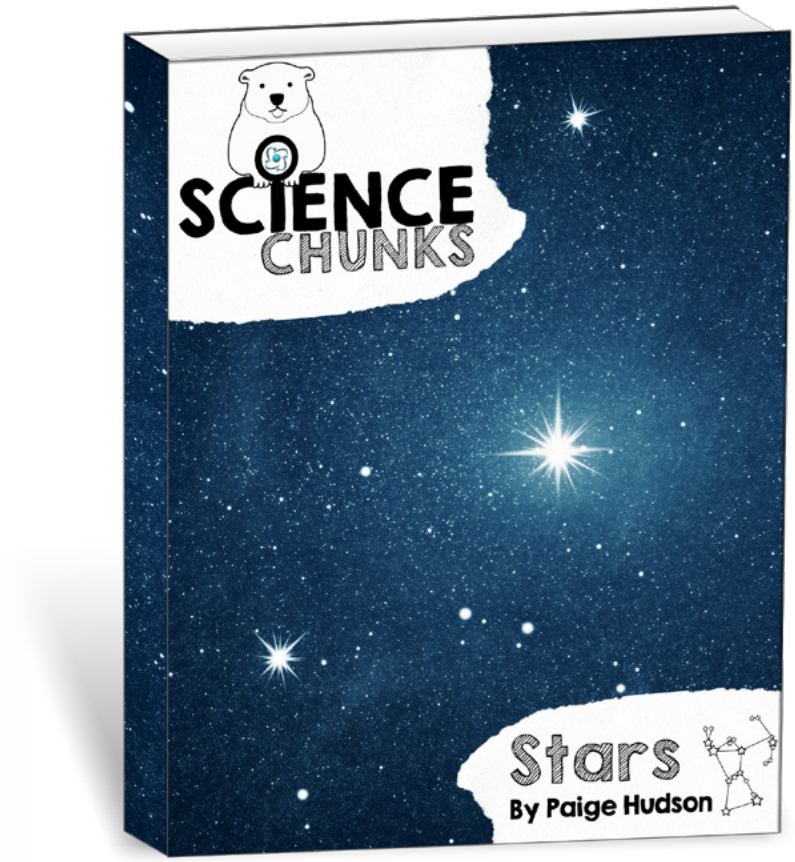


Science Chunks: Stars Sample Packet

Teach your students the basics about constellations in bite-sized chunks. The following sample packet includes most of the first lesson of the *Science Chunks: Stars* 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. To get started, head to:

https://elementalscience.com/products/science-chunks-stars-unit

A Peek Inside a Science Chunks Unit

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.

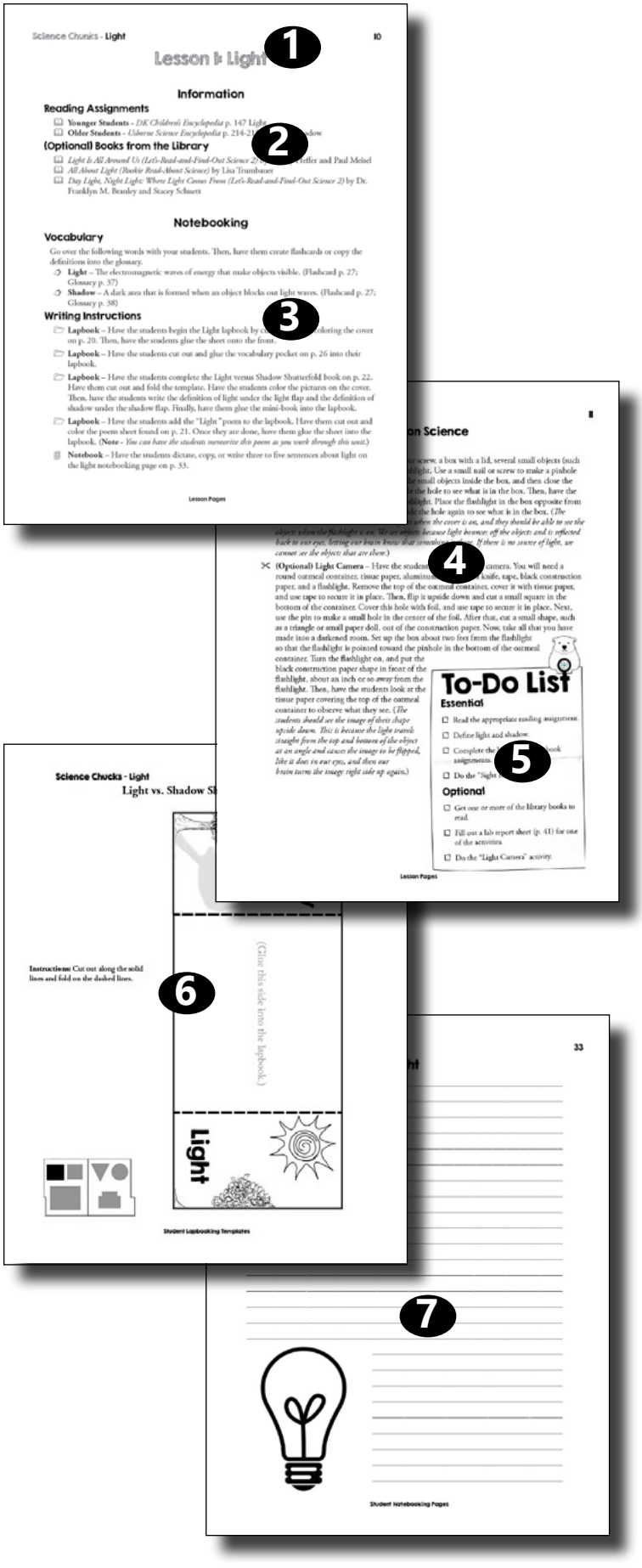
6. Lapbook Templates

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: Stars
- ✓ Lesson 2: Ursa Major and Ursa Minor
- ✓ Lesson 3: Winter Constellations
- ✓ Lesson 4: Spring Constellations
- ✓ Lesson 5: Summer Constellations
- ✓ Lesson 6: Fall Constellations

THIS UNIT IS INTENDED FOR HOME USE ONLY

Unit Introduction

Science Chunks - Stars is a unique and versatile unit study that leads you through a survey of the night sky. 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 - Stars 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 I - 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 stars. In the notebook section, you will find all the pages you need to create a simple notebook on stars, 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 demonstration 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. 44-45.

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:

- 🕮 **All -** *Glow in the Dark Constellations*
- 🕮 **(Optional) Younger Students -** *DK Children's Encyclopedia*
- 🕮 **(Optional) 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. 9.

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 six 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 - Stars* by emailing us at 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 - Stars*!

~ 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

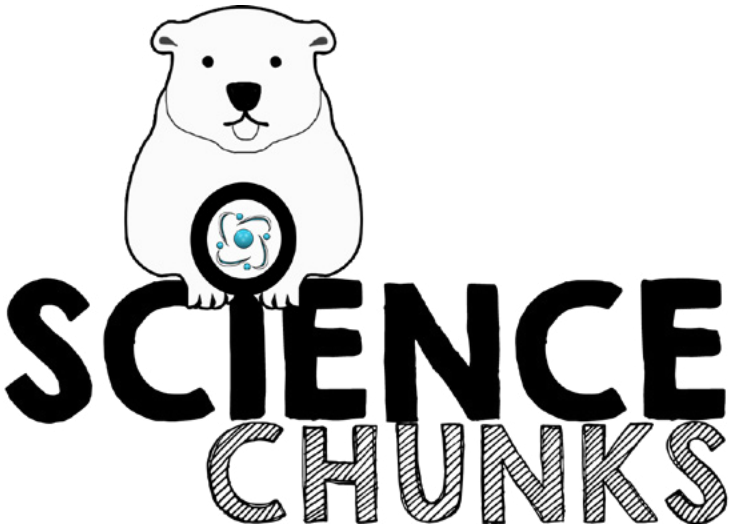
You will need the following materials to assemble the notebook:

- 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:** Black construction paper, Toothpick, Tape, Flashlight, Large, clear bowl, Water
- **Lesson 2:** Foil, Toilet paper tube, Pin, Small flashlight, Rubber band, Sharpie marker
- **Lesson 3:** Flashlight planetarium (*from previous lesson*), Foil, Pin, Sharpie marker
- **Lesson 4:** Flashlight planetarium (*from previous lesson*), Foil, Pin, Sharpie marker
- **Lesson 5:** Flashlight planetarium (*from previous lesson*), Foil, Pin, Sharpie marker
- **Lesson 6:** Flashlight planetarium (*from previous lesson*), Foil, Pin, Sharpie marker



Lessons

Lesson I: Stars

Information

Reading Assignments

- 🕮 **All Students –** *Glow in the Dark Constellations* pp. 6-8 An Introduction to Stargazing
  The reading assignments for this Science Chunks unit are a bit different from other ones as all the students will be reading from the same book. If you would like to add more information, we have included optional reading assignments from a public-domain book and from two of the encyclopedias used in other Science Chunks units.
- 🕮 **(Optional) Younger Students –** *DK Children's Encyclopedia* p. 242 Stars, p. 73 Constellations
- 🕮 **(Optional) Older Students –** *Usborne Science Encyclopedia* pp. 158-161 Stars

(Optional) Books from the Library

- 🕮 *The Sky Is Full of Stars (Let's-Read-and-Find... Science 2)* by Franklyn M. Branley and Felicia Bond
- 🕮 *Jump Into Science: Stars* by Steve Tomecek
- 🕮 *Stars! Stars! Stars!* by Bob Barner

Notebooking

Vocabulary

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

- **Constellation –** A group of stars that when viewed from Earth form the outline of an object or figure. (Flashcard p. 33; Glossary p. 42)
- **Star –** A huge ball of exploding gas. (Flashcard p. 33; Glossary p. 42)

Writing Instructions

- 🗁 **Lapbook –** Have the students complete the Stars mini-book on p. 26. Have them cut out the mini-book and color the cover. Next, have the students tell you what they have learned about stars and stargazing and write this down for them in the mini-book. Then, have them fold the booklet, glue on the cover, and place it into the lapbook.
- 🗁 **Lapbook –** Have the students cut out and glue the vocabulary pocket on p. 32 into their lapbook.
- 🗐 **Notebook –** Have the students dictate, copy, or write one to four sentences about stars and stargazing on the stars notebooking page on p. 36.

Hands-on Science

Coordinating Activities

✂ **Shining Stars** – You will need black construction paper, a toothpick, tape, a flashlight, a large, clear bowl, and water. Have the students begin by using the toothpick to poke holes in the paper. (*These are the stars in the night sky.*) As they create the stars in their night sky, fill the bowl about three-quarters full of water. (*This will serve as the atmosphere.*) When the students are done, tape their night sky to the back of the bowl and head into a room without windows. Set the bowl on a flat surface and wait for the water to settle. Turn on the flashlight before turning off the lights in the room. Shine the flashlight on the back of the paper so that the light shines through the star holes and into the atmosphere bowl. Have the students observe the "stars" that are created. Gently tap the bowl so that the water begins to move, and have the students observe the changes to the "stars." (*The students should see that the stars appear to twinkle when the water moves because the light is being refracted, or bent, by the water. The same thing happens when light rays from the stars enter Earth's atmosphere, and this is the reason why the stars appear to twinkle at night.*)

✂ **(Optional) Life Cycle of a Star –** Have the students make a Life Cycle of a Star mobile. You will need a paper plate, string, two cotton balls, a small yellow pom-pom, a large red pom-pom, paint, and a white bead or sequin. Have them cut a paper plate into a spiral, punch a hole in the center of the spiral, and tie a string through it, so that they can hang up their mobile. Have the students use a pulled-out white cotton ball to make a stellar nebula with its cloud of dust and gas. Then, have them use a small yellow pom-pom for the average star and a large red pom-pom for the red giant. Next, have them paint a cotton ball purple, orange, and a bit of blue. Let it dry and pull it out of shape and use it for the planetary nebula. Finally, have the students use a small white bead or sequin the white dwarf. See the following post for example of a similar project:

https://elementalscience.com/blogs/science-activities/119870275-the-life-cycle-of-a-star-poster

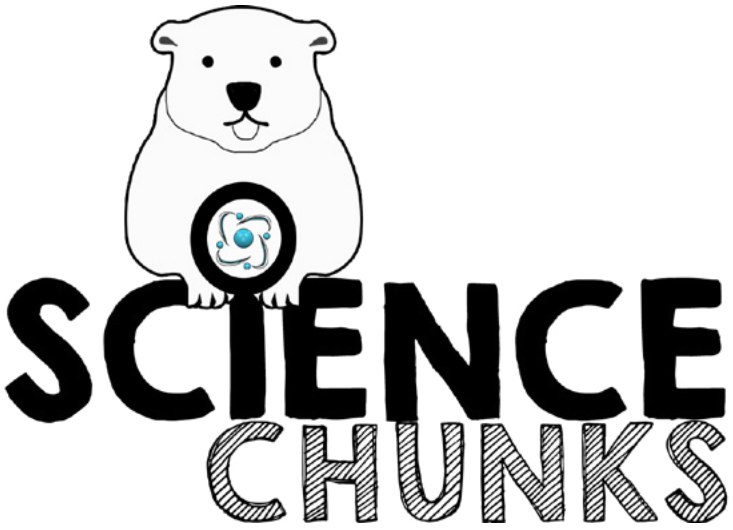
To-Do List

Essential

- ☐ Read the appropriate reading assignment.
- ☐ Define constellation and star.
- ☐ Complete the lapbook or notebook assignments.
- ☐ Do the "Shining Stars" activity.

Optional

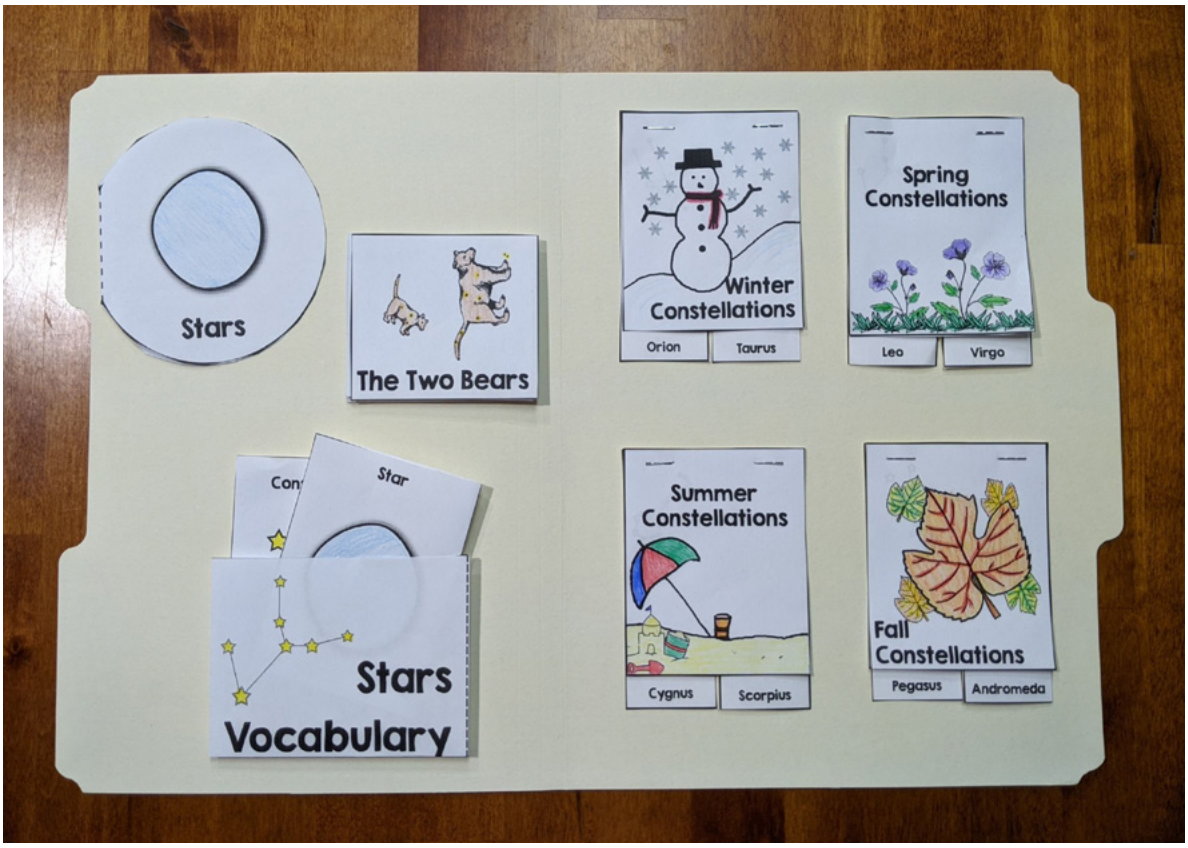
- ☐ Get one or more of the library books to read.
- ☐ Fill out a lab report sheet (p. 45) for one of the activities.
- ☐ Do the "Life Cycle of a Star" activity.



Student Lapbook Templates

Stars 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:

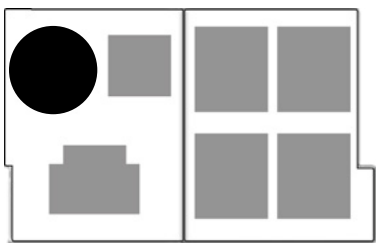


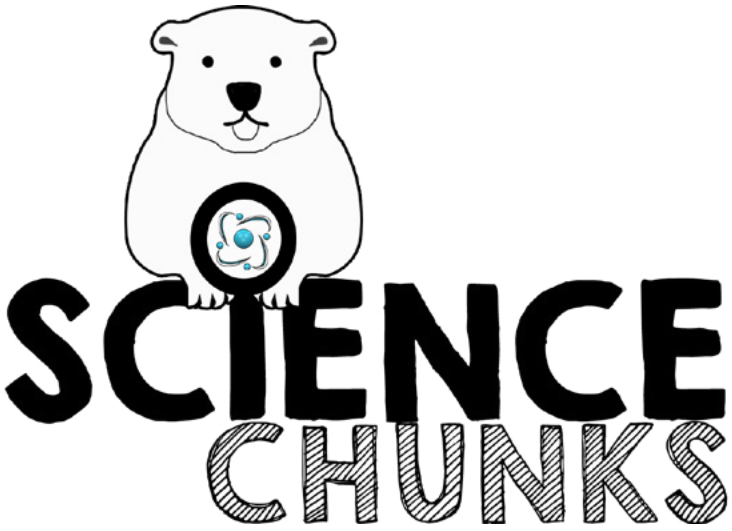
Stars Mini-book

Glue this side into your lapbook

Stars

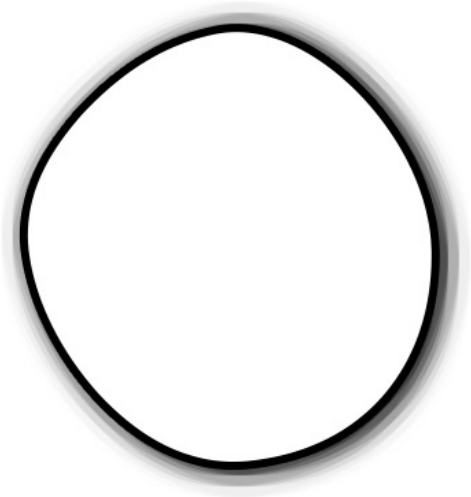
Instructions: Cut out along the solid lines and fold on the dashed lines.





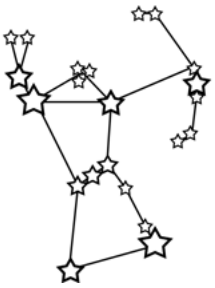
Student Notebook Pages

Stars



Stars Vocabulary

Constellation —



Star —