Performance Expectations at a Glance

In this unit, students will discover and practice the Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts needed to perform the following Performance Expectations.

Performance Expectations	Module: **Matter: Properties and Changes**	Module: **Materials Science**
MS-PS1-2,	●	
MS-PS1-3,		●
MS-PS1-5,	●	
MS-PS1-6,	●	
MS-ETS1-1,	●	●
MS-ETS1-2,	●	●
MS-ETS1-3,	●	
MS-ETS1-4	●	●

Correlations by Module to the NGSS

MODULE: Matter: Properties and Changes

MS-PS1	**Matter and its Interactions**	
MS-PS1-2.	**Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.** [Clarification Statement: Examples of reactions could include burning sugar or steel wool, fat reacting with sodium hydroxide, and mixing zinc with hydrogen chloride.] [*Assessment Boundary: Assessment is limited to analysis of the following properties: density, melting point, boiling point, solubility, flammability, and odor.*]	*38–39*, 73–78

SEP Science and Engineering Practices

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. (MS-PS1-2) * Other aspects of this SEP are integrated throughout this module and are listed in the *Also Integrates* section.	*10–11*, *15–17*, *22–23*, 31, *41–42*, *60–61*, *64–67*, 73–78

Labs and investigations are in italics.

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Connections to Nature of Science **Scientific Knowledge is Based on Empirical Evidence** • Science knowledge is based upon logical and conceptual connections between evidence and explanations. (MS-PS1-2)	43, 67
DCI Disciplinary Core Ideas	
PS1.A: Structure and Properties of Matter • Each pure substance has characteristic physical and chemical properties (for any bulk quantity under given conditions) that can be used to identify it. (MS-PS1-2)	10, *10–11*, 12–13, *15–17*, 18–19, *20*, 21, *22–23*, 24, *25–27*, 27–28, 30–32
PS1.B: Chemical Reactions • Substances react chemically in characteristic ways. In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants. (MS-PS1-2)	*38–39*, 40, *43*, 44, *44–45*, 46, 50–52, 73–78
CCC Crosscutting Concepts	
Patterns • Macroscopic patterns are related to the nature of microscopic and atomic-level structure. (MS-PS1-2)	12–14, 18–19, 40, *41–42*, *43*, 44, *44–45*, 46, 73–78
CCSS ELA/Literacy Connections	
ELA RST.6–8.1	8–9, 36–37, 56–57, 63, Literacy Skill Handbook (online)
ELA RST.6–8.7	30, *47*, 50, 59, 70–72, 73–78, Literacy Skill Handbook (online)
CCSS Math Connections	
Math MP.2	14, *15–17*, 18–19, *20*, 51, Math Skill Handbook (online)
Math 6.RP.A.3	*20* , Math Skill Handbook (online)
Math 6.SP.B.4	Math Skill Handbook (online)
Math 6.SP.B.5	*15–17,* Math Skill Handbook (online)

MS-PS1	Matter and its Interactions	
MS-PS1-5.	**Develop and use a model to describe how the total number of atoms does not change in a chemical reaction and thus mass is conserved.** [Clarification Statement: Emphasis is on law of conservation of matter and on physical models or drawings, including digital forms, that represent atoms.] [*Assessment Boundary: Assessment does not include the use of atomic masses, balancing symbolic equations, or intermolecular forces.*]	*41–42*, *47*, 73–78

Labs and investigations are in italics.

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SEP Science and Engineering Practices	
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 describe unobservable mechanisms. (MS-PS1-5) * Other aspects of this SEP are integrated throughout this module and are listed in the *Also Integrates* section.	14, *41–42*, *47*, 59, 70, 72, 73–78
Connections to Nature of Science **Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena** • Laws are regularities or mathematical descriptions of natural phenomena. (MS-PS1-5)	43, 67
DCI Disciplinary Core Ideas	
PS1.B: Chemical Reactions • Substances react chemically in characteristic ways. In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants. (MS-PS1-5)	*38–39*, 40, *43*, 44, *44–45*, 46, 50–52, 73–78
• The total number of each type of atom is conserved, and thus the mass does not change. (MS-PS1-5)	*41–42*, *43*, 43–44, *44–45*, 46, *47*, 49–52, 73–78
CCC Crosscutting Concepts	
Energy and Matter • Matter is conserved because atoms are conserved in physical and chemical processes. (MS-PS1-5)	*41–42*, *43*, 43–44, *44–45*, 46, 49–52, 73–78
CCSS ELA/Literacy Connections	
ELA RST.6–8.7	30, *47*, 50, 59, 70–72, 73–78, Literacy Skill Handbook (online)
CCSS Math Connections	
Math MP.2	14, *15–17*, 18–19, *20*, 51, Math Skill Handbook (online)
Math MP.4	*15–17*, 18–19, *47*, 48, 51, Math Skill Handbook (online)
Math 6.RP.A.3	*20,* Math Skill Handbook (online)

Labs and investigations are in italics.

MS-PS1	Matter and its Interactions	
MS-PS1-6.	**Undertake a design project to construct, test, and modify a device that either releases or absorbs thermal energy by chemical processes.** [Clarification Statement: Emphasis is on the design, controlling the transfer of energy to the environment, and modification of a device using factors such as type and concentration of a substance. Examples of designs could involve chemical reactions such as dissolving ammonium chloride or calcium chloride.] [*Assessment Boundary: Assessment is limited to the criteria of amount, time, and temperature of substance in testing the device.*]	*64–67*, 73–78
SEP Science and Engineering Practices		
Constructing Explanations and Designing Solutions* Constructing explanations and designing solutions in 6–8 builds on K–5 experiences and progresses to include constructing explanations and designing solutions supported by multiple sources of evidence consistent with scientific knowledge, principles, and theories. • Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints. (MS-PS1-6) * Other aspects of this SEP are integrated throughout this module and are listed in the *Also Integrates* section.		*64–67*, 73–78
DCI Disciplinary Core Ideas		
PS1.B: Chemical Reactions • Some chemical reactions release energy, others store energy. (MS-PS1-6)		40, *58*, 59, *60–61*, 62–63, *64–67*, 67–72
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. (secondary to MS-PS1-6)		*64–67*, 73–78
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 the characteristics may be incorporated into the new design. (secondary to MS-PS1-6)		*64–67*, 73–78
• 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. (secondary to MS-PS1-6)		*64–67*, 73–78
CCC Crosscutting Concepts		
Energy and Matter • The transfer of energy can be tracked as energy flows through a designed or natural system. (MS-PS1-6)		59, 62–63, *64–67*, 67–68, 73–78

Labs and investigations are in italics.

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CCSS ELA/Literacy Connections	
ELA RST.6–8.3	*10–11*, *22–23*, *25–27*, *38–39*, *60–61*, Literacy Skill Handbook (online)
ELA WHST.6–7	49, 69, Literacy Skill Handbook (online)

MS-ETS1	**Engineering Design**	
MS-ETS1-1.	**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.**	*64–67*, 73–78
SEP Science and Engineering Practices		
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, 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) * Other aspects of this SEP are integrated throughout this module and are listed in the *Also Integrates* section.		*64–67*, 73–78
DCI Disciplinary Core Ideas		
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)		*64–67*, 73–78
CCC Crosscutting Concepts		
Connections to Science, Technology, Society and the Environment **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)		49A–49B
• 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)		49A–49B

Labs and investigations are in italics.

MODULE: Materials Science

MS-PS1	Matter and its Interactions	
MS-PS1-3.	**Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.** [Clarification Statement: Emphasis is on natural resources that undergo a chemical process to form the synthetic material. Examples of new materials could include new medicine, foods, and alternative fuels.] [*Assessment Boundary: Assessment is limited to qualitative information.*]	*118*, 125–130
SEP Science and Engineering Practices		
Obtaining, Evaluating, and Communicating Information* Obtaining, evaluating, and communicating information in 6–8 builds on K–5 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. (MS-PS1-3) * Other aspects of this SEP are integrated throughout this module and are listed in the *Also Integrates* section.		*91–92*, 97, *116*, *117*, *118*, *121*, 125–130
DCI Disciplinary Core Ideas		
PS1.A: Structure and Properties of Matter • Each pure substance has characteristic physical and chemical properties (for any bulk quantity under given conditions) that can be used to identify it. (MS-PS1-3)		*88–90*, 90, *93–94*, 97, 131
PS1.B: Chemical Reactions • Substances react chemically in characteristic ways. In a chemical process, the atoms that make up the original substances are regrouped into different molecules, and these new substances have different properties from those of the reactants. (MS-PS1-3)		*93–94*, *95*, 95, 96, *113–114*, 115, 125–130
CCC Crosscutting Concepts		
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-PS1-3)		85, *88–90*, 90, *91–92*, 93, 96–97, 99–100, 119, 125–130, 131
Connections to Engineering, Technology, and Applications of Science **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. (MS-PS1-3) * Other aspects of this Connections to Engineering, Technology, and Applications of Science are integrated throughout this module and are listed in the *Also Integrates* section.		*95*, 96–97, 119–120, 125–130

Labs and investigations are in italics.

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CCSS ELA/Literacy Connections	
ELA RST.6–8.1	8–9, 36–37, 56–57, 63, Literacy Skill Handbook (online)
ELA WHST.6–8.8	29, 69, Literacy Skill Handbook (online)
CCSS Math Connections	
Math MP.2	14, *15–17*, 18–19, *20*, 51, Math Skill Handbook (online)

MS-ETS1	Engineering Design	
MS-ETS1-2.	**Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.**	*64–67*, 73–78
SEP Science and Engineering Practices		
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) * Other aspects of this SEP are integrated throughout this module and are listed in the *Also Integrates* section.		*64–67*, 73–78
DCI Disciplinary Core Ideas		
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) possible solutions. (MS-ETS1-1)		*64–67*, 73–78
CCSS ELA/Literacy Connections		
ELA RST.6–8.1		8–9, 36–37, 56–57, 63, Literacy Skill Handbook (online)
ELA RST.6–8.9		14, 18, *41–42*, *64–67*, 73–78, Literacy Skill Handbook (online)
ELA WHST.6–8.7		49, 69, Literacy Skill Handbook (online)
ELA WHST.6–8.9		63, 69, 73–78, Literacy Skill Handbook (online)
CCSS Math Connections		
Math MP.2		14, *15–17*, 18–19, *20*, 51, Math Skill Handbook (online)
Math 7.EE.B.3		73–78, Math Skill Handbook (online)

Labs and investigations are in italics.

MS-ETS1	Engineering Design	
MS-ETS1-3.	**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 solution to better meet the criteria for success.**	*64–67*, 73–78
SEP Science and Engineering Practices		
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) * Other aspects of this SEP are integrated throughout this module and are listed in the *Also Integrates* section.		*10–11*, *15–17*, *22–23*, 31, *41–42*, *60–61*, *64–67*, 73–78
DCI Disciplinary Core Ideas		
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)		*64–67*, 73–78
• Sometimes parts of different solutions can be combined to create a solution that is better than any of its predecessors. (MS-ETS1-3)		*64–67*, 73–78
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)		*64–67*, 73–78
CCSS ELA/Literacy Connections		
ELA RST.6–8.1		8–9, 36–37, 56–57, 63, Literacy Skill Handbook (online)
ELA RST.6–8.7		30, *47*, 50, 59, 70–72, 73–78, Literacy Skill Handbook (online)
ELA RST.6–8.9		14, 18, *41–42*, *64–67*, 73–78, Literacy Skill Handbook (online)
CCSS Math Connections		
Math MP.2		14, *15–17*, 18–19, *20*, 51, Math Skill Handbook (online)
Math 7.EE.B.3		73–78, Math Skill Handbook (online)

Labs and investigations are in italics.

MS-ETS1	Engineering Design	
MS-ETS1-4.	**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.**	73–78
SEP Science and Engineering Practices		
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) * Other aspects of this SEP are integrated throughout this module and are listed in the *Also Integrates* section.		*41–42*, 73–78
DCI Disciplinary Core Ideas		
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)		*64–67*, 73–78
• Models of all kinds are important for testing solutions. (MS-ETS1-4)		*64–67*, 73–78
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)		*64–67*, 73–78
CCSS ELA/Literacy Connections		
ELA SL.8.5		69, 73-78, Literacy Skill Handbook (online)
CCSS Math Connections		
Math MP.2		14, *15–17*, 18–19, *20*, 51, Math Skill Handbook (online)
Math 7.SP.C.7		Math Skill Handbook (online)

ALSO INTEGRATES:	
SEP Asking Questions and Defining Problems	79
SEP Developing and Using Models	73–78
SEP Planning and Carrying Out Investigations	*10–11*, *15–17*, *22–23*, *25–27*, 28, *41–42*, *64–67*, 73–78, 79

Labs and investigations are in italics.

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SEP Analyzing and Interpreting Data	*15–17*, *20*, *64–67*, 73–78
SEP Using Mathematics and Computational Thinking	*15–17*, *20*, 48, 51, Lab *Density Column* (online), Lab *Do heavy objects always sink and light objects always float?* (online)
SEP Constructing Explanations and Designing Solutions	8–9, 19, 32, 36–37, *44–45*, 52, 56–57, 68, 72, 73–78
SEP Engaging in Argument from Evidence	62, *64–67*, 73–78
SEP Obtaining, Evaluating, and Communicating Information	63, 73–78
DCI PS3.D: Energy in Chemical Processes and Everyday Life	63, 68, 71
DCI LS1.C: Organization for Matter and Energy Flow in Organisms	63, 68, 71
DCI LS2.B: Cycle of Matter and Energy Transfer in Ecosystems	68
DCI ESS2.A: Earth's Materials and Systems	46
CCC Cause and Effect	*38–39*
CCC Scale Proportion, and Quantity	*47*, 48, 51
CCC Systems and System Models	*47*, 48, 51, *58*, 59, 73–78
CCC Structure and Function	*47*, 73–78
CCC Stability and Change	*38–39*
CCSS ELA RST.6–8.10	29, 49, 49A-49-B, 63, 69
CCSS ELA WHST.6–8.1	14
CCSS ELA WHST.6–8.2	49
CCSS ELA WHST.6–8.4	49
CCSS ELA WHST.6–8.6	29
CCSS ELA WHST.6–8.10	14, 29
CCSS ELA SL.7.4	69
CCSS ELA SL.7.5	69, 73–78
CCSS MATH 7.EE.B.4	*20*, 31
CCSS MATH 7.RP.A.2	*15–17*, *20*

Labs and investigations are in italics.

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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. (MS-PS1-3)	*106–107*, 108–109, *109*, 110, *110–111*, 117A-117B, 120, 125–130
CCSS ELA/Literacy Connections	
ELA RST.6–8.1	86–87, 104–105, 117, 119, *Literacy Skill Handbook*
ELA WHST.6–8.8	*91–92*, 97, *116*, *118*, 124, *Literacy Skill Handbook*

MS-ETS1	Engineering Design	
MS-ETS1-1.	**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.**	125–130
SEP Science and Engineering Practices		
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, 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) * Other aspects of this SEP are integrated throughout this module and are listed in the *Also Integrates* section.		125–130
DCI Disciplinary Core Ideas		
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)		125–130
CCC Crosscutting Concepts		
Connections to Science, Technology, Society and the Environment **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)		91, *91–92*, 103, 108, *109*, 110, *110–111*, 112, 115, 117A-117B, *118,* 122–124, 125–130, 131

Labs and investigations are in italics.

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• 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)	*106–107*, 108–109, *109*, 110, *110–111,* 117A-117B, 120, 125–130
CCSS ELA/Literacy Connections	
ELA RST.6–8.1	86–87, 104–105, 117, 119, *Literacy Skill Handbook*
ELA WHST.6–8.8	*91–92* , 97, *116* , *118,* 121, *Literacy Skill Handbook*
CCSS Math Connections	
Math MP.2	99, Math Skill Handbook (online)
Math 7.EE.B.3	Math Skill Handbook (online)

MS-ETS1	**Engineering Design**	
MS-ETS1-2.	**Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem.**	*106–107,* 125–130
SEP **Science and Engineering Practices**		
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) * Other aspects of this SEP are integrated throughout this module and are listed in the *Also Integrates* section.		*106–107,* 125–130
DCI **Disciplinary Core Ideas**		
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) possible solutions. (MS-ETS1-1)		125–130
CCSS ELA/Literacy Connections		
ELA RST.6–8.1		96–97, 104–105, 117, 119, *Literacy Skill Handbook*
ELA RST.6–8.9		108, *Literacy Skill Handbook*
ELA WHST.6–8.7		*91–92, Literacy Skill Handbook*

Labs and investigations are in italics.

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ELA WHST.6–8.9	*91–92, 97, 116, 118, Literacy Skill Handbook*
CCSS Math Connections	
Math MP.2	99, Math Skill Handbook (online)
Math 7.EE.B.3	Math Skill Handbook (online)

MS-ETS1	Engineering Design	
MS-ETS1-4.	**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.**	*106–107,* 125–130
SEP **Science and Engineering Practices**		
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) * Other aspects of this SEP are integrated throughout this module and are listed in the *Also Integrates* section.		*106–107,* 125–130
DCI **Disciplinary Core Ideas**		
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)		Science and Engineering Practices Handbook (online)
• Models of all kinds are important for testing solutions. (MS-ETS1-4)		*106–107,* 125–130
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)		Science and Engineering Practices Handbook (online)
CCSS ELA/Literacy Connections		
ELA SL.8.5		125–130, Literacy Skill Handbook (online)
CCSS Math Connections		
Math MP.2		99, Math Skill Handbook (online)
Math 7.SP.C.7		Math Skill Handbook (online)

Labs and investigations are in italics.

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ALSO INTEGRATES:	
SEP Asking Questions and Defining Problems	131
SEP Developing and Using Models	96, 115
SEP Planning and Carrying Out Investigations	*88–90, 93–94, 106–107, 113–114,* 131
SEP Analyzing and Interpreting Data	*88–90,* 99, *106–107*
SEP Constructing Explanations and Designing Solutions	86–87, 100, 104–105, 108, *113–114,* 115, 124, 125–130, 131
SEP Engaging in Argument from Evidence	112
SEP Obtaining, Evaluating, and Communicating Information	123, 125–130
DCI ESS3.A: Natural Resources	108, 110
DCI ESS3.C: Human Impacts on Earth Systems	112
DCI LS2.A: Interdependent Relationships in Ecosystems	112
DCI LS4.D: Interdependent Relationships in Ecosystems	112
CCC Patterns	*88–90*
CCC Systems and System Models	115
CCC Energy and Matter	96
CCC Stability and Change	112
Connections to Nature of Science Science is a Human Endeavor	97
Connections to Nature of Science Science Addresses Questions About the Natural and Material World	120
Connections to Science, Technology, Society, and the Environment Interdependence of Science, Engineering, and Technology	120
CCSS ELA RST.6–8.3	*88–90, 93–94, 113–114*
CCSS ELA RST.6–8.6	117, 119
CCSS ELA RST.6–8.7	*91–92,* 97–98, 122
CCSS ELA RST.6–8.8	117
CCSS ELA RST.6–8.10	97, 117, 117A–117B, 119, 121
CCSS ELA WHST.6–8.1	112
CCSS ELA WHST.6–8.2	*118*
CCSS ELA WHST.6–8.5	*118*

Labs and investigations are in italics.

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CCSS ELA WHST.6–8.6	*116, 118*
CCSS ELA SL.7.1	117, 119
CCSS ELA SL.7.4	125–130
CCSS ELA SL.7.5	125–130

Labs and investigations are in italics.