Teacher's Edition

Grade 3 • Unit 4

Inspire Science

Observing Weather

Mc Graw Hill Education

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: **Weather**
3-ESS2-1	●
3-ESS2-2	●
3-ESS3-1	●
3–5-ETS1-1	●
3–5-ETS1-2	●

Correlations by Module to the NGSS

MODULE: Weather

3-ESS2	Earth's Systems	
3-ESS2-1	**Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.** *[Clarification Statement: Examples of data could include average temperature, precipitation, and wind direction.] [Assessment Boundary: Assessment of graphical displays is limited to pictographs and bar graphs. Assessment does not include climate change.]*	*8–9*, *16–17*, 21, *24–25*, 26–27, 28, 29–30, 31, 32, *34–35*
SEP Science and Engineering Practices		
Analyzing and Interpreting Data Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used. • Represent data in tables and various graphical displays (bar graphs, pictographs) to reveal patterns that indicate relationships. (3-ESS2-1)		*8–9*, 14, *16–17*, 19, *24–25*, 28, 32, *34–35*
DCI Disciplinary Core Ideas		
ESS2.D: Weather and Climate • Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (3-ESS2-1)		*8–9*, 13–14, 15, *16–17*, 19
CCC Crosscutting Concepts		
Patterns • Patterns of change can be used to make predictions. (3-ESS2-1)		*8–9*, 10–13, 15, *16–17*, 18, 19

Inquiry activities are in Italics.

3-ESS2	From Molecules to Organisms: Structures and Processes	
3-ESS2-2	**Obtain and combine information to describe climates in different regions of the world.**	21, *24–25*, 26, 28, 29–30, 31, 32, 33, *34–35*, 37
SEP Science and Engineering Practices		
Obtaining, Evaluating, and Communicating Information Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods. • Obtain and combine information from books and other reliable media to explain phenomena. (3-ESS2-2)		21, 23, *24–25*, 26–27, 28, 29–30, 31, 32, *34–35*, 36, 37, *42–43*, 44–45, *46*, 47, 48–49, 51, *58*, 61, 62–63, *64–65*, 66–67, 68, *70–71*, 72, *75–80*
DCI Disciplinary Core Ideas		
ESS2.D: Weather and Climate • Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. (3-ESS2-2)		26, 28–30, 31, 32, 33, *34–35*, 37, 53
CCC Crosscutting Concepts		
Patterns • Patterns of change can be used to make predictions. (3-ESS2-2)		21, 23, *24–25*, 26–27, 28, 29–30, 31, 32, 33, *34–35*, 37, 53

3-ESS3	Earth's Place in the Universe	
3-ESS3-1	**Make a claim about the merit of a design solution that reduces the impacts of a weather related hazard.** *[Clarification Statement: Examples of design solutions to weather-related hazards could include barriers to prevent flooding, wind resistant roofs, and lightning rods.]*	41, *42–43*, 44–45, *46*, 47, 48–49, 53, 55, *58*, 61, 62–63, *64–65*, 66–*67*, 68, *70–71*, 72, *75–80*
SEP Science and Engineering Practices		
Engaging in Argument from Evidence Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s). • Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem. (3-ESS3-1)		*42–43*, 61, *64–65*, 66–*67*, *70–71*
DCI Disciplinary Core Ideas		
ESS3.B: Natural Hazards • A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (3-ESS3-1) (Note: This Disciplinary Core Idea is also addressed by 4-ESS3-2.)		39, 41, *42–43*, 44–45, *46*, 47, 48–49, 53, 55, *58*, 61, 62–63, *64–65*, 66–67, 68, *70–71*, 72, 73, *75–80*

Inquiry activities are in Italics.

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CCC Crosscutting Concepts	
Cause and Effect • Cause and effect relationships are routinely identified, tested, and used to explain change. (3-ESS3-1)	39, *42–43*, 45, *46*, 47, 48–49, 53, *58*, 73
Connections to Nature of Science **Influence of Engineering, Technology, and Science on Society and the Natural World** • Engineers improve existing technologies or develop new ones to increase their benefits (e.g., better artificial limbs), decrease known risks (e.g., seatbelts in cars), and meet societal demands (e.g., cell phones). (3-ESS3-1)	51, *58*, 62–63, *64–65*, 68, *70–71*
Science is a Human Endeavor • Science affects everyday life. (3-ESS3-1)	62–63

3–5-ETS	Engineering Design	
3–5-ETS1-1	**Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.**	*58*, 62–63, *64–65*, *70–71*, *75–80*
SEP Science and Engineering Practices		
Asking Questions and Defining Problems Asking questions and defining problems in 3–5 builds on grades K–2 experiences and progresses to specifying qualitative relationships. • Define a simple design problem that can be solved through the development of an object, tool, process, or system and includes several criteria for success and constraints on materials, time, or cost. (3–5-ETS1-1)		41, 62–63, *64–65*, *70–71*
DCI Disciplinary Core Ideas		
ETS1.A: Defining and Delimiting Engineering Problems • Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals for solutions can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. (3–5-ETS1-1)		*58*, 62–63, *64–65*, 68, *70–71*, *75–80*
CCC Crosscutting Concepts		
Influence of Engineering, Technology, and Science on Society and the Natural World • People's needs and wants change over time, as do their demands for new and improved technologies. (3–5-ETS1-1)		*58*, 62–63, *64–65*, *70–71*

Inquiry activities are in Italics.

3–5-ETS	Engineering Design	
3–5-ETS1-2	**Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.**	*47*, 63, *70–71*, *75–80*
SEP Science and Engineering Practices		
Constructing Explanations and Designing Solutions Constructing explanations and designing solutions in 3–5 builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems. • Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design problem. (3–5-ETS1-2)		*42–43*, *47*, 51, 55, *58*, 62–63, *64–65*, *70–71*, 72, *75–80*
DCI Disciplinary Core Ideas		
ETS1.B: Developing Possible Solutions • Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. (3–5-ETS1-2) • At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs. (3–5-ETS1-2)		*43*, 51, *64–65*, *70–71*, *75–80*
CCC Crosscutting Concepts		
Influence of Engineering, Technology, and Science on Society and the Natural World • Engineers improve existing technologies or develop new ones to increase their benefits, decrease known risks, and meet societal demands. (3–5-ETS1-2)		51, 62–63, 68

Other Correlations	
CCSS Math Connections	
3.MD.B.3	11, *16–17*, 28, *35*
3.MD.B.4	*47*
ELD Connections	
ELD.PI.3.1	Teacher's Edition *Only*: 3, *8–9*, 18, 23, *24–25*, 36, 41, *42–43*, 52, 57, *58*, 66–67, *75–80*
ELD.PI.3.2	Teacher's Edition *Only*: 13, 20, 68

Inquiry activities are in Italics.

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ELD.PI.3.5	Teacher's Edition *Only*: 3, *8–9*, 11, *16–17*, 23, *24–25*, 29, 41, *42–43*, 57, *58*, 66–67, *75–80*
ELD.PI.3.9	Teacher's Edition *Only*: *16–17*, 51, *75–80*
CCSS ELA/Literacy Connections	
RI.3.1, 3, 4, 5, 7	5, *8–9*, 10–11, 12–13, 15, *16–17*, 19, 21, *24–25*, 26–27, 28, 29–30, 32, 33, *34–35*, 39, 45, 47, 51, 62–63, 66–67
SL.3.1, 2, 3, 4	3, *8–9*, 18, 23, *24–25*, 36, 41, *42–43*, 57, *58*, 66–67, 72, *75–80*
W.3.8	*8–9*, *16–17*, *24–25*, 28, 31, 32, *42–43*, 68
ALSO INTEGRATES:	
SEP Analyzing and Interpreting Data	*42–43*, *58*
SEP Constructing Explanations and Designing Solutions	*8–9*, 10–11, 12, 18, *24–25*, 29–30, 32, *34–35*, 36, 37
SEP Engaging in Argument from Evidence	5, 21, *24–25*
SEP Obtaining, Evaluating, and Communicating Information	5, *8–9*, 10–11, 12–14, 15, *16–17*, 18, 19
SEP Planning and Carrying Out an Investigation	*34–35*
CCC Cause and Effect	10–13, 23, 27, 29–30, *34–35*, 37
CCC Structure and Function	23, 29–30, 32, 37, 45, *58*, 61, 62–63, *64–65*, *70–71*
Math MP.5	*8–9*, 10–11, 14, *16–17*, 19, *24–25*, 28, 32, *34–35*, *42–43*
ELD.PI.3.6	Teacher's Edition *Only*: 33, 46

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