



## Guide to Module Investigations



### Cause and effect

Students evaluate evidence of the relationship between burning fossils fuels and pollution.

### Using models

Students use energy models to document observations of electrical energy.

### Nature of Science

Students express their creativity as they develop individual solutions to the design challenge.

### NGSS

These NGSS margin notes describe how students are engaging with Science and Engineering Practices; Crosscutting Concepts; Connections to Nature of Science; and Connections to Engineering, Technology, and Applications of Science. Blue text indicates a Science and Engineering Practice. Green text indicates a Crosscutting Concept. Black text indicates a Nature of Science or Engineering, Technology, and Applications of Science connection.

### Common Core

These icons indicate when students are engaging in activities that prepare them to meet Common Core State Standards in Literacy (broken down by Speaking and listening, Reading, and Writing) and Mathematics for this grade.



### Misconceptions

These Good Thinking! boxes alert you to places in the lessons where common student misconceptions may appear or can be addressed. Some include sample exchanges that show possible peer-peer and teacher-peer interactions that could help counteract misconceptions.



### Misconception

Some students may think that fossil fuels can form in a relatively short time. In the course of obtaining information about multiple sources of energy, students will find a pattern—fossil fuels take millions of years to form.



### Digital Resource

This icon indicates an online or digital resource.

## ELL Strategy

These research-based suggestions for ELL support are embedded throughout the lessons.

### ELL strategy

Connecting students' community and culture to the content can help all students, but especially ELL students, integrate prior experiences with new content.

## Teacher Tips and Tech Tips

These practical tips give options for teaching the lesson and suggestions for integration of technology.

## Guiding Questions

These guiding questions should be directed at students to gauge understanding. Possible correct or expected student responses are included in parentheses.

- **Can using renewable resources harm the environment?**

(Yes, they affect the area where the plants are: Hydroelectric plants harm river and valley habitats, wind farms can injure animals.)

## Safety Notes

These warnings keep everyone safe.



**Safety**

Hot water and steam can cause serious burns.

## Class Period Breaks

This icon indicates a good point to stop and continue the lesson in the next class period.



**Suggested class period break**

### Teacher tip

Do this lesson at the beginning of the day or in your usual literacy time.



### Tech tip

Project an online timer onto a whiteboard to help students manage their time.

