Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

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Smithsonian Science for the Classroom™ Learning Framework for the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade	Physical Science	Earth Science	Life Science
1	How Can We Send a Message Using Sound? How Can We Light Our Way in the Dark?	How Can We Predict When the Sky Will Be Dark?	How Do Living Things Stay Safe and Grow?
2	How Can We Change Solids and Liquids?	What Can Maps Tell Us About Land and Water on Earth? How Can We Stop Soil from Washing Away?	How Can We Find the Best Place for a Plant to Grow?
3	How Can We Predict Patterns of Motion?	How Do Weather and Climate Affect Our Lives?	What Explains Similarities and Differences Between Organisms? How Can We Protect Animals When Their Habitat Changes?
4	How Does Motion Energy Change in a Collision? How Can We Provide Energy to People's Homes?	What Is Our Evidence That We Live on a Changing Earth?	How Can Animals Use Their Senses to Communicate?
5	How Can We Identify Materials Based on Their Properties?	How Can We Use the Sky to Navigate? How Can We Provide Freshwater to Those in Need?	How Can We Predict Change in Ecosystems?

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 1	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Waves and Their Applications in Technologies for Information Transfer (PS4)	
1.PS4.1 Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.	***How Can We Send a Message Using Sound?* Teacher Guide** **Disciplinary Core Ideas** • **PS4.A: Wave Properties:** L3 pgs. 85-92; L4 pgs. 93-100; L5 pgs. 101-110; L6 pgs. 111-120; L7 pgs. 121-130; L8 pgs. 131-140 **Science and Engineering Practices** • **Planning and Carrying Out Investigations:** L2 pgs. 75-84; L3 pgs. 85-92; L4 pgs. 93-100; L6 pgs. 111-120; L7 pgs. 121-130 • **Scientific Investigations Use a Variety of Methods:** L3 pgs. 85-92 **Crosscutting Concepts** • **Cause and Effect:** L3 pgs. 85-92; L4 pgs. 93-100; L5 pgs. 101-110; L6 pgs. 111-120; L7 pgs. 121-130; L8 pgs. 131-140
1.PS4.2 Make observations to construct an evidence-based account that objects can be seen only when illuminated.	***How Can We Predict When the Sky Will Be Dark?* Teacher Guide** **Disciplinary Core Ideas** • **PS4.B: Electromagnetic Radiation:** L1 pgs. 65-76; L2 pgs. 77-86; L3 pgs. 87-96; L4 pgs. 97-112; L7 pgs. 137-148; L10 pgs. 173-182 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L1 pgs. 65-76 • **Developing and Using Models:** L1 pgs. 65-76; L4 pgs. 97-112 • **Carrying Out Investigations:** L2 pgs. 77-86 • **Constructing Explanations:** L2 pgs. 77-86; L10 pgs. 173-182 • **Planning Investigations:** L7 pgs. 137-148 **Crosscutting Concepts** • **Patterns:** L1 pgs. 65-76; L4 pgs. 97-112; L7 pgs. 137-148 • **Cause and Effect:** L2 pgs. 77-86; L3 pgs. 87-96; L10 pgs. 173-182

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Grade 1	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	***How Can We Light Our Way in the Dark?* Teacher Guide** **Disciplinary Core Ideas** • **PS4.B: Electromagnetic Radiation:** L1 pgs. 69-82; L2 pgs. 83-94; L3 pgs. 95-114; L4 pgs. 115-130; L5 pgs. 131-148; L9 pgs. 187-201; L10 pgs. 205-214 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L5 pgs.131-148 • **Carrying Out Investigations:** L1 pgs. 69-82; L3 pgs. 95-114; L9 pgs. 187-201 • **Constructing Explanations:** L4 pgs. 115-130; L5 pgs. 131-148; L9 pgs. 187-201; L10 pgs. 205-214 • **Planning Investigations:** L1 pgs. 69-82; L3 pgs. 95-114; L9 pgs. 187-201 • **Defining Problems:** L2 pgs. 83-94; L10 pgs. 205-214 • **Obtaining, Evaluating, and Communicating Information:** L2 pgs. 83-94; L6 pgs. 149-162 • **Communicating Information**: L5 pgs. 131-148 **Crosscutting Concepts** • **Patterns:** L4 pgs. 115-130; L5 pgs. 131-148 • **Cause and Effect:** L1 pgs. 69-82; L3 pgs. 95-114; L4 pgs. 115-130; L5 pgs. 131-148; L9 pgs. 187-201; L10 pgs. 205-214 • **Structure and Function:** L2 pgs. 83-94; L10 pgs. 205-214
1.PS4.3 Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.	***How Can We Light Our Way in the Dark?* Teacher Guide** **Disciplinary Core Ideas** • **PS4.B: Electromagnetic Radiation:** L1 pgs. 69-82; L2 pgs. 83-94; L3 pgs. 95-114; L4 pgs. 115-130; L5 pgs. 131-148; L9 pgs. 187-201; L10 pgs. 205-214

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Grade 1	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	Science and Engineering Practices • **Analyzing and Interpreting Data:** L5 pgs. 131-148 • **Carrying Out Investigations:** L1 pgs. 69-82; L3 pgs. 95-114; L9 pgs. 187-201 • **Constructing Explanations:** L4 pgs. 115-130; L5 pgs. 131-148; L9 pgs. 187-201; L10 pgs. 205-214 • **Planning Investigations:** L1 pgs. 69-82; L3 pgs. 95-114; L9 pgs. 187-201 • **Defining Problems:** L2 pgs. 83-94; L10 pgs. 205-214 • **Obtaining, Evaluating, and Communicating Information:** L2 pgs. 83-94; L6 pgs. 149-162 • **Communicating Information**: L5 pgs. 131-148 **Crosscutting Concepts** • **Patterns:** L4 pgs. 115-130; L5 pgs. 131-148 • **Cause and Effect:** L1 pgs. 69-82; L3 pgs. 95-114; L4 pgs. 115-130; L5 pgs. 131-148; L9 pgs. 187-201; L10 pgs. 205-214 • **Structure and Function:** L2 pgs. 83-94; L10 pgs. 205-214
1.PS4.4 Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.	***How Can We Send a Message Using Sound?* Teacher Guide** **Disciplinary Core Ideas** • **PS4.C: Information Technologies and Instrumentation:** L2 pgs. 75-84 **Science and Engineering Practices** • **Constructing Explanations and Designing Solutions:** L2 pgs. 75-84; L4 pgs. 93-100; L5 pgs. 101-110; L7 pgs. 121-130; L8 pgs. 131-140 **Crosscutting Concepts** • **Influence of Science, Engineering, and Technology on Society and the Natural World:** L1 pgs. 65-74; L2 pgs. 75-84; L5 pgs. 101-110

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Grade 1	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
From Molecules to Organisms: Structure and Function (LS1)	
1.LS1.1 Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.	***How Do Living Things Stay Safe and Grow?* Teacher Guide** **Disciplinary Core Ideas** • **LS1.A: Structure and Function:** L1 pgs. 73-84; L5 pgs. 127-138; L6 pgs. 139-150; L7 pgs. 151-160; L8 pgs. 161-172; L9 pgs. 173-186 **Science and Engineering Practices** • **Constructing Explanations:** L1 pgs. 73-84; L9 pgs. 173-186 • **Defining Problems:** L8 pgs. 161-172 • **Engaging in Argument from Evidence:** L9 pgs. 173-186 • **Obtaining, Evaluating, and Communicating Information:** L5 pgs. 127-138; L6 pgs. 139-150; L7 pgs. 151-160; L9 pgs. 173-186 **Crosscutting Concepts** • **Cause and Effect:** L6 pgs. 139-150 • **Structure and Function:** L7 pgs. 151-160; L8 pgs. 161-172; L9 pgs. 173-186 • **Patterns:** L1 pgs. 73-84; L5 pgs. 127-138; L6 pgs. 139-150; L9 pgs. 173-186 ***How Can We Light Our Way in the Dark?* Teacher Guide** **Disciplinary Core Ideas** • **LS1.A: Structure and Function:** L6 pgs. 149-162; L8 pgs. 173-186; L10 pgs. 205-214 **Science and Engineering Practices** • **Constructing Explanations:** L6 pgs. 149-162; L10 pgs. 205-214 • **Asking Questions:** L10 pgs. 205-214 • **Defining Problems:** L10 pgs. 205-214 • **Obtaining, Evaluating, and Communicating Information:** L6 pgs. 149-162 • **Designing Solutions:** L8 pgs. 173-186

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Grade 1	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	Crosscutting Concepts • **Cause and Effect:** L10 pgs. 205-214 • **Structure and Function:** L6 pgs. 149-162; L8 pgs. 173-186; L10 pgs. 205-214
1.LS1.2 Obtain information from media and/or text to determine patterns in the behavior of parents and offspring that help offspring survive.	***How Do Living Things Stay Safe and Grow?* Teacher Guide** **Disciplinary Core Ideas** • **LS1.B: Growth and Development of Organisms:** L1 pgs. 73-84; L5 pgs. 127-138; L6 pgs. 139-150; L9 pgs. 173-186; L10 pgs. 187-198 **Science and Engineering Practices** • **Constructing Explanations:** L1 pgs. 73-84; L9 pgs. 173-186; L10 pgs. 187-198 • **Engaging in Argument from Evidence:** L9 pgs. 173-186 • **Defining Problems:** L10 pgs. 187-198 • **Communicating Information:** L5 pgs. 127-138; L6 pgs. 139-150; L9 pgs. 173-186; L10 pgs. 187-198 **Crosscutting Concepts** • **Cause and Effect:** L5 pgs. 127-138; L6 pgs. 139-150 • **Structure and Function:** L10 pgs. 187-198 • **Patterns:** L1 pgs. 73-84; L5 pgs. 127-138; L6 pgs. 139-150; L10 pgs. 187-198

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Grade 1	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Heredity: Inheritance and Variation of Traits (LS3)	
1.LS3.1 Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.	***How Do Living Things Stay Safe and Grow?*** **Teacher Guide** **Disciplinary Core Ideas** • **LS3.A: Inheritance of Traits:** L2 pgs. 85-98; L3 pgs. 99-112; L4 pgs. 113-126; L10 pgs. 187-198 **Science and Engineering Practices** • **Constructing Explanations:** L2 pgs. 85-98; L3 pgs. 99-112; L4 pgs. 113-126; L10 pgs. 187-198 • **Defining Problems:** L10 pgs. 187-198 • **Communicating Information:** L2 pgs. 85-98; L3 pgs. 99-112; L10 pgs. 187-198 **Crosscutting Concepts** • **Structure and Function:** L10 pgs. 187-198 • **Patterns:** L2 pgs. 85-98; L3 pgs. 99-112; L4 pgs. 113-126; L10 pgs. 187-198
Earth's Place in the Universe (ESS1)	
1.ESS1.1 Use observations of the sun, moon, and stars to describe patterns that can be predicted.	***How Can We Predict When the Sky Will Be Dark?*** **Teacher Guide** **Disciplinary Core Ideas** • **ESS1.A: The Universe and Its Stars:** L1 pgs. 65-76; L5 pgs. 113-124; L6 pgs. 125-136; L7 pgs. 137-148; L9 pgs. 161-172 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L1 pgs. 65-76; L5 pgs. 113-124; L9 pgs. 161-172 • **Developing and Using Models:** L1 pgs. 65-76; L5 pgs. 113-124; L6 pgs. 125-136; L7 pgs. 137-148; L9 pgs. 161-172 • **Planning Investigations:** L7 pgs. 137-148; L9 pgs. 161-172

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Grade 1	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	Crosscutting Concepts • **Patterns:** L1 pgs. 65-76; L5 pgs. 113-124; L6 pgs. 125-136; L7 pgs. 137-148; L9 pgs. 161-172 • **Scale, Proportion, and Quantity:** L5 pgs. 113-124; L6 pgs. 125-136
1.ESS1.2 Make observations at different times of year to relate the amount of daylight and relative temperature to the time of year.	***How Can We Predict When the Sky Will Be Dark?* Teacher Guide** **Disciplinary Core Ideas** • **ESS1.B: Earth and the Solar System:** L1 pgs. 65-76; L8 pgs. 149-160; L9 pgs. 161-172 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L1 pgs. 65-76; L5 pgs. 113-124; L8 pgs. 149-160; L9 pgs. 161-172 • **Developing and Using Models:** L1 pgs. 65-76; L9 pgs. 161-172 • **Planning Investigations:** L9 pgs. 161-172 • **Carrying Out Investigations:** L8 pgs. 149-160; L9 pgs. 161-172 • **Using Mathematics and Computational Thinking:** L8 pgs. 149-160 **Crosscutting Concepts** • **Patterns:** L1 pgs. 65-76; L8 pgs. 149-160; L9 pgs. 161-172 • **Scale, Proportion, and Quantity:** L8 pgs. 149-160
Earth and Human Activity (ESS3)	
1.ESS3.1 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.	***How Can We Light Our Way in the Dark?* Teacher Guide** **Disciplinary Core Ideas** • **ETS1.A: Defining and Delimiting Engineering Problems:** L2 pgs. 84-94 **Science and Engineering Practices** • **Asking Questions and Defining Problems:** L2 pgs. 84-94 • **Obtaining, Evaluating and Communicating Information:** L2 pgs. 84-94

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Grade 1	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	Crosscutting Concepts • **Structure and Function:** L2 pgs. 84-94 ***How Do Living Things Stay Safe and Grow?* Teacher Guide** **Disciplinary Core Ideas** • **ETS1.A: Defining and Delimiting Engineering Problems:** L8 pgs. 161-171 **Science and Engineering Practices** • **Asking Questions and Defining Problems:** L8 pgs. 161-171 **Crosscutting Concepts** • **Structure and Function:** L8 pgs. 161-171

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Grade 2	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Matter and Its Interactions (PS1)	
2.PS1.1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.	***What Can Maps Tell Us About Land and Water on Earth?* Teacher Guide** **Disciplinary Core Ideas** • **PS1.A: Structure and Properties of Matter:** L4 pgs. 105-118; L5 pgs. 119-134; L10 pgs. 187-198 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L4 pgs. 105-118; L10 pgs. 175-184 • **Developing and Using Models:** L5 pgs. 119-134; L10 pgs. 187-198 • **Planning Investigations:** L10 pgs. 187-198 • **Carrying Out Investigations:** L10 pgs. 187-198 • **Obtaining, Evaluating and Communicating Information:** L5 pgs. 119-134; L10 pgs. 187-198 **Crosscutting Concepts** • **Patterns:** L4 pgs. 105-118; L5 pgs. 119-134; L10 pgs. 187-198 • **Scale, Proportion, and Quantity:** L4 pgs. 105-118 ***How Can We Change Solids and Liquids?* Teacher Guide** **Disciplinary Core Ideas** • **PS1.A: Structure and Properties of Matter:** L1 pgs. 67-78; L2 pgs. 79-88; L3 pgs. 89-98; L4 pgs. 99-108; L5 pgs. 109-122; L6 pgs. 123-134; L7 pgs. 135-148; L9 pgs. 161-174; L10 pgs. 175-184 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L2 pgs. 79-88; L3 pgs. 89-98; L6 pgs. 123-134; L9 pgs. 161-174 • **Constructing an Explanation:** L10 pgs. 175-184 • **Planning and Carrying Out Investigations:** L1 pgs. 67-78; L2 pgs. 79-88; L4 pgs. 99-108; L7 pgs. 135-148; L9 pgs. 161-174 • **Obtaining, Evaluating and Communicating Information:** L3 pgs. 89-98

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Grade 2	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	• **Engaging in Argument from Evidence:** L5 pgs. 109-122; L10 pgs. 175-184 **Crosscutting Concepts** • **Patterns:** L3 pgs. 89-98; L5 pgs. 109-122; L9 pgs. 161-174 • **Scale, Proportion, and Quantity:** L2 pgs. 79-88; L6 pgs. 123-134 • **Cause and Effect:** L1 pgs**.** 67-78; L7 pgs. 135-148 • **Energy and Matter:** L4 pgs. 99-108; L5 pgs. 109-122
2.PS1.2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for the intended purpose.	***How Can We Change Solids and Liquids?*** **Teacher Guide** **Disciplinary Core Ideas** • **PS1.A: Structure and Properties of Matter:** L1 pgs**.** 67-78; L2 pgs. 79-88; L3 pgs. 89-98; L4 pgs. 99-108; L5 pgs. 109-122; L6 pgs. 123-134; L7 pgs. 135-148; L9 pgs. 161-174; L10 pgs. 175-184 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L2 pgs. 79-88; L3 pgs. 89-98; L6 pgs. 123-134; L9 pgs. 161-174 • **Constructing an Explanation:** L10 pgs. 175-184 • **Planning and Carrying Out Investigations:** L1 pgs**.** 67-78; L2 pgs. 79-88; L4 pgs. 99-108; L7 pgs. 135-148; L9 pgs. 161-174 • **Obtaining, Evaluating and Communicating Information:** L3 pgs. 89-98 • **Engaging in Argument from Evidence:** L5 pgs. 109-122; L10 pgs. 175-184 **Crosscutting Concepts** • **Patterns:** L3 pgs. 89-98; L5 pgs. 109-122; L9 pgs. 161-174 • **Scale, Proportion, and Quantity:** L2 pgs. 79-88; L6 pgs. 123-134 • **Cause and Effect:** L1 pgs**.** 67-78; L7 pgs. 135-148 • **Energy and Matter:** L4 pgs. 99-108; L5 pgs. 109-122

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Grade 2	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
2.PS1.3 Make observations to construct an evidence-based account of how an object made of a small set of pieces can be disassembled and made into a new object.	***How Can We Change Solids and Liquids?* Teacher Guide** **Disciplinary Core Ideas** • **PS1.A: Structure and Properties of Matter:** L1 pgs. 67-78; L2 pgs. 79-88; L3 pgs. 89-98; L4 pgs. 99-108; L5 pgs. 109-122; L6 pgs. 123-134; L7 pgs. 135-148; L9 pgs. 161-174; L10 pgs. 175-184 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L2 pgs. 79-88; L3 pgs. 89-98; L6 pgs. 123-134; L9 pgs. 161-174 • **Constructing an Explanation:** L10 pgs. 175-184 • **Planning and Carrying Out Investigations:** L1 pgs. 67-78; L2 pgs. 79-88; L4 pgs. 99-108; L7 pgs. 135-148; L9 pgs. 161-174 • **Obtaining, Evaluating and Communicating Information:** L3 pgs. 89-98 • **Engaging in Argument from Evidence:** L5 pgs. 109-122; L10 pgs. 175-184 **Crosscutting Concepts** • **Patterns:** L3 pgs. 89-98; L5 pgs. 109-122; L9 pgs. 161-174 • **Scale, Proportion, and Quantity:** L2 pgs. 79-88; L6 pgs. 123-134 • **Cause and Effect:** L1 pgs. 67-78; L7 pgs. 135-148 • **Energy and Matter:** L4 pgs. 99-108; L5 pgs. 109-122
2.PS1.4 Construct an argument with evidence that some changes caused by heating or cooling can be reversed and some cannot.	***How Can We Change Solids and Liquids?* Teacher Guide** **Disciplinary Core Ideas** • **PS1.B: Chemical Reactions:** L7 pgs. 135-148; L8 pgs. 149-160; L10 pgs. 175-184 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L10 pgs. 175-184 • **Planning and Carrying Out Investigations:** L7 pgs. 135-148 • **Obtaining, Evaluating and Communicating Information:** L8 pgs. 149-160 • **Constructing Explanations:** L8 pgs. 149-160; L10 pgs. 175-184

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Grade 2	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	• **Engaging in Argument from Evidence:** L10 pgs. 175-184 **Crosscutting Concepts** • **Cause and Effect:** L7 pgs. 135-148; L8 pgs. 149-160
Ecosystems: Interactions, Energy and Dynamics (LS2)	
2.LS2.1 Plan and conduct an investigation to determine if plants need sunlight and water to grow.	***How Can We Find the Best Place for a Plant to Grow?*** **Teacher Guide** **Disciplinary Core Ideas** • **LS2.A: Interdependent Relationships in Ecosystems:** L1 pgs. 73-84; L2 pgs. 85-96; L3 pgs. 97-114; L4 pgs. 115-126; L5 pgs. 127-144; L6 pgs. 145-160; L9 pgs. 189-202; L10 pgs. 203-21 **Science and Engineering Practices** • **Engaging in Argument from Evidence:** L1 pgs. 73-84; L4 pgs. 115-126; L6 pgs. 145-160; L10 pgs. 203-212 • **Developing Models:** L1 pgs. 73-84; L9 pgs. 189-202 • **Obtaining and Evaluating Information:** L2 pgs. 85-96 • **Planning and Carrying Out Investigations:** L3 pgs. 97-114 • **Analyzing and Interpreting Data:** L4 pgs. 115-126; L5 pgs. 127-144; L9 pgs. 189-202 • **Designing Solutions:** L9 pgs. 189-202 • **Asking Questions:** L9 pgs. 189-202 **Crosscutting Concepts** • **Systems and Systems Models:** L1 pgs. 73-84; L9 pgs. 189-202; L10 pgs. 203-212 • **Cause and Effect:** L1 pgs. 73-84; L3 pgs. 97-114; L9 pgs. 189-202; L2 pgs. 85-96; L3 pgs. 97-114; L4 pgs. 115-126 • **Patterns:** L1 pgs. 73-84; L2 pgs. 85-96 • **Structure and Function:** L2 pgs. 85-96; L5 pgs. 127-144; L6 pgs. 145-160; L9 pgs. 189-202

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Grade 2	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
2.LS2.2 Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.	***How Can We Find the Best Place for a Plant to Grow?* Teacher Guide** **Disciplinary Core Ideas** • **LS2.A: Interdependent Relationships in Ecosystems:** L1 pgs. 73-84; L2 pgs. 85-96; L3 pgs. 97-114; L4 pgs. 115-126; L5 pgs. 127-144; L6 pgs. 145-160; L9 pgs. 189-202; L10 pgs. 203-212 **Science and Engineering Practices** • **Engaging in Argument from Evidence:** L1 pgs. 73-84; L4 pgs. 115-126; L6 pgs. 145-160; L10 pgs. 203-212 • **Developing Models:** L1 pgs. 73-84; L9 pgs. 189-202 • **Obtaining and Evaluating Information:** L2 pgs. 85-96 • **Planning and Carrying Out Investigations:** L3 pgs. 97-114 • **Analyzing and Interpreting Data:** L4 pgs. 115-126; L5 pgs. 127-144; L9 pgs. 189-202 • **Designing Solutions:** L9 pgs. 189-202 • **Asking Questions:** L9 pgs. 189-202 **Crosscutting Concepts** • **Systems and Systems Models:** L1 pgs. 73-84; L9 pgs. 189-202; L10 pgs. 203-212 • **Cause and Effect:** L1 pgs. 73-84; L3 pgs. 97-114; L9 pgs. 189-202; L2 pgs. 85-96; L3 pgs. 97-114; L4 pgs. 115-126 • **Patterns:** L1 pgs. 73-84; L2 pgs. 85-96 • **Structure and Function:** L2 pgs. 85-96; L5 pgs. 127-144; L6 pgs. 145-160; L9 pgs. 189-202

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Grade 2	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Biological Unity and Diversity (LS4)	
2.LS4.1 Make observations of plants and animals to compare the diversity of life in different habitats.	***How Can We Find the Best Place for a Plant to Grow?* Teacher Guide** **Disciplinary Core Ideas** • **LS4.D: Biodiversity and Humans:** L8 pgs. 177-188; L9 pgs. 189-202; L10 pgs. 203-212 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L8 pgs. 177-188; L9 pgs. 189-202 • **Using Models:** L8 pgs. 177-188 • **Developing and Using Models:** L9 pgs. 189-202 • **Designing Solutions:** L9 pgs. 189-202 • **Asking Questions:** L9 pgs. 189-202 • **Engaging in Argument from Evidence:** L10 pgs. 203-212 **Crosscutting Concepts** • **Patterns:** L8 pgs. 177-188 • **Systems and System Models:** L8 pgs. 177-188; L9 pgs. 189-202; L10 pgs. 203-212 • **Cause and Effect:** L9 pgs. 189-202 • **Structure and Function:** L9 pgs. 189-202
Earth's Place in the Universe (ESS1)	
2.ESS1.1 Use information from several sources to provide evidence that Earth events can occur quickly or slowly.	***How Can We Stop Soil from Washing Away?* Teacher Guide** **Disciplinary Core Ideas** • **ESS1.C: The History of Planet Earth:** L1 pgs. 65-76; L3 pgs. 89-98; L8 pgs. 137-144 **Science and Engineering Practices** • **Constructing Explanations and Designing Solutions:** L1 pgs. 65-76; L2 pgs. 77-88; L3 pgs. 89-98; L5 pgs. 111-118; L6 pgs. 119-136; L7 pgs. 129-136

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Grade 2	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	Crosscutting Concepts • **Stability and Change:** L2 pgs. 77-88; L3 pgs. 89-98; L5 pgs. 111-118
Earth's Systems (ESS2)	
2.ESS2.1 Compare multiple solutions designed to slow or prevent wind or water from changing the shape of the land.	***How Can We Stop Soil from Washing Away?* Teacher Guide** **Disciplinary Core Ideas** • **ESS2.A: Earth Materials and Systems:** L1 pgs. 65-76; L2 pgs. 77-88; L3 pgs. 89-98; L6 pgs. 119-128; L8 pgs. 137-144 • **ETS1.C: Optimizing the Design Solution:** L6 pgs. 119-128 **Science and Engineering Practices** • **Constructing Explanations and Designing Solutions:** L1 pgs. 65-76; L2 pgs. 77-88; L3 pgs. 89-98; L5 pgs. 111-118; L6 pgs. 119-128; L7 pgs. 129-136 **Crosscutting Concepts** • **Stability and Change:** L2 pgs. 77-88; L3 pgs. 89-98; L5 pgs. 111-118 • **Influence of Engineering, Technology, and Science on Society and the Natural World:** L3 pgs. 89-98 • **Science Addresses Questions About the Natural and Material World:** L3 pgs. 89-98
2.ESS2.2 Develop a model to represent the shapes and kind of land and bodies of water in an area.	***What Can Maps Tell Us About Land and Water on Earth?* Teacher Guide** **Disciplinary Core Ideas** • **ESS2.B: Plate Tectonics and Large-Scale System Interactions:** L1 pgs. 67-76; L2 pgs. 77-90; L3 pgs. 91-104; L5 pgs. 119-134; L6 pgs. 135-146; L7 pgs. 147-158; L8 pgs. 159-174; L9 pgs. 175-186; L10 pgs. 187-198

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Grade 2	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	Science and Engineering Practices • **Obtaining, Evaluating, and Communicating Information:** L1 pgs. 67-76; L5 pgs. 119-134; L6 pgs. 135-146; L8 pgs. 159-174; L9 pgs. 175-186; L10 pgs. 187-198 • **Planning and Carrying Investigations:** L10 pgs. 187-198 • **Developing and Using Models:** L1 pgs. 67-76; L2 pgs. 77-90; L3 pgs. 91-104; L5 pgs. 119-134; L7 pgs. 147-158; L8 pgs. 159-174; L9 pgs. 175-186; L10 pgs. 187-198 • **Analyzing and Interpreting Data:** L7 pgs. 147-158 **Crosscutting Concepts** • **Patterns:** L1 pgs. 67-76; L2 pgs. 77-90; L3 pgs. 91-104; L5 pgs. 119-134; L6 pgs. 135-146; L7 pgs. 147-158; L8 pgs. 159-174; L9 pgs. 175-186; L10 pgs. 187-198
2.ESS2.3 Obtain information to identify where water is found on Earth and that it can be solid or liquid.	***What Can Maps Tell Us About Land and Water on Earth?* Teacher Guide** **Disciplinary Core Ideas** • **ESS2.C: The Roles of Water in Earth's Surface Processes:** L3 pgs. 91-104; L4 pgs. 105-118; L5 pgs. 119-134; L10 pgs. 187-198 **Science and Engineering Practices** • **Developing and Using Models:** L3 pgs. 91-104; L5 pgs. 119-134; L10 pgs. 187-198 • **Planning and Carrying Investigations:** L10 pgs. 187-198 • **Analyzing and Interpreting Data:** L4 pgs. 105-118 **Crosscutting Concepts** • **Patterns:** L3 pgs. 91-104; L4 pgs. 105-118; L5 pgs. 119-134; L10 pgs. 187-198 • **Scale, Proportion, and Quantity:** L4 pgs. 105-118

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 3	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Motion and Stability: Forces and Interactions (PS2)	
3.PS2.1 Plan and conduct investigations on the effects of balanced and unbalanced forces on the motion of an object.	***How Can We Predict Patterns of Motion?* Teacher Guide** **Disciplinary Core Ideas** • **PS2.A: Forces and Motion:** L1 pgs. 77-88; L2 pgs. 89-100; L3 pgs. 101-112; L4 pgs. 113-120; L5 pgs. 121-132; L6 pgs. 133-140; L7 pgs. 141-150; L9 pgs. 163-178; L10 pgs. 179-188 • **PS2.B: Types of Interactions:** L1 pgs. 77-88; L2 pgs. 89-100; L3 pgs. 101-112 **Science and Engineering Practices** • **Planning and Carrying Out Investigations:** L1 pgs. 77-88; L2 pgs. 89-100; L3 pgs. 101-112; L5 pgs. 121-132; L7 pgs. 141-150; L8 pgs. 151-162; L9 pgs. 163-178; L12 pgs. 201-208 • **Scientific Investigations Use a Variety of Methods:** L5 pgs. 121-132 **Crosscutting Concepts** • **Cause and Effect:** L1 pgs. 77-88; L2 pgs. 89-100; L3 pgs. 101-112; L5 pgs. 121-132; L6 pgs. 133-140; L7 pgs. 141-150; L8 pgs. 151-162; L9 pgs. 163-178

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 3	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
3.PS2.2 Make observations and/or measurements of an object's motion to provide evidence that a pattern can be used to predict future motion.	***How Can We Predict Patterns of Motion?* Teacher Guide** **Disciplinary Core Ideas** • **PS2.A: Forces and Motion:** L2 pgs. 89-100; L3 pgs. 101-112; L4 pgs. 113-120; L5 pgs. 121-132; L6 pgs. 133-140; L7 pgs. 141-150; L8 pgs. 151-162; L9 pgs. 163-178; L10 pgs. 179-188 **Science and Engineering Practices** • **Planning and Carrying Out Investigations:** 77-88; L2 pgs. 89-100; L3 pgs. 101-112; L5 pgs. 121-132; L7 pgs. 141-150; L8 pgs. 151-162; L9 pgs. 163-178; L12 pgs. 201-208 • **Science Knowledge Is Based on Empirical Evidence:** L5 pgs. 121-132; L6 pgs. 133-140 **Crosscutting Concepts** • **Patterns:** L2 pgs. 89-100; L3 pgs. 101-112; L4 pgs. 113-120; L5 pgs. 121-132; L6 pgs. 133-140; L8 pgs. 151-162; L9 pgs. 163-178
3.PS2.3 Ask questions to determine cause and effect relationships of electric or magnetic interactions between two objects not in contact with each other.	***How Can We Predict Patterns of Motion?* Teacher Guide** **Disciplinary Core Ideas** • **PS2.B: Types of Interactions:** L7 pgs. 141-150; L8 pgs. 151-162; L9 pgs. 163-178; L10 pgs. 179-188; L11 pgs. 189-200; L12 pgs. 201-208 **Science and Engineering Practices** • **Asking Questions and Defining Problems:** L1 pgs. 77-88; L5 pgs. 121-132; L9 pgs. 163-178; L10 pgs. 179-188; L11 pgs. 189-200; L12 pgs. 201-208 **Crosscutting Concepts** • **Cause and Effect:** L1 pgs. 77-88; L2 pgs. 89-100; L3 pgs. 101-112; L5 pgs. 121-132; L6 pgs. 133-140; L7 pgs. 141-150; L8 pgs. 151-162; L9 pgs. 163-178

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 3	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
3.PS2.4 Define a simple design problem that can be solved by applying scientific ideas about magnets.	***How Can We Predict Patterns of Motion?* Teacher Guide** **Disciplinary Core Ideas** • **PS2.B: Types of Interactions:** L7 pgs. 141-150; L8 pgs. 151-162; L9 pgs. 163-178; L10 pgs. 179-188; L11 pgs. 189-200; L12 pgs. 201-208 **Science and Engineering Practices** • **Asking Questions and Defining Problems:** L1 pgs. 77-88; L5 pgs. 121-132; L9 pgs. 163-178; L10 pgs. 179-188; L11 pgs. 189-200; L12 pgs. 201-208 **Crosscutting Concepts** • **Interdependence of Science, Engineering, and Technology:** L11 pgs. 189-200
From Molecules to Organisms: Structure and Function (LS1)	
3.LS1.1 Develop and use models to describe that organisms have unique and diverse life cycles but all have a common pattern of birth, growth, reproduction, and death.	***What Explains Similarities and Differences Between Organisms?* Teacher Guide** **Disciplinary Core Ideas** • **LS1.B: Growth and Development of Organisms:** L8 pgs. 173-184; L9 pgs. 185-192; L10 pgs. 193-202 **Science and Engineering Practices** • **Developing and Using Models:** L2 pgs. 105-114; L10 pgs. 193-202 • **Science Knowledge Is Based on Empirical Evidence:** L9 pgs. 185-192 **Crosscutting Concepts** • **Patterns:** L5 pgs. 143-150; L6 pgs. 151-160; L7 pgs. 161- 172; L9 pgs. 185-192; L10 pgs. 193-202; L13 pgs. 219-225

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 3	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Heredity: Inheritance and Variation of Traits (LS2)	
3.LS2.1 Construct an argument that some animals form groups that help members survive.	***How Can We Protect Animals When Their Habitat Changes?*** **Teacher Guide** **Disciplinary Core Ideas** • **LS2.D: Social Interactions and Group Behavior:** L4 pgs. 115-122 **Science and Engineering Practices** • **Engaging in Argument From Evidence:** L3 pgs. 103-114; L4 pgs. 115-122; L7 pgs. 147-156; L9 pgs. 167-174; L13 pgs. 203-210 **Crosscutting Concepts** • **Cause and Effect:** L1 pgs. 79-88; L4 pgs. 115-122; L6 pgs. 135-146; L7 pgs. 147-156; L11 pgs. 183-190; L13 pgs. 203-210
Heredity: Inheritance and Variation of Traits (LS3)	
3.LS3.1 Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.	***What Explains Similarities and Differences Between Organisms?*** **Teacher Guide** **Disciplinary Core Ideas** • **LS3.A: Inheritance of Traits:** L2 pgs. 105-114; L3 pgs. 115-126; L7 pgs. 161-172 • **LS3.B: Variation of Traits:** L1 pgs. 91-104; L2 pgs. 105-114; L3 pgs. 115-126; L4 pgs. 127-142; L7 pgs. 161-172; L11 pgs. 203-210; L12 pgs. 211-218 L13 pgs. 219-225 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L1 pgs. 91-104; L5 pgs. 143-150; L6 pgs. 151-160; L7 pgs. 161-172; L9 pgs. 185-192; L10 pgs. 193-202; L12 pgs. 211-218 **Crosscutting Concepts** • **Patterns:** L5 pgs. 143-150; L6 pgs. 11-160; L7 pgs. 161-172; L9 pgs. 185-192; L10 pgs. 193-202; L13 pgs. 219-225

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 3	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
3.LS3.2 Use evidence to support the explanation that traits can be influenced by the environment.	***What Explains Similarities and Differences Between Organisms?* Teacher Guide** **Disciplinary Core Ideas** • **LS3.A: Inheritance of Traits:** L2 pgs. 105-114; L3 pgs. 115-126; L7 pgs. 161-172 • **LS3.B: Variation of Traits:** L1 pgs. 91-104; L2 pgs. 105-114; L3 pgs. 115-126; L4 pgs. 127-142; L7 pgs. 161-172; L11 pgs. 203-210; L12 pgs. 211-218; L13 pgs. 219-225 **Science and Engineering Practices** • **Constructing Explanations and Designing Solutions:** L3 pgs. 115-126; L7 pgs. 161-172; L13 pgs. 219-225 **Crosscutting Concepts** • **Cause and Effect:** L3 pgs. 115-126; L4 pgs. 127-142; L7 pgs. 161-172; L11 pgs. 203-210; L12 pgs. 211-218
Biological Unity and Diversity (LS4)	
3.LS4.1 Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.	***How Can We Protect Animals When Their Habitat Changes?* Teacher Guide** **Disciplinary Core Ideas** • **LS4.A: Evidence of Common Ancestry and Diversity:** L8 pgs. 157-166; L9 pgs. 167-174; L10 pgs. 175-182 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L1 pgs. 79-88; L3 pgs. 103-114; L5 pgs. 123-134; L6 pgs. 135-146; L8 pgs. 157-166; L9 pgs. 167-174; L10 pgs. 175-182 **Crosscutting Concepts** • **Scale, Proportion, and Quantity:** L8 pgs. 157-166

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 3	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
3.LS4.2 Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving and reproducing.	***What Explains Similarities and Differences Between Organisms?*** **Teacher Guide** **Disciplinary Core Ideas** • **LS4.B: Natural Selection:** L11 pgs. 203-210; L12 pgs. 211-218; L13 pgs. 219-225 **Science and Engineering Practices** • **Constructing Explanations and Designing Solutions:** L3 pgs. 115-126; L7 pgs. 161-172; L13 pgs. 219-225 **Crosscutting Concepts** • **Cause and Effect:** L3 pgs. 115-126; L4 pgs. 127-142; L7 pgs. 161-172; L11 pgs. 203-210; L12 pgs. 211-218
3.LS4.3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.	***How Can We Protect Animals When Their Habitat Changes?*** **Teacher Guide** **Disciplinary Core Ideas** • **LS4.C: Adaptation:** L1 pgs. 79-88; L2 pgs. 89-102; L3 pgs. 103-114; L5 pgs. 123-134; L6 pgs. 135-146; L7 pgs. 147-156 **Science and Engineering Practices** • **Engaging in Argument From Evidence:** L3 pgs. 103-114; L4 pgs. 115-122; L7 pgs. 147-156; L9 pgs. 167-174; L13 pgs. 203-210 **Crosscutting Concepts** • **Cause and Effect:** L1 pgs. 79-88; L4 ps. 115-122; L6 pgs. 135-146; L7 pgs. 147-156; L11 pgs. 183-190; L13 pgs. 203-210 • **Interdependence of Science, Engineering, and Technology:** L1 pgs. 79-88; L2 pgs. 89-102 • **Science Is a Human Endeavor:** L2 pgs. 89-102; L5 pgs. 123-134; L7 pgs. 147-156; L13 pgs. 203-210

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 3	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
3.LS4.4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.	***How Can We Protect Animals When Their Habitat Changes?* Teacher Guide** **Disciplinary Core Ideas** • **LS2.C: Ecosystem Dynamics, Functioning, and Resilience:** L11 pgs. 183-190; L12 pgs. 191-202; L13 pgs. 203-210 • **LS4.D:** Biodiversity and Humans: L11 pgs. 183-190; L12 pgs. 191-102; L13 pgs. 203-210 **Science and Engineering Practices** • **Engaging in Argument From Evidence:** L3 pgs. 103-114; L4 pgs. 115-122; L7 pgs. 147-156; L9 pgs. 167-174; L13 pgs. 203-210 **Crosscutting Concepts** • **Systems and System Models:** L12 pgs. 191-202
Earth's Systems (ESS2)	
3.ESS2.1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.	***How Do Weather and Climate Affect Our Lives?* Teacher Guide** **Disciplinary Core Ideas** • **ESS2.D: Weather and Climate:** L1 pgs. 75-84; L2 pgs. 85-98; L3 pgs. 99-108; L4 pgs. 109-120; L5 pgs. 121-130; L6 pgs. 131-140 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L2 pgs. 85-98; L3 pgs. 99-108; L4 pgs. 109-120; L5 pgs. 121-130; L6 pgs. 131-140 **Crosscutting Concepts** • **Patterns:** L3 pgs. 99-108; L5 pgs. 121-130; L6 pgs. 131-140; L7 pgs. 141-148; L8 pgs. 149-154

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 3	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
3.ESS2.2 Obtain and combine information to describe climates in different regions of the world.	***What Explains Similarities and Differences Between Organisms?* Teacher Guide** **Disciplinary Core Ideas** • **ESS2.D: Weather and Climate:** L5 pgs. 143-150; L6 pgs. 151-160 **Science and Engineering Practices** • **Obtaining, Evaluating, and Communicating Information:** L2 pgs. 105-114; L5 pgs. 142-150; L6 pgs. 151-160; L9 pgs. 185-192; L11 pgs. 203-210 **Crosscutting Concepts** • **Patterns:** L5 pgs. 143-150; L6 pgs. 151-160; L7 pgs. 161-172; L9 pgs. 185-192; L10 pgs. 193-202; L13 pgs. 219-225 ***How Do Weather and Climate Affect Our Lives?* Teacher Guide** **Disciplinary Core Ideas** • **ESS2.D: Weather and Climate:** L7 pgs. 141-148; L8 pgs. 149-154 **Science and Engineering Practices** • **Obtaining, Evaluating, and Communicating Information:** L1 pgs. 75-84; L3 pgs. 99-108; L7 pgs. 141-148; L8 pgs. 149-154; L9 pgs. 155-164; L10 pgs. 165-178 **Crosscutting Concepts** • **Patterns:** L3 pgs. 99-108; L5 pgs. 121-130; L6 pgs. 131-140; L7 pgs. 141-148; L8 pgs. 149-154

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 3	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Earth and Human Activity (ESS3)	
3.ESS3.1 Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.	***How Do Weather and Climate Affect Our Lives?* Teacher Guide** **Disciplinary Core Ideas** • **ESS3.B: Natural Hazards:** L9 pgs. 155-164; L10 pgs. 165-178; L11 pgs. 179-190; L12 pgs. 191-200 **Science and Engineering Practices** • **Constructing Explanations and Designing Solutions:** L2 pgs. 85-98; L5 pgs. 121-130; L9 pgs. 155-164; L12 pgs. 191-200 **Crosscutting Concepts** • **Cause and Effect:** L9 pgs. 155-164; L10 pgs. 165-178; L11 pgs. 179-190; L12 pgs. 191-200 • **Influence of Engineering, Technology, and Science on Society and the Natural World:** L4 pgs. 109-120

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 4	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Energy (PS3)	
4.PS3.1 Use evidence to construct an explanation relating the speed of an object to the energy of that object.	***How Does Motion Change in a Collision?* Teacher Guide** **Disciplinary Core Ideas** • **PS3.A: Definitions of Energy:** L5 pgs. 119-133, L6 pgs. 135-146, L7 pgs. 147-155 **Science and Engineering Practices** • **Constructing Explanations and Designing Solutions:** L3 pgs. 95-104; L5 pgs. 119-134; L6 pgs. 135-146; L7 pgs. 147-156; L9 pgs. 169-176; L11 pgs. 177-186; L12 pgs. 193-202; L13 pgs. 203-212L5 pgs. 121-132 **Crosscutting Concepts** • **Energy and Matter:** L1 pgs. 77-84; L2 pgs. 85-94; L3 pgs. 95-104; L4 pgs. 105-118; L5 pgs. 119-134; L6 pgs. 135-146; L8 pgs. 157-168; L9 169-176; L10 pgs. 177-186; L11 pgs. 187-192; L12 pgs. 193-202; L13 pgs. 203-212
4.PS3.2 Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents.	***How Does Motion Change in a Collision?* Teacher Guide** **Disciplinary Core Ideas** • **PS3.A: Definitions of Energy:** L3 pgs. 95-104; L4 pgs. 105-118; L8 pgs. 157-168; L10 pgs. 177-186 • **PS3.B: Conservation of Energy and Energy Transfer:** L1 pgs. 77-84; L2 pgs. 85-94; L3 pgs. 95-104; L8 pgs. 157-168; L9 pgs. 169-176; L10 pgs. 177-186 **Science and Engineering Practices** • **Planning and Carrying Out Investigations:** L1 pgs. 77-84; L2 pgs. 85-94; L4 pgs. 105-118; L5 pgs. 119-134; L6 pgs. 135-146; L8 pgs. 157-168; L10 pgs. • 177-186; L13 pgs. 203-212

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Grade 4	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	Crosscutting Concepts • **Energy and Matter:** L1 pgs. 77-83; L2 pgs. 85-94; L3 pgs. 95-104; L4 pgs. 105-118; L5 pgs. 119-134; L6 pgs. 135-146; L8 pgs. 157-168; L9 pgs. 169-176; L10 pgs. 177-186; L11 pgs. 187-192; L12 pgs. 193- 202; L13 pgs. 203-212 ***How Can We Provide Energy to People's Homes?* Teacher Guide** **Disciplinary Core Ideas** • **PS3.A: Definitions of Energy:** L1 pgs. 77-86; L3 pgs. 99-112; L4 pgs. 113-128; L6 pgs. 139-146; L11 pgs. 183-194 • **PS3.B: Conservation of Energy and Energy Transfer:** L1 pgs. 77-86; L2 pgs. 87-98; L3 pgs. 99-112; L4 pgs. 113-128; L5 pgs. 129-138; L6 pgs. 139-146; L8 pgs. 157-164; L11 pgs. 183-194 **Science and Engineering Practices** • **Planning and Carrying Out Investigations:** L2 pgs. 87-98; L4 pgs. 113-128; L11 pgs. 183-194 **Crosscutting Concepts** • **Energy and Matter:** L2 pgs. 87-98; L5 pgs. 129-138; L12 pgs. 195-206
4.PS3.3 Ask questions and predict outcomes about the changes in energy that occur when objects collide.	***How Does Motion Change in a Collision?* Teacher Guide** **Disciplinary Core Ideas** • **PS3.A: Definitions of Energy:** L4 pgs. 105-118; L8 pgs. 157-168; L10 pgs. 177-186 • **PS3.B: Conservation of Energy and Energy Transfer:** L4 pgs. 105-118; L8 pgs. 157-168; L10 pgs. 177-186; L12 pgs. 193-202; L13 pgs. 203-212 • **PS3.C: Relationship Between Energy and Forces:** L4 pgs. 105-118; L6 pgs. 135-146

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 4	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	Science and Engineering Practices • **Asking Questions and Defining Problems:** L4 pgs. 105-118; L10 pgs. 177-186; L11 pgs. 187-192 **Crosscutting Concepts** • **Energy and Matter:** L1 pgs. 77-84; L2 pgs. 85-94; L3 pgs. 95-104; L4 pgs. 105-118; L5 pgs. 119-134; L6 pgs. 35-146; L8 pgs. 157-168; L9 pgs. 169-176; L10 pgs. 177-186; L11 pgs.187-192; L12 pgs. 193-202, L13 pgs. 203-212
4.PS3.4 Apply scientific ideas to design, test, and refine a device that converts energy from one form to another.	***How Can We Provide Energy to People's Homes?*** **Teacher Guide** **Disciplinary Core Ideas** • **PS3.B: Conservation of Energy and Energy Transfer:** L3 pgs. 99-112; L4 pgs. 113-128; L5 pgs. 129-138; L6 pgs. 139-146; L8 pgs. 157-164; L11 pgs. 183-194 • **PS3.D: Energy in Chemical Processes and Everyday Life:** L4 pgs. 113-128; L5 pgs. 129-138; L6 pgs. 139-146; L8 pgs. 157-164; L11 pgs. 183-194 • **ETS1.A: Defining and Delimiting Engineering Problems:** L1 pgs. 77-86; L4 pgs. 113-128; L5 pgs. 129-138; L7 pgs. 147-156; L10 pgs. 173-182 **Science and Engineering Practices** • **Constructing Explanations and Designing Solutions:** L2 pgs. 87-98; L4 pgs. 113-128; L9 pgs. 165-172; L10 pgs. 173-182; L11 pgs. 183-194; L12 pgs. 195-206 **Crosscutting Concepts** • **Energy and Matter:** L2 pgs. 87-98; L5 pgs. 129-138; L12 pgs. 195-206 • **Influence of Engineering, Technology, and Science on Society and the Natural World:** L9 pgs. 165-172; L10 pgs. 173-182; L12 pgs. 195-206

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 4	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Waves and Their Applications in Technologies for Information Transfer (PS4)	
4.PS4.1 Develop and use a model of waves to describe patterns in terms of amplitude and wavelength, and to show that waves can cause objects to move.	***What Is Our Evidence That We Live on a Changing Earth?* Teacher Guide** **Disciplinary Core Ideas** • **PS4.A Wave Properties:** L4 pgs. 107-118 **Science and Engineering Practices** • **Developing and Using Models:** L1 pgs. 81-88; L2 pgs. 89-96; L4 pgs. 107-118; L5 pgs. 119-128; L7 pgs. 139-150; L8 pgs. 151-164; L10 pgs. 173-184; L11 pgs. 185-194; L13 pgs. 203-214 • **Scientific Knowledge Is Based on Empirical Evidence:** L2 pgs. 89-96; L4 pgs. 107-118 **Crosscutting Concepts** • **Patterns:** L1 pgs. 81-88; L2 pgs. 89-96; L4 pgs. 107-118; L5 pgs. 119-128; L8 pgs. 151-164; L10 pgs. 173-184; L11 pgs. 185-194; L12 pgs. 195-202; L13 pgs. 203-214
4.PS4.2 Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.	***How Can Animals Use Their Senses to Communicate?* Teacher Guide** **Disciplinary Core Ideas** • **PS4.B:** Electromagnetic Radiation: L1 pgs. 81-90; L2 pgs. 91-100 **Science and Engineering Practices** • **Developing and Using Models:** L1 pgs. 81-90; L4 pgs. 112-122; L5 pgs. 123-130; L11 pgs. 177-190 **Crosscutting Concepts** • **Cause and Effect:** L6 pgs. 131-138; L8 pgs. 147-158; L10 pgs. 167-176

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Grade 4	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
4.PS4.3 Generate and compare multiple solutions that use patterns to transfer information.	***How Can Animals Use Their Senses to Communicate?* Teacher Guide** **Disciplinary Core Ideas** • **PS4.C: Information Technologies and Instrumentation:** L11 pgs. 177-190; L12 pgs. 191-202 • **ETS1.C: Optimizing the Design Solution:** L11 pgs. 177-190 **Science and Engineering Practices** • **Constructing Explanations and Designing Solutions:** L11 pgs. 177-190; L12 pgs. 191-202 **Crosscutting Concepts** • **Patterns:** L2 pgs. 91-100; L10 pgs. 167-176; L11 pgs. 177-190 • **Interdependence of Science, Engineering, and Technology:** L12 pgs. 191-202
From Molecules to Organisms: Structure and Processes (LS1)	
4.LS.1.1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction**.**	***How Can Animals Use Their Senses to Communicate?* Teacher Guide** **Disciplinary Core Ideas** • **LS1.A: Structure and Function:** L2 pgs. 91-100; L3 pgs. 101-112; L9 pgs. 159-166 **Science and Engineering Practices** • **Engaging in Argument from Evidence:** L3 pgs. 101-112; L4 pgs. 113-122; L5 pgs. 123-130; L6 pgs. 131-138; L9 pgs. 159-166; L10 pgs. 167-176; L12 pgs. 191-202 **Crosscutting Concepts** • **Systems and System Models:** L1 pgs. 81-90; L4 pgs. 113-122; L7 pgs. 139-146; L8 pgs. 147-158; L9 pgs. 159-166; L11 pgs. 177-190

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Grade 4	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	***How Does Motion Change in a Collision?* Teacher Guide** **Disciplinary Core Ideas** • **LS1.D: Structure and Function:** L7 pgs. 147-156; L11 pgs. 187-192 **Science and Engineering Practices** • **Engaging in Argument From Evidence:** L3 pgs. 95-104; L13 pgs. 203-212 **Crosscutting Concepts** • **Systems and System Models:** L2 pgs. 85-94; L3 pgs. 95-104; L7 pgs. 147-156; L11 pgs. 187-192
4.LS1.2 Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.	***How Can Animals Use Their Senses to Communicate?* Teacher Guide** **Disciplinary Core Ideas** • **LS1.D: Information Processing:** L3 pgs. 101- 112; L4 pgs. 113-122; L5 pgs. 123-130; L6 pgs. 131-138; L7 pgs. 139-146; L8 pgs. 147-158; L9 pgs. 159-166; L10 pgs. 167-176 **Science and Engineering Practices** • **Developing and Using Models:** L1 pgs. 81-90; L4 pgs. 113-122; L5 pgs. 123-130; L11 pgs. 177-190 **Crosscutting Concepts** • **Systems and System Models:** L1 pgs. 81-90; L4 pgs. 113-122; L7 pgs. 139-146; L8 pgs. 147-158; L9 pgs. 159-166; L11 pgs. 177-190

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Grade 4	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Earth's Place in the Universe (ESS1)	
4.ESS1.1 Identify evidence from patterns in rock formations and fossils in rock layers to support an explanation for changes in landscape over time.	***What Is Our Evidence That We Live on a Changing Earth?* Teacher Guide** **Disciplinary Core Ideas** • **ESS1.C: The History of Planet Earth:** L4 pgs. 107-118; L11 pgs. 185-194; L12 pgs. 195-202; L13 pgs. 203-214 **Science and Engineering Practices** • **Constructing Explanations and Designing Solutions:** L7 pgs. 139-150; L8 pgs. 151-164; L9 pgs. 165-172; L10 pgs. 173-184; L11 pgs. 185-194; L12 pgs. 195-202; L13 pgs. 203-214 **Crosscutting Concepts** • **Patterns:** L1 pgs. 81-88; L2 pgs. 89-96; L4 pgs. 107-118; L5 pgs. 119-128; L8 pgs. 151-164; L10 pgs. 173-184; L11 pgs. 185-194; L12 pgs. 195-202; L13 pgs. 203-214 • **Scientific Knowledge Assumes an Order and Consistency in Natural Systems:** L2 pgs. 89-96
Earth's Systems (ESS2)	
4.ESS2.1 Plan and conduct investigations on the effects of water, ice, wind, and vegetation on the relative rate of weathering and erosion.	***What Is Our Evidence That We Live on a Changing Earth?* Teacher Guide** **Disciplinary Core Ideas** • **ESS2.A: Earth Materials and Systems:** L8 pgs. 151-164;L9 pgs. 165-172; L10 pgs. 173-184; L12 pgs. 195-202; L13 pgs. 203-214 • **ESS2.E: Biogeology:** L9 pgs. 165-172; L10 pgs. 173-184 **Science and Engineering Practices** • **Planning and Carrying Out Investigations:** L5 pgs. 119-128; L7 pgs. 139-150; L8 pgs. 151-164; L10 pgs. 173-184 **Crosscutting Concepts** • **Cause and Effect:** L3 pgs. 97-106; L4 pgs. 107-118; L7 pgs. 139-150; L8 pgs. 151-164; L9 pgs. 165-172; L10 pgs. 173-184

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 4	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
4.ESS2.2 Analyze and interpret data from maps to describe patterns of Earth's features.	***What Is Our Evidence That We Live on a Changing Earth?* Teacher Guide** **Disciplinary Core Ideas** • **ESS2.B: Plate Tectonics and Large-Scale System Interactions:** L1 pgs. 81-88; L2 pgs. 89-96 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L2 pgs. 81-88; L4 pgs. 107-118; L5 pgs. 119-128; L8 pgs. 151-164; L10 pgs. 173-184 **Crosscutting Concepts** • **Patterns:** L1 pgs. 81-88; L2 pgs. 89-96; L4 pgs. 107-118; L5 pgs. 119-128; L8 pgs. 151-164; L10 pgs. 173-184; L11 pgs. 185-194; L12 pgs. 195-202; L13 pgs. 203-214
Earth and Human Activity (ESS3)	
4.ESS3.1 Obtain and combine information to describe that energy and fuels are derived from renewable and non-renewable resources and how their uses affect the environment.	***How Can We Provide Energy to People's Homes?* Teacher Guide** **Disciplinary Core Ideas** • **ESS3.A: Natural Resources:** L6 pgs. 139-146; L7 pgs. 147-156; L8 pgs. 157-164; L9 pgs. 165-172 **Science and Engineering Practices** • **Obtaining, Evaluating, and Communicating Information:** L1 pgs. 77-86; L5 pgs. 129-138; L6 pgs. 139-146, L7 pgs. 147-156; L9 pgs. 165-172; L10 pgs. 173-182; L12 pgs. 195-206 **Crosscutting Concepts** • **Cause and Effect:** L4 pgs. 113-128; L5 pgs. 129-138; L6 pgs. 139-146; L7 pgs. 147-156; L9 pgs. 165-172; L10 pgs. 173-182 • **Influence of Engineering, Technology, and Science on Society and the Natural World:** L9 pgs. 165-172; L10 pgs. 173-183; L12 pgs. 195-206

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Grade 4	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
4.ESS3.2 Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans.	***What Is Our Evidence That We Live on a Changing Earth?* Teacher Guide** **Disciplinary Core Ideas** • **ESS3.B: Natural Hazards:** L3 pgs. 97-106; L4 pgs. 107-118; L5 pgs. 119-128; L6 pgs. 129-128; L8 pgs. 151-164 • **ETS1.B: Designing Solutions to Engineering Problems:** L7 pgs. 139-150 **Science and Engineering Practices** • **Constructing Explanations and Designing Solutions:** L7 pgs. 139-150; L8 pgs. 151-164; L9 pgs. 165-172; L10 pgs. 173-184; L11 pgs. 185-194; L12 pgs. 195-202; L13 pgs. 203-214 **Crosscutting Concepts** • **Cause and Effect:** L3 pgs. 97-106; L4 pgs. 107-118; L7 pgs. 139-150; L8 pgs. 151-164; L9 pgs. 165-172; L10 pgs. 173-184 • **Influence of Engineering, Technology, and Science on Society and the Natural World:** L6 pgs. 129-138; L7 pgs. 139-150

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Grade 5	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Matter and Its Interactions (PS1)	
5.PS1.1 Develop a model to describe that matter is made of particles too small to be seen.	***How Can We Predict Change in Ecosystems?* Teacher Guide** **Disciplinary Core Ideas** • **PS1.A: Structure and Properties of Matter:** L2 pgs. 97-112; L3 pgs. 113-124; L7 pgs. 165-174; L8 pgs. 175-184 **Science and Engineering Practices** • **Developing and Using Models:** L2 pgs. 97-112; L3 pgs. 113-124; L6 pgs. 153-164; L7 pgs. 165-174; L8 pgs. 175-184; L10 pgs. 197-204; L11 pgs. 205-214; L13 pgs. 223-232 **Crosscutting Concepts** • **Scale, Proportion, and Quantity:** L2 pgs. 97-112 ***How Can We Identify Materials Based on Their Properties?* Teacher Guide** **Disciplinary Core Ideas** • **PS1.A: Structure and Properties of Matter:** L5 pgs. 127-138; L6 pgs. 139-150 **Science and Engineering Practices** • **Developing and Using Models:** L5 pgs. 127-138 **Crosscutting Concepts** • **Scale, Proportion, and Quantity:** L4 pgs. 115-126; L5 pgs. 127-138; L6 pgs. 139-150; L7 pgs. 151-164; L8 pgs. 165-172; L12 pgs. 203-212

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 5	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
5.PS1.2 Measure and graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved.	***How Can We Identify Materials Based on Their Properties?* Teacher Guide** **Disciplinary Core Ideas** • **PS1.A: Structure and Properties of Matter:** L4 pgs. 115-126 • **PS1.B: Chemical Reactions:** L12 pgs. 203-212 **Science and Engineering Practices** • **Using Mathematics and Computational Thinking:** L4 pgs. 115-126; L12 pgs. 203-212 **Crosscutting Concepts** • **Scale, Proportion, and Quantity:** L4 pgs. 115-126; L5 pgs. 127-138; L6 pgs. 139-150; L7 pgs. 151-164; L8 pgs. 165-172; L12 pgs. 203-212 • **Scientific Knowledge Assumes and Order and Consistency in Natural Systems:** L12 pgs. 203-212
5.PS1.3 Make observations and measurements to identify materials based on their properties.	***How Can We Identify Materials Based on Their Properties?* Teacher Guide** **Disciplinary Core Ideas** • **PS1.A: Structure and Properties of Matter:** L1 pgs. 83-96; L2 pgs. 97-106; L3 pgs. 107-114; L6 pgs. 139-150; L7 pgs. 151-164; L8 pgs. 165-172; L9 pgs. 173-182; L10 pgs. 183-194 **Science and Engineering Practices** • **Planning and Carrying Out Investigations:** L1 pgs. 83-96; L4 pgs. 115-126; L6 pgs. 139-150; L7 pgs. 151-164; L9 pgs. 173-182; L10 pgs. 183-194; L12 pgs. 203-212 **Crosscutting Concepts** • **Scale, Proportion, and Quantity:** L4 pgs. 115-126; L5 pgs. 127-138; L6 pgs. 139-150; L7 pgs. 151-164; L8 pgs. 165-172; L12 pgs. 173-182

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 5	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
5.PS1.4 Conduct an investigation to determine whether the mixing of two or more substances results in new substances.	***How Can We Identify Materials Based on Their Properties?* Teacher Guide** **Disciplinary Core Ideas** • **PS1.B: Chemical Reactions:** L10 pgs. 183-194; L11 pgs. 195-202; L12 pgs. 203-212 **Science and Engineering Practices** • **Planning and Carrying Out Investigations:** L1 pgs. 83-96; L4 pgs. 115-126; L6 pgs. 139-150; L7 pgs. 151-164; L9 pgs. 173-182; L10 pgs. 183-194; L12 pgs. 203-212 **Crosscutting Concepts** • **Cause and Effect:** L6 pgs. 139-150; L7 pgs. 151-164; L8 pgs. 165-172; L10 pgs. 183-194; L11 pgs. 195-202
Motion and Stability: Forces and Interactions (PS2)	
5.PS2.1 Support an argument, with evidence, that Earth's gravitational force pulls objects downward toward the center of the earth.	***How Can We Use the Sky to Navigate?* Teacher Guide** **Disciplinary Core Ideas** • **PS2.B: Types of Interactions:** L1 pgs. 77-90; L2 pgs. 91-102; L3 pgs. 103-112 **Science and Engineering Practices** • **Engaging in Argument from Evidence:** L1 pgs. 77-90; L2 pgs. 91-102; L3 pgs. 103-112; L4 pgs. 113-124; L6 pgs. 139-150; L7 pgs. 151-166; L9 pgs. 183-192 **Crosscutting Concepts** • **Cause and Effect:** L1 pgs. 77-90; L2 pgs. 91-102; L3 pgs. 103-112; L7 pgs. 151-166; L9 pgs. 183-192

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 5	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Energy (PS3)	
5.PS3.1 Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.	***How Can We Predict Change in Ecosystems?* Teacher Guide** **Disciplinary Core Ideas** • **PS3.D: Energy in Chemical Processes and Everyday Life:** L8 pgs. 175-184; L10 pgs. 197-204 • **LS1.C: Organization for Matter and Energy Flow in Organisms:** L5 pgs. 135-152; L6 pgs. 153-164; L7 pgs. 165-174 **Science and Engineering Practices** • **Developing and Using Models:** L2 pgs. 97-112; L3 pgs. 113-124; L6 pgs. 153-164; L7 pgs. 165-174; L8 pgs. 175-184; L10 pgs. 197-204; L11 pgs. 205-214; L13 pgs. 223-232 **Crosscutting Concepts** • **Energy and Matter:** L1 pgs. 85-96; L2 pgs. 97-112; L3 pgs. 113-124; L4 pgs. 125-134; L5 pgs. 135-152; L6 pgs. 153-164; L7 pgs. 165-174; L8 pgs. 175-184; L9 pgs. 185-196; L10 pgs. 197-204; L11 pgs. 205-214
From Molecules to Organisms: Structure and Processes (LS1)	
5.LS1.1 Support an argument that plants get the materials they need for growth chiefly from air and water.	***How Can We Predict Change in Ecosystems?* Teacher Guide** **Disciplinary Core Ideas** • **LS1.C: Organization for Matter and Energy Flow in Organisms:** L1 pgs. 85-96; L2 pgs. 97-112; L3 pgs. 113-124; L4 pgs. 125-134 **Science and Engineering Practices** • **Engaging in Argument from Evidence:** L2 pgs. 97-112; L4 pgs. 125-134; L6 pgs. 153-164; L7 pgs. 165-174; L9 pgs. 185-196; L11 pgs. 205-214; L13 pgs. 223-232

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Grade 5	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	Crosscutting Concepts • **Energy and Matter:** L1 pgs. 85-96; L2 pgs. 97-112; L3 pgs. 113-124; L4 pgs. 125-134; L5 pgs. 135-152; L6 pgs. 153-164; L7 pgs. 165-174; L8 pgs. 175-184; L9 pgs. 185-196; L10 pgs. 197-204; L11 pgs. 205-214 ***How Can We Identify Materials Based on Their Properties?* Teacher Guide** **Disciplinary Core Ideas** • **LS1.C: Organization for Matter and Energy Flow in Organisms:** L3 pgs. 107-114; L11 pgs. 195-202 **Science and Engineering Practices** • **Engaging in Argument From Evidence:** L3 pgs. 107-114; L6 pgs. 139-150; L9 pgs. 173-182; L10 pgs. 183-194 **Crosscutting Concepts** • **Energy and Matter:** L3 pgs. 107-114; L4 pgs. 115-126; L5 pgs. 127-138; L11 pgs. 195-202; L12 pgs. 203-212
Ecosystems: Interactions, Energy, and Dynamics (LS2)	
5.LS2.1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.	***How Can We Predict Change in Ecosystems?* Teacher Guide** **Disciplinary Core Ideas** • **LS2.A: Interdependent Relationships in Ecosystems:** L8 pgs. 175-184; L9 pgs. 185-196; L11 pgs. 197-204; L12 pgs. 215-222; L13 pgs. 223-232 • **LS2.B: Cycles of Matter and Energy Transfer in Ecosystems:** L2 pgs. 97-112; L10 pgs. 197-204 **Science and Engineering Practices** • **Developing and Using Models:** L2 pgs. 97-112; L3 pgs. 113-124; L6 pgs. 153-164; L7 pgs. 165-174; L8 pgs. 175-184; L10 pgs. 197-204; L11 pgs. 205-214; L13 pgs. 223-232

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 5	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
	• **Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena:** L3 pgs. 113-124; L11 pgs. 205-214 **Crosscutting Concepts** • **Systems and System Models:** L10 pgs. 197-204; L13 pgs. 223-232
5.LS2.2 Use models to explain factors that upset the stability to local ecosystems.	***How Can We Predict Change in Ecosystems?* Teacher Guide** **Disciplinary Core Ideas** • **LS2.A: Interdependent Relationships in Ecosystems:** L8 pgs. 175-184; L9 pgs. 185-196; L11 pgs. 197-204; L12 pgs. 215-222; L13 pgs. 223-232; L14 pgs. 233-244; L15 pgs. 245-253 • **LS1.C: Organization for Matter and Energy Flow in Organisms:** L14 pgs. 233-244; L15 pgs. 245-253 **Science and Engineering Practices** • **Developing and Using Models:** L8 pgs. 175-184; L11 pgs. 197-204; L13 pgs. 223-232; L14 pgs. 233-244; L15 pgs. 245-253 • **Analyzing and Interpreting Data:** L9 pgs. 185-196; L11 pgs. 197-204 • **Obtaining, Evaluating, and Communicating Information:** L9 pgs. 185-196; L12 pgs. 215-222; L14 pgs. 233-244 • **Engaging in Argument from Evidence:** L9 pgs. 185-196; L11 pgs. 197-204; L13 pgs. 223-232; L14 pgs. 233-244; L15 pgs. 245-253 **Crosscutting Concepts** • **Systems and System Models:** L13 pgs. 223-232; L14 pgs. 233-244; L15 pgs. 245-253 • **Cause and Effect:** L9 pgs. 185-196; L11 pgs. 197-204; L12 pgs. 215-222; L13 pgs. 223-232; L14 pgs. 233-244; L15 pgs. 245-253 • **Energy and Matter:** L8 pgs. 175-184; L9 pgs. 185-196; L11 pgs. 197-204; L14 pgs. 233-244 • **Patterns:** L8 pgs. 175-184; L9 pgs. 185-196; L13 pgs. 223-232

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 5	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Earth's Place in the Universe (ESS1)	
5.ESS1.1 Support an argument with evidence that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.	***How Can We Use the Sky to Navigate?* Teacher Guide** **Disciplinary Core Ideas** • **ESS1.A: The Universe and Its Stars:** L4 pgs. 113-124; L6 pgs. 139-150; L7 pgs. 151-166 **Science and Engineering Practices** • **Engaging in Argument from Evidence:** L1 pgs. 77-90; L2 pgs. 91-102; L3 pgs. 103- 112; L4 pgs. 113-124; L6 pgs. 139-150; L7 pgs. 151-166; L9 pgs. 183-192 **Crosscutting Concepts** • **Scale, Proportion, and Quantity:** L2 pgs. 91- 102; L4 pgs. 113-124; L8 pgs. 167-182; L10 pgs. 193-206; L11 pgs. 207-220
5.ESS1.2 Represent data in graphical displays to reveal patterns of daily changes in the length and direction of shadows, in addition to different positions of the sun, moon, and stars at different times of the day, month, and year.	***How Can We Use the Sky to Navigate?* Teacher Guide** **Disciplinary Core Ideas** • **ESS1.B: Earth and the Solar System:** L5 pgs. 125-138; L6 pgs. 139-150; L7 pgs. 151-166; L8 pgs. 167-182; L9 pgs. 183-192; L10 pgs. 193-106; L12 pgs. 221-232 **Science and Engineering Practices** • **Analyzing and Interpreting Data:** L5 pgs. 125-138; L6 pgs. 139-150; L7 pgs. 151-166; L9 pgs. 183-192; L10 pgs. 193-206; L11 pgs. 207-220 **Crosscutting Concepts** • **Patterns:** L3 pgs. 103-112; L6 pgs. 139-150; L7 pgs. 151-166; L9 pgs. 183-192; L10 pgs. 193-206; L12 pgs. 221-232

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Grade 5	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Earth's Systems (ESS2)	
5.ESS2.1 Develop a model to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.	***How Can We Provide Freshwater to Those in Need?* Teacher Guide** **Disciplinary Core Ideas** • **ESS2.A: Earth Materials and Systems:** L6 pgs. 135-142; L7 pgs. 143-152; L8 pgs. 153-164; L9 pgs. 165-174 **Science and Engineering Practices** • **Developing and Using Models:** L7 pgs. 143-152; L8 pgs. 153-164; L9 pgs. 165-174; L10 pgs. 175-182 **Crosscutting Concepts** • **Systems and System Models:** L1 pgs. 77-88; L5 pgs. 121-134; L6 pgs. 135-142; L7 pgs. 143-152; L8 pgs. 153-164; L9 pgs. 165-174; L10 pgs. 175-182; L11 pgs. 183-192
5.ESS2.2 Describe and graph amounts of saltwater and freshwater in various reservoirs to provide evidence about the distribution of water on Earth.	***How Can We Provide Freshwater to Those in Need?* Teacher Guide** **Disciplinary Core Ideas** • **ESS2.C: The Roles of Water in Earth's Surface Processes:** L3 pgs. 99-110; L4 pgs. 111-120 **Science and Engineering Practices** • **Using Mathematics and Computational Thinking:** L2 pgs. 89-98; L3 pgs. 99-110 **Crosscutting Concepts** • **Scale, Proportion, and Quantity:** L1 pgs. 77-88; L3 pgs. 99-110; L4 pgs. 111-120; L9 pgs. 165-174

Correlation of Smithsonian Science for the Classroom™ to the Oklahoma Academic Standards for Science 2020, Grades 1–5

Grade 5	
Oklahoma Academic Standards for Science	**Smithsonian Science for the Classroom™**
Earth and Human Activity (ESS3)	
5.ESS3.1 Obtain and combine information about ways individual communities use science ideas to protect the Earth's resources and environments.	***How Can We Provide Freshwater to Those in Need?* Teacher Guide** **Disciplinary Core Ideas** • **ESS3.C: Human Impacts on Earth Systems:** L2 pgs. 89-98; L4 pgs. 111-120; L7 pgs. 143-152; L8 pgs. 153-164; L9 pgs. 165-174; L10 pgs. 175-182; L11 pgs. 183-192; L13 pgs. 201-208 **Science and Engineering Practices** • **Obtaining, Evaluating, and Communicating Information:** L1 pgs. 77-88; L4 pgs. 111-120; L5 pgs. 121-134; L6 pgs. 135-142; L7 pgs. 143-152; L11 pgs. 183-192; L12 pgs. 193-200 **Crosscutting Concepts** • **Systems and System Models:** L1 pgs. 77-88; L5 pgs. 121-134; L6 pgs. 135-142; L7 pgs. 143-152; L8 pgs. 153-164; L9 pgs. 165-174; L10 pgs. 175-182; L11 pgs. 183-192; L12 pgs. 193-200 • **Science Addresses Questions About the Natural World:** L1 pgs. 77-78