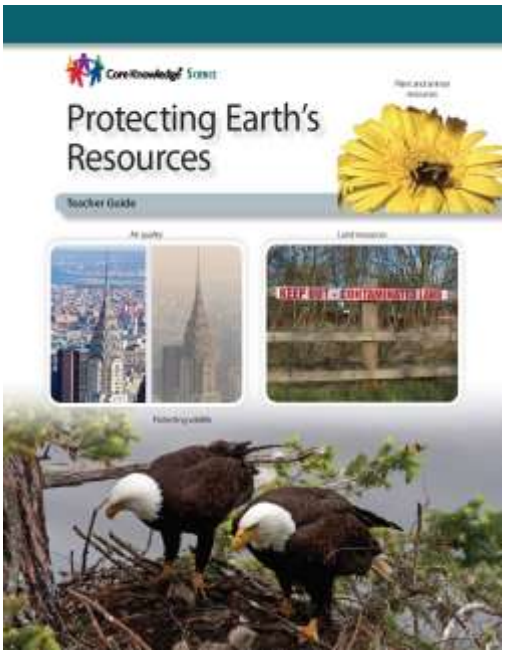
Online Resources

Protecting Earth's Resources

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).

	About This Unit
Part A	Lesson 1
Part B	Lesson 2
	Lesson 3
	Lesson 4
	Lesson 5
Part C	Lesson 6
	Lesson 7
	Lesson 8
	Lesson 9
Part D	Lesson 10
	Lesson 11
	Lesson 12
	Lesson 13
Part E	Lesson 14
	Lesson 15
Problem-Based Learning Project	Unit Capstone
	Teacher Resources



Online Resources

About This Unit

Page	Resource Links
1	Note to Teachers and Curriculum Planners • The learning progressions of Disciplinary Core Idea ESS3.C offers guidance regarding the scope and sequence of learning about Earth's Systems in the elementary grades and beyond. • Learn more about this core idea and its 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	Notes to Core Knowledge Teachers: 2019 Core Knowledge Science Sequence for this unit: Domain—Protecting Earth's Resources CKSci correlations to the 2010 Core Knowledge Sequence— • GRADE 3 • GRADE 4 • GRADE 5
4	This unit has been informed by the following Next Generation Science Standards (NGSS) Performance Expectation: Topic—5. Earth Systems • 5-ESS3.1
13	Resources for Effective and Safe Classroom Activities
15	Materials Supply List: Grade 3 Unit 3 Protecting Earth's Resources
17	Pacing Guides for CKSci Grades 3–5

← Table of Contents Next Lesson →

Online Resources

Part A: Protecting Earth's Resources
Lesson 1

Page	Resource Links
21	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
23	*Modeling Earth's Systems* key concepts
25	[WEBLINK] EPA website
27	[WEBLINK] EPA website [WEBLINK] Research resource

← Table of Contents Next Lesson →

Online Resources

Part B: Protecting Earth's Water
Lesson 2

Page	Resource Links
29	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
31	[WEBLINK] Water quality engagement activities [WEBLINK] USGS brainstorming support
32	[WEBLINK] Brainstorming support

← Table of Contents Next Lesson →

Online Resources

Lesson 3

Page	Resource Links
38	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
43	[VIDEO] Boyan Slat
44	[WEBLINK] EPA Water Topics [WEBLINK] Research Resource [WEBLINK] Research Resource

← Table of Contents Next Lesson →

Online Resources

Lesson 4

Page	Resource Links
46	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
48	[IMAGES] Water pollution
49	[WEBLINK] Satellite-view map resource

← Table of Contents Next Lesson →

Online Resources

Lesson 5

Page	Resource Links
52	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
54	[WEBLINK] Discussion resource [WEBLINK] Map resource

← Table of Contents Next Lesson →

Online Resources

Part C: Protecting Earth's Air
Lesson 6

Page	Resource Links
59	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
62	[VIDEO] Smog [0:23+]
63	[VIDEO] Vertical forest

← Table of Contents Next Lesson →

Online Resources

Lesson 7

Page	Resource Links
65	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
69	[WEBLINK] Air quality

← Table of Contents Next Lesson →

Online Resources

Lesson 8

Page	Resource Links
71	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
72	[WEBLINK] Air quality

← Table of Contents Next Lesson →

Online Resources

Lesson 9

Page	Resource Links
76	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
78	[VIDEO] Cyclone

← Table of Contents Next Lesson →

Online Resources

Part D: Protecting Earth's Land
Lesson 10

Page	Resource Links
82	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
85	[VIDEO] Landfill construction 1 [VIDEO] Landfill construction 2
86	[WEBLINK] Discussion support

← Table of Contents Next Lesson →

Online Resources

Lesson 11

Page	Resource Links
88	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science

← Table of Contents Next Lesson →

Online Resources

Lesson 12

Page	Resource Links
94	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
97	[WEBLINK] USGS map

← Table of Contents Next Lesson →

Online Resources

Lesson 13

Page	Resource Links
99	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science

← Table of Contents Next Lesson →

Online Resources

Part E: Taking Local Action
Lesson 14

Page	Resource Links
105	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science

← Table of Contents Next Lesson →

Online Resources

Lesson 15

Page	Resource Links
110	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
111	[IMAGES] Unspoiled versus impacted ecosystems Forest / logging Desert / urbanization Grassland / agriculture Tundra / pollution

← Table of Contents Unit Capstone →

Online Resources

Problem-Based Learning Project
Unit Capstone: Sharing Community Solutions

Page	Resource Links
116	Performance Expectation: • 5-ESS3-1 Evidence Statements for 5-ESS3-1
	Disciplinary Core Idea: ESS3.C *Human Impacts on Earth Systems* • From the Framework: Pages 194–196
	Science and Engineering Practices: *Obtaining, Evaluating, and Communicating Information* • From the Framework: Pages 74–77
	Crosscutting Concept: *System and System Models* • From the Framework: Pages 91–94
	Crosscutting Concept: *Science Addresses Questions About the Natural and Material World* Connections to the Nature of Science
117	[IMAGES] Unspoiled versus impacted ecosystems Forest / logging Desert / urbanization Grassland / agriculture Tundra / pollution

← Table of Contents Teacher Resources →

Online Resources

Teacher Resources

Page	Resource Links
13	Resources for Effective & Safe Classroom Activities *(also, see below re: page 169)*
15	Materials Supply List: Grade 5 Unit 4 Protecting Earth's Resources
162	Activity Pages Answer Key
169	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

← Table of Contents