LAPBOOKING GUIDE AT-A-GLANCE

OVERVIEW

I. LAPBOOK OVERVIEW

See how to put together the location lapbook on the lapbook overview sheet, plus the supplies needed for the demonstrations.

CHAPTER LESSONS

2 READ

Know what to read each week in the corresponding Sassafras Science novel. Plus, get options for additional encyclopedia pages to read and for books to check out from the library. The novel contains the essential information for each week, but if you want to dig deeper, we've got you covered!

3 WRITE

Build your students' science vocabulary with words relevant to the topics the students are studying. Plus, get the directions for the mini-books that your students will be making to correspond to each location.

4 DO

Know what materials you will need to do a weekly hands-on science activity that coordinates with the topic. This section lists the supplies you will need, provides easy-to-follow steps, and explanations to make it a snap to complete the scientific demonstration.

5. TWO LESSONS PER LOCATION

Find two lessons per location, each following the same format of read, write, and do.

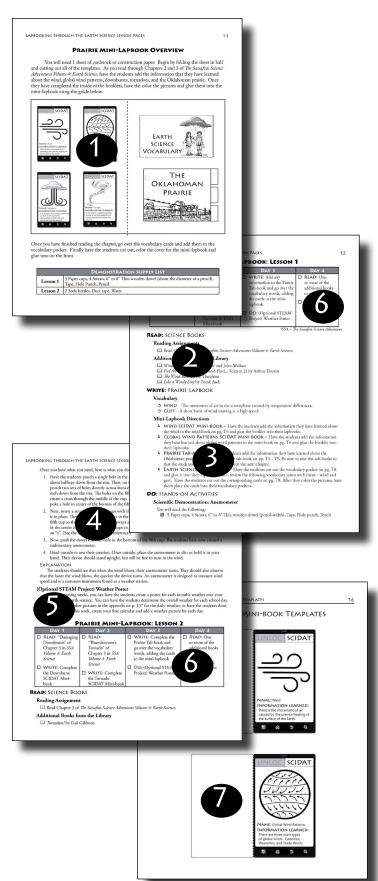
6. OPTIONAL SCHEDULE

See how you could plan out each lesson over a week with the 4-day grid schedule. These schedules will make planning your weekly science adventure a snap!

THE REST

7. TEMPLATES AND MORE

In the appendix, you will find project templates and a full glossary. At the back of this guide, you will find all of the mini-book templates for the lapbooks.



THIS PRODUCT IS INTENDED FOR HOME USE ONLY

The images and all other content in this book are copyrighted material owned by Elemental Science, Inc. Please do not reproduce this content on e-mail lists or websites. If you have an eBook, you may print out as many copies as you need for use WITHIN YOUR IMMEDIATE FAMILY ONLY. Duplicating this book or printing the eBook so that the book can then be reused or resold is a violation of copyright.

Schools and co-ops: You MAY NOT DUPLICATE OR PRINT any portion of this book for use in the classroom. Please contact us for licensing options at support@elementalscience.com.

LAPBOOKING THROUGH EARTH SCIENCE

Second Edition

Copyright @ Elemental Science, Inc. Email: support@elementalscience.com

Digital Edition

Printed In USA For World Wide Distribution

For more copies write to: Elemental Science PO Box 79 Niceville, FL 32588 support@elementalscience.com

COPYRIGHT POLICY

All contents copyright © 2016, 2022 by Elemental Science. All rights reserved.

Limit of Liability and Disclaimer of Warranty: The publisher has used its best efforts in preparing this book, and the information provided herein is provided "as is." Elemental Science makes no representation or warranties with respect to the accuracy or completeness of the contents of this book and specifically disclaims any implied warranties of merchantability or fitness for any particular purpose and shall in no event be liable for any loss of profit or any other commercial damage, including but not limited to special, incidental, consequential, or other damages.

Trademarks: This book identifies product names and services known to be trademarks, registered trademarks, or service marks of their respective holders. They are used throughout this book in an editorial fashion only. In addition, terms suspected of being trademarks, registered trademarks, or service marks have been appropriately capitalized, although Elemental Science cannot attest to the accuracy of this information. Use of a term in this book should not be regarded as affecting the validity of any trademark, registered trademark, or service mark. Elemental Science is not associated with any product or vendor mentioned in this book.

QUICK START GUIDE

Welcome to your super, scientific journey with the Sassafras Twins!! The information and activities in this guide will help you turn a simple adventure novel into a simple science program for your early elementary students. Let's start by answering three pressing questions!

WHAT WILL WE LEARN?

Students will learn about earth science, which is the study of our planet. See p. 9 for a list of the topics explored in this program.

WHAT DO I NEED?

In addition to this lapbooking guide, you will need the following materials:

- **1. Novel** All the main reading assignments are from *The Sassafras Science Adventures Volume 4: Earth Science.* You can get the paperback novel, the Kindle version, or the audiobook.
- **2. Demonstration Supplies** See a full list on p. 10, or save yourself time and purchase the *Sassafras Science Year 2 Experiment Kit*, which includes the materials for both volume 3 and volume 4.

WHAT WILL A WEEK LOOK LIKE?

Each week you and your students will do the following activities:

- Read scientific information from an adventure-filled novel, also known as a living book, and discuss what you read.
- **Write** down what the students have learned on the journey in the coordinating mini-book.
- **Do** hands-on science through demonstrations using the directions found in this guide.

For a more detailed explanation of the components in each lesson, we highly recommend checking out the peek inside this guide on p. 6 and reading the introduction on pp. 7-9. The chapter lessons begin on p. 11.



As the author and publisher of Lapbooking through the Earth Science with the Sassafras Twins, I encourage you to contact me with any questions or problems that you might have concerning this program at support@elementalscience.com. I, or a member of our team, will be more than happy to assist you. I hope that you will enjoy creating memories using Lapbooking through the Earth Science with the Sassafras Twins!

LAPBOOKING THROUGH EARTH SCIENCE TABLE OF CONTENTS

FRONT MATTER		3
Quick Start Guide	3	
Lapbooking Guide At-A-Glance	6	
Introduction	7	
Topics Covered	9	
Supply List	10	
LESSON PAGES		
Prairie Mini-Lapbook		
Prairie Mini-Lapbook Overview	13	
Prairie Mini-Lapbook: Lesson 1	14	
Prairie Mini-Lapbook: Lesson 2	15	
Rainforest Mini-Lapbook		
Rainforest Mini-Lapbook Overview	17	
Rainforest Mini-Lapbook: Lesson 1	18	
Rainforest Mini-Lapbook: Lesson 2	19	
Tundra And Taiga Mini-Lapbook		
Tundra and Taiga Mini-Lapbook Overview	21	
Tundra and Taiga Mini-Lapbook: Lesson 1	22	
Tundra and Taiga Mini-Lapbook: Lesson 2	23	
Desert Mini-Lapbook		
Desert Mini-Lapbook Overview	25	
Desert Mini-Lapbook: Lesson 1	26	
Desert Mini-Lapbook: Lesson 2	27	
Mountains Mini-Lapbook		
Mountains Mini-Lapbook Overview	29	
Mountains Mini-Lapbook: Lesson 1	30	
Mountains Mini-Lapbook: Lesson 2	31	
Boreal Forest Mini-Lapbook		
Boreal Forest Mini-Lapbook Overview	33	
Boreal Forest Mini-Lapbook: Lesson 1	34	
Boreal Forest Mini-Lapbook: Lesson 2	35	
Ocean Mini-Lapbook		
Ocean Mini-Lapbook Overview	37	
Ocean Mini-Laphook: Lesson 1	38	
Ocean Mini-Lapbook: Lesson 2	39	

Deciduous Forest Mini-Lapbook		
Deciduous Forest Mini-Lapbook Overview	41	
Deciduous Forest Mini-Lapbook: Lesson 1	42	
Deciduous Forest Mini-Lapbook: Lesson 2	43	
APPENDIX		45
Lapbooking through Earth Science Cover Page	46	
Lab Report	47	
Book Narration	49	
Blank Vocabulary Cards	52	
Earth Science Glossary	55	
TEMPLATES		ТТ
Prairie Lapbooking Templates	T3-T8	
Rainforest Lapbooking Templates	T9-T14	
Tundra and Taiga Lapbooking Templates	T15-T20	
Desert Lapbooking Templates	T21-T26	
Mountains Lapbooking Templates	T27-T34	
Boreal Forest Lapbooking Templates	T35-T40	
Ocean Lapbooking Templates	T41-T46	
Deciduous Forest Lapbooking Templates	T47-T52	

INTRODUCTION

Lapbooking through the Earth Science with the Sassafras Twins is a unique and versatile program that leads you through a survey of weather and our planet using a series of eight mini-lapbooks to document the journey. The program is centered around the living book, The Sassafras Science Adventures Volume 4: Earth Science. 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.

WHAT IS A LAPBOOK?

Lapbooks are educational scrapbooks that fit into the lap of a students. 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. To learn more about lapbooking, you can read the following articles:

- What are lapbooks? This article shares what lapbooks are and how you can use them.
 - https://elementalscience.com/blogs/news/what-are-lapbooks
- **3 Common Misconceptions about Lapbooks** This article looks at three of the most common mistaken beliefs about lapbooks.
 - https://elementalscience.com/blogs/news/3-misconceptions-about-lapbooks

WHAT IS INCLUDED IN THIS PROGRAM?

Lapbooking through Earth Science with the Sassafras Twins includes all of the basic components of elementary science education that are explained in Success in Science.

- 1. {READ} Science Books Elementary students are 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 are from the living book, The Sassafras Science Adventures Volume 4: Earth Science. I have also included a list of additional books from the library.
- 2. {WRITE} Lapbooks 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 series of mini-lapbooks as well as vocabulary words to coordinate with each lesson.
- **3. {DO**} Hands-on Activities Scientific demonstrations, observations, and STEAM* projects 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.

Each lesson in this guide includes suggested hands-on science activities to fulfill this section of elementary science instruction.

*STEAM: Science, Technology, Engineering, Art, and Math

These concepts are more fully developed in our book, or you can read the following articles from to learn more:

- **10 Posts you must read about living books** This article shares links to 10 different articles that will help you to gain a clear picture of what living books are.
 - https://elementalscience.com/blogs/news/10-posts-you-must-read-about-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.
 - http://elementalscience.com/blogs/news/89905795-scientific-demonstrations-or-experiments

HOW TO USE THIS PROGRAM

Each lesson is designed to be completed over several days or up to one week. The lesson contains reading assignments from *The Sassafras Science Adventures Volume 4: Earth Science*. You can choose to break each chapter up over two days or read it all at once. If you are using this program with younger students, read the selected chapters to them. If you are using this program with older students, you can choose to have them read the assigned chapters on their own or you can read the selected pages to them. (NOTE—Chapter 1 and 18 of *The Sassafras Science Adventures Volume 4: Earth Science* are not scheduled as a part of this program. You will need to read chapter 1 before beginning and chapter 18 after you finish.)

After you complete the reading assignment, have the students tell you what they have learned about the topics and the regions climate 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 the words into the mini-book. Once the students have finished writing, have them color the related pictures. When the mini-book is complete, glue it into the lapbook using the overview sheet as a guide.

At another time during the week, review the vocabulary words with the students. You can have them memorize each one or just go over the words with the lesson. I have included a set of blank vocabulary cards in the Appendix on pp. 56-58. If you use the blank vocabulary cards, have the students look up the vocabulary words in the science encyclopedia of your choice or the glossary included in the Appendix on pp. 59-60.

Finally, you can finish the lesson by doing the related scientific demonstration. If you would like to have your students write a lab report, I have included a template for you in the Appendix on pp.

47-48. After you finishing the demonstration, you can finish the week by reading to the students one of the related books from the additional book list. If you would like to record what they have learned from these books, I have included a book narration sheet in the Appendix on p. 49.

HOW LONG IT SHOULD TAKE

I have included possible schedules for completed each minilapbook. These schedules spread the work for each lesson out over 4 days. If you choose to complete the program in this manner, each mini-lapbook will take you two weeks to complete, which means that this program will provide you about a semesters worth of material.

OPTIONS - 8 MINI-LAPBOOKS OR I FULL LAPBOOK

If you would like to create one full lapbook instead of a series of eight mini-lapbooks, simply arrange the interior components of each onto one full sheet of construction paper or one side of a file folder like below. We have included a cover for a full lapbook in the Appendix on p. 46. See a sample of a full lapbook in the following video:

1 https://www.youtube.com/watch?v=4LMhkVcXYfk&t=3s



The Sassafras Science Adventures Volume 4: Earth Science covers a variety of aspects of earth science, such as:

- Hemispheres
- Aurora Australis (and Aurora Borealis)
- Gravity
- Altitude In the process, you will learn about the following specific topics:
 - Winds
 - Downbursts
 - Tornadoes
 - Rain
 - Monsoons
 - Thunder and Lightening
 - Floods
 - Snow
 - Ice
 - Frost Quakes
 - Seasons
 - Day and night
 - Sandstorms
 - Droughts
 - Oasis

- Recycling
- Recording Weather Skills
- Basic Mapping Skills
- Atmosphere
- Clouds
- Water Cycle
- Fog
- Natural Cycles
- Coral
- Ocean Currents
- Oceans
- Hurricanes and Typhoons
- Groundwater
- Waterfalls
- Rivers
- Lakes
- Plus, 8 of the world's major climates



SUPPLY LIST

The following supplies will be needed to complete the scientific demonstrations suggested in this guide.

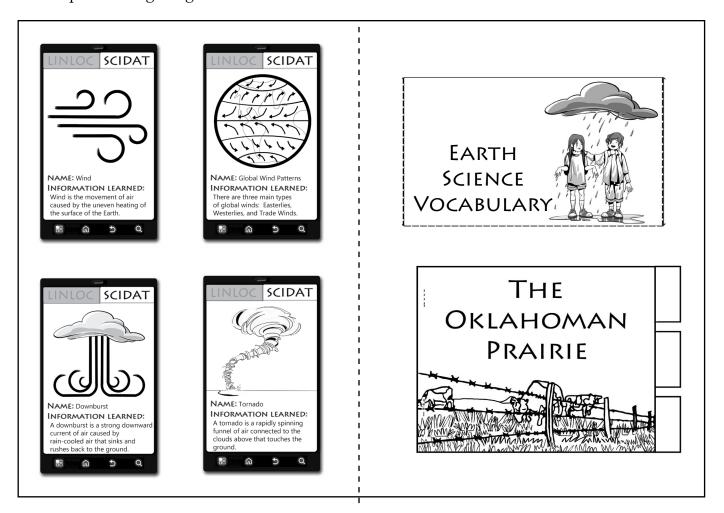
CHAPTER	SUPPLIES NEEDED
2: ANEMOMETER	5 Paper cups, 4 Straws, 6" to 8" Thin wooden dowel (about the diameter of a pencil), Tape, Hole Punch, Pencil
3: TORNADO IN A BOTTLE	2 Soda bottles, Duct tape, Water
4: RAIN GAUGE	Plastic water bottle, Duct tape, Permanent marker, Small marbles or rocks, Ruler
5: STORM IN A GLASS	Clear glass jar, Jar lid or bowl, Ice cubes, Warm water
6: SNOWFLAKES	Glass Jar, 2 Pipe cleaners, Pencil, Borax (NOTE—This can be found in the laundry detergent aisle of the grocery store.), Water
7: EXPANDING ICE	Small paper cup, Water
8: DAY OR NIGHT	A globe (or large ball), A desk lamp, A Post-it tab (or another type of removable marker)
9: DROUGHT CRUST	Dark construction paper (black or brown), Water, Salt
10: BAROMETER	Clear plastic cup, Soda bottle, Blue food coloring, Water, Marker
II: CLOUD IN A BOTTLE	Hot water, Glass jar with lid, Crushed ice, Match
12: WATER CYCLE IN A BAG	Plastic baggie, Warm water, Tape
13: SOIL TEST	Soil sample, Coffee filter, Rubber band, 2 Cups, Distilled water, Aquarium test strip (one that tests the pH and nitrate levels)
14: MOVING CURRENTS	Water, Cup, Ice, Bowl, Blue food coloring
15: OCEAN FLOAT	2 Eggs, 2 Tall Cups, Water, Salt
16: GROUNDWATER FILTER	Plastic bottle, Cotton balls, Gravel, Sand, Soil, Duct tape, Water
17: RIVER EROSION	Flour, Aluminum pan, Eye dropper, Water



LESSON PAGES

PRAIRIE MINI-LAPBOOK OVERVIEW

You will need 1 sheet of cardstock or construction paper. Begin by folding the sheet in half and cutting out all of the templates. As you read through Chapters 2 and 3 of *The Sassafras Science Adventures Volume 4: Earth Science*, have the students add the information that they have learned about the wind, global wind patterns, downbursts, tornadoes, and the Oklahoman prairie. Once they have completed the inside of the booklets, have the color the pictures and glue them into the mini-lapbook using the guide below.



Once you have finished reading the chapter, go over the vocabulary cards and add them to the vocabulary pocket. Finally have the students cut out, color the cover for the mini-lapbook and glue into on the front.

DEMONSTRATION SUPPLY LIST		
LESSON I	5 Paper cups, 4 Straws, 6" to 8" Thin wooden dowel (about the diameter of a pencil), Tape, Hole Punch, Pencil	
LESSON 2	2 Soda bottles, Duct tape, Water	

PRAIRIE MINI-LAPBOOK: LESSON 1

DAY 1	DAY 2	DAY 3	DAY 4
□ READ: "Where the wind" of Chapter 2 in SSA Volume 4: Earth Science □ WRITE: Complete the Wind SCIDAT Mini-book	☐ READ: "Easterlies, Westerlies" of Chapter 2 in SSA Volume 4: Earth Science ☐ WRITE: Complete the Global Wind Patterns SCIDAT Mini-book	 □ WRITE: Add any information to the Prairie Tab-book and go over the vocabulary words, adding the cards to the minilapbook □ DO: (Optional STEAM Project) Weather Poster 	□ READ: One or more of the additional books to read □ DO: Scientific Demonstration: Anemometer

*SSA = The Sassafras Science Adventures

READ: SCIENCE BOOKS

READING ASSIGNMENTS

Read Chapter 2 of *The Sassafras Science Adventures Volume 4: Earth Science*.

ADDITIONAL BOOKS FROM THE LIBRARY

- Wind by Marion Dane Bauer and John Wallace
- Feel the Wind (Let's-Read-and-Find... Science 2) by Arthur Dorros
- The Wind Blew by Pat Hutchins
- Like a Windy Day by Frank Asch

WRITE: PRAIRIE LAPBOOK

VOCABULARY

- ☼ WIND The movement of air in the atmosphere created by temperature differences.
- ₲UST A short burst of wind moving at a high speed.

MINI-LAPBOOK DIRECTIONS

- WIND SCIDAT MINI-BOOK Have the students add the information they have learned about the wind to the mini-book on p. T6 and glue the booklet into their lapbooks.
- ♣ GLOBAL WIND PATTERNS SCIDAT MINI-BOOK Have the students add the information they have learned about global wind patterns to the mini-book on p. T6 and glue the booklet into their lapbooks.
- ▶ PRAIRIE TAB-BOOK Have the students add the information they have learned about the Oklahoman prairie and its climate to the tab-book on pp. T4 T5. Be sure to save the tab-books so that the students can add information from the next chapter.
- ▶ EARTH SCIENCE VOCABULARY Have the students cut out the vocabulary pocket on p. T8 and glue it into their lapbooks. Then, review the following vocabulary terms with them—wind and gust. Have the students cut out the corresponding cards on p. T8. After they color the pictures, have them place the cards into their vocabulary pockets.

DO: HANDS-ON ACTIVITIES

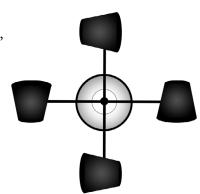
SCIENTIFIC DEMONSTRATION: ANEMOMETER

You will need the following:

☑ 5 Paper cups, 4 Straws, 6" to 8" Thin wooden dowel (pencil-width), Tape, Hole punch, Pencil
*SCIDAT: Scientific Data

Once you have what you need, here is what you do:

- 1. Have the students punch a single hole in the side of each of four cups, about halfway down from the rim. Then, on the fifth cup, have them punch two sets of holes directly across from each, other about half an inch down from the rim. The holes on the fifth cup should line up to create a cross through the middle of the cup. Finally, use a pencil to poke a hole in center of the bottom of the fifth cup.
- 2. Next, insert a straw into the four cups with the single hole and secure it in place. Then, insert the four straws in the holes on the side of the fifth cup so that the cups are tilted sideways and the four straws meet in the center of the fifth cup. Use the tape to secure the four straws in an "x". (See the diagram for a visual reference.)



- 3. Now, push the dowel rod into hole in the bottom of the fifth cup. The students have now created a rudimentary anemometer.
- 4. Head outside to test their creation. Once outside, place the anemometer in dirt or hold it in your hand. Their device should stand upright, but still be free to turn in the wind.

This is what you should see and why:

The students should see that when the wind blows, their anemometer turns. They should also observe that the faster the wind blows, the quicker the device turns. An anemometer is designed to measure wind speed and it a common instrument found at a weather station.

(OPTIONAL STEAM PROJECT) WEATHER POSTER

Over the coming weeks, you can have the students create a poster for each month's weather over your journey through earth science. You can have the students determine the overall weather for each school day. You can use the weather pictures in the appendix on p. 50 for the daily weather, or have the students draw their own picture. This week, create your first calendar and add a weather picture for each day.

PRAIRIE MINI-LAPBOOK: LESSON 2

DAY 1	DAY 2	DAY 3	DAY 4
□ READ: "Damaging Downbursts" of Chapter 3 in SSA Volume 4: Earth Science □ WRITE: Complete	☐ READ: "Thunderstone's Tornado" of Chapter 3 in SSA Volume 4: Earth Science	 □ WRITE: Complete the Prairie Tab-book and go over the vocabulary word, adding the card to the mini-lapbook □ DO: (Optional STEAM) 	□ READ: One or more of the additional books to read □ DO: Scientific Demonstration:
the Downburst SCIDAT Mini- book	☐ WRITE: Complete the Tornado SCIDAT Mini-book	Project) Weather Poster	Tornado in a Bottle

READ: SCIENCE BOOKS

READING ASSIGNMENT

Read Chapter 3 of *The Sassafras Science Adventures Volume 4: Earth Science*.

ADDITIONAL BOOKS FROM THE LIBRARY

Tornadoes! by Gail Gibbons

Tornadoes by Seymour Simon
Tornado Alert (Let's-Read-and-Find-Out Science 2) by Franklyn M. Branley and Giulio Maestro
A Grassland Habitat (Introducing Habitats) by Kelley Macaulay and Bobbie Kalman
Grasslands (About Habitats) by Cathryn P. Sill

WRITE: PRAIRIE LAPBOOK

VOCABULARY

☼ TORNADO – A spinning funnel of wind that touches the ground and is also connected to the clouds above.

MINI-LAPBOOK DIRECTIONS

- ▶ DOWNBURST SCIDAT MINI-BOOK Have the students add the information they have learned about downbursts to the mini-book on p. T7 and glue the booklet into their lapbooks.
- ▶ TORNADO SCIDAT MINI-BOOK Have the students add the information they have learned about tornadoes on p. T7 to the mini-book on p. T7 and glue the booklet into their lapbooks.
- ▶ PRAIRIE TAB-BOOK Have the students add the information they have learned about the Oklahoman prairie and its climate to the tab-book on pp. T4 T5. Then, staple the pages together and glue the tab-book into their mini-lapbooks.
- EARTH SCIENCE VOCABULARY Review the following vocabulary term with the students—tornado. Have the students cut out the corresponding card on p. T8. After they color the picture, have them place the card into their vocabulary pockets.
- PRAIRIE MINI-LAPBOOK COVER Have the students cut out the cover page on p. T3, color it, and glue it on the front of their mini-lapbooks.

DO: HANDS-ON ACTIVITIES

SCIENTIFIC DEMONSTRATION: TORNADO IN A BOTTLE

You will need the following:

☑ 2 Soda bottles, Duct tape, Water

Once you have what you need, here is what you do:

- 1. Have the students fill one of the soda bottles two-thirds of the way with room temperature water.
- 2. Then, have them invert the second bottle and use the duct tape to attach the two openings together so that no water will leak out.
- 3. Once the two bottles are securely attached, have the students flip the bottles over and observe what happens

This is what you should see and why:

The students should see a vortex or funnel of form as the water moves from one bottle to the other. The swirling motion and movement of the water mimics the same conditions in the air that form a tornado.

(OPTIONAL STEAM PROJECT) WEATHER POSTER

Have the students add to their weather poster this week. Weather template pictures can be found in the appendix on p. 50.



TEMPLATES

PRAIRIE MINI-LAPBOOK COVER PAGE

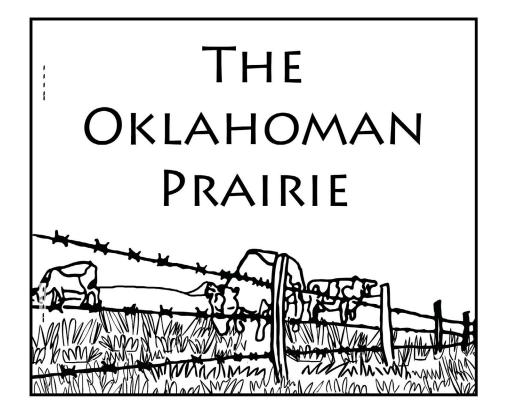
MY GUIDE TO THE PRAIRIE

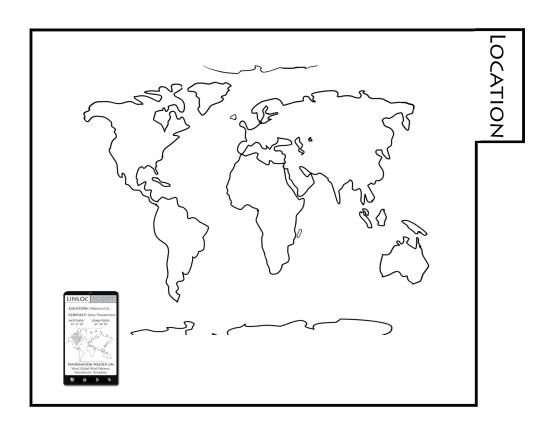


BY: _____

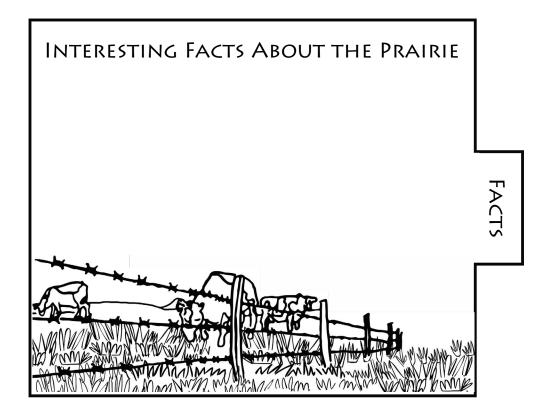
& THE SASSAFRAS TWINS

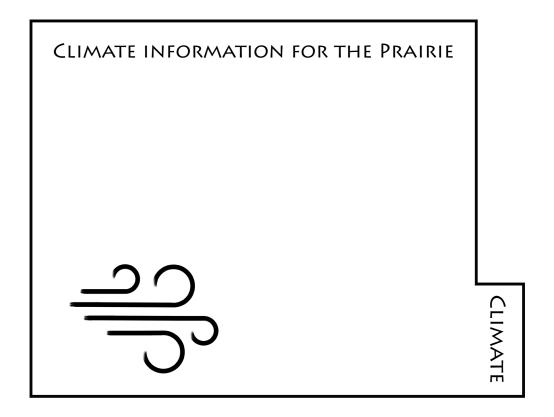
PRAIRIE TAB-BOOK TEMPLATES



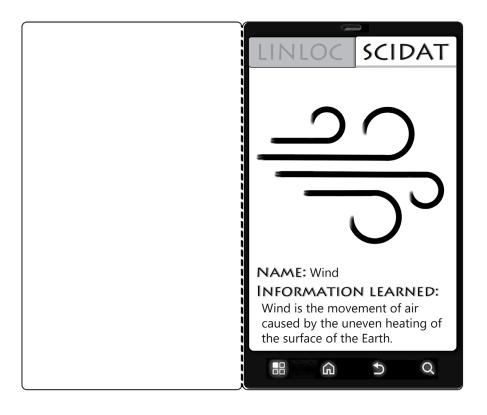


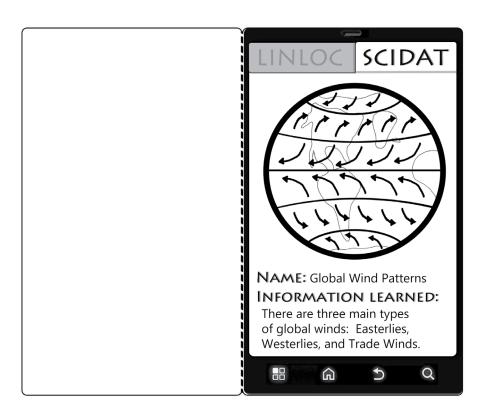
PRAIRIE TAB-BOOK TEMPLATES



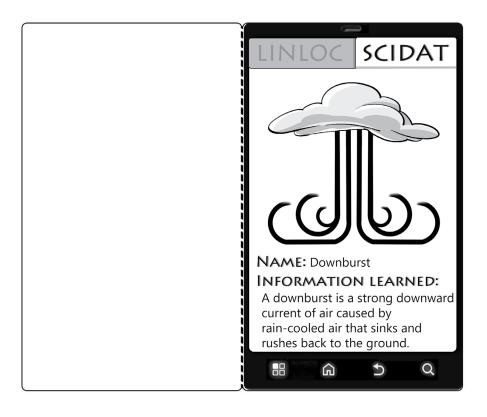


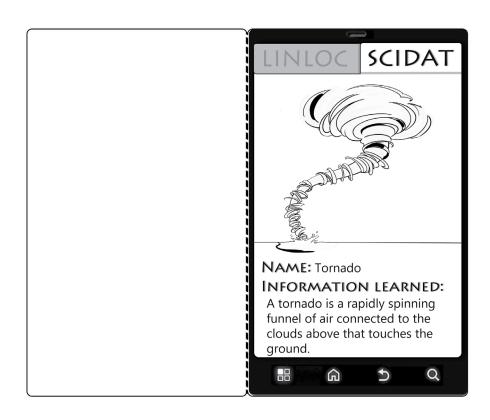
PRAIRIE SCIDAT MINI-BOOK TEMPLATES

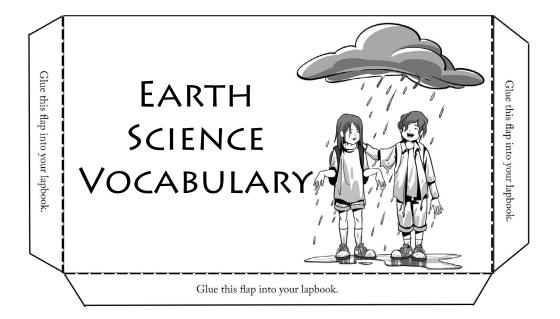




PRAIRIE SCIDAT MINI-BOOK TEMPLATES









WIND – The movement of air in the atmosphere created by temperature differences.



GUST – A short burst of wind moving at a high speed.



TORNADO – A spinning funnel of wind that touches the ground and is also connected to the clouds above.