Online Resources

Astronomy: Space Systems

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 Adobe Reader).

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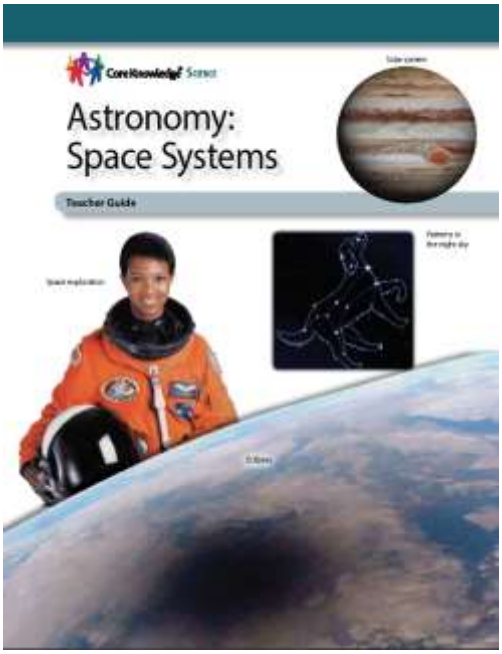

Extend and customize this unit using the CKSci Additional Activities

Online Resources

About This Unit

Page	Resource Links

1	Note to Teachers and Curriculum Planners
	• The learning progressions of Disciplinary Core Ideas offer guidance regarding the scope and sequence of learning about Earth's Systems in the elementary grades and beyond:
	  ○ ESS1.A The Universe and Its Stars
	  ○ ESS1.B Earth and the Solar System
	  ○ PS2.B Types of Interactions
	• Learn more about these core ideas and their related content by reading the corresponding section of *A Framework for K–12 Science Education*.
	See also the Teachers Resources section of this guide.

2	Note to Core Knowledge Teachers: 2019 Core Knowledge Science Sequence for this unit: Domain—Astronomy: Space Systems CKSci correlations to the 2010 Core Knowledge Sequence— • GRADE 3 • GRADE 4 • GRADE 5
3	This unit has been informed by the following Next Generation Science Standards (NGSS) Performance Expectations: Topic—5. Space Systems: Stars and the Solar System • 5-ESS1-1 • 5-ESS1-2 • 5-PS2-1
10	Resources for Effective and Safe Classroom Activities
12	Materials Supply List: Grade 5 Unit 5 *Astronomy: Space Systems*
14	Pacing Guides for CKSci Grades 3–5

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18	Disciplinary Core Idea: ESS1.B *Earth and the Solar System* • From the *Framework*: Pages 175–180
	Crosscutting Concept: *Patterns* • From the Framework: Pages 85–87
	Science and Engineering Practices: *Analyzing and Interpreting Data* • From the Framework: Pages 61–63
21	[VIDEO] Earth in context of the universe
22	[VIDEOS] Space technology Telescopes Space probes Rovers Satellites International Space Station

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25	Disciplinary Core Idea: ESS1.B *Earth and the Solar System* • From the *Framework*: Pages 175–180
	Crosscutting Concept: *Patterns* • From the Framework: Pages 85–87
	Science and Engineering Practices: *Analyzing and Interpreting Data* • From the Framework: Pages 61–63
26	[VIDEO] Venus transit

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	Crosscutting Concept: *Patterns* • From the Framework: Pages 85–87
	Science and Engineering Practices: *Analyzing and Interpreting Data* • From the Framework: Pages 61–63
36	[WEBLINK] NASA missions

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Part B: Evidence of Earth's Movement
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40	Performance Expectation: • 5-ESS1-2 Evidence Statements for 5-ESS1-2
	Disciplinary Core Idea: ESS1.B *Earth and the Solar System* • From the *Framework*: Pages 175–180
	Crosscutting Concept: *Patterns* • From the Framework: Pages 85–87
	Science and Engineering Practices: *Analyzing and Interpreting Data* • From the Framework: Pages 61–63

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	Disciplinary Core Idea: ESS1.B *Earth and the Solar System* • From the *Framework*: Pages 175–180
	Crosscutting Concept: *Patterns* • From the Framework: Pages 85–87
	Science and Engineering Practices: *Analyzing and Interpreting Data* • From the Framework: Pages 61–63
49	[VIDEO] Night sky time lapse

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52	Performance Expectation: • 5-ESS1-2 Evidence Statements for 5-ESS1-2
	Disciplinary Core Idea: ESS1.B *Earth and the Solar System* • From the *Framework*: Pages 175–180
	Crosscutting Concept: *Patterns* • From the Framework: Pages 85–87
	Science and Engineering Practices: *Analyzing and Interpreting Data* • From the Framework: Pages 61–63
54	[VIDEO] Shadows
56	[VIDEOS] Eclipse 1 Eclipse 2

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58	Performance Expectation: • 5-ESS1-2 Evidence Statements for 5-ESS1-2
	Disciplinary Core Idea: ESS1.B *Earth and the Solar System* • From the *Framework*: Pages 175–180
	Crosscutting Concept: *Patterns* • From the Framework: Pages 85–87
	Science and Engineering Practices: *Analyzing and Interpreting Data* • From the Framework: Pages 61–63
60	[VIDEO] Earth's rotation
61	[VIDEO] Moon shadow on Earth
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	Science and Engineering Practices: *Analyzing and Interpreting Data* • From the Framework: Pages 61–63
66	[IMAGE] Long-exposure night sky

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70	Performance Expectation: • 5-ESS1-1 Evidence Statements for 5-ESS1-1
	Disciplinary Core Idea: ESS1.A *The Universe and Its Stars* • From the *Framework*: Pages 173–174
	Crosscutting Concept: *Scale, Proportion, and Quantity* • From the Framework: Pages 89–91
	Science and Engineering Practices: *Engaging in Argument from Evidence* • From the Framework: Bottom of pages 71–74
71	[IMAGE] Night sky, star brightness variation

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75	Performance Expectation: • 5-ESS1-1 Evidence Statements for 5-ESS1-1
	Disciplinary Core Idea: ESS1.A *The Universe and Its Stars* • From the *Framework*: Pages 173–174
	Crosscutting Concept: *Scale, Proportion, and Quantity* • From the Framework: Pages 89–91
	Science and Engineering Practices: *Engaging in Argument from Evidence* • From the Framework: Bottom of pages 71–74
76	[IMAGE] Hubble Space Telescope image
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	Disciplinary Core Idea: ESS1.B *Earth and the Solar System* • From the *Framework*: Pages 175–180
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	Science and Engineering Practices: *Analyzing and Interpreting Data* • From the Framework: Pages 61–63
84	[WEBLINK] Local night sky projections

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	Disciplinary Core Idea: ESS1.B *Earth and the Solar System* • From the *Framework*: Pages 175–180
	Crosscutting Concept: *Patterns* • From the Framework: Pages 85–87
	Science and Engineering Practices: *Engaging in Argument from Evidence* • From the Framework: Bottom of pages 71–74

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Part D: Gravity
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	Disciplinary Core Idea: PS2.B *Types of Interactions* • From the *Framework*: Pages 116–118
	Crosscutting Concept: *Cause and Effect* • From the Framework: Pages 87–89
	Science and Engineering Practices: *Engaging in Argument from Evidence* • From the Framework: Bottom of pages 71–74 *Developing and Using Models* • From the Framework: Pages 56–59
97	[VIDEO] Bay of Fundy tides [VIDEO] Hopewell Cape tides

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99	Performance Expectation: • 5-PS2-1 Evidence Statements for 5-PS2-1
	Disciplinary Core Idea: PS2.B *Types of Interactions* • From the *Framework*: Pages 116–118
	Crosscutting Concept: *Cause and Effect* • From the Framework: Pages 87–89
	Science and Engineering Practices: *Engaging in Argument from Evidence* • From the Framework: Bottom of pages 71–74 *Planning and Carrying Out Investigations* • From the Framework: Pages 59–61

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109	[WEBLINK] Key NASA missions [WEBLINK] Astronaut requirements

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10	Resources for Effective & Safe Classroom Activities *(also, see below re: page 153)*
12	Materials Supply List: Grade 5 Unit 5 *Astronomy: Space Systems*
146	Activity Pages Answer Key
149	Unit Assessment: Teacher Evaluation Guide
153	Safety in the Science Classroom: • NSTA Safety Resources • Safety Resources for Elementary Teachers
	Teacher Guide Appendices: • Appendix A – Glossary • Appendix B – Safety for Activities • Appendix C – Strategies for Acquiring Materials • Appendix D – Advance Preparation • Appendix E – Unexpected Activity Results

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