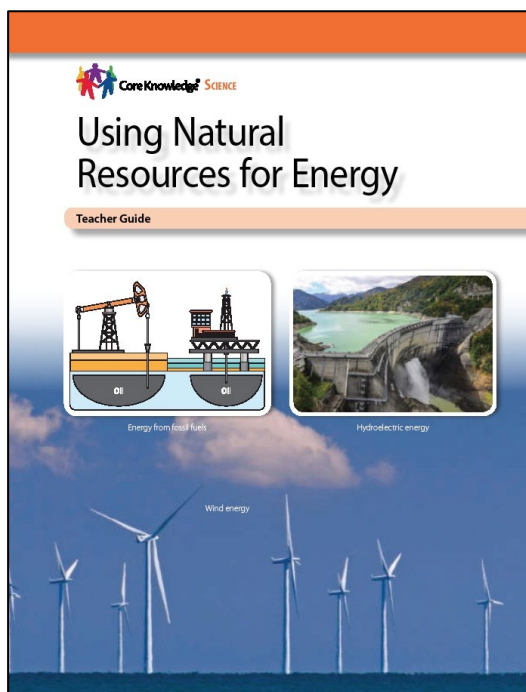


Using Natural Resources for Energy

Click on each link below to access additional activities to supplement and extend the core lessons of CKSci. Page numbers refer to pages in the Teacher Guide where these activities are best integrated. 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
Part C	Lesson 5
	Lesson 6
	Lesson 7
	Lesson 8
	Lesson 9
Part D	Lesson 10
	Lesson 11
	Lesson 12
	Lesson 13
	Lesson 14
	Lesson 15
	Lesson 16
Part E Problem-Based Learning Project	n/a
	Teacher Resources





Additional Activities

About This Unit

Page	Resource Links
17	<p><i>Using Natural Resources for Energy</i> is one of five science units in the Grade 4 Core Knowledge Curriculum Series™. In the Teacher Guide Introduction there is a Sample Pacing Guide that provides guidance to select and use the core resources in this unit. This pacing guide suggests you allocate 21 days of instruction to complete the unit. However, there are many options to individualize instruction for your students, based on their interests and needs. Use the blank Pacing Guide to reflect your individualized activity choices and pacing for your class.</p> <p>The Additional Activities found in this document are recommended as extensions to the 21-day set of core lessons. If you plan to create a customized pacing guide for your class, including one or more of these additional activities We recommend that you preview the entire unit and create your pacing guide before teaching the first lesson. We recommend that you do not exceed 30 instructional days for this unit, so you have instructional time to complete all Grade 4 units.</p>
	<p>**Note that this unit intentionally builds on students' learning from earlier in the year regarding G4U1 <i>Energy Transfer and Transformations</i>. It also provides a foundation for students in the next year, specifically during CKSci Grade 5 Unit 4 <i>Protecting Earth's Resources</i>. Coordinate with your Grade 5 colleagues as their insight (and yours to them) will help you to successfully customize and extend the core lessons of these units.</p>

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Additional Activities

Part A: Problem-Based Learning Introduction

Lesson 1

Page	Resource Links
21	Extend the introduction to this unit by <i>starting where the students will end</i> : a cost-benefit analysis. For example contact an energy expert in your local area to engage your students with examples of how energy is generated, used, and monitored in your local community. Before speaking with the expert, ask your students to spend one class session brainstorming questions to pose to the expert.

Part B: Natural Resources

Lessons 2–3

Page	Resource Links
27	[Video + Discussion + Additional Activity] Renewable vs. Non-Renewable (approx. 13 minutes) (1–2 classroom sessions) This Generation Genius episode introduces students to examples and demonstrations of different resources (<i>subscription required for full access</i>). The free Teacher Guide and Make Your Own Hydro-Wheel activity can also extend Part B of this CKSci unit. The guide offers insight into the common misconceptions that students may have about resources, fuel, and the concept of “renewable”.

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Additional Activities

Part C: Using Nonrenewable Resources Lessons 4–8

Page	Resource Links
41	<p>[Video + Discussion]</p> <p>Bill Nye - Energy (1 class session)</p> <p>This classic episode asks students to think about energy and where it “comes from”. For this unit, consider starting at approximately minute 14 into the video, starting with the “Check it out!” featurette. From this point in the clip, Bill begins investigating both renewable and nonrenewable sources of energy.</p>

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Part D: Using Renewable Resources Lessons 9–17

Page	Resource Links
73	<p>[Videos + Discussion]</p> <p>Iowa Wind Power 2min 30 sec</p> <p>A very different kind of hydropower 4 min 38 sec</p> <p>(1/2 - 1 class session each)</p> <p>These National Geographic videos include additional examples of renewable energy technologies used in specific communities.</p>
	<p>[Video + Discussion re: costs and benefits of energy conservation technologies]</p> <p>Energy Conservation approx. 3 minutes</p>

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[Teacher Resources](#) →

Teacher Resources

Page	Resource Links
	<p>The following instructional masters may help you to further extend the core lessons of CKSci:</p> <ul style="list-style-type: none"> • K-W-L Chart • T-Chart • T-Chart and Summary • Box and T-Chart • Venn Diagram
	<p>[Trade Books]</p> <p>The following are optional trade books that can support and extend learning. Each trade book should take no more than 1 to 2 class sessions to read with students and discuss relative to the core learning objectives of this unit.</p> <ul style="list-style-type: none"> • <i>Energy Island</i> by Allan Drummond ISBN: 0374321841 • <i>Buried Sunlight: How Fossil Fuels Have Changed the Earth</i> by Molly Bang and Penny Chisholm ISBN: 9780545577854 • <i>What's so bad about gasoline?</i> by Anne Rockwell ISBN: 1442002972

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