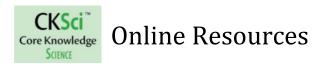


#### **Weather Patterns**

Click on each lesson to access its online resources. Page numbers refer to pages in the Teacher Guide. Some links provide access to files created by the Core Knowledge Foundation, including PDF documents that you can download and view with the appropriate software (such as <a href="Adobe Acrobat Reader DC">Adobe Acrobat Reader DC</a>).

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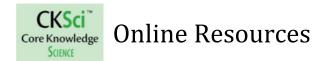




#### About this Unit

Page	Resource Links
2	<ul> <li>Note to Teachers and Curriculum Planners</li> <li>The learning progressions of Disciplinary Core Ideas PS1.A, PS3.B, ESS2.D, ESS3.A, ESS3.B, ETS1.A, ETS1.B, and ETS1.C offers guidance regarding the scope and sequence of learning about matter and its interactions, the conservation of energy and energy transfer, weather and climate, natural resources, and engineering design in the elementary grades and beyond.</li> <li>Learn more about this core idea and its related content by reading the corresponding section of A Framework for K-12 Science Education.</li> <li>See also the Teachers Resources section of this guide.</li> <li>To see an overview of the entire Core Knowledge Science program, visit this page.</li> </ul>
3	This unit has been informed by the following Next Generation Science Standards (NGSS) Performance Expectations:  Topic—Energy  K-PS3-1  K-PS3-2  Topic—Earth and Human Activity  K-ESS3-1  K-ESS3-1
10	Recommended Science Trade Books
13	NGSS References  • DCI • CCC • SEP
14	<ul> <li>Resources for Effective and Safe Classroom Activities</li> <li>Materials Supply List: Grade K Unit 4 Weather Patterns</li> </ul>

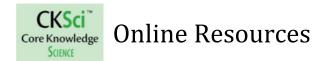
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## **Introductory Class Session**

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19	Disciplinary Core Idea: PS3.B Conservation of Energy and Energy Transfer  • From the Framework: Pages 124–126
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	Crosscutting Concept:  2 Cause and Effect  • From the Framework: Pages 87–89  Connection to Engineering, Technology and Applications of Science
21	Interdependence of Science, Engineering, and Technology [WEBLINK]Heat Waves

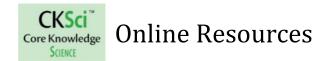
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## **Unit Opener**

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28	Disciplinary Core Idea: ESS2.D Weather and Climate  • From the Framework: Pages 186–189
	Science and Engineering Practice:  3 Planning and Carrying Out Investigations  • From the Framework:  Pages 59–61
	Crosscutting Concept:  1 Patterns  • From the Framework:  Pages 85–87
31	[VIDEO]A Song About Weather
36	[VIDEO]National Weather Service Balloon Launch

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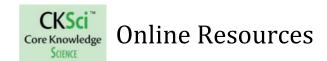
## Lesson 1 Opener

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38	NGSS References
	<ul> <li>DCI</li> <li>CCC</li> <li>SEP</li> </ul>

#### Lesson 1, Segment 1

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39	Disciplinary Core Ideas:  PS1.A Structures and Properties of Matter  • From the Framework:  Pages 106–109  PS3.B Conservation of Energy and Energy Transfer  • From the Framework:  Pages 124–126
	Science and Engineering Practices:  1 Asking Questions and Defining Problems  • From the Framework:  Pages 54–56  3 Planning and Carrying Out Investigations  • From the Framework:  Pages 59–61
	Crosscutting Concept:  1 Patterns  • From the Framework: Pages 85–87  Understanding About the Nature of Science Scientific Investigations Use a Variety of Methods

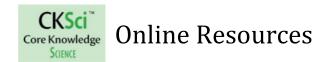
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45	Performance Expectation:  • K-PS3-1  Evidence Statements for K-PS3-1
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	Science and Engineering Practice:  3 Planning and Carrying Out Investigations  • From the Framework:  Pages 59–61
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	<ul> <li>3 Scale, Proportion, and Quantity</li> <li>From the Framework:         Pages 89–91     </li> <li>Understanding About the Nature of Science     </li> <li>Scientific Investigations Use a Variety of Methods</li> </ul>

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51	Disciplinary Core Idea: PS3.B Conservation of Energy and Energy Transfer  • From the Framework: Pages 124–126
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	Crosscutting Concepts:  1 Patterns  • From the Framework:  Pages 85–87  2 Cause and Effect  • From the Framework:  Pages 87–89  Understanding About the Nature of Science  Scientific Investigations Use a Variety of Methods
53	[VIDEO]Sun and Space Song

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#### Lesson 2 Opener

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63	NGSS References
	<ul><li>DCI</li><li>CCC</li><li>SEP</li></ul>

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64	Performance Expectation:  • K-2-ETS1-1  Evidence Statements for K-2-ETS1-1
	Disciplinary Core Ideas:  PS3.B Conservation of Energy and Energy Transfer  • From the Framework:  Pages 124–126  ETS1.A Defining and Delimiting Engineering Problems  • From the Framework:  Pages 204–206  ESS3.A Natural Resources  • From the Framework:  Pages 191–192
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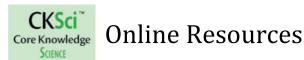
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#### Core Knowledge Online Resources

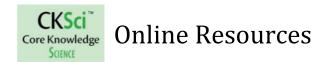
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71	Performance Expectations:
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77	[VIDEO]
	Architecture
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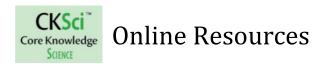
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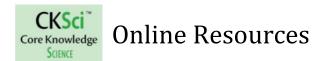
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00	Performance Expectation:  • K-2-ETS1-3
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87	[Weblink]Vocabulary Development
	[VIDEO]
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89	[VIDEO] <i>Umbrella</i> by Taro Yashima

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**Crosscutting Concepts:** 

1 Patterns

From the Framework: Pages 85–87

3 Scale, Proportion, and Quantity

• From the Framework: Pages 89–91

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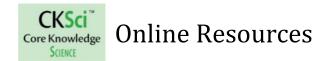
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100	Disciplinary Core Idea:
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106	[VIDEO]Weather and Seasons
108	[WEBLINK] Comparative Climatic Data Raw Climatic Data Table

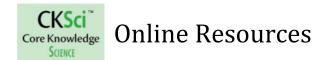
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123	NGSS References
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	• CCC
	• SEP

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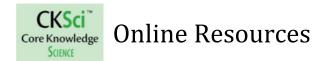
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124	Disciplinary Core Ideas: ESS3.B Natural Hazards  • From the Framework: Pages 192–194 ETS1.A Defining and Delimiting Engineering Problems  • From the Framework: Pages 204–206
	Science and Engineering Practices:  1 Asking Questions and Defining Problems  • From the Framework: Pages 54–56  8 Obtaining, Evaluating, and Communicating Information  • From the Framework: Pages 74–77
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126	[VIDEO]Warning Sirens
127	[VIDEO]
	Heat Wave Safety
	What Is a Heat Wave?
	Teacher Reference: What Causes Heat Waves?
128	[VIDEO]
	Hurricanes for Kids
	What Is a Hurricane?
129	[VIDEO]Close-Up of a Tornado
130	[VIDEO]Close-Up of a Blizzard [WEBLINK]Prepare with Pedro

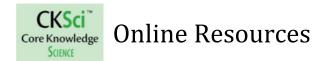
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	Science and Engineering Practice:  8 Obtaining, Evaluating, and Communicating Information  • From the Framework: Pages 74–77
	Crosscutting Concepts:  1 Patterns  • From the Framework: Pages 85–87  2 Cause and Effect • From the Framework: Pages 87–89
136	[VIDEO] <i>Blizzard</i> Preview Trailer
137	[WEBLINK]State Drought Map

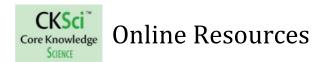
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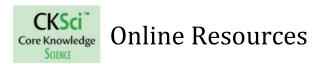
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138	Disciplinary Core Ideas:  ESS3.B Natural Hazards  • From the Framework:  Pages 192–194  ETS1.A Defining and Delimiting Engineering Problems  • From the Framework:
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151	[VIDEO]After a Blizzard
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Unit Capstone →



## Unit Capstone

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	Evidence Statements for K-ESS3-2
	Disciplinary Core Ideas:
	PS3.B Conservation of Energy and Energy Transfer
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	ESS2.D Weather and Climate
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	ESS3.B Natural Hazards
	<ul><li>From the Framework:</li></ul>
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	ETS1.A Defining and Delimiting Engineering Problems
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	Science and Engineering Practices:  4 Analyzing and Interpreting Data
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#### Online Resources

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#### 2 Cause and Effect

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#### Understanding About the Nature of Science

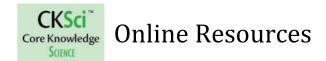
- Scientific Investigations Use a Variety of Methods
- Scientific Knowledge Is Based on Empirical Evidence

# Connection to Engineering, Technology and Applications of Science

- Influence of Engineering, Technology, and Science on Society and the Natural World
- Interdependence of Science, Engineering, and Technology

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Unit Supplement →



## Unit Supplement

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205	Activity Pages Answer Key
209	Safety in the Science Classroom:  • NSTA Safety Resources • Safety Resources for Elementary Teachers
	<ul> <li>Teacher Guide Appendices:</li> <li>Appendix A: Glossary</li> <li>Appendix B: Safety for Activities</li> <li>Appendix C: Strategies for Acquiring Materials</li> <li>Appendix D: Advance Preparation</li> <li>Appendix E: Unexpected Activity Results</li> </ul>

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