Lapbooking through...

Energy

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Lapbooking through Energy

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Digital Edition

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Lapbooking through Energy
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Introduction

Lapbooking through Energy is a unique and versatile program that leads you through a survey of energy using a lapbook to document the journey. It is designed to be a gentle approach to homeschool science education based on the Unit Study method suggested in *Success in Science: A Manual for Excellence in Science Education* by Bradley & Paige Hudson. This study can be used as a stand-alone science program for 1st to 3rd grade or in conjunction with another physics program for an older student.

What is a lapbook?

Lapbooks are educational scrapbooks that fit into the lap of the student. Typically they are a collection of related mini-books on a certain subject that have been glued into a file folder for easy viewing, but they can also include pictures or projects that the students have completed. In the same way that notebooking does not require regurgitation of facts; lapbooking causes the students to interact with the materials instead of just responding to comprehension questions.

Lapbooks are extremely versatile because they can be used in conjunction with any subject the students are learning about. They are excellent tools to use with elementary students as a way of reinforcing what they are learning because this age group tends to prefer a more creative format of notebooking.

The heartbeat of the lapbook is the mini-books that are placed inside. Each of these booklets contains information on topics related to the main subject of the lapbook. They can be in a variety of shapes and sizes, but the cover should have a picture related to the subject as well as a title. The interior of each booklet should contain several sentences detailing what the students have learned about the topic in their own words. The mini-books will each pertain to different sub-topics of the main topic. In other words, for this lapbook your main topic is energy and your related mini-books are on types of energy, heat, and so on.

Lapbooks serve as beautiful scrapbooks that the students can continue to learn from for years to come, which makes them a beneficial addition to the students' science education.

What is included in this program?

Lapbooking through Energy includes all of the basic components of elementary science education as explained in our book.

1. **Science-Oriented Books –** 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 appropriate children's science encyclopedias, living books for science, and/or children's non-fiction 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).
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. This unit includes all the templates and pictures you will need to

complete a lapbook on plants as well as vocabulary words to coordinate with each lesson.

3. **Scientific Demonstrations or Observations –** Scientific demonstrations and observations are meant to spark the students' enthusiasm for learning science, to work on their observation skills, and to demonstration the principles of science for them. This component of elementary science education can contain scientific demonstrations, hands-on projects, and/or nature studies. The coordinating activities found in this guide fulfill this section of elementary science instruction.

If you would like to read more about the concepts introduced in the above points, check out *Success in Science: A Manual for Excellence in Science Education* and the following articles from our website.

- **What Are Living Books? –** This article clearly shares the difference between living books and encyclopedias, especially in the context of science.
  - https://elementalscience.com/blogs/news/what-are-living-books
- **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
- **Scientific Demonstrations vs. 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

How can I use this program?

Each lesson in this program was designed to be completed over several days or up to one week. The lesson contains reading assignments from the selected books. You can choose to break these selections up over the several days or do them all at once. If you are using this program with younger students, read the selected pages to them. If you are using this program with older students, you can choose to have them read the assigned pages on their own or you can read the selected pages to them.

After you complete the reading assignment, have the students tell you what they have learned from the selection. This can simply be what they found to be the most interesting or something new that they have learned from the reading. You can choose to write the sentences for them or have them copy them into the mini-book. If you are using this program with older students, I recommend that you have them do all their own writing. Once the students have finished writing, have them color the related picture on the mini-book. Once the mini-book is complete, glue it into their lapbook using the overview sheet on pg. 7 as a guide.

At another time during the week, review the vocabulary with the students. You can have them memorize each of the definitions or just go over each of the words with the lesson before adding the card to the vocabulary pocket. I have also included a set of blank vocabulary cards to use with an older student in the Appendix on pp. 24-26. If you use the blank vocabulary cards, have the students look up the vocabulary words in the science encyclopedia of your choice or dictate the provided definition to them. Then, have them write the definition on the back of each card. I recommend that you print the blank vocabulary cards out on card stock for durability.

Finally, you can finish the week by reading to the students one of the related books from the additional book list. After you finishing reading, do an additional activity with the students. If you would like to record what they have learned, there are two template pages provided for you to use in the appendix of this book on pp. 22-23.

I have also included a possible schedule for each lesson to give you an idea of how to plan out each one. These schedules spread the assigned work for out over four days. If you choose to complete the program in this manner, this lapbook will take you six weeks to complete.

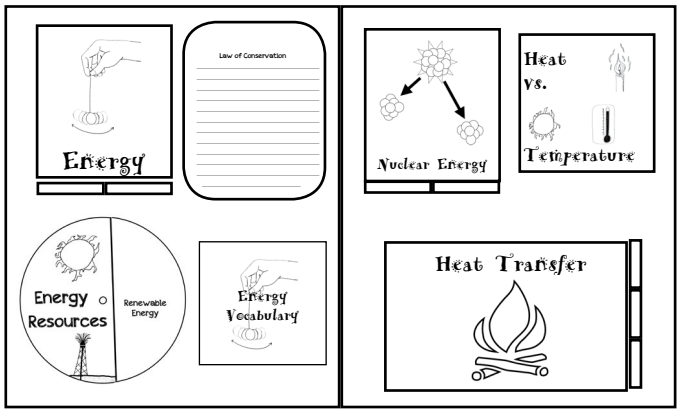
Final Thoughts

As the author and publisher of this curriculum, I encourage you to contact me with any questions or problems that you might have concerning *Lapbooking through Energy* at support@elementalscience.com. I will be more than happy to answer them as soon as I am able. I hope that you will enjoy creating memories using *Lapbooking through Energy*!

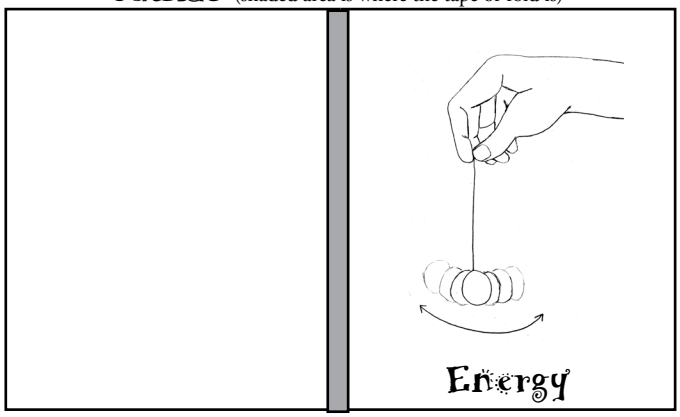
Lapbook Overview

You will need 2 sheets of card-stock or one file folder. Begin by taping the two sheets together on the longest edge, to look like this:

Inside



Outside (shaded area is where the tape or fold is)



Overall Directions

For each mini-book have the students color the pictures. Then, write the narration sentences for the students or have them copy the information into the inside of the mini-book. Finally, glue the mini-books and poems onto the lapbook. You can use the cover template provided or allow the students to decorate the cover as they choose.

Books and Materials List

Books Scheduled

The following books are what I used while planning the reading assignments for this curriculum:

Younger Students
- 🕮 *Usborne Children's Encyclopedia*
- 🕮 *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.

Additional Materials Needed

The following materials will be needed to complete the lapbook:
- ✂ 2 sheets of 8 ½ by 11 cardstock OR 1 file folder
- ✂ Colored pencils or crayons
- ✂ Markers for decorating the cover
- ✂ Glue stick
- ✂ Scissors
- ✂ Stapler

Additional materials will vary according to the activities you choose to do.

Overview of Study

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

Lapbooking through Energy

Lessons

Lesson 1: Energy Basics

Science-Oriented Books

Reading Assignments

Younger Students

- 🕮 *"Energy" Usborne Children's Encyclopedia pp. 192-193*

Older Students

- 🕮 *"Energy" Usborne Science Encyclopedia pp. 106-110*

Additional 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

Have the students cut out and glue the vocabulary pocket on pg. T-10 into their lapbook. Then, have them cut out and add the following card to their vocabulary pocket.

- **Energy –** The ability to do work. (Completed card on pg. T-10, Blank card on pg. 24)
- **Energy Chain –** A way of showing how energy changes into different forms. (Completed card on pg. T-10, Blank card on pg. 24)

Mini-book Assembly Instructions

1. **Energy Tab-book –** Have them cut out the pages for the tab-book 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. (pg. T-3)
2. **Energy Law Sheet –** Have the students complete the Energy Law Sheet. Have them cut out the sheet and copy the Law of Conservation of Energy in the space provided. Then, have the students glue the sheet into the lapbook. (pg. T-9)

Scientific Demonstrations or Observations

Coordinating Activity

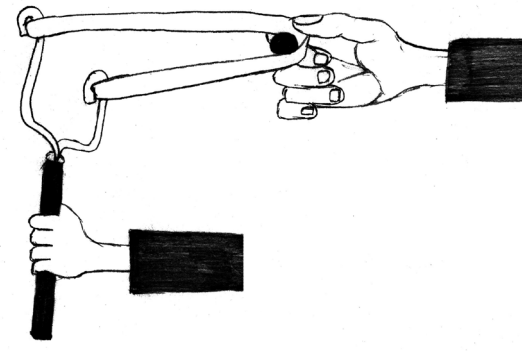
- ✂ **Energy Race –** Have the students compete to see who can transfer the most energy to their rubber band. You will need several people, a rubber band for each person, and a measuring tape. Draw a line at one end of a room or outside. Give each player a rubber band and have them stand on the line. 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.)*

Possible Schedule

Day 1	Day 2	Day 3	Day 4
☐ Read the 1st half of the selected pages on Energy ☐ Add any information learned to the Energy Tab-book	☐ Read the 2nd half of the selected pages on Energy ☐ Add any information learned to the Energy Tab-book and glue the mini-book to the lapbook	☐ Complete the "Energy Race" activity ☐ Choose one or more of the additional books to read	☐ Go over the vocabulary words and add the cards to the vocabulary pocket ☐ Complete the Energy Law Sheet and glue it into the lapbook

Notes



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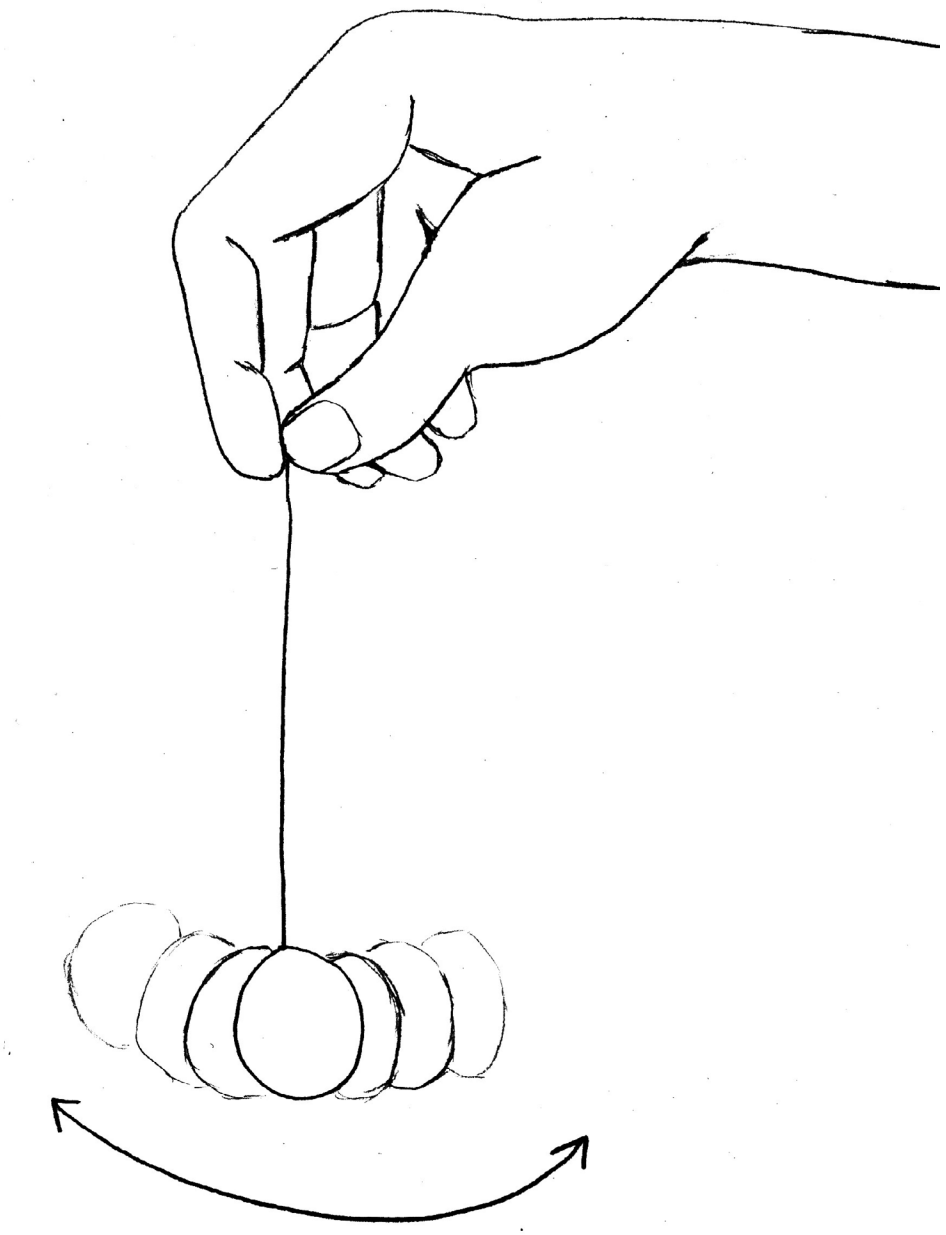
Templates

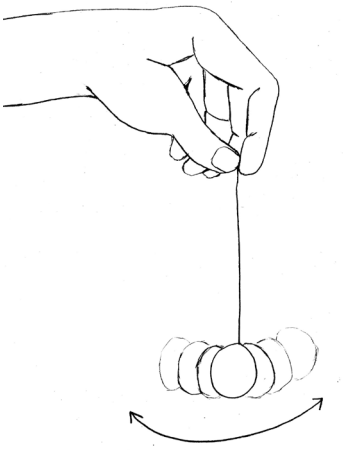
Energy Lapbook Cover Page Template



Energy

By: _____

Energy Tab-book



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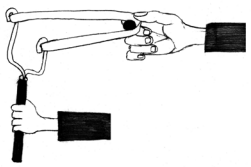
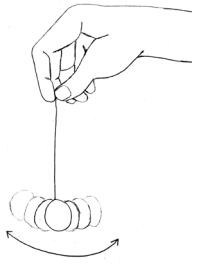
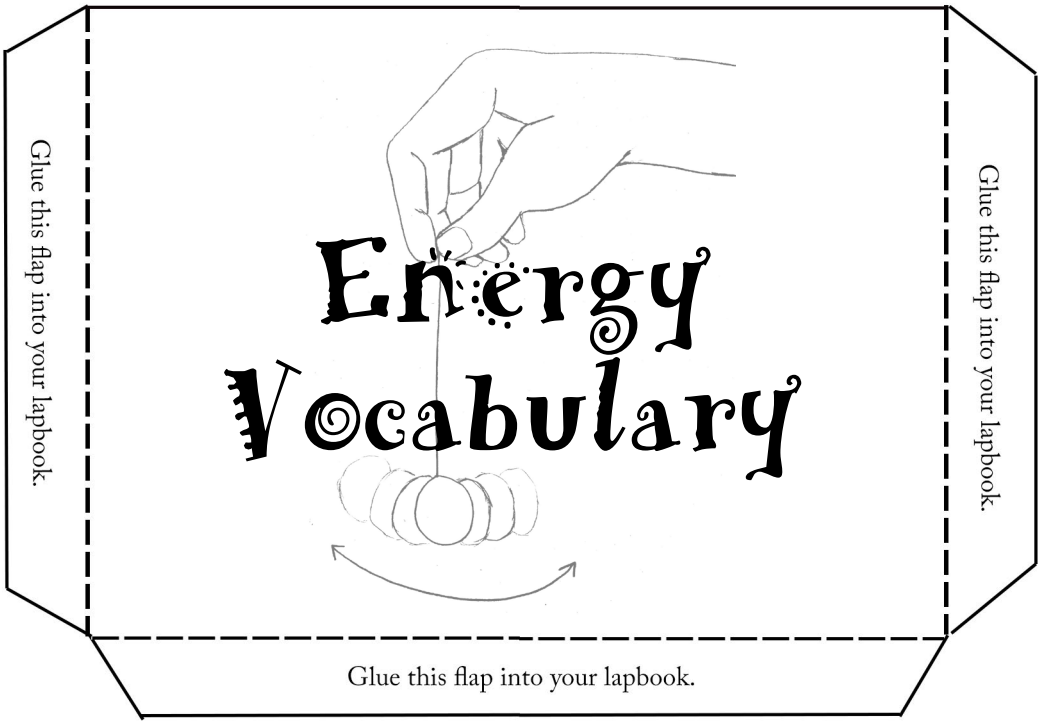


Potential

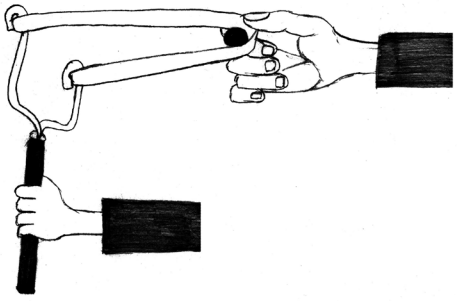


Kinetic

Vocabulary Cards



Energy



The ability to do work.