

Light Energy
A 40 session unit
Seeds of Science/Roots of Reading Program
Grades 3–4

Seeds of Science/Roots of Reading units provide rich and varied opportunities for students to inquire about important topics in science as they **investigate** through firsthand inquiry, **read** content-rich science books, **talk** with others about their investigations, and **write** to record and reflect on their learning. Students learn important strategies to comprehend science texts and gather information to support their inquiry by reading. As they read and investigate, they develop flexible knowledge of new vocabulary and learn to communicate using the language of science, a significant academic discourse.

The *Light Energy* integrated science-literacy unit immerses students in learning about the **characteristics of light, the multiple ways light interacts with different materials, light as energy**, and other key physical science concepts. The unit has four investigations—each with 10 sessions, in which students engage in the inquiry processes of making predictions, recording and analyzing data, making explanations from evidence, evaluating claims and evidence, and summarizing. Nine student books engage students in reading and talking about these important science concepts and skills. About half of the sessions in the unit have a literacy focus. As students read the books, they learn reading comprehension strategies such as making predictions and summarizing. Students also learn to use a variety of nonfiction text features to locate information and understand important ideas. Students write scientific explanations and summaries of written text, and learn to use and interpret data tables. Throughout the unit, students are provided with opportunities for oral discourse and discussions focusing on the nature and practices of science.

The *Light Energy* Kit includes:

- ✓ 18 copies each of 9 books, for a total of 162 student books
- ✓ Student Investigation Notebooks for each student
- ✓ Materials and equipment for leading the unit with 32 students
- ✓ The *Light Energy* Teacher’s Guide

The *Light Energy* Teacher’s Guide includes:

- ✓ Detailed lesson plans for enacting four inquiry-based science investigations comprised of 10 sessions each
- ✓ Science and literacy assessments and scoring rubrics
- ✓ Instructional scaffolds and accommodations for English Language Learners
- ✓ Background information pertaining to the science content introduced in the unit

Learning Goals in the *Light Energy* unit

Science Goals	Literacy Goals
<p>Science Knowledge</p> <ul style="list-style-type: none"> • Characteristics of light • Light interactions • Light as energy <p>Science Inquiry</p> <ul style="list-style-type: none"> • Making predictions • Summarizing • Making explanations from evidence • Recording and analyzing data • Evaluating Claims and Evidence <p>Nature and Practices of Science</p> <ul style="list-style-type: none"> • Understanding that science knowledge is based on evidence • Recognizing that the scientific community seeks to improve explanations • Understanding how scientists engage in the practices of science 	<p>Reading</p> <ul style="list-style-type: none"> • Making predictions • Summarizing • Understanding and Using Tables • Using nonfiction text features <p>Writing</p> <ul style="list-style-type: none"> • Writing Scientific Explanations • Writing Summaries • Using Scientific Language and Vocabulary <p>Listening/Speaking</p> <ul style="list-style-type: none"> • Participating in Scientific Discourse • Making Explanations from Evidence • Using Scientific Language and Vocabulary

Light Energy Science Books
Cameras, Eyes, and Glasses
Can You See in the Dark?
Handbook of Light Interactions
I See What You Mean
It's All Energy
Light Strikes!
Sunlight and Showers
The Speed of Light
Why Do Scientists Disagree?