

## Science Chunks: Acids and Bases Sample Packet

Teach your students the basics of acids and bases in bite-sized chunks. The following sample packet includes most of the first lesson of the *Science Chunks: Acids and Bases* 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-acids-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.

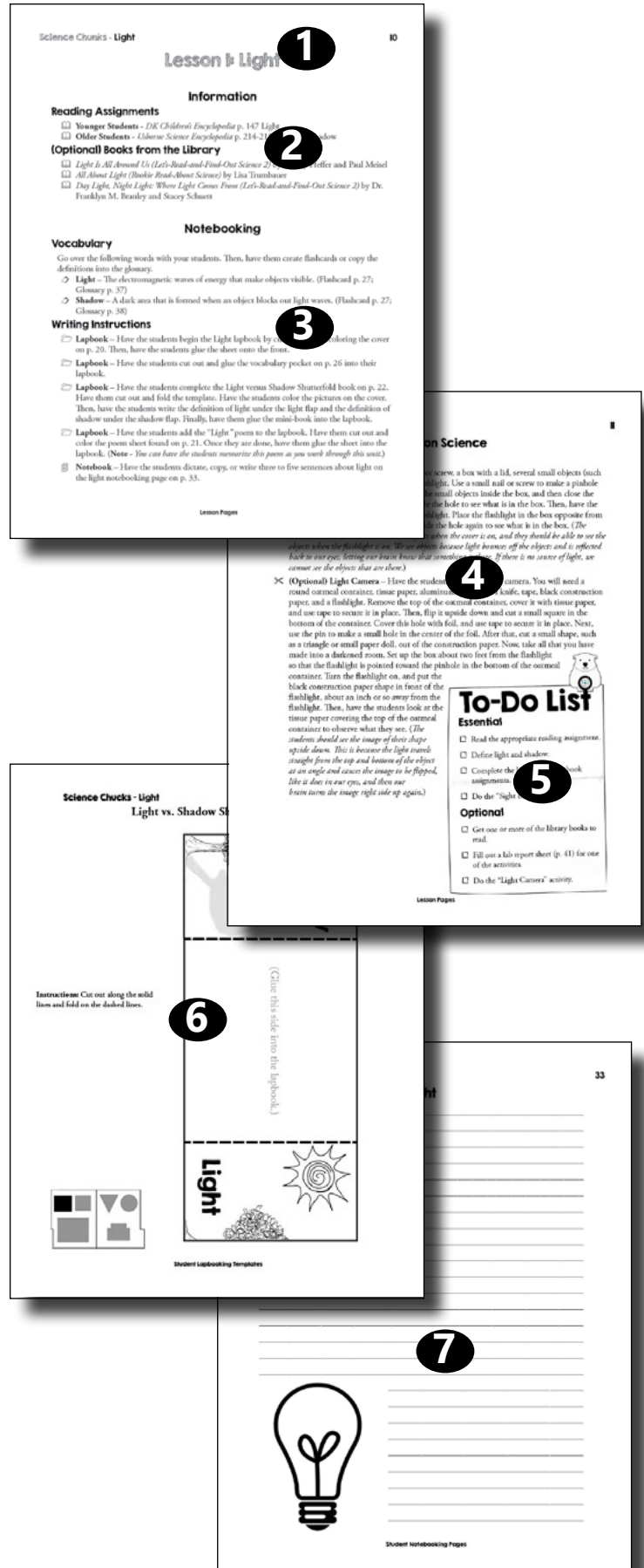
## 6. Lapbook Templates

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).



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## Unit Introduction

*Science Chunks - Acids and Bases* is a unique and versatile unit study that leads you through a survey of acids and bases. 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 - Acids and Bases* 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 acids and bases. In the notebook section, you will find all the pages you need to create a simple notebook on acids and bases, 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. 35-36.

## 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** - *Chemistry: Getting a Big Reaction (Basher 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.

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 three 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 - Acids and Bases* 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 - Acids and Bases*!

~ 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

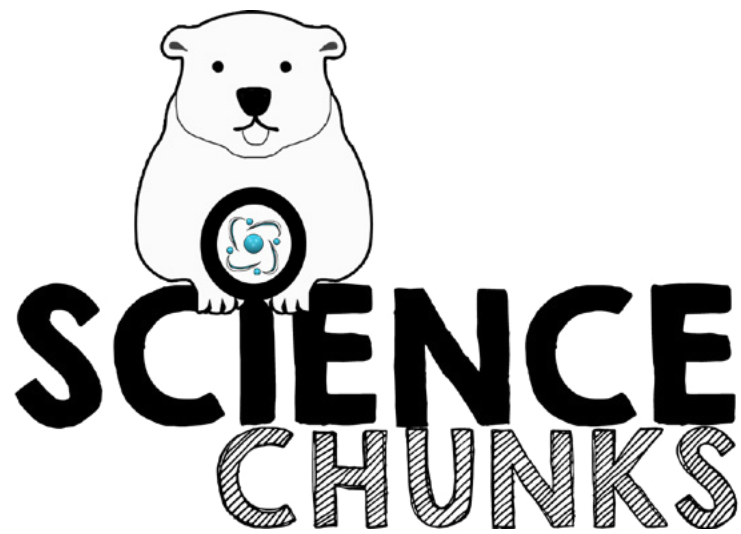
You will need the following materials to assemble the notebook:

- ✂ 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:** Head of red cabbage, Knife, Pot, Water, Strainer, Large plastic container, 2 Clear glasses, ammonia, White vinegar
- ✂ **Lesson 2:** Head of cabbage, Water, Pot, Variety of liquids from your kitchen (ex. lemon juice, baking soda, powder, or detergent), Several cups
- ✂ **Lesson 3:** Vinegar, Baking soda, Water, Cabbage juice, Coffee filter, 2 Clear cups, Eyedropper





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# Lessons




# Lesson 1: Acids and Bases

## Information

### Reading Assignments

-  **Younger Students** - *Basher Science Chemistry* p. 46 Acid, p. 48 Base
-  **Older Students** - *Usborne Science Encyclopedia* pp. 84-85 Acids and Bases



### (Optional) Books from the Library

-  *Acids and Bases (Why Chemistry Matters)* by Lynnette Brent
-  *Acids and Bases (Material Matters)* by Carol Baldwin
-  *Acids and Bases (Chemicals in Action)* by Chris Oxlade





## Notebooking

### Vocabulary

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


-  **Acid** – A chemical that dissolves in water and can neutralize a base. Weak acids taste sour. (Flashcard p. 24; Glossary p. 32)
-  **Base** – A chemical that dissolves in water and can neutralize an acid. Weak bases taste bitter. (Flashcard p. 24; Glossary p. 32)

### Writing Instructions

-  **Lapbook** – Have the students begin the Atoms lapbook by cutting out and coloring the cover on p. 18.
-  **Lapbook** – Have the students complete the Acids and Bases tab-book-book on p. 20. Have them cut out and color the pictures on the cover. Then, have the students write what they have learned about acids and bases on their respective tabs. Have them staple the mini-book together and glue it into the lapbook.
-  **Lapbook** – Have the students cut out and color the “Acids and Bases” poem on p. 19. Once they have finished, have them glue the poem into the lapbook.
-  **Notebook** – Have the students dictate, copy, or write one to four sentences on acids and bases on p. 29.

## Hands-on Science

### Coordinating Activities

-  **Crazy Colors** – You will need a head of red cabbage, knife, pot, water, strainer, a large plastic container, two clear glasses, ammonia, and white vinegar. Chop up a third of the red cabbage

head. Place it in the pot and cover it with water. Bring the water to a boil and let it boil for 10 to 15 minutes – basically until the water is a deep purple color. Let cool the red cabbage juice before straining about a cup of the liquid into the plastic container. Next, have the students add about a quarter of a cup of the red cabbage juice to each of the clear glasses. As they watch, add a tablespoon of ammonia to one of the glasses. (*You should see the liquid go from deep purple to bright neon green! If you don't, add another tablespoon ammonia.*) Then, add a tablespoon of vinegar to the other glass. (*You should see the liquid go from deep purple to bright pink! If you don't, add another tablespoon vinegar.*) Red cabbage juice acts as an indicator of pH, which is a fancy way of saying that it changes color. In the presence of an acid, the juice can turn pink. In the presence of a base, it can turn bright green. Ammonia is a base, vinegar is an acid. (**Note** – *You will need red cabbage juice again in this unit. So be sure to save what you have left.*)

- ✂ **(Optional) Acids and Bases Poster** – Over this unit, the students will create two posters with the acids and bases they encounter in real life. For example, this week, they could add lemonade to the acid poster and baking soda to the base poster. They can simply write the names or they can use pictures of the acids and bases.



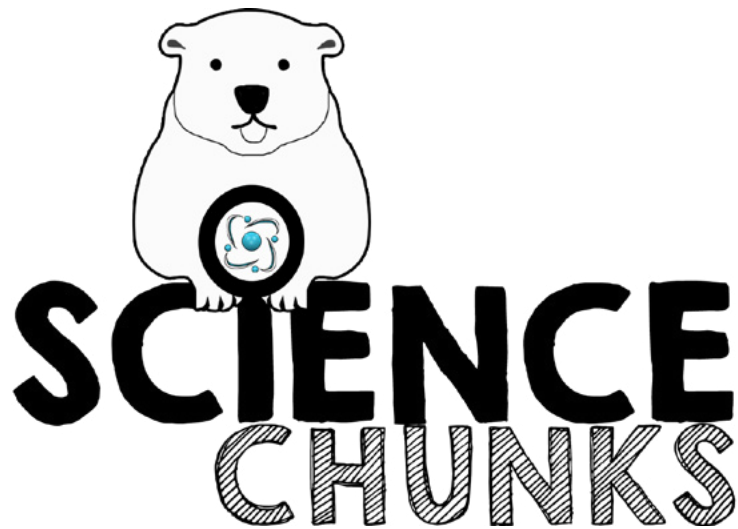
## To-Do List

### Essential

- ☐ Read the appropriate reading assignment.
- ☐ Define acid and base.
- ☐ Complete the lapbook or notebook assignments.
- ☐ Do the “Crazy Colors” activity.

### Optional

- ☐ Get one or more of the library books to read.
- ☐ Fill out a lab report sheet (p. 36) for one of the activities.
- ☐ Do the “Acids and Bases Poster” activity.

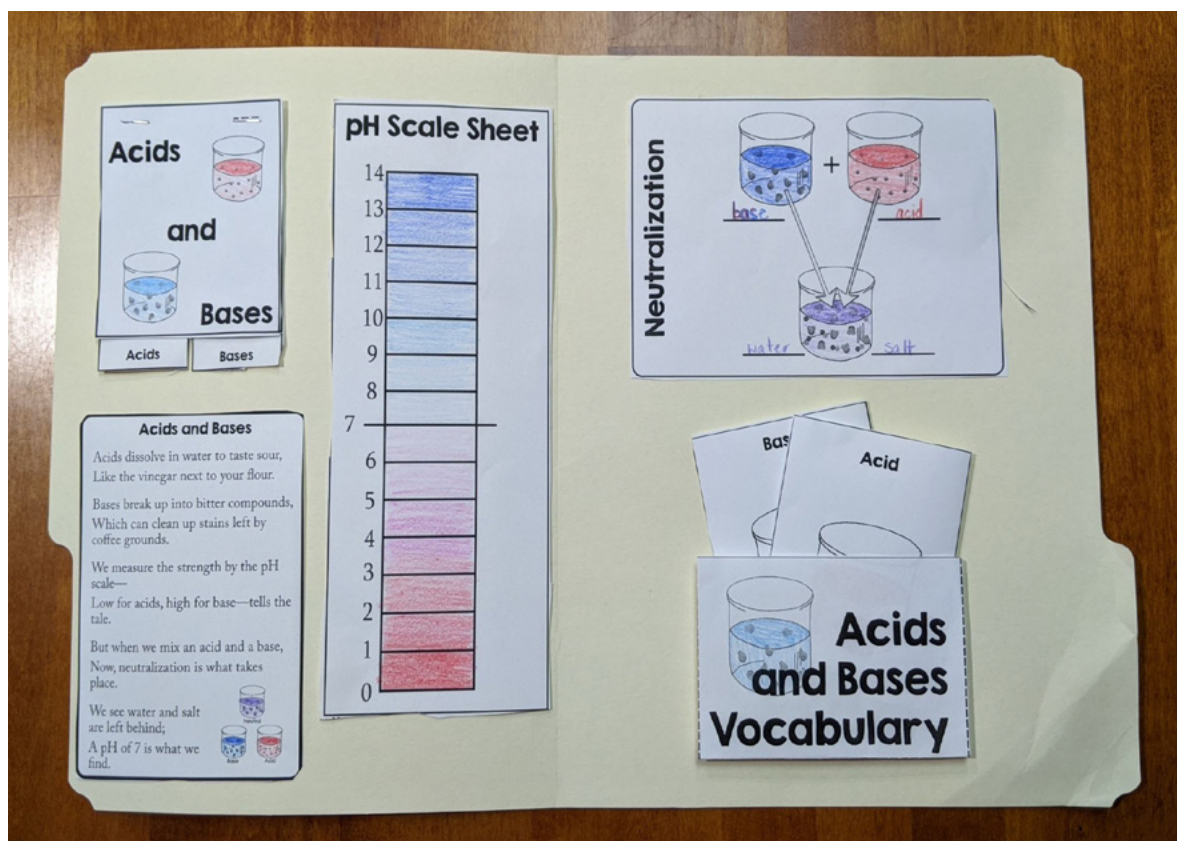


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# **Student Lapbook Templates**

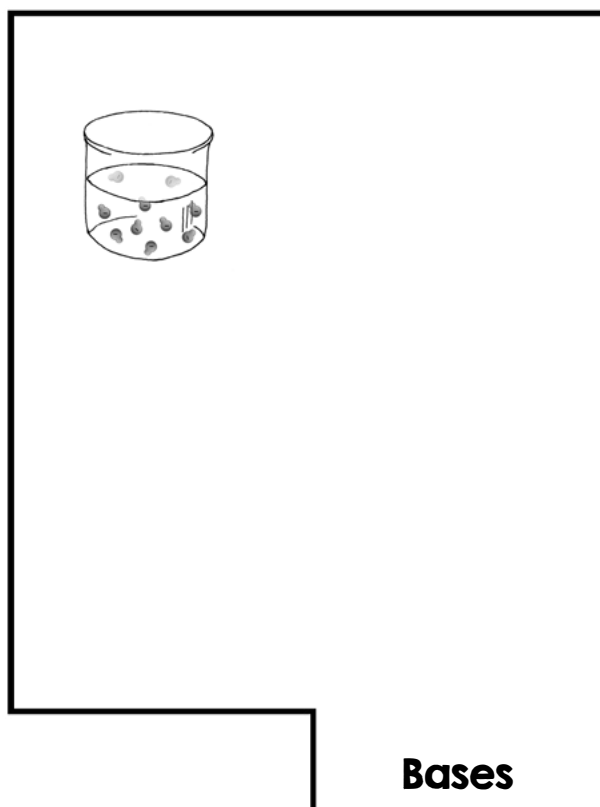
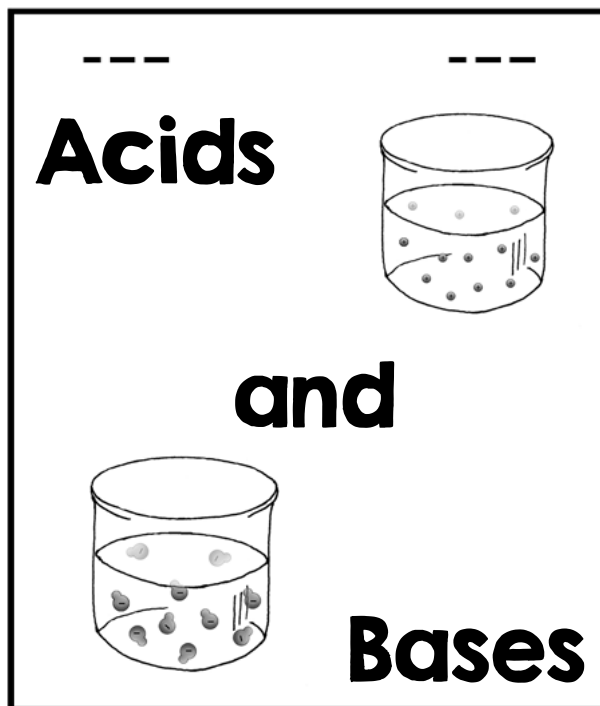
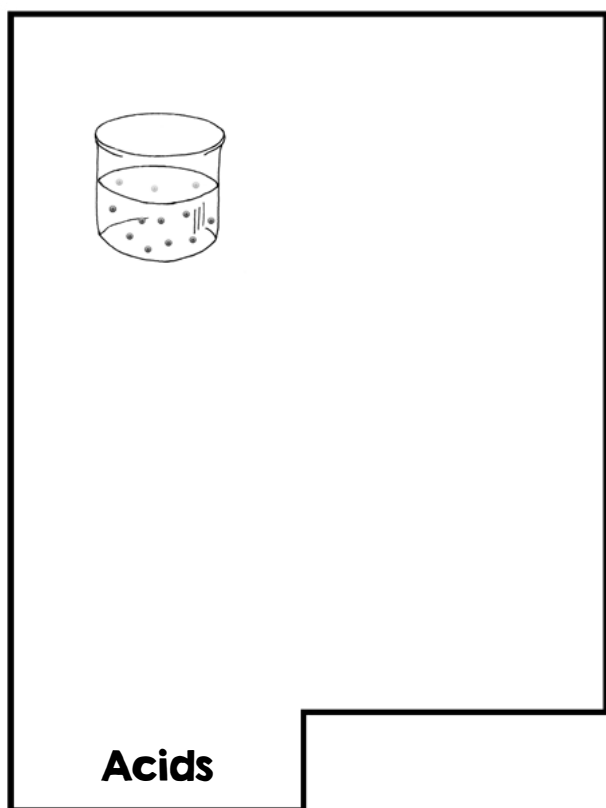
# Acids and Bases Lapbook

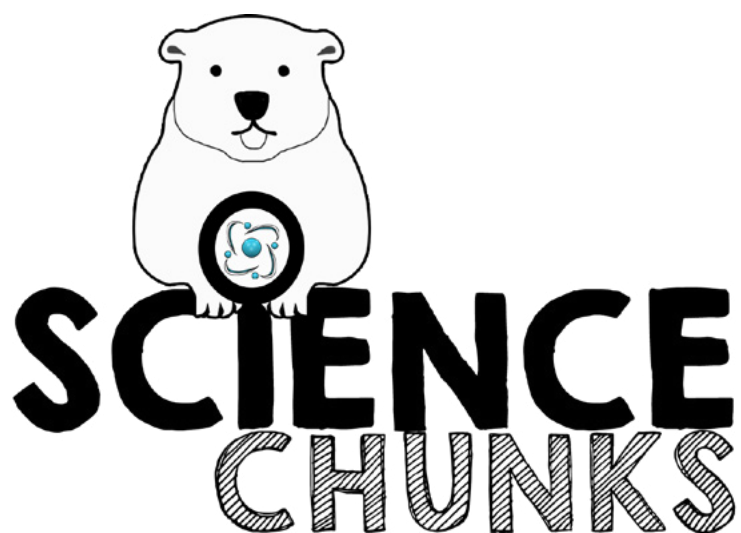
You will need two sheets of card stock or one file folder. If you are using card stock, begin by taping the two sheets together on the longest edge. The completed lapbook will look like this on the inside:



**Acids and Bases Tab-book**

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



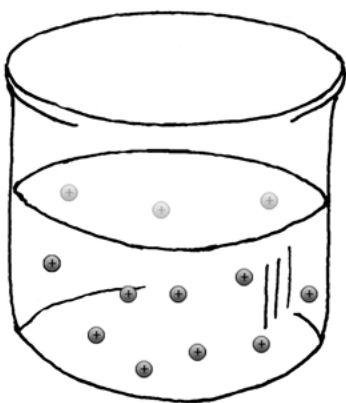


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# **Student Notebook Pages**

# Acids and Bases

## Acids




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## Bases

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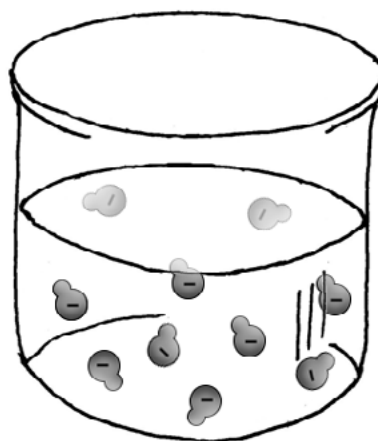
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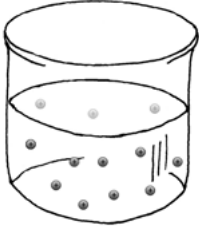
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## Acids and Bases Vocabulary

### Acid -



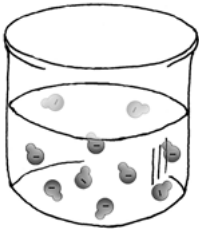

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### Base -



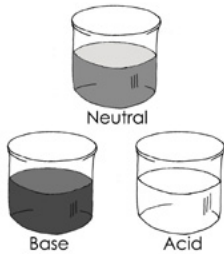

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### Indicator -



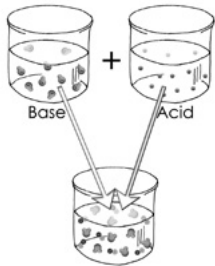

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### Neutralization -




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