ESS3-2), (HS-ESS3-3), (HS-ESS3-4), (HS-ESS3-5), (HS-ESS3-6)</i>	TE: Unit 1, Module 3, Lesson 1, p. 64, Density and Specific Gravity, and Check Your Progress Item 7						
150	CCSS Math	MP.4 Model with mathematics. <i>(HS-ESS1-1), (HS-ESS1-4), (HS-ESS2-1), (HS-ESS2-3), (HS-ESS2-4), (HS-ESS2-6), (HS-ESS3-3), (HS-ESS3-6), (HS-ETS1-2), (HS-ETS1-3), (HS-ETS1-4)</i>	TE: Unit 7, Module 22, Module Wrap-Up, Go Further, CER Items 1 and 2						

Section 1: Standards Review: Science

Abbreviations for the Form F Standards Review Tab:

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		Grades 9-12 Earth and Space Science Standards Review:							
151	CCSS Math	HSN-Q.A.1 Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. <i>(HS-ESS1-1), (HS-ESS1-2), (HS-ESS1-4), (HS-ESS1-5), (HS-ESS1-6), (HS-ESS2-1), (HS-ESS2-2), (HS-ESS2-3), (HS-ESS2-4), (HS-ESS2-6), (HS-ESS3-1), (HS-ESS3-4), (HS-ESS3-5), (HS-ESS3-6)</i>	TE: Unit 7, Module 23, Lesson 2, Math Connection						
152	CCSS Math	HSN-Q.A.2 Define appropriate quantities for the purpose of descriptive modeling. <i>(HS-ESS1-1), (HS-ESS1-2), (HS-ESS1-4), (HS-ESS1-5), (HS-ESS1-6), (HS-ESS2-1), (HS-ESS2-3), (HS-ESS2-4), (HS-ESS2-6), (HS-ESS3-1), (HS-ESS3-4), (HS-ESS3-5), (HS-ESS3-6)</i>	Online Resources: Unit 7, Module 24, Module Opener: Launch Lab Answer Key: How Big is the Milky Way?						
153	CCSS Math	HSN-Q.A.3 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <i>(HS-ESS1-1), (HS-ESS1-2), (HS-ESS1-4), (HS-ESS2-1), (HS-ESS2-2), (HS-ESS2-3), (HS-ESS2-4), (HS-ESS2-5), (HS-ESS2-6), (HS-ESS3-1), (HS-ESS3-4), (HS-ESS3-5), (HS-ESS3-6)</i>	Online Resources: Module 1: Introduction to Earth Science, Lesson 1, GeoLAB Answer Key: Measurement and SI Units, p. 4						
154	CCSS Math	HSA-SSE.A.1 Interpret expressions that represent a quantity in terms of its context. <i>(HS-ESS1-1), (HS-ESS1-2), (HS-ESS1-4)</i>	Online Resources: Unit 7, Module 22, Applying Practices Answer Key: Planetary Orbits						
155	CCSS Math	HSA-CED.A.2 Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. <i>(HS-ESS1-1), (HS-ESS1-2), (HS-ESS1-4)</i>	TE: Unit 4, Module 15, Lesson 3, p. 405, Differentiated Instruction						
156	CCSS Math	HSA-CED.A.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. <i>(HS-ESS1-1), (HS-ESS1-2), (HS-ESS1-4)</i>	TE: Skillbuilder Handbook, p. 695, Convert Temperature						
157	CCSS Math	HSF-IF.B.5 Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. <i>(HS-ESS1-6)</i>	This standard is beyond the scope of Inspire Earth Science						
158	CCSS Math	HSF-IF.C.7 Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. <i>(HS-PS2-1)</i>	Online Resources: Unit 3, Module 11, Lesson 4, Explore and Explain: Exploring Environmental Problems Answer Key: How does the presence of water vapor and carbon dioxide affect the temperature of Earth's atmosphere?						

Section 1: Standards Review: Science

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Criteria #	Standard Identifier	F.14 Grades 9-12 Earth and Space Science 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
159	CCSS Math	HSS-ID.B.6 Represent data on two quantitative variables on a scatter plot, and describe how those variables are related. (HS-ESS1-6)	TE: Unit 7, Module 22, Lesson 2, p. 620, Check Your Progress Item 6						

Section 2: Science Content Review

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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.	TE: Unit 4, p. 342A TE: Unit 4, Module 15, p. 391						
2	Materials consistently support meaningful student sensemaking with the three dimensions, including discourse, that is appropriate to grade band progressions, instruction and assessment.	TE: Unit 2, Module 7, Lesson 2, p. 175, Discourse						
3	Natural and designed phenomena and/or problems that are meaningful and apparent to students drive coherent lessons and activities in all three dimensions.	TE: Unit 1, Module 2, pp. 32-33						

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.	TE: Unit 1, Module 2, Lesson 2, p. 46, Formative Assessment Check and Check Your Progress TE: Unit 3, Module 11, Lesson 3, p. 291, SEP Quick Practice						
5	Materials include opportunities for students to obtain feedback from teachers and peers as well as opportunities for student self-reflection.	Online Resources: Unit 1, STEM Unit Project: Rubric Guide TE: Unit 3, Module 12, Module Wrap-Up, p. 339, Revisit the Phenomenon						

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.	Online Resources: Course Materials: Materials List: Inspire Earth Online Resources: Course Materials: Teacher Lab Safety						
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Section 2: Science Content Review

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7	Materials provide teacher guidance for the use of embedded and meaningful technology to support and enhance student learning, when applicable.	Online Resources: Unit 5, Module 17, Lesson 3, Lesson Library: PhET Simulation Teacher Guide: Radioactive Dating Game						
8	Materials and assessments include teacher guidance for students at, approaching, or exceeding grade level expectations.	TE: Module 1: Introduction to Earth Science, Lesson 1, p. 5, EL Support Online Resources: Course Materials: Advanced-Gifted Learners, pp. 3-4						
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.	TE: Unit 2, Module 5, Lesson 2, p. 123, Formative Assessment Check, Remediation						

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.	TE: Unit 2, Module 6, Lesson 1, p. 138, Activate Prior Knowledge						
11	The flow of lessons from one unit to the next is coherent, meaningful, direct, and apparent to students.	TE: Unit 1, Module 2, Lesson 1, p. 34, Implementation Options TE: Unit 2, p. 108A, Phenomenon-Driven Learning						

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.	Online Resources: Unit 4, STEM Unit Project, pp. 2-4 TE: Unit 3, Module 11, Lesson 2, p. 283, Differentiated Instruction						
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Section 2: Science Content Review

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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.	TE: Unit 5, Module 18, Lesson 1, p. 477, Differentiated Instruction TE: Unit 3, Module 9, Lesson 1, p. 227, Discussion and Writing Support						

Section 2: All Content Review

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Criteria #	All Content Criteria Review	Score	Required: Reviewer's Evidence from Material	Comments, citations, notes
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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.			

Section 2: All Content Review

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Criteria #	All Content Criteria Review	Score	Required: Reviewer's Evidence from Material	Comments, citations, notes
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. <i>(Adopted New Mexico Content Standards for 2024: NM STEM Ready Science Standards)</i>			
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Criteria #	All Content Criteria Review	Score	Required: Reviewer's Evidence from Material	Comments, citations, notes
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.			

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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, inquiry, and complex 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.			

Section 2: All Content Review**PUBLISHER/PROVIDER INSTRUCTIONS:**

- 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
32	Instructional materials address multiple ethnic descriptions, interpretations, or perspectives of events and experiences.			