

Lapbooking through...



Atoms and Molecules

Written by Paige Hudson

Lapbooking through Atoms and Molecules

First Edition

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Digital Edition

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Lapbooking through Atoms and Molecules

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introduction

Lapbooking through Atoms and Molecules is a unique and versatile program that leads you through a survey of the building blocks of chemistry using a collection of mini-books 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 and Paige Hudson. This study can be used as a stand-alone science program for K-2nd grade or in conjunction with another chemistry 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 habitats and your related mini-books are on the desert, the grasslands, and more.

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 Atoms and Molecules 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 (K-2nd grade) and older students (3rd-5th 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 atoms, molecules, and more 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 demonstrate 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 Elemental Blogging.

- **What Are Living Books?** — This article clearly shares the difference between living books and encyclopedias, especially in the context of science.
<http://elementalblogging.com/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.
<http://elementalblogging.com/the-basics-of-notebooking/>
- **Scientific Demonstrations vs. Experiments** — This article explains the difference between scientific demonstrations and experiments along with when and how to employ these methods.
<http://elementalblogging.com/science-corner-scientific-demonstrations-vs-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. 22-23. 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. 20-21.

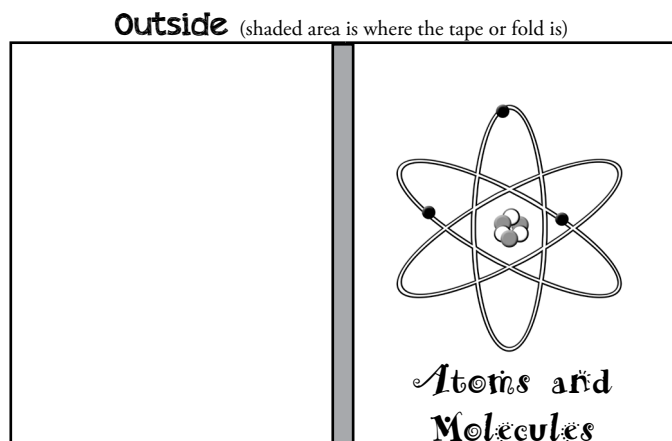
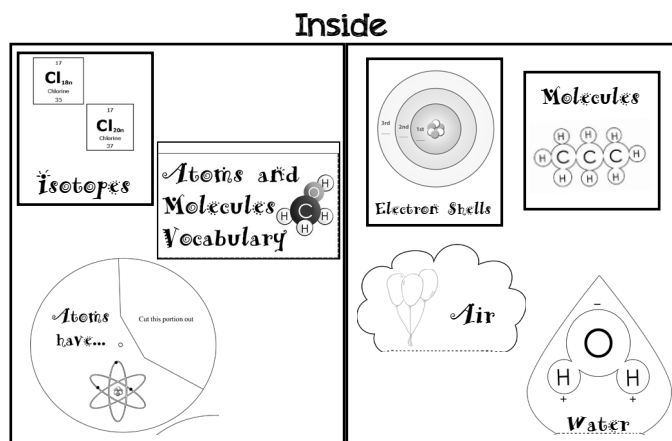
I have also included a possible schedule for each lesson to give you an idea of how to plan out each one. These schedules spread the assigned work for out over four days. If you choose to complete the program in this manner, this lapbook will take you six weeks to complete.

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 Atoms and Molecules* 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 Atoms and Molecules*!

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:



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 into 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

 *Basher Science Chemistry*

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:** Atoms
-  **Lesson 2:** Molecules
-  **Lesson 3:** Air
-  **Lesson 4:** Water

*Lapbooking
through Atoms
and Molecules*


Lesson Pages


Lesson 1: Atoms

Science-Oriented Books

Reading Assignments


Younger Students

 “Atom” Basher Science Chemistry pg. 26


 “Isotope” Basher Science Chemistry pg. 28


Older Students

 “Atomic Structure” Usborne Science Encyclopedia pp. 10-11

 “Isotopes and Atomic Theory” Usborne Science Encyclopedia pp. 13

Additional Books from the Library

 *What Are Atoms? (Rookie Read-About Science)* by Lisa Trumbauer





 *Atoms and Molecules (Building Blocks of Matter)* by Richard and Louise Spilsbury

 *Atoms (Simply Science)* by Melissa Stewart

Notebooking

Vocabulary

Have the students cut out and glue the vocabulary pocket on pg. T-8 into their lapbook. Then, have them cut out and add the following card to their vocabulary pocket.

-  **Electron** — A negatively charged particle in an atom. (Completed card on pg. T-8, Blank card on pg. 22)
-  **Proton** — A positively charged particle in an atom. (Completed card on pg. T-9, Blank card on pg. 22)
-  **Neutron** — A neutral particle in an atom. (Completed card on pg. T-9, Blank card on pg. 22)
-  **Isotope** — An atom that has a different number of neutrons and so has a different mass number from the other atoms of an element. (Completed card on pg. T-10, Blank card on pg. 22)

Mini-book Assembly Instructions

1. **Atoms and Molecules Lapbook** — Have the students begin the Atoms and Molecules lapbook by cutting out and coloring the cover. (pg. T-2)
2. **Atoms Wheel-book** — Have the students complete the Atoms wheel-book. Have them cut along the solid lines, punch a hole in the center, and use a brad fastener to fasten the two circles together. Have the students write their electron narration to the left of the picture, their proton narration above the picture, and their neutron narration to the right of the picture. Finally, have them glue their mini-book into the lapbook. (pg. T-3)
3. **Isotopes Shutterfold Book** — Have the students complete the Isotopes shutterfold book.

Have them cut out and fold the template. Have the students color the pictures on the cover. Have them write their narration about the isotopes inside the mini-book. Then, have them glue the mini-book into the lapbook. (pg. T-4)

Scientific Demonstrations or Observations

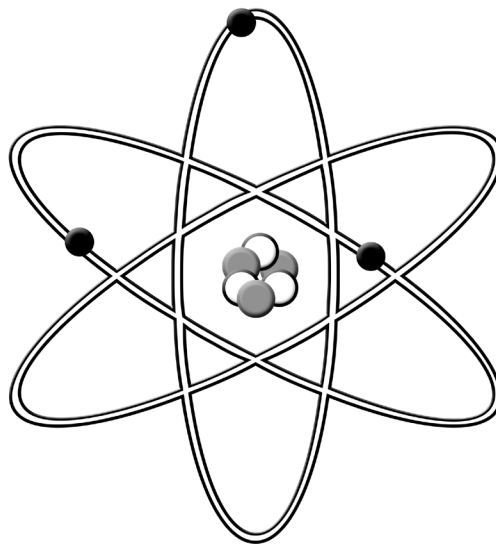
Coordinating Activity

- ✂ **Model Atom** — Have the students make a fruit atom model. In the center of a plate, have the students build a mound of raspberries and grapes for the protons and neutrons in the nucleus. Then, they can roll blueberries in a circle around the nucleus for the electrons. Once, they are done playing, let the students gobble their atoms up!

Possible Schedule

Day 1	Day 2	Day 3	Day 4
<input type="checkbox"/> Read <i>Atom</i> (or the section on Atomic Structure) <input type="checkbox"/> Complete the Atoms Wheel-book	<input type="checkbox"/> Review <i>Isotope</i> (or the section on Isotopes and Atomic Theory) <input type="checkbox"/> Complete the Isotopes Shutterfold Book	<input type="checkbox"/> Do the “Model Atom” activity <input type="checkbox"/> Add the cover to the Atoms and Molecules lapbook	<input type="checkbox"/> Go over the vocabulary words and add the cards to the vocabulary pocket <input type="checkbox"/> Choose one or more of the additional books to read

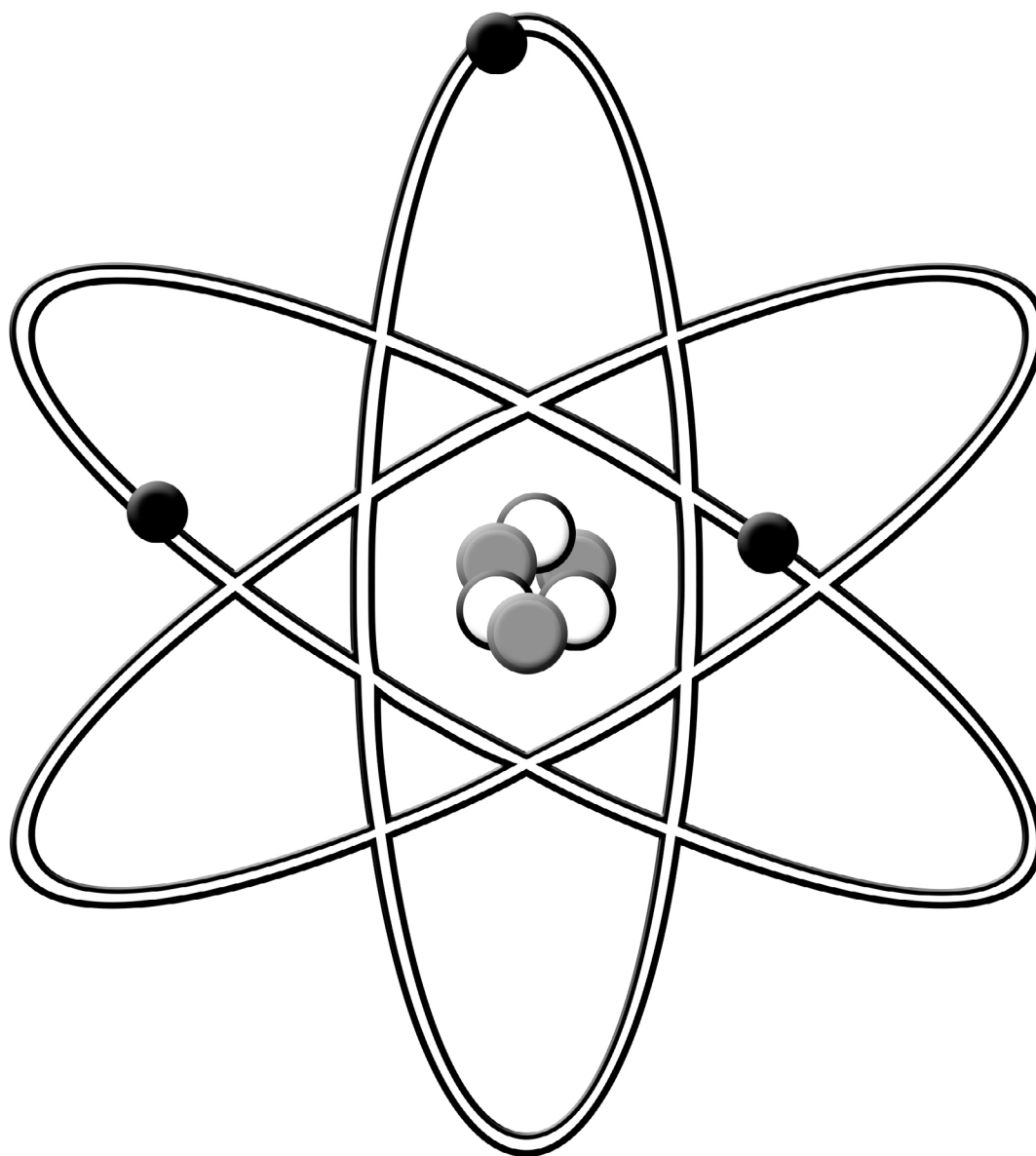
Notes



*Lapbooking
through Atoms
and Molecules*

Templates

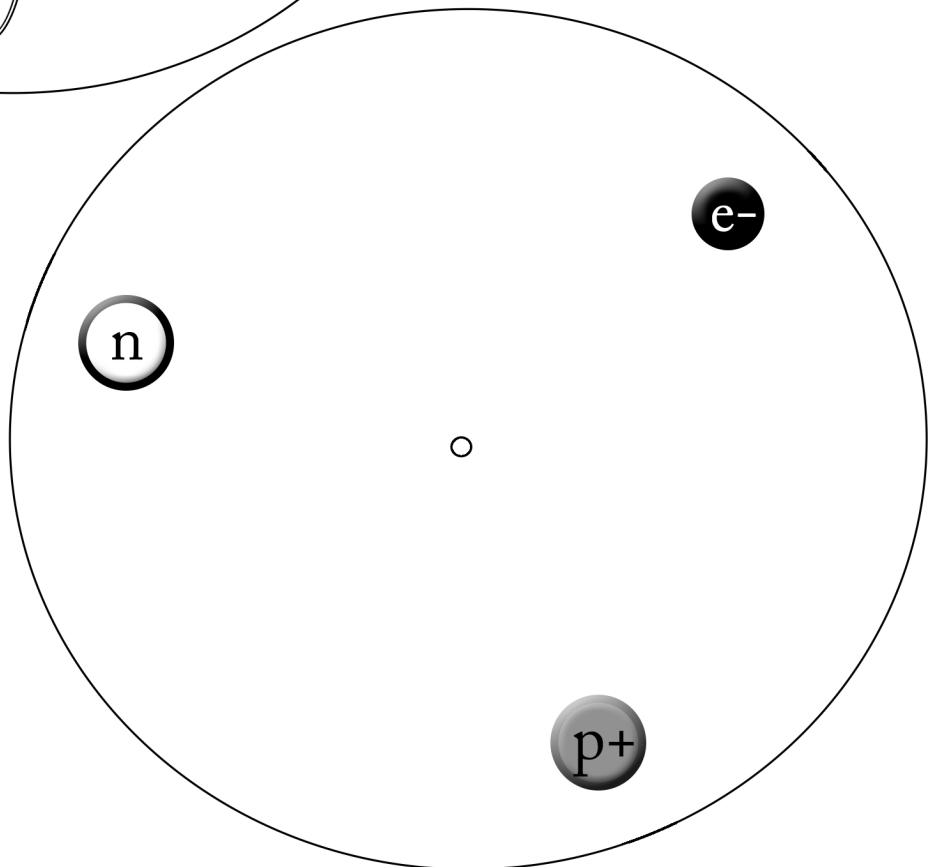
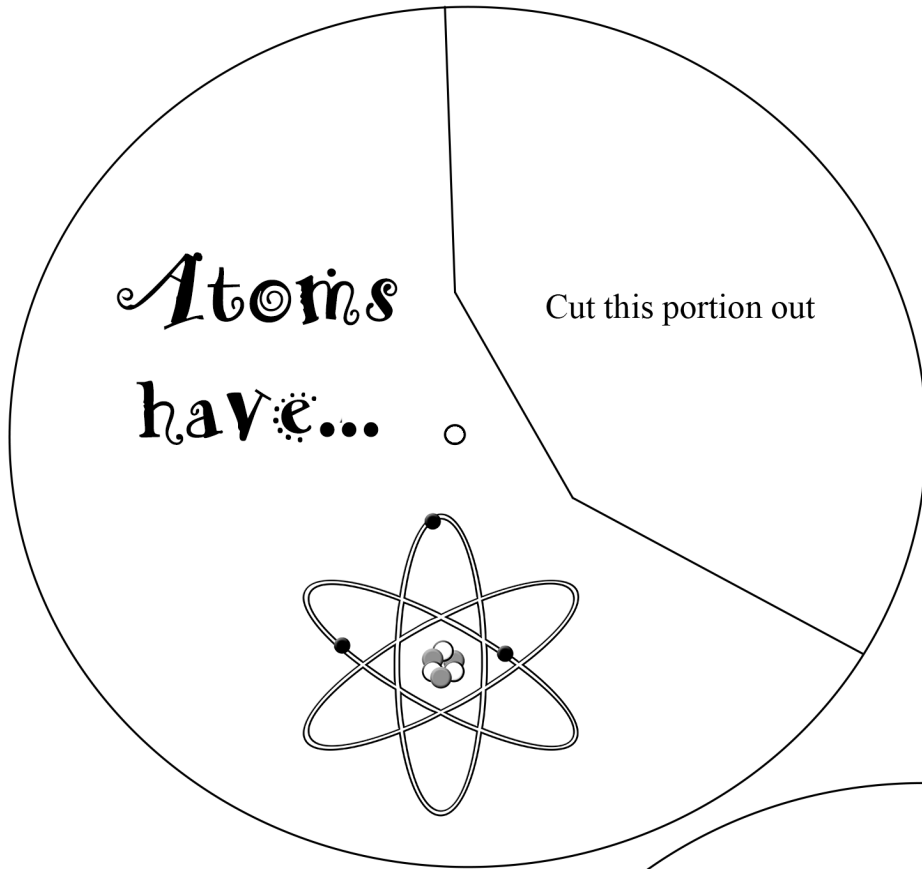
Atoms and Molecules Lapbook Cover Page Template



Atoms and Molecules

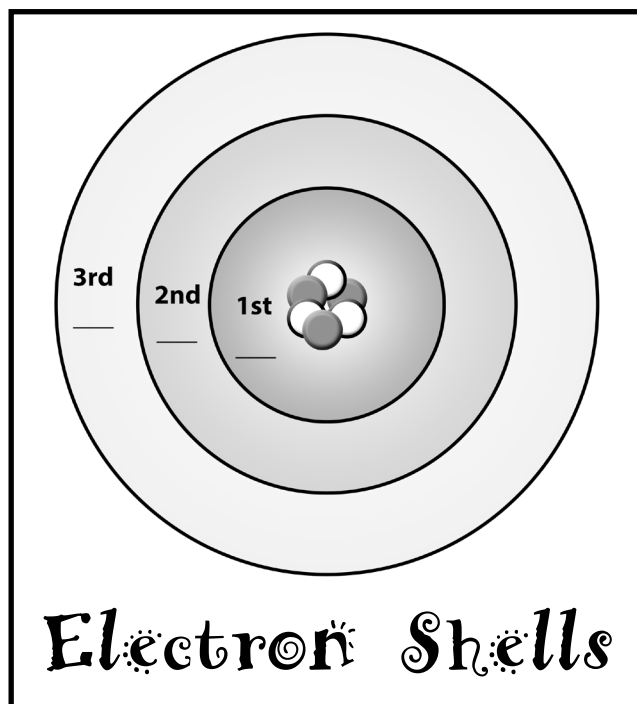
By: _____

Atoms Wheel-book

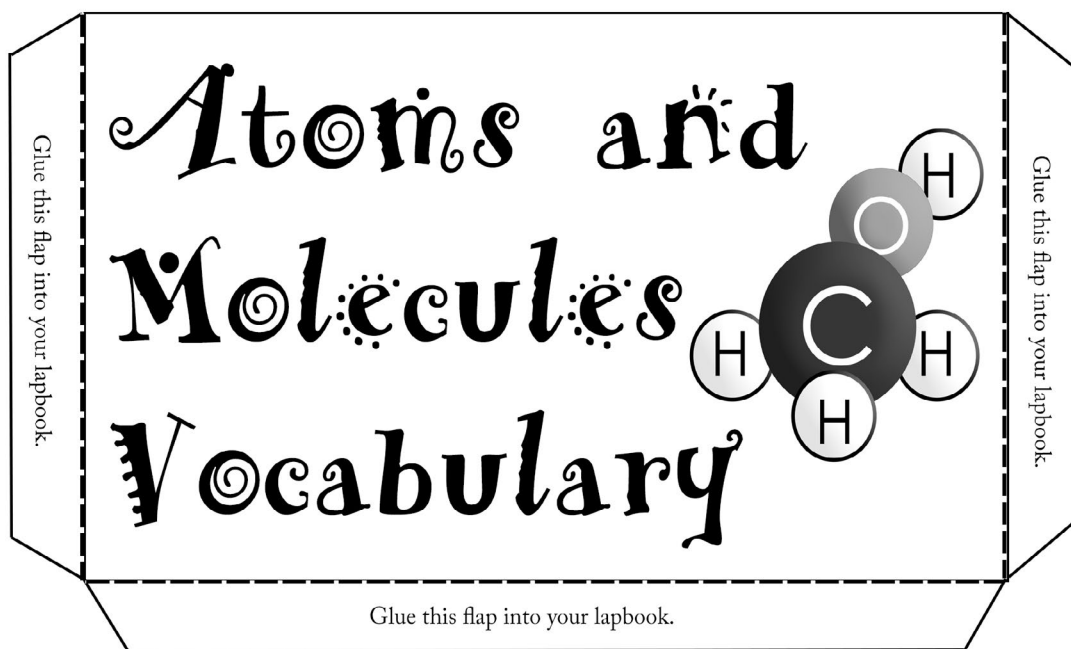


Isotopes Shutterfold Book and Electron Shell Diagram

 Pencils	<table border="1"><tr><td>17</td></tr><tr><td>Cl</td></tr><tr><td>Chlorine</td></tr><tr><td>20n</td></tr><tr><td>37</td></tr></table>	17	Cl	Chlorine	20n	37
17						
Cl						
Chlorine						
20n						
37						
Glue this side down.						
<table border="1"><tr><td>17</td></tr><tr><td>Cl</td></tr><tr><td>Chlorine</td></tr><tr><td>18n</td></tr><tr><td>35</td></tr></table>	17	Cl	Chlorine	18n	35	 Isot
17						
Cl						
Chlorine						
18n						
35						



Vocabulary Cards



Fold each card in half and glue together before adding the card to the vocabulary pocket.

