



## Science Chunks: Energy Sample Packet

Teach your students the basics about energy in bite-sized chunks. The following sample packet includes most of the first lesson of the *Science Chunks: Energy* digital unit study. You will see:

- ✓ The Introduction (*beginning on p. 4*)
- ✓ The Lesson (*beginning on p. 8*)
- ✓ The Lapbooking Templates (*beginning on p. 11*)
- ✓ The Notebooking Templates (*beginning on p. 14*)

If you have questions about what you see, please let us know by emailing [support@elementalscience.com](mailto:support@elementalscience.com). To get started, head to:

🔗 <https://elementalscience.com/products/science-chunks-energy-unit>

# A Peek Inside a Science Chunks Unit

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## 1. Lesson Topic

Focus on one main idea throughout the week. You will learn about these ideas by reading from visually appealing encyclopedias, recording what the students learned, and doing coordinating hands-on science activities.

## 2. Information Assignments

Find two reading options—one for younger students, one for older students, plus optional library books.

## 3. Notebooking Assignments

Record what your students have learned with either a lapbook or a notebook. The directions for these options are included for your convenience in this section along with the vocabulary the lesson will cover.

## 4. Hands-on Science Assignments

Get the directions for coordinating hands-on science activities that relate to the week's topic.

## 5. Lesson To-Do Lists

See what is essential for you to do each week and what is optional. You can check these off as you work through the lesson so that you will know when you are ready to move on to the next one.

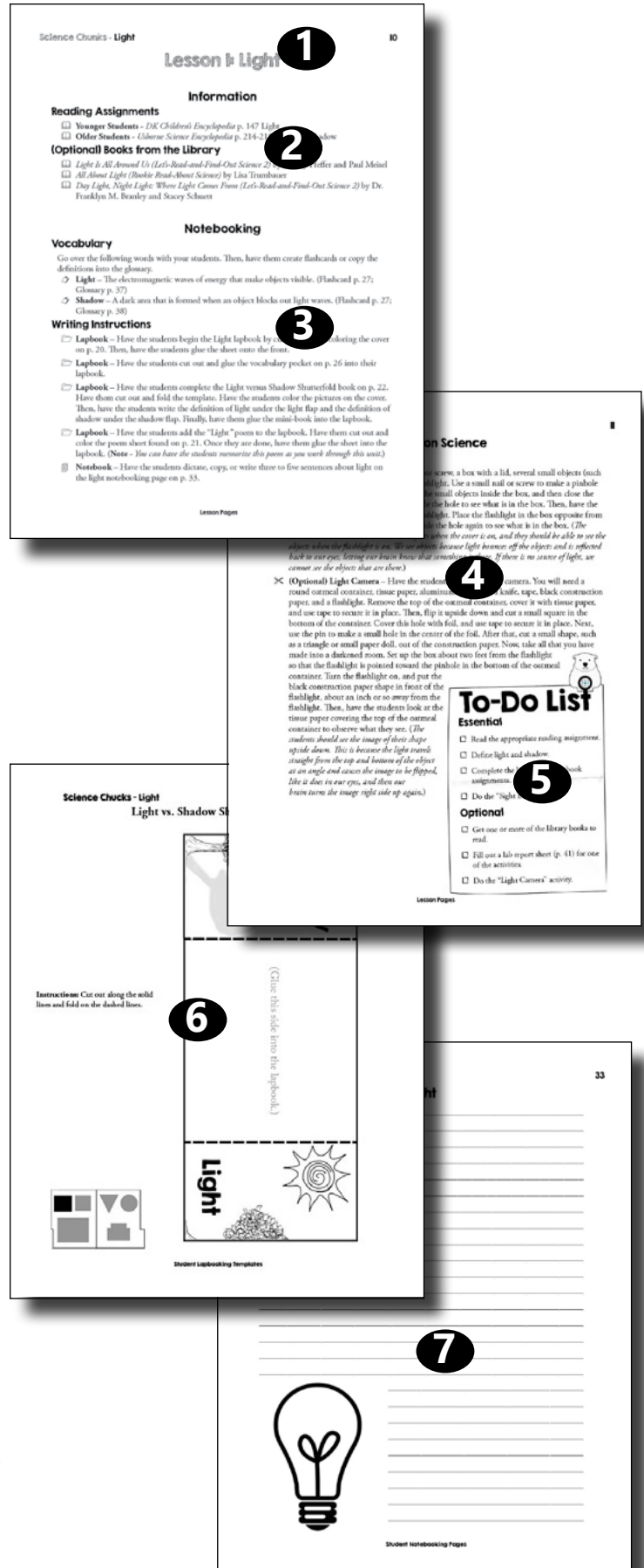
## 6. Lapbook Templates

Get all the information you need to create a lapbook on the subject.

## 7. Notebook Templates

Have all the sheets you need to create a notebook on the subject, including a glossary for the vocabulary terms.

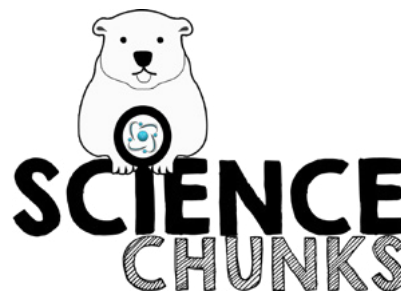
In the appendix you will find a blank activity sheet, a blank lab report sheet, and a review sheet (or quiz).



## TOPICS COVERED

This unit will cover the following topics:

- ✓ Lesson 1: Energy Basics
- ✓ Lesson 2: Energy Resources
- ✓ Lesson 3: Nuclear Energy
- ✓ Lesson 4: Heat Energy
- ✓ Lesson 5: Heat Transfer



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## Unit Introduction

*Science Chunks - Energy* is a unique and versatile unit study that leads you through a survey of energy. It is designed to be a gentle approach to homeschool science based on the Unit Study method suggested in *Success in Science: A Manual for Excellence in Science Education* by Bradley and Paige Hudson. This study can be used as a stand-alone unit for elementary science.

### What Is Included in This Unit

*Science Chunks - Energy* includes the three keys to teaching science. With each lesson you will be doing the following:

- ✓ Listening to (or reading) **scientific information** from visually appealing encyclopedias
- ✓ Dictating (or writing down) what the students have learned and seen using **lapbooking or notebooking**
- ✓ Watching (and doing) **hands-on science** through a variety of science activities

Here is how this works for a lesson.

### Section 1 - Information

The elementary student is an empty bucket waiting to be filled with information, and science-oriented books are a wonderful way to do that. These books can include age-appropriate children's science encyclopedias, living books for science, and/or children's nonfiction science books.

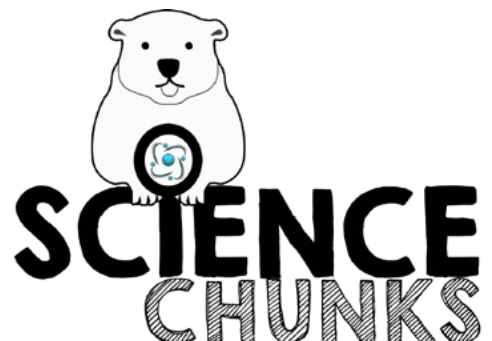
In this program, the reading assignments and additional books scheduled in the lesson fulfill this component. The reading assignments are broken for you into two levels: younger students (1st to 3rd grade) and older students (4th to 6th grade).

Our idea is that you will read these selections with your students, pausing to ask questions or discussing the information once you are done reading.

### Section 2 - Notebooking

The purpose of the notebooking component for elementary science education is to verify that the students have placed at least one piece of information into their knowledge bucket. You can use notebooking sheets, lapbooks, and/or vocabulary words to fulfill this requirement.

In this program, we have included two writing options, a lapbook and a notebook, for you to use with your students. In the lapbook section, you will find all of the templates and pictures you will need to complete a lapbook on energy. In the notebook section, you will find all the pages you need to create a simple



notebook on energy, including notebooking sheets and a glossary.

### Section 3 - Hands-on Science


Scientific demonstrations and observations are meant to spark students' enthusiasm for learning science, to work on their observation skills, and to demonstrate the principles of science for them. This component of elementary science education can contain scientific demonstrations, hands-on projects, and/or nature studies.


In this program, the coordinating activities at the end of each lesson fulfill this section of elementary science instruction. If you would like to record what you have done, you can use one of the templates in the appendix pp. 47-48.

## What You Need in Addition to This Guide

### Books Scheduled

The following books are what we used to plan the reading assignments for this unit:

 **Younger Students** - *DK Children's Encyclopedia*

 **Older Students** - *Usborne Science Encyclopedia*

However, you could certainly use the encyclopedias you already have on hand or books from the library. Simply look up the topic assigned for the day, read about it, and complete the section in your lapbook.

You will need also simple craft supplies and other science materials—see a complete list of essential items on p. 8.

## How This Unit Works

We have included a to-do list with each lesson to give you an idea of what is essential and what is optional. There are several ways you can schedule this unit. Here is a quick look at a few of the options.

### Possible Schedules for Your Week

- **One Day** – You can set aside about an hour to an hour and a half each week to complete all the essential tasks in one day.
- **Two Days** – You can set aside about 30 to 40 minutes twice a week to complete all the essential tasks, plus a few more, in two days. On the first day, you can complete the reading assignments and either the lapbook or notebook assignments. On the second day, you can complete the coordinating activity and the vocabulary assignments as well as read any library books.
- **Three Days** – You can set aside about 30 minutes three times a week to complete all the essential tasks, plus a few more, in three days. On the first day, you can complete the reading assignments and either the lapbook or notebook assignments. On the second day, you can

complete the coordinating activity and write a lab report using one of the templates. On the third day, you can do the vocabulary assignments as well as read any library books.

- **Four Days** – You can set aside about 20 to 30 minutes four times a week to complete all the essential tasks, plus a few more, in four days. On the first day, you can complete the reading assignments and either the lapbook or notebook assignments. On the second day, you can complete the coordinating activity and write a lab report. On the third day, you can do the vocabulary assignments as well as read any library books. On the fourth day, you can do the optional coordinating activity as well as read any library books.

If you choose to complete one lesson per week, this unit will take you five weeks to complete.

## Final Thoughts

### Read Further

If you would like to read more about the philosophy behind the Science Chunks series, check out *Success in Science: A Manual for Excellence in Science Education* and the following articles from our website.

- **The Three Keys to Teaching Science** – This article shares the three keys to teaching science, including a free session that walks you through what each key can look like.  
🔗 <https://elementalscience.com/blogs/news/3-keys>
- **The Basics of Notebooking** – This article details the basic components of notebooking along with how a few suggestions on what notebooking can look like.  
🔗 <https://elementalscience.com/blogs/news/what-is-notebooking>
- **Lapbooking versus Notebooking** – This article takes a look at the differences between lapbooking and notebooking.  
🔗 <https://elementalscience.com/blogs/news/lapbook-or-notebook>
- **Scientific Demonstrations versus Experiments** – This article explains the difference between scientific demonstrations and experiments along with when and how to employ these methods.  
🔗 <https://elementalscience.com/blogs/news/89905795-scientific-demonstrations-or-experiments>

### Last Words

As the author and publisher of this curriculum, I encourage you to contact me with any questions or problems that you might have concerning *Science Chunks - Energy* by emailing us at [support@elementalscience.com](mailto:support@elementalscience.com). I, or a member of our team, will be more than happy to answer them as soon as we can. I hope that you will enjoy creating memories using *Science Chunks - Energy*!

~ Paige Hudson

# Materials List

## Lapbook Materials

You will need the following materials to complete the lapbook:

- ✂ 2 Sheets of 8 ½" by 11" card stock OR 1 file folder
- ✂ Colored pencils or crayons
- ✂ Markers for decorating the cover
- ✂ Glue stick
- ✂ Scissors
- ✂ Stapler

## Notebook Materials

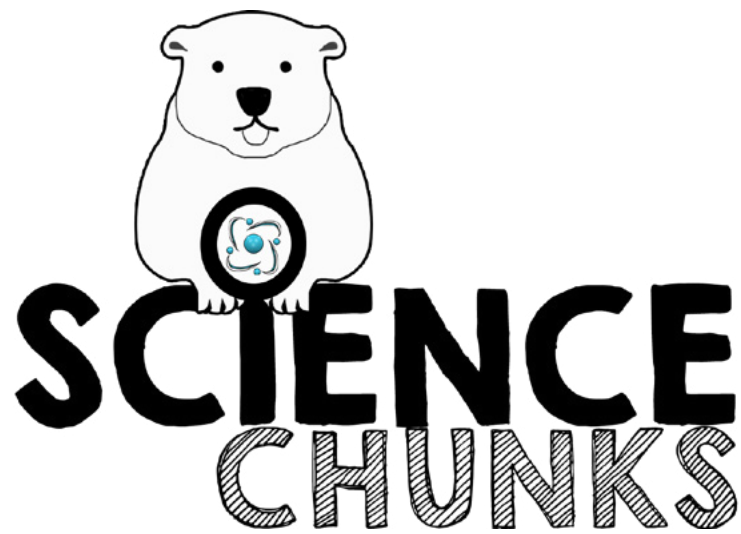
You will need the following materials to assemble the notebook:

- ✂ Hole punch and 3 brad fasteners or string OR
- ✂ Staples

## Coordinating Activity Materials

You will need the following materials to complete the essential coordinating activities:

- ✂ **Lesson 1:** Several people, rubber band for each person, measuring tape
- ✂ **Lesson 2:** Scissors, plastic wrap, aluminum foil, tape, old pizza box, black construction paper, glass or metal pie plate, marshmallows or piece of buttered toast
- ✂ **Lesson 3:** 32 Pieces bite-sized food such as M&M's, raisins, or cereal puffs; timer
- ✂ **Lesson 4:** 3 Bowls, hot-to-the-touch (but not burning) water, cold water, room temperature water
- ✂ **Lesson 5:** Sunny window sill, bowl, cool water



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# Lessons





# Lesson 1: Energy Basics

## Information

### Reading Assignments

-  **Younger Students** - *DK Children's Encyclopedia* pp. 88-89 Energy
-  **Older Students** - *Usborne Science Encyclopedia* pp. 106-110 Energy



### (Optional) Books from the Library

-  *Energy (Science Readers)* by Suzanne I. Barchers
-  *Energy (True Books: Physical Science)* by Matt Mullins
-  *Energy Makes Things Happen (Let's-Read-and-Find-Out Science 2)* by Kimberly Brubaker Bradley and Paul Meisel



## Notebooking

### Vocabulary

Go over the following words with your students. Then, have them create flashcards or copy the definitions into the glossary.

-  **Energy** – The ability to do work. (Flashcard p. 30; Glossary p. 43)
-  **Energy Chain** – A way of showing how energy changes into different forms. (Flashcard p. 31; Glossary p. 43)


### Writing Instructions

-  **Lapbook** – Have the students cut out the pages for the Energy Tab-book on p. 23 and color the pictures. Then, have the students add a sentence about potential energy on the potential page and a sentence about kinetic energy on the kinetic page. Assemble the tab-book and staple it together on the dashed lines. Finally, have the students glue the mini-book into the lapbook.
-  **Lapbook** – Have the students complete the Energy Law Sheet on p. 29. Have them cut out the sheet and copy the Law of Conservation of Energy in the space provided.

#### Law of Conservation of Energy

Energy can neither be created nor destroyed.

Then, have the students glue the sheet into the lapbook. (**Note** - *You can have the students memorize this law as you work through this unit.*)

-  **Notebook** – Have the students dictate, copy, or write three to five sentences about the basics of energy on the energy notebooking page on p. 38.

## Hands-on Science

### Coordinating Activity

- ✂ **Energy Race** – Have the students compete to see who can transfer the most energy to their rubber band. You will need several people, a rubber band for each person, and a measuring tape. Draw a line at one end of a room or outside. Give each player a rubber band and have them stand on the line. Call out “potential,” at which point the players will stretch their rubber bands. Then, call out “kinetic,” at which point the players will let go. Measure the distance each rubber band has traveled. The player whose rubber band has traveled the farthest wins the race! *(You can also have several trials and add up the distances to see who is the energy winner.)*
- ✂ **(Optional) Energy Boat** – Have the students do the “See for yourself” activity on p. 107 of the *Usborne Science Encyclopedia*. You will need a matchbox, a cardboard, two used matches, and a rubber band for this activity.



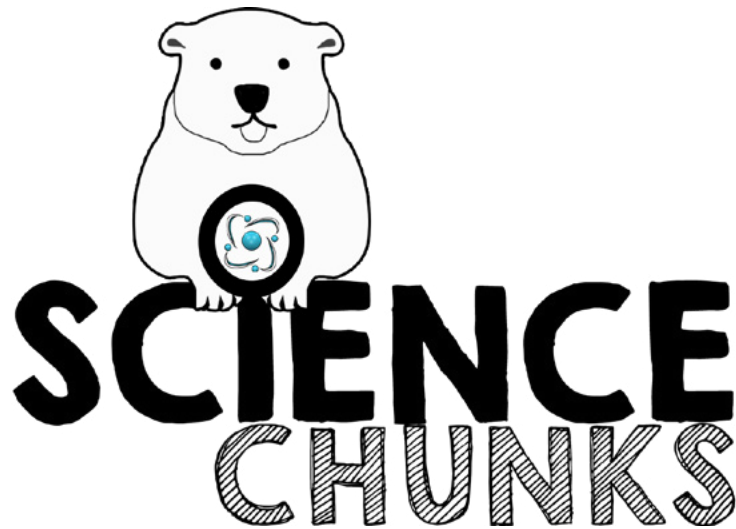
## To-Do List

### Essential

- ☐ Read the appropriate reading assignment.
- ☐ Define energy and energy chain.
- ☐ Complete the lapbook or notebook assignments.
- ☐ Do the “Energy Race” activity.

### Optional

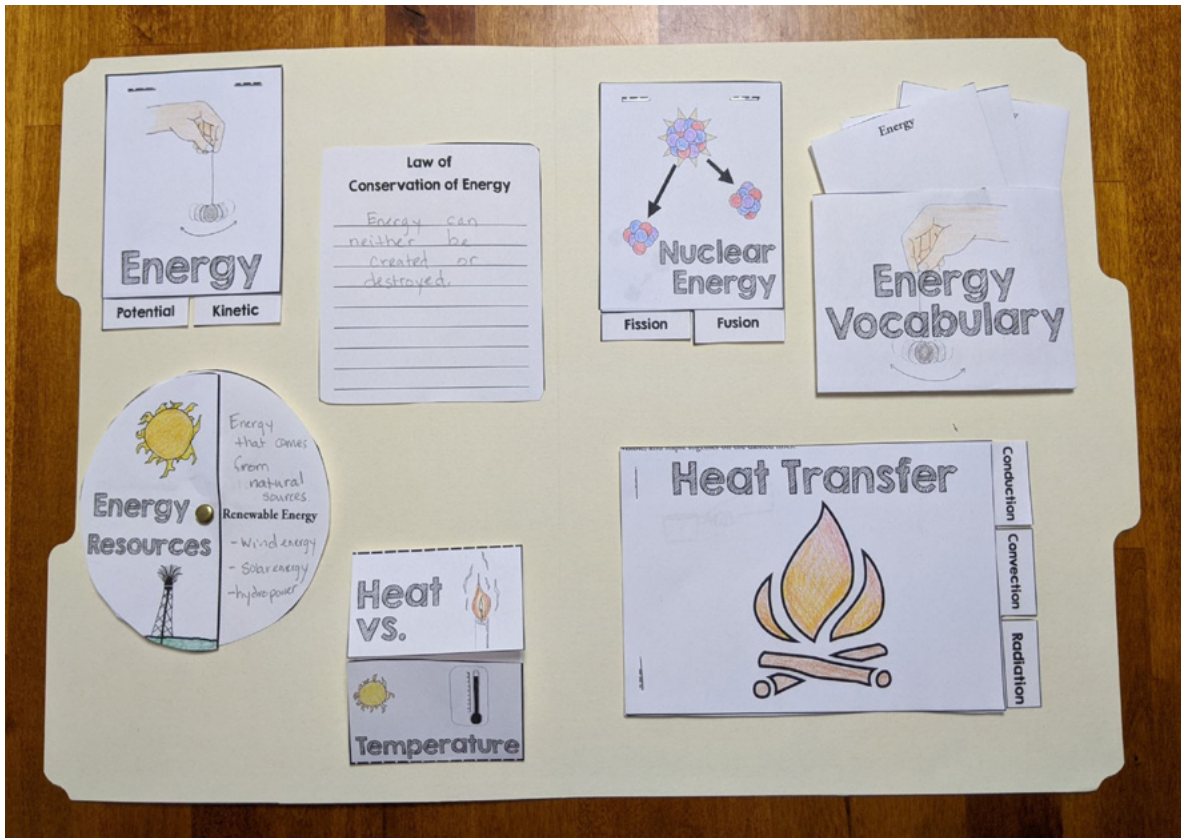
- ☐ Get one or more of the library books to read.
- ☐ Fill out a lab report sheet (p. 48) for one of the activities.
- ☐ Do the “Energy Boat” activity.



# **Student Lapbook Templates**

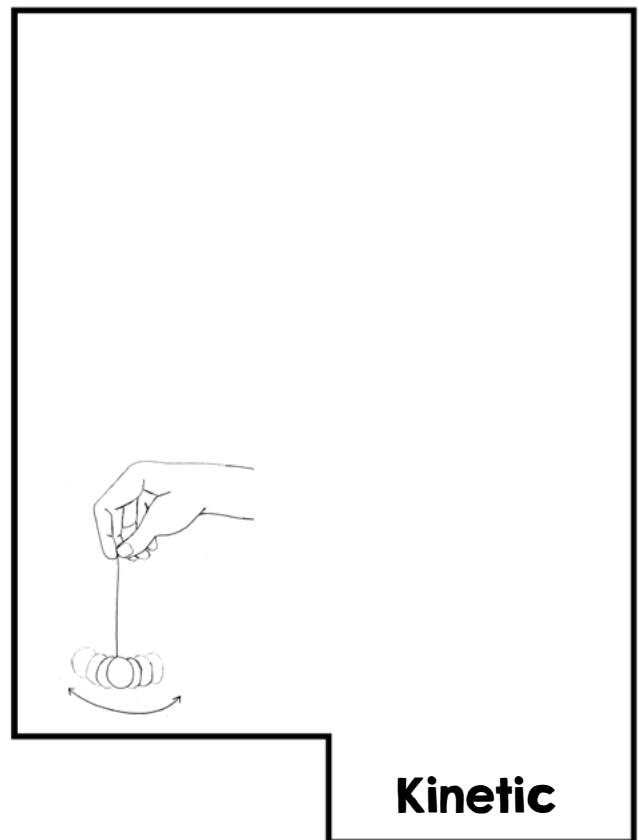
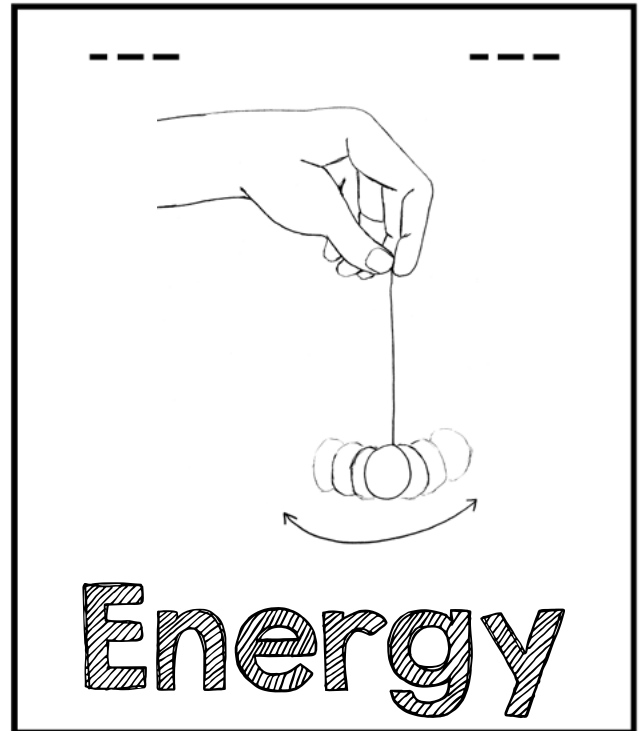
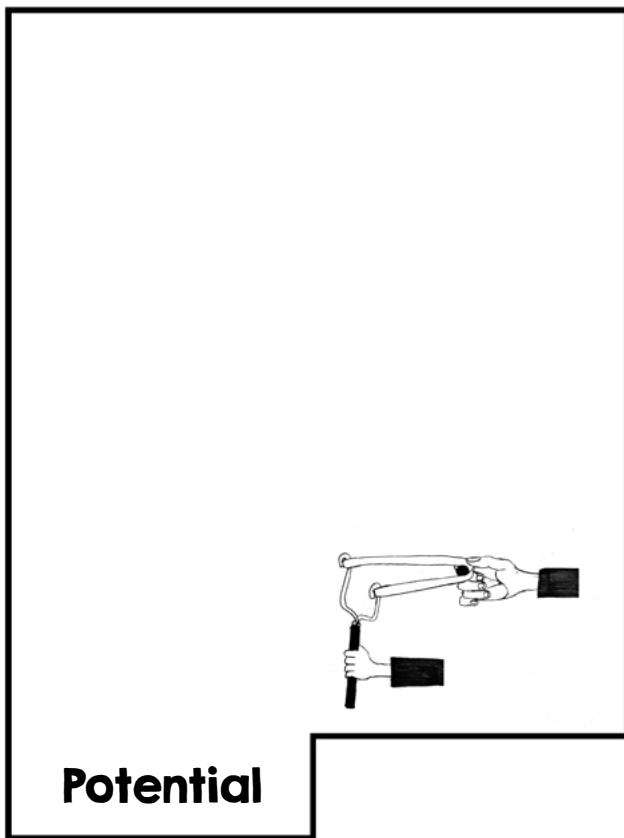
# Energy Lapbook

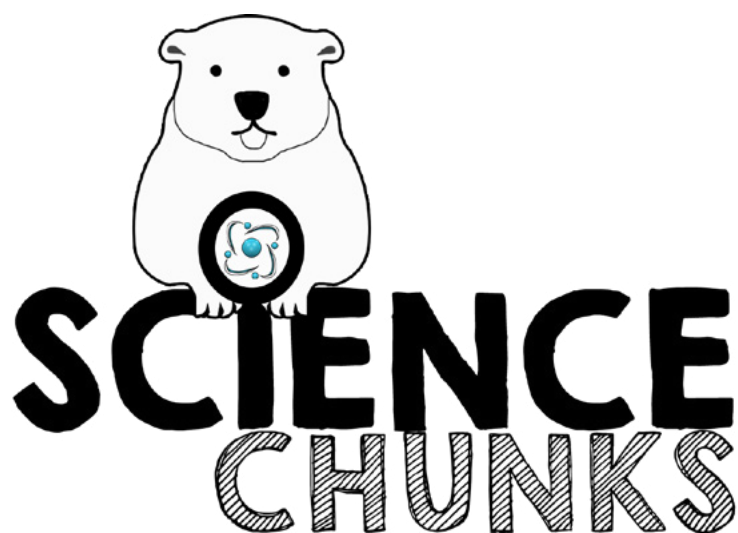
You will need two sheets of card stock or one file folder. If you are using card stock, begin by taping the two sheets together on the longest edge. The completed lapbook will look like this on the inside:



# Energy Tab-book

**Instructions:** Cut out along the solid lines, stack the pages so the tabs are visible, and staple together on the dashed lines.

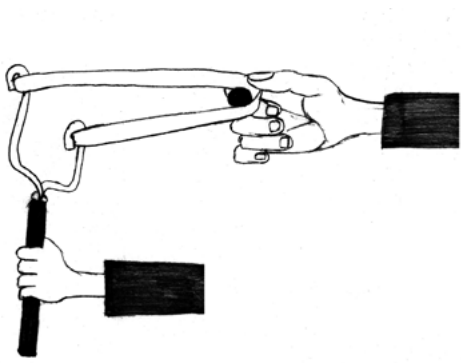




# **Student Notebook Pages**

# Energy

## Energy



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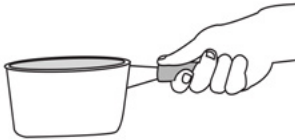
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This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

# Energy Vocabulary

## Conduction -




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## Convection -



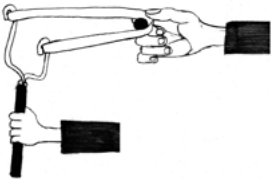

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## Energy -



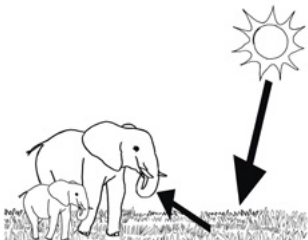

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## Energy Chain -




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