SONLIGHT

Science *A*

4-DAY

INSTRUCTOR'S GUIDE

SONLIGHT

Thank you for downloading this sample of Sonlight's Science A Instructor's Guide (what we affectionately refer to as an IG). In order to give you a full perspective on our Instructor's Guides, this sample will include parts from every section that is included in the full IG.

Here's a quick overview of what you'll find in this sample.

- A **Quick Start Guide** START HERE
- A 3-week **Schedule**
- Activity Sheets and Parent Answer Keys
- A **Scope and Sequence** of topics and and skills your children will be developing throughout the school year

SONLIGHT'S "SECRET" COMES DOWN TO THIS:

We believe most children respond more positively to great literature than they do to textbooks. To properly use this sample to teach your student, you will need the books that are scheduled in it. We include all the books you will need when you purchase a package from sonlight.com.

Curriculum experts develop each IG to ensure that you have everything you need for your homeschool day. Every IG offers a customizable homeschool schedule, complete lesson plans, pertinent activities, and thoughtful questions to aid your students' comprehension. It includes handy teaching tips and pointers so you can homeschool with confidence all year long.

If you need any help using or customizing our IGs, please reach out to our experienced homeschool advisors at sonlight.com/advisors.

We hope you enjoy using this sample. For even more information about Sonlight's IGs, please visit: sonlight.com/ig. It would be our pleasure to serve you as you begin your homeschool journey.

If you like what you see in this sample, visit sonlight.com/science to order your Science package.

Blessings!

Sarita Holzmann,
Co-founder and president
of Sonlight Curriculum

Homeschool questions? Sonlight advisors have answers.

"I was feeling overwhelmed and afraid that I lacked what it takes to successfully homeschool my kids," writes Jennifer A of Battle Creek, MI. "I contacted an Advisor on Sonlight's online chat tool and got the help I needed. The next day I was able to put her counsel into practice!"

Contact a Sonlight Advisor today–FREE

CHAT
sonlight.com/advisors

CALL / TEXT
303-730-6292

EMAIL
advisor@sonlight.com

SONLIGHT.COM

SONLIGHT

A

Ages 5–7
Grades K–2

Science (4-Day)

Biology, Botany, and Physics

by The Sonlight Team

"The heavens declare the glory of God; the skies proclaim the work of his hands."

Psalm 19:1 (NIV)

INSTRUCTOR'S GUIDE

Sonlight Curriculum® "Intro to the World: Cultures" (5-Day) Instructor's Guide and Notes, Twenty-Ninth Edition

"Do to others what you would have them do to you" (Matthew 7:12).

"The worker is worth his keep" (Matthew 10:10).

Published by

Sonlight Curriculum, Ltd.
8042 South Grant Way
Littleton, CO 80122-2705
USA

Phone (303) 730-6292 Fax (303) 795-8668

E-mail: main@sonlight.com

NOTE TO PURCHASER

Sonlight Curriculum, Ltd. is committed to providing the best homeschool resources on the market. This entails regular upgrades to our curriculum and to our Instructor's Guides. This guide is the 2018 Edition of the Sonlight Curriculum® "Intro to the World: Cultures" (5-Day) Instructor's Guide and Notes. If you purchased it from a source other than Sonlight Curriculum, Ltd., you should know that it may not be the latest edition available.

This guide is sold with the understanding that none of the Authors nor the Publisher is engaged in rendering educational services. Questions relevant to the specific educational or legal needs of the user should be addressed to practicing members of those professions.

The information, ideas, and suggestions contained herein have been developed from sources, including publications and research, that are considered and believed to be reliable but cannot be guaranteed insofar as they apply to any particular classroom or homeschooling situation.

The Authors and Publisher specifically disclaim any liability, loss, or risk, personal or otherwise, incurred as a consequence directly or indirectly of the use and application of any of the suggestions or contents of this guide.

Printed in the United States of America.

For the latest information about changes in this guide, please visit **www.sonlight.com/curriculum-updates.html**. Please notify us of any errors you find not listed on this site. E-mail corrections to ***IGcorrections@sonlight.com*** and any suggestions you may have to ***IGsuggestions@sonlight.com***.

Table of Contents

SCIENCE
Instructor's Guides

Try before you buy!

Get a three week sample of any Sonlight Instructor's Guide—FREE!
sonlight.com/samples

Special features of Sonlight's Science Instructor's Guides:

1 Complete, Ready-to-Use Lesson Plans

All your science books and experiments are fully scheduled for the entire year. No need to create your own plans.

2 Detailed Teaching Notes

Notes explain each assignment and activity, point out fun facts about your reading, and provide extra information about important topics so you get the most from your materials.

3 Organizational Tools to Help You Plan Ahead

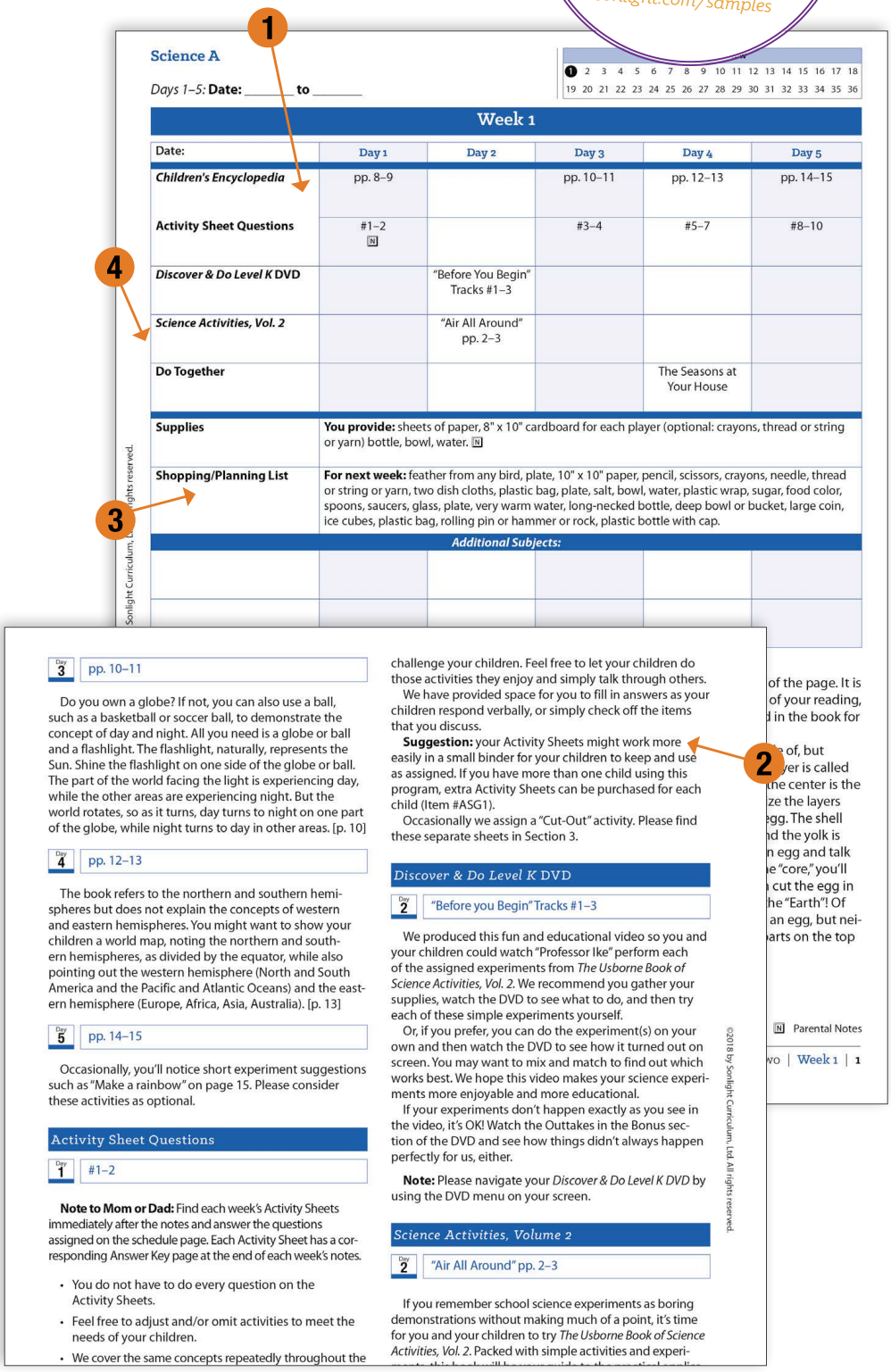
See at a glance the supplies you need for experiments this week and the following week. Know what supplies you'll find in the Sonlight Science Kits, and which household items you'll want to have ready.

4 Weekly Assignments and Engaging Activities

Simple, engaging experiments coordinate with your reading and provide hands-on learning. Sonlight's Science kits provide the key supplies . . . so you actually do the experiments.

Many experiments are intriguing, yet simple, activities—such as exploring taste buds using basic ingredients like lemon juice and sugar. Again, no planning necessary!

Your children will relish the discoveries they make throughout the year. And you'll love that they are actively exploring Science, Technology, Engineering, Math (STEM) concepts, and making their learning stick.



Science A

Days 1–5: **Date:** _____ **to** _____

Week 1

Date:	Day 1	Day 2	Day 3	Day 4	Day 5
Children's Encyclopedia	pp. 8–9		pp. 10–11	pp. 12–13	pp. 14–15
Activity Sheet Questions	#1–2 N		#3–4	#5–7	#8–10
***Discover & Do Level K* DVD**		"Before You Begin" Tracks #1–3			
Science Activities, Vol. 2		"Air All Around" pp. 2–3			
Do Together				The Seasons at Your House	
Supplies	**You provide:** sheets of paper, 8" x 10" cardboard for each player (optional: crayons, thread or string or yarn) bottle, bowl, water. N				
Shopping/Planning List	**For next week:** feather from any bird, plate, 10" x 10" paper, pencil, scissors, crayons, needle, thread or string or yarn, two dish cloths, plastic bag, plate, salt, bowl, water, plastic wrap, sugar, food color, spoons, saucers, glass, plate, very warm water, long-necked bottle, deep bowl or bucket, large coin, ice cubes, plastic bag, rolling pin or hammer or rock, plastic bottle with cap.				
Additional Subjects:					

Day 3 pp. 10–11

Do you own a globe? If not, you can also use a ball, such as a basketball or soccer ball, to demonstrate the concept of day and night. All you need is a globe or ball and a flashlight. The flashlight, naturally, represents the Sun. Shine the flashlight on one side of the globe or ball. The part of the world facing the light is experiencing day, while the other areas are experiencing night. But the world rotates, so as it turns, day turns to night on one part of the globe, while night turns to day in other areas. [p. 10]

Day 4 pp. 12–13

The book refers to the northern and southern hemispheres but does not explain the concepts of western and eastern hemispheres. You might want to show your children a world map, noting the northern and southern hemispheres, as divided by the equator, while also pointing out the western hemisphere (North and South America and the Pacific and Atlantic Oceans) and the eastern hemisphere (Europe, Africa, Asia, Australia). [p. 13]

Day 5 pp. 14–15

Occasionally, you'll notice short experiment suggestions such as "Make a rainbow" on page 15. Please consider these activities as optional.

Activity Sheet Questions

Day 1 #1–2

Note to Mom or Dad: Find each week's Activity Sheets immediately after the notes and answer the questions assigned on the schedule page. Each Activity Sheet has a corresponding Answer Key page at the end of each week's notes.

- You do not have to do every question on the Activity Sheets.
- Feel free to adjust and/or omit activities to meet the needs of your children.
- We cover the same concepts repeatedly throughout the challenge your children. Feel free to let your children do those activities they enjoy and simply talk through others.

We have provided space for you to fill in answers as your children respond verbally, or simply check off the items that you discuss.

Suggestion: your Activity Sheets might work more easily in a small binder for your children to keep and use as assigned. If you have more than one child using this program, extra Activity Sheets can be purchased for each child (Item #ASG1).

Occasionally we assign a "Cut-Out" activity. Please find these separate sheets in Section 3.

Discover & Do Level K DVD

Day 2 "Before you Begin" Tracks #1–3

We produced this fun and educational video so you and your children could watch "Professor Ike" perform each of the assigned experiments from *The Usborne Book of Science Activities, Vol. 2.* We recommend you gather your supplies, watch the DVD to see what to do, and then try each of these simple experiments yourself.

Or, if you prefer, you can do the experiment(s) on your own and then watch the DVD to see how it turned out on screen. You may want to mix and match to find out which works best. We hope this video makes your science experiments more enjoyable and more educational.

If your experiments don't happen exactly as you see in the video, it's OK! Watch the Outtakes in the Bonus section of the DVD and see how things didn't always happen perfectly for us, either.

Note: Please navigate your *Discover & Do Level K DVD* by using the DVD menu on your screen.

Science Activities, Volume 2

Day 2 "Air All Around" pp. 2–3

If you remember school science experiments as boring demonstrations without making much of a point, it's time for you and your children to try *The Usborne Book of Science Activities, Vol. 2.* Packed with simple activities and experi-

N Parental Notes

Instructor's Guides A-J also include:

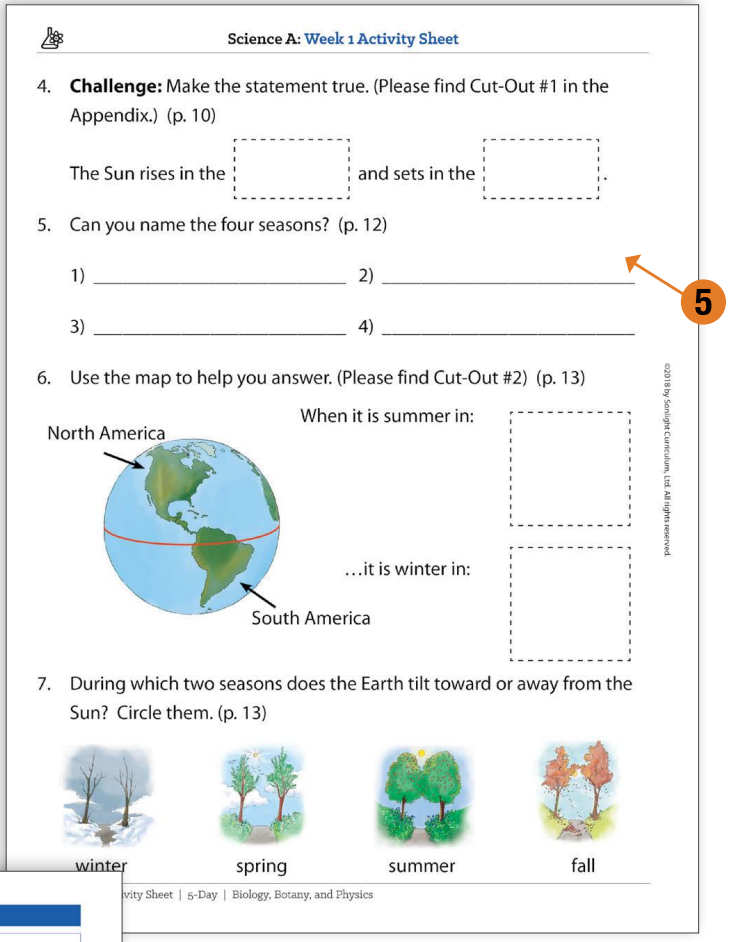
5 Interactive Activity Sheets

Your Activity Sheets—with hundreds of activities, illustrations, charts, and pictures—help your children remember what they've learned. A variety of activity options coordinate with your students' science studies and draw on a range of skills and interests.

Activities progress with your children's abilities: from cutouts, matching, circle-the-answer, and dictation, to fill-in puzzles and sequencing analysis.

6 Complete Answer Keys

Separate Answer Keys mirror your Student Activity sheets for easy grading. No need to test—you have ongoing, reliable insight into your children's comprehension. ◆


Science A: Week 1 Activity Sheet

4. **Challenge:** Make the statement true. (Please find Cut-Out #1 in the Appendix.) (p. 10)

The Sun rises in the [ ] and sets in the [ ].

5. Can you name the four seasons? (p. 12)

1) _____ 2) _____

3) _____ 4) _____

6. Use the map to help you answer. (Please find Cut-Out #2) (p. 13)

North America

South America

When it is summer in: [ ]

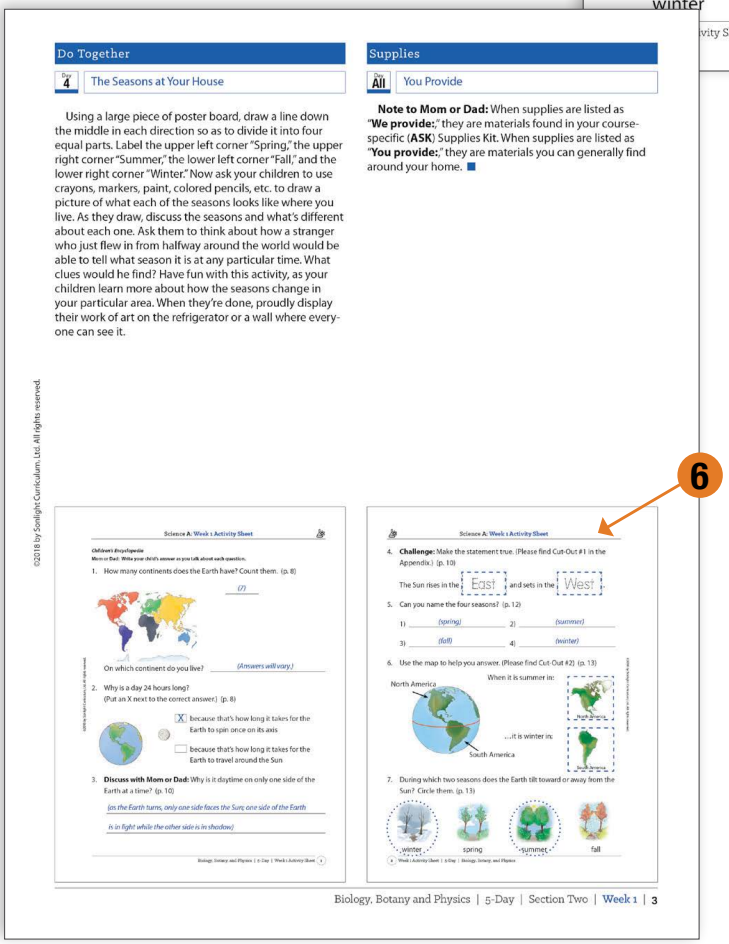
…it is winter in: [ ]

7. During which two seasons does the Earth tilt toward or away from the Sun? Circle them. (p. 13)

winter spring summer fall

vity Sheet | 5-Day | Biology, Botany, and Physics

5


Do Together

Day 4 The Seasons at Your House

Using a large piece of poster board, draw a line down the middle in each direction so as to divide it into four equal parts. Label the upper left corner "Spring," the upper right corner "Summer," the lower left corner "Fall," and the lower right corner "Winter." Now ask your children to use crayons, markers, paint, colored pencils, etc. to draw a picture of what each of the seasons looks like where you live. As they draw, discuss the seasons and what's different about each one. Ask them to think about how a stranger who just flew in from halfway around the world would be able to tell what season it is at any particular time. What clues would he find? Have fun with this activity, as your children learn more about how the seasons change in your particular area. When they're done, proudly display their work of art on the refrigerator or a wall where everyone can see it.

Supplies

Day All You Provide

Note to Mom or Dad: When supplies are listed as "**We provide:**" they are materials found in your course-specific (**ASK**) Supplies Kit. When supplies are listed as "**You provide:**" they are materials you can generally find around your home. ■

6

Biology, Botany and Physics | 5-Day | Section Two | Week 1 | 3

"I am so thankful for Sonlight Science," writes Janine B of Peoria, AZ. "The gentle overview of many topics in Science A has kept both of us engaged all year. I love that the materials are all provided in the Science Supply kit, so I'm not left scrambling for uncommon items on the morning of Experiment Day. Thank you, Sonlight, for making my job easy!" In this picture, Levi (7, Science A) learns about carbonation with the help of some raisins.

Welcome!

In Science A, you will learn about biology, zoology, botany, and physics.

Sonlight Science programs include introductory studies in a range of experimental sciences. The main point of all the reading, activities, and (if you choose) experiments is to introduce your children to the scientific method and the joy of discovery.

We want children to be *introduced* to a lot of different subjects, *intrigued* by the concepts and ideas, and *enticed* to come back to the same themes again in the future. And so, you will find we follow a spiral pattern of education, touching on certain topics repeatedly this year and again in future years.

This way the basic *vocabulary* of science becomes ingrained not only in short-term, but also long-term memory. "Oh, yeah. I vaguely remember hearing about pistils and stamens earlier this year," a child may say—late in the program. When the child studies biology again in future programs, the names and concepts will be vague, but recognizable, as the child gains deeper understanding. Please don't expect mastery of the vocabulary at this age. That will come in time.

We want our children to *remember* what they have learned because they can't help it; because they want to. We don't want them merely to *memorize* what they are supposed to learn so they can pass a test.

The science experiments in this package, although not larger than life, work well.

As you do the experiments and demonstrate care in reading and following directions, recording data, and such, your children learn to follow your lead. An attitude of success—"Sure. We can do this!"—rubs off as well. These cannot be taught simply by reading books; they have to be modeled.

One quick note before you begin: The experiments also don't coordinate with the other science reading. We have not found any single book that coordinates great information and exciting illustrations (as found in the majority of our science books) with great hands-on activities and experiments. We believe we have selected the best cluster of books for both interest and excitement, but know up front: the science reading will not match the experiments.

My Downloads

Find extra schedule pages, new user information (how to use a Sonlight guide) and further helpful information specific to the guide you have purchased from Sonlight on our website: www.sonlight.com. Go to Your Account and select the Downloads section to find all of the downloads for your guide.

Evolution and the Age of the Earth

Two science-related issues require some special attention. The first has to do with evolution, while the second relates to the age of the Earth.

Evolution

Some of the book selections in our science programs contain material supportive of evolution. Why do we include these books? First, we include them because the majority of the content in these resources is of high quality, offering visually and intellectually appealing material. Second, we don't take an isolationist approach to knowledge. The subject of evolution is not something we want to teach children to avoid or put down without adequate understanding. Third, as the dominant perspective in contemporary science, evolution deserves mention and attention, even from those who disagree with its arguments. With that said, we do our best to provide balanced perspectives in relation to any potentially divisive content such as evolution.

When it comes to evolution, there are a few important points to keep in mind. In particular, differences between *macroevolution* and *microevolution* are crucial. These terms are sometimes used to clarify what is meant by evolution. *Macroevolutionists* accept evolution as the over arching explanation for all life, believing that evolution is responsible for significant changes in life forms such as a land-based mammal changing into an oceangoing mammal or dinosaurs allegedly evolving into birds. These supposed evolutionary changes are big, hence the term *macro*, meaning something very large in scale, is used in reference to this kind of evolution.

Microevolution, however, refers to small changes within different kinds of life. This approach grants the reality of changes within kinds such as birds or dogs. Obviously, there are many kinds and sizes of birds and dogs, but despite the variations, these creatures remain birds and dogs. As a result, someone can adhere to *microevolution* without granting all the beliefs of *macroevolutionists*, who tend to accept the basic underlying principles of Darwinian evolution.

Religious objections to evolution tend to stem from the accusation that *macroevolution* leaves God out of the picture, instead leaving the entire process of the emergence and development of life to chance and time. Of course, this means that evolution is undirected by any sort of intelligence, while Christianity, for instance, believes in the reality of the existence of God as Creator. In other words, one approach to evolution is based on a worldview known as *naturalism*, while another is based on *theism*.

Naturalism here does not refer to enjoying nature, as in being a naturalist, but in a worldview that denies the existence of anything beyond the material world. In other words, anything supernatural, such as the existence of God, is rejected by naturalists.

Theistic evolutionists accept the existence of God, but view Him as being active in the process of evolution. Christian theistic evolutionists may appeal to Scripture supporting God's active involvement in His creation (such as 1 Corinthians 8:6, Hebrews 1:3, etc.). In areas where a naturalist sees random processes and events, the theistic evolutionist argues that God is actively involved in directing matters.

Theism accepts that there is more to reality than the material world. There is a supernatural world and God exists as a personal being, active in His creation. By definition, naturalism excludes God. Christian theists who reject macroevolution and theistic evolution argue that God is Creator and Designer, having made all life without resorting to any macroevolutionary processes.

Scientific objections to *macroevolution* include, for instance, allegations that the fossil record lacks transitional forms, that genetic mutations are commonly harmful not helpful, and claims that life shows signs of intelligent design.

One goal we have at Sonlight is to present fair and balanced perspectives on issues, including science and evolution. As a result, some of the materials we choose to utilize will at times present evolutionary points of view, while other selections will not. As the parent, we encourage you to provide guidance for your children on these topics. In our assessment, it's better for your children to have some exposure to controversial topics at home, with intelligent and caring guidance, rather than have them be surprised by ideas they will eventually encounter anyway.

The Age of the Earth

Another issue that will come up in the course of studying science has to do with questions about the age of the Earth. Secular books in some of our science programs will at times refer to "millions" or "billions" of years. For Christians who hold to a young Earth perspective, believing the Earth may only be several thousand years old rather than billions, such phrases pose a problem.

We suggest two solutions. First, whenever you encounter "millions" or "billions" in a science book, feel free to rephrase the sentences in question with phrases such as "a long time," "a very long time," or variations of this phrasing. Second, you may wish to state that although the book uses millions and billions of years, there are other perspectives on the age of the Earth and the age of the universe.

If your children ask why there is disagreement on the age of the Earth and/or universe, you can explain that not everyone interprets the data in the same way. In addition, not everyone employs the same research methods or believes in the same data. Young Earth creationists, for example, include their interpretation of the Bible as a primary source of data. Those who hold to an old Earth view tend either to ignore the Bible (if they are non-Christian) or interpret the biblical creation account in such a way that allows for an old Earth without diminishing essential Christian doctrine. The Bible, from this old Earth perspective, may be a supplementary witness regarding the question of the age of the Earth, but traditional interpretations of it in reference to the age of the Earth need to remain open to reinterpretation.

You may also wish to add, "We aren't sure about how old the Earth is, but I happen to believe …" then state your position on the matter.

Our goal here is not to present a definitive position on the age of the Earth or to present nuanced arguments for each side in the debate, but to leave it to you, as parent, to discuss with your children as you see fit.

Discussion and disagreement about the age of the Earth leads to another important point: is a particular view of the age of the Earth an essential Christian doctrine? Sometimes nonessential beliefs can lead to problems with essential beliefs, so this point needs to be approached carefully and thoughtfully. In general, however, we do well to follow the maxim, "In essentials unity, in nonessentials liberty, and in all things charity." In other words, we should foster Christian unity on essentials, rather than division about nonessentials.

Student Activity Sheets

After each week's notes you will find Activity Sheets to reinforce what you are teaching and engage your student. Each Activity Sheet lists the week it is used at the top of the page. The questions coordinate with what you are reading and each activity is assigned on the schedule page.

It is not necessary to complete every activity provided. These are merely suggestions and you, as the teacher, can determine which are best suited for your children. You will find a variety of activities included in the Activity Sheets that are designed to draw on different skills and interests. Please feel free to assist your children by doing the hard work of handwriting the answers.

We have also included corresponding Instructions and Answer Key pages for all activities. You may want to file the Activity Sheets in a separate binder for your student's use.

Note: If you might reuse your Instructor's Guide and Student Activity Sheets in the future (for a younger child, for instance), we strongly suggest that you purchase an extra set of Activity Sheets when you buy the Instructor's Guide. That way, when we update our Instructor's Guides you will have matching Activity Sheets when you need them. Please contact us if you are looking for Activity Sheets from the past.

Helpful Hints for Using the Cut-Out Sheets

We hope that the Cut-Out sheets included in Section Three will be a wonderful resource for you and your children. They should provide your student with another avenue for demonstrating comprehension, even though they have not yet mastered the written language. Some of the questions on the Activity Sheets ask the student to write simple words (usually terms they are studying in the material at the time). Whenever this occurs, we have structured the sheet to already include the word in dashed letters. We suggest your children practice forming letters to produce a word to show familiarity with science con-

cepts while minimizing the work involved. More importantly, these exercises also allow your children to practice their writing skills in a very practical way. By integrating handwriting and science skills, your children will begin to see how two separate subjects are related and how each is important to the other.

So why the dashed letters? This relates to an educational concept called "scaffolding." When you "scaffold" knowledge, you give them a little information that they didn't have before to get them to a higher level of comprehension than they might have been able to achieve on their own. For example: students are asked to label the four stages of a butterfly's life. It would be very difficult for children to recognize the "pupa" stage, think of the word "pupa," remember that the letters p-u-p-a spell "pupa," and then get their pencil to actually write p-u-p-a without transforming a "p" to a "b" or a "q" in the process!

With the dashed letters, students are provided with the correct letters in the correct order, and as they trace them, they are helping to memorize how to form the letters correctly in the future. Be sure to talk with your children as they trace to help them read the word and recognize it as something you've been talking about—not just tracing.

A Few Other Helpful Hints

1. Write or color first, then cut out. Small pieces of paper are hard to work with, even if your children have fully developed fine motor skills. Eliminate some frustration for your children (and mess for you!) by cutting out pieces last.
2. Assist with cutting! Always be sure to help your children with scissors. Safety scissors with the rounded tips are best (especially for younger children), but they can still cause damage to items you'd rather not cut, or even to children themselves. Cut with care as a pair! **Also**: a few of the pieces may be small or require a little fancier scissor-work. We recommend that an adult cut out these pieces (to save frustrating your children), or share the cutting project—give your children some to do (larger, more basic pieces) while you work on the harder ones.
3. Resist the temptation to do it all! No matter how prepared you'd like to be for a day of teaching, don't think that you need to cut things out ahead of time. Your children will love to help! Not only will they achieve a sense of accomplishment when they have finished, but they are also learning a valuable life skill while developing their fine motor skills.

A Practical Suggestion

Please be aware that some of your books may imply that an experiment will knock your socks off: the results will be "bigger than life." The reality, we've found, is rarely so exciting. Often what you should be looking for is a very small change. The experiments suggested in your books are basic ideas. Try them; improve them! If you figure something out that works better than the instructions in your book, please tell us! Some experiments work every time, some may take several tries. Even the most famous scientists have had to try the same (or similar) experiments over and over. If an experiment does not work the first time, please try again.

Painted Lady Caterpillars

This year, your children will be studying butterflies in Week 13. However, if you plan to order the caterpillars, you may wish to reschedule your study of butterflies to better fit your seasonal situation. In order for the butterflies to survive after their release, the average daily temperature must be 55 degrees Fahrenheit. Please be aware that this is an optional assignment, and not required. We have heard from many customers over the years, however, that they have enjoyed this fun project!

It is possible to inexpensively order Painted Lady Butterfly Caterpillars that you and your children can nurture through metamorphosis and then watch them emerge as live butterflies! Caterpillars even come in kits with everything you'll need to make this project a success. This is an incredible way to bring a topic of study to life with an activity they'll always remember. There are a number of places to obtain these materials. Make sure you plan ahead so that you will have the materials when you need them. Plan on ordering them three or four weeks before you use them.

We recommend:

The Earth's Birthday Project

Phone: (800) 698-4438

Address: Earth's Birthday Project 💻
PO Box 1536
Santa Fe, NM 87504-1536
or: Insect Lore 💻

Supplementary Websites

For your convenience, we have created a website that is dedicated to providing you with links that we think may be helpful for supplementing the material your children will be learning. That website is http://www.sonlight.com/iglinks.html. Every time we have provided a corresponding link on this page, you will see this symbol: 💻. We hope you find this helpful!

Corrections and Suggestions

Since we at Sonlight Curriculum are constantly working to improve our product development, we would love it if we could get you to help us with this process.

Whenever you find an error anywhere in one of our Instructor's Guides, please check our updates page for the latest information at www.sonlight.com/curriculum-updates.html 💻. Report new information by sending a short e-mail to: IGcorrections@sonlight.com. It would be helpful if the subject line of your email indicated where the problem is. For instance, "Science A schedule pages" or "Introduction to World History, Part 1 Study Guide."

If, while going through our curriculum, you think of any way we could improve our product, please e-mail your suggestions to: IGsuggestions@sonlight.com. If you know of a different book we should use, if you think we should read a book we assign at a different point in the year, or if you have any other ideas, please let us know.

Summary

We hope that you enjoy your adventure this year and that it helps you learn more about the world we live in. If we can be of any assistance, please do not hesitate to e-mail us at main@sonlight.com, call us at (303) 730-6292, or better yet, join our Sonlight Connections Community (sonlight.com/connections), where you can chat with others who are going through this same program. You can ask questions, learn new ideas, share with others what you have learned, problem-solve, or just talk. Happy exploring! ■

Science A—Science Supplies

ASK (Science Supplies Kit) Item	Week(s) Used
aluminum foil	6, 23
balloon	30
charcoal	5
citric acid	31
clay (plasticine, model dough, etc.)	3, 11, 30
clothespins	6, 11, 30
coffee filters	26
dowel rod	3, 5
flex straws	20
kidney beans	16
magnifying glass	4, 13, 17
marble	26
masking tape (sticky tape, adhesive tape, etc.)	3, 5, 6, 7, 11, 18, 23, 27, 29, 30
paperclips	30
peat pots	18
ping pong ball	33
potting soil	5, 18
rubber band	26, 27
spool	3
straws	21, 27, 30, 34
Styrofoam tray	30
sugar cubes	24
talcum powder	12
tissue paper strip (1″ x 8″)	2
toothpicks	30
wire	12
yeast	10

Science A

Days 1–4: **Date: _____ to _____**

Week Overview

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36

Week 1

Date:	Day 1	Day 2	Day 3	Day 4
Children's Encyclopedia	pp. 8–9	pp. 10–11	pp. 12–13	
Activity Sheet Questions	#1–2 N	#3–4	#5–7	
***Discover & Do Level K* DVD**				"Before You Begin" Tracks #1–3
Do Together			The Seasons at Your House	
Science Activities, Vol. 2				"Air All Around" pp. 2–3
Supplies	**You provide:** sheets of paper, 8" x 10" cardboard for each player (optional: crayons, thread or string or yarn) bottle, bowl, water. N			
Shopping/Planning List	**For next week:** feather from any bird, plate, 10" x 10" paper, pencil, scissors, crayons, needle, thread or string or yarn.			
Additional Subjects:				

Children's Encyclopedia

Day 1 — pp. 8–9

Let your children know how amazing it is that so many things have to work just right in order for our world to support life. For example, if we were too close to the sun, our world would be too hot to support life. If we were too far, it would be too cold. Isn't amazing what God has done in His creation? He's made things just right to support life on Earth.

The book mentions continents, but doesn't list them. The seven continents are North America, South America, Europe, Asia, Africa, Australia, and Antarctica. Find a map at the back of the book on page 286–287 and show your children the continents. [p. 8]

Notice the "Internet links" box at the top of the page. It is not necessary to visit all these links as part of your reading, but if you'd like to, just follow the link listed in the book for supplemental online material.

The book mentions what the Earth is made of, but doesn't properly label the layers: The outer layer is called the crust; next there is the mantle; then in the center is the core. One idea to help your children visualize the layers of the Earth is to compare the Earth to an egg. The shell is the crust, the white part is the mantle, and the yolk is the core. For a hands-on visual, hard-boil an egg and talk about each part. To see the "mantle" and the "core," you'll need to peel away the "crust" first, but then cut the egg in half lengthwise for a nice cross-section of the "Earth"! Of course, the Earth is not shaped exactly like an egg, but neither is it perfectly round (there are flatter parts on the top and bottom). [p. 9]

N Parental Notes

Day 2 | pp. 10–11

Do you own a globe? If not, you can also use a ball, such as a basketball or soccer ball, to demonstrate the concept of day and night. All you need is a globe or ball and a flashlight. The flashlight, naturally, represents the Sun. Shine the flashlight on one side of the globe or ball. The part of the world facing the light is experiencing day, while the other areas are experiencing night. But the world rotates, so as it turns, day turns to night on one part of the globe, while night turns to day in other areas. [p. 10]

Day 3 | pp. 12–13

The book refers to the northern and southern hemispheres, but does not explain the concepts of western and eastern hemispheres. You might want to show your children a world map, noting the northern and southern hemispheres, as divided by the equator, while also pointing out the western hemisphere (North and South America and the Pacific and Atlantic Oceans) and the eastern hemisphere (Europe, Africa, Asia, Australia). [p. 13]

Activity Sheet Questions

Day 1 | #1–2

Note to Mom or Dad: Find each week's Activity Sheets after the week's notes and answer the questions assigned on the schedule page. Each Activity Sheet has a corresponding Answer Key page at the end of each week's notes.

- You do not have to do every question on the Activity Sheets.
- Feel free to adjust and/or omit activities to meet the needs of your children.
- Some store the Activity Sheets separately for their student to use and some choose to store them behind each week's notes to pull out as they use them. Do what is easiest for your family.
- We cover the same concepts repeatedly throughout the year (and years to come!) to enable students to learn "naturally" through repetition and practice over time.
- Any question marked **Challenge:** will be just that—a challenge for your children. While we believe the material covered in the challenge questions is worthwhile for your children to know, it may not be specifically explained in their reading assignment. As always, if you think any question is too difficult for your children, please feel free to skip.

Please don't expect your children to write the answers until they gain considerable proficiency at handwriting. We have provided a variety of activities to interest and challenge your children. Feel free to let your children do those activities they enjoy and simply talk through others.

We have provided space for you to fill in answers as your children respond verbally, or simply check off the items that you discuss.

Suggestion: if you have more than one child using this program, extra Activity Sheets can be purchased for each child (Item #ASG41).

Occasionally, we assign a "Cut-Out" activity. Please find these separate sheets in Section Three of your guide. Cut them out and attach them to the worksheet.

Discover & Do Level K DVD

Day 4 | "Before you Begin" Tracks #1–3

We produced this fun and educational video so you and your children could watch "Professor Ike" perform each of the assigned experiments from *The Usborne Book of Science Activities, Vol. 2*. We recommend you gather your supplies, watch the DVD to see what to do, and then try each of these simple experiments yourself.

Or, if you prefer, you can do the experiment(s) on your own and then watch the DVD to see how it turned out on screen. You may want to mix and match to find out which works best. We hope this video makes your science experiments more enjoyable and more educational.

If your experiments don't happen exactly as you see in the video, it's OK! Watch the Outtakes in the Bonus section of the DVD and see how things didn't always happen perfectly for us, either.

Note: Please navigate your *Discover & Do Level K DVD* by using the DVD menu on your screen.

Do Together

Day 3 | The Seasons at Your House

Using a large piece of poster board, draw a line down the middle in each direction so as to divide it into four equal parts. Label the upper left corner "Spring," the upper right corner "Summer," the lower left corner "Fall," and the lower right corner "Winter." Now ask your children to use crayons, markers, paint, colored pencils, etc. to draw a picture of what each of the seasons looks like where you live. As they draw, discuss the seasons and what's different about each one. Ask them to think about how a stranger who just flew in from halfway around the world would be able to tell what season it is at any particular time. What clues would he find? Have fun with this activity, as your children learn more about how the seasons change in your particular area. When they're done, proudly display their work of art on the refrigerator or a wall where everyone can see it.

Science Activities, Volume 2

Day **4** — "Air All Around" pp. 2–3

If you remember school science experiments as boring demonstrations without making much of a point, it's time for you and your children to try *The Usborne Book of Science Activities, Vol. 2*. Packed with simple activities and experiments, this book will be your guide to the practical application of science throughout all 36 weeks of this curriculum.

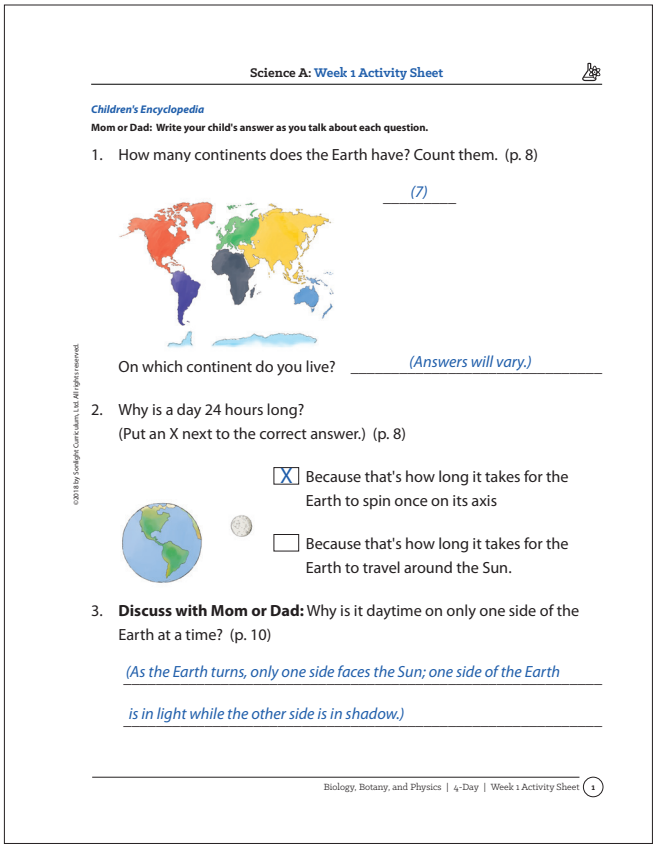
Take some time to look through this book and you'll notice it covers three main kinds of science experiments: science with air, science in the kitchen, and science with plants. What your children will really learn about are principles of physics, botany, and even some chemistry. But you won't need an advanced science degree to work through these activities. In fact, our accompanying *Discover & Do DVD*, described previously, will show you exactly what to do to make these experiments fun and easy.

Note, too, that we've scheduled all experiments for one day during the week. That way, you'll have time to prepare and take your time as you work through these fun activities.

Supplies

Day **All** — You Provide

Note to Mom or Dad: When supplies are listed as "**We provide:**," they are materials found in your course-specific (**ASK**) Supplies Kit. When supplies are listed as "**You provide:**," they are materials you can generally find around your home. ■



Science A: Week 1 Activity Sheet

Children's Encyclopedia

Mom or Dad: Write your child's answer as you talk about each question.

1. How many continents does the Earth have? Count them. (p. 8)

(7)

On which continent do you live? *(Answers will vary.)*

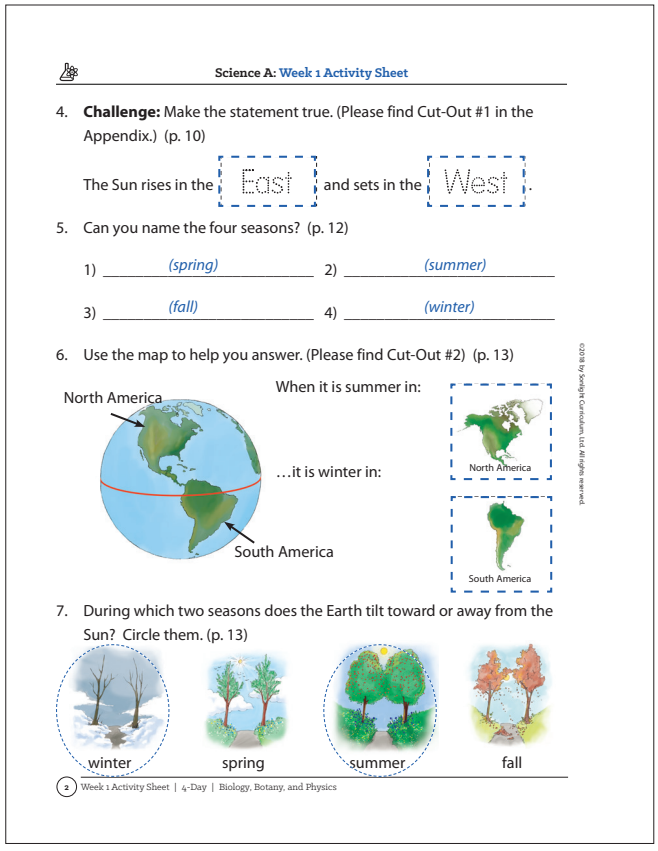
2. Why is a day 24 hours long?
(Put an X next to the correct answer.) (p. 8)

[X] Because that's how long it takes for the Earth to spin once on its axis

[ ] Because that's how long it takes for the Earth to travel around the Sun.

3. **Discuss with Mom or Dad:** Why is it daytime on only one side of the Earth at a time? (p. 10)

(As the Earth turns, only one side faces the Sun; one side of the Earth is in light while the other side is in shadow.)



Science A: Week 1 Activity Sheet

4. **Challenge:** Make the statement true. (Please find Cut-Out #1 in the Appendix.) (p. 10)

The Sun rises in the East and sets in the West.

5. Can you name the four seasons? (p. 12)

1) *(spring)* 2) *(summer)*

3) *(fall)* 4) *(winter)*

6. Use the map to help you answer. (Please find Cut-Out #2) (p. 13)

When it is summer in: …it is winter in:

7. During which two seasons does the Earth tilt toward or away from the Sun? Circle them. (p. 13)

Children's Encyclopedia

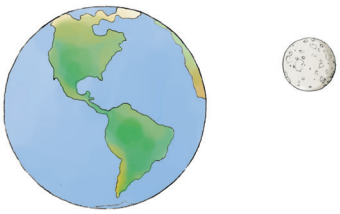
Mom or Dad: Write your child's answer as you talk about each question.

1. How many continents does the Earth have? Count them. (p. 8)

_____

On which continent do you live? _____

2. Why is a day 24 hours long?
(Put an X next to the correct answer.) (p. 8)



☐ Because that's how long it takes for the Earth to spin once on its axis

☐ Because that's how long it takes for the Earth to travel around the Sun.

3. **Discuss with Mom or Dad:** Why is it daytime on only one side of the Earth at a time? (p. 10)

_____

_____

4. **Challenge:** Make the statement true. (Please find Cut-Out #1 in the Appendix.) (p. 10)

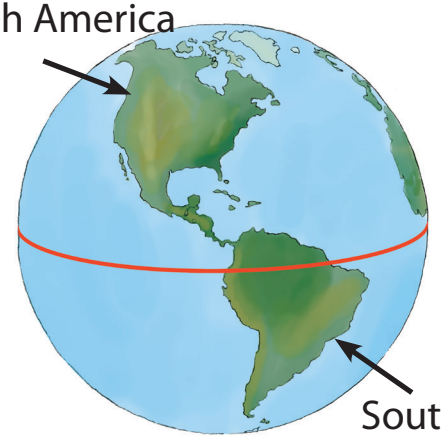
   The Sun rises in the _____ and sets in the _____.

5. Can you name the four seasons? (p. 12)

   1) _____ 2) _____

   3) _____ 4) _____

6. Use the map to help you answer. (Please find Cut-Out #2) (p. 13)



When it is summer in: _____

…it is winter in: _____

7. During which two seasons does the Earth tilt toward or away from the Sun? Circle them. (p. 13)


winter


spring


summer


fall

Science A

Days 5–8: **Date: _____ to _____**

Week Overview																	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36

Week 2

Date:	Day 5	Day 6	Day 7	Day 8
Children's Encyclopedia	pp. 14–15	pp. 16–17		
Activity Sheet Questions	#1–3	#4–5		
Weather			pp. 3–9	
Activity Sheet Questions			#6–7	
***Discover & Do Level K* DVD**				Track #11
Do Together		The Flood		
Science Activities, Vol. 2				"Rising Air" pp. 8–9
Supplies	**We provide: ASK**—1" x 8" strip tissue paper. **You provide:** feather from any bird, plate, 10" x 10" paper, pencil, scissors, crayons, needle, thread or string or yarn.			
Shopping/Planning List	**For next week:** a weather vane already made (or 10" x 10" cardboard, two pieces of cardboard—3" x 6" and 2"x 2"), scissors, glue, pen, paper, stones.			
Additional Subjects:				

Children's Encyclopedia

Day 5 — pp. 14–15

Occasionally, you'll notice short experiment suggestions such as "Make a rainbow" on page 15. Please consider these activities as optional.

Day 6 — pp. 16–17

The photograph at the bottom of page 16 shows a hurricane. Earth is not the only planet to have storms. Jupiter, for example, has many huge storms, such as the Great Red Spot. If you look at images of Jupiter, the spot looks like part of the planet, but is actually an enormous storm that has been occurring for many years.

Weather

Day 7 — pp. 3–9

It's an exaggeration to state, as the book does, that "Every kind of weather is happening somewhere in the world right now." In a broad sense this is true, in that there is sun, rain, wind, and snow, but in a more specific sense this is not true, as, for example, hurricanes aren't always occurring. Just make sure your children get the bigger pic-

Parental Notes

ture—different kinds of weather happen regularly in the world. Even though it may be a sunny day where you and your children live, across the world, someone else may be experiencing very different weather. [p. 3]

How do we know what Earth looks like? Up until the time of rockets, spaceships, and satellites, we didn't know, but we could guess. Nowadays, we have photographs of Earth taken from space, so we know what it looks like. Doesn't it look wonderful? If you look at images of other planets in our solar system, they are each interesting in their own way, but they're nothing like Earth. Our world is made for life. It has air, water, land, many kinds of plants, animals, and people. It's just where it needs to be so that we can have enough sun, too. Did this all happen by itself or did God make it this way on purpose? [p. 5]

The book assumes our world is at least "millions of years" old. See our note on "Evolution and the Age of the Earth" in the Introduction about how to address issues regarding the age of the earth. [p. 7]

In addition to the four types of clouds listed on these pages, *Weather* also mentions a lenticular cloud (p. 26). [pp. 8–9]

Do Together

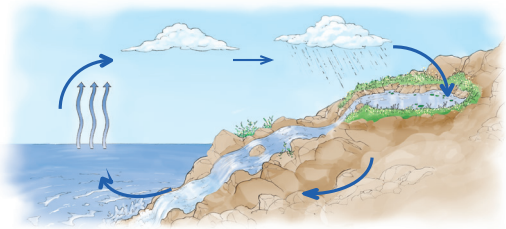
Day 6 — The Flood

Issues of faith and science intersect often. For example, in your children's reading this week, they learned about the scientific aspects of rainbows. But do they know the biblical explanation behind rainbows? To remind them, discuss Noah and the flood and then read Genesis 9:8–17. According to the Bible, what should we remember when we see a rainbow?

To explain how a rainbow forms, explain to your children that light is made up of a lot of colors. Specifically, the colors are red, orange, yellow, green, blue, indigo, and violet. When light passes through the water, it is broken up into the colors seen in a rainbow. ■

Children's Encyclopedia

1. Draw arrows to show which way the water moves in the water cycle. (p. 14)



2. Draw a picture to record the Weather each day this week. (pp. 14–15)

Day 1 | Day 2

(Possible Answers)

Day 3

3. Trace the words and then color the correct colors on the rainbow. (p. 15)

(red)
(orange)
(yellow)
(green)
(blue)
(indigo)
(violet)

red yellow violet blue
orange indigo green

4. Draw lines to match each storm feature to the picture that shows what each is like. (p. 16)

spark | wind and rain | sucks things up

hurricane | lightning | tornado

5. Why do floods happen? Talk through these causes with your children. (p. 17)

(too much rain falls in a short time)

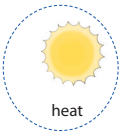
(undersea volcanoes or Earthquakes send huge waves to shore)

(ice and snow melt when the ground is too frozen to absorb it)

(monsoon winds bring heavy rain from the ocean)

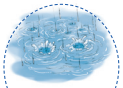
Weather

6. What three things cause weather? Circle them. (p. 4)


heat


clouds


air

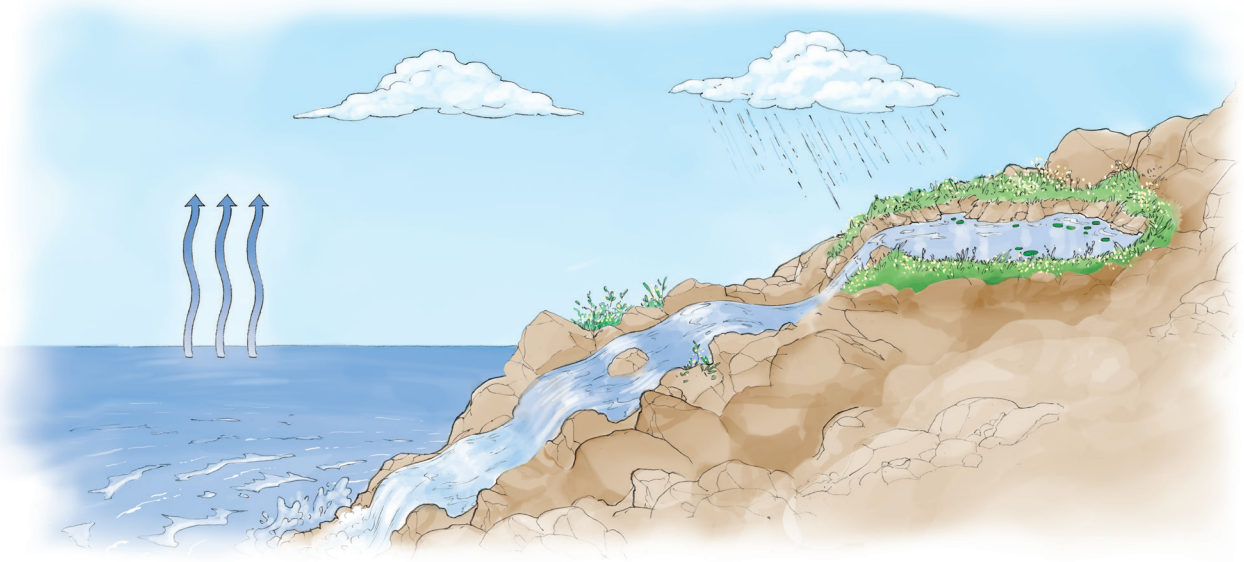

water

7. Fog is like _____ that is close to the ground. Circle one. (p. 9)

a tree **a breeze** **rain** **a cloud**

Children's Encyclopedia

1. Draw arrows to show which way the water moves in the water cycle. (p. 14)



2. Draw a picture to record the Weather each day this week. (pp. 14–15)

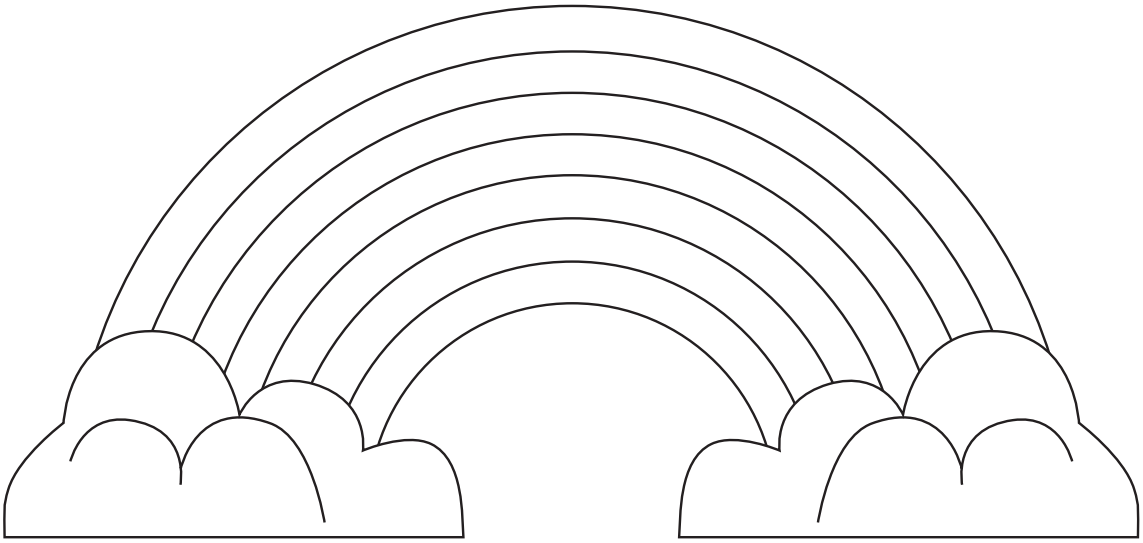
Day 1

Day 2

Day 3

Day 4

3. Trace the words and then color the correct colors on the rainbow. (p. 15)



red yellow violet blue

orange indigo green

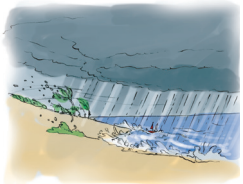
4. Draw lines to match each storm feature to the picture that shows what each is like. (p. 16)

spark

•

•

hurricane



wind and rain

•

•

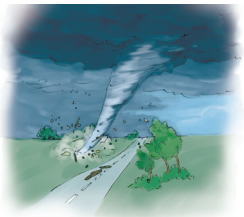
lightning

sucks things up

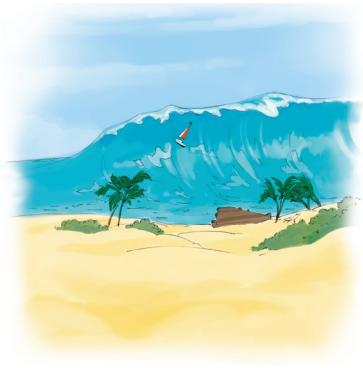
•

•

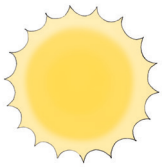
tornado



5. Why do floods happen? Talk through these causes with your children. (p. 17)



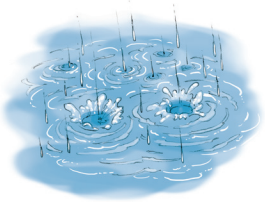
6. What three things cause weather? Circle them. (p. 4)



heat

clouds

air



water

7. Fog is like _____ that is close to the ground. Circle one. (p. 9)

a tree **a breeze** **rain** **a cloud**

Science A

Days 9–12: **Date: _____ to _____**

Week Overview

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36

Week 3

Date:	Day 9	Day 10	Day 11	Day 12
Weather	pp. 10–15	pp. 16–21	pp. 22–30	
Activity Sheet Questions	#1–5	#6–8	#9–11	
***Discover & Do Level K* DVD**				Tracks #12–13
Do Together		Tornado in a Bottle & Disaster Relief	Make a Windsock	
Science Activities, Vol. 2				"Wind" pp. 10–11
Supplies	**We provide: ASK**—dowel, spool, tape, clay. **You provide:** a weather vane already made (or 10" x 10" cardboard, two pieces of cardboard—3" x 6" and 2" x 2") scissors, glue, pen, paper, stones.			
Shopping/Planning List	**For next week:** dirt, medium jar with lid, disposable cup (yogurt) to scoop dirt, water, leaf litter (dead and rotting leaves), baggie, sheet paper, gloves—gardening or rubber (optional), small paint brush or stick to pick up a bug.			
Additional Subjects:				

Weather

Day 9 — pp. 10–15

Let your children know that hail is sometimes dangerous. If hailstones are big enough, they can cause damage to cars, homes, and other things. If you live in an area where you might get hail, make sure your children know to be careful around it.

According to *National Geographic News* (August 4, 2003), the largest hailstone on record in the U.S., as noted briefly in the book, was seven inches in diameter with an 18.75-inch circumference, or, "almost as large as a soccer ball."[1] That's a big piece of ice! The hailstone is frozen and is kept at the National Center for Atmospheric Research in Boulder, Colorado, which isn't too far from Sonlight Curriculum's offices in Littleton. [pp. 14–15]

1. http://news.nationalgeographic.com/news/2003/08/0804_030804_largesthailstone.html. Accessed June 2008.

Day 10 — pp. 16–21

The book notes, "Ancient Greeks believed that the wind was the breath of the Gods." In Greek mythology, several gods are associated with wind, including Aeolus, Boreas (or Aquilo), Eurus, Favonius (or Zephyrus), and Notus (or Auster). Do gods really control the wind? The God of the Bible does. Genesis 8:1 tells us that God "sent a wind over the earth." This wind helped the flood waters recede so Noah's ark could reach dry ground. Other passages also speak about God's control of the wind (see, for instance, Numbers 11:31, Amos 4:13, and Jonah 4:8). In Acts 17:24, the Apostle Paul describes God as, "The God who made the world and everything in it is the Lord of heaven and earth …" [p. 17]

N Parental Notes

Day 11 pp. 22–30

Birds flying away from cold weather has to do with *migration*. This is when animals move from one place to another—sometimes to find a new place to live for awhile where the weather isn't so rough—because they need to locate better sources of food, or to find breeding areas. Scientists aren't really sure how birds and other animals know how or where to migrate. Some think it has to do with the magnetic poles of the planet that some creatures can use to navigate while others think it has to do with instinct, or even the length of daylight. Whatever the answer, it seems to point to design. Could it be that God made certain animals to migrate? [p. 23]

This is a good place to remind your children of the four kinds of clouds discussed earlier in the book: cumulus, stratus, cirrus, and cumulonimbus. Review pages 8 and 9 for more information about these clouds. [p. 26]

The story about a hailstone with a turtle inside is amusing, but we're not sure it's true. There are several stories about the incident, but they all have different dates ranging from 1887, 1894, 1930, and 1984. All the stories agree that the turtle supposedly was in a hailstone that fell near Vicksburg, Mississippi, possibly in Bovina. Some accounts add that it was a 6-inch by 8-inch gopher turtle. Whether the story is true or not, we're pretty sure you and your children don't have to worry about turtles encased in hailstones falling out of the sky. But you never know! [p. 27]

Is it getting hot around here? The book introduces the subject of global warming, but does so carefully, noting, "Many scientists think that the Earth's atmosphere is slowly getting warmer." There are scientists on both sides of this issue, so we'll leave it to you to present this material as you see fit. Your children should at least be familiar with the terms *global warming* and *greenhouse effect*. [p. 28]

Yes, it's a glossary! Read through it with your children. Or ask them if they can define any of the terms *as you read them and then read the definition.* [p. 30]

Do Together

Day 10 Tornado in a Bottle

Discuss tornadoes with your children and then help them make their very own water-based tornado in a bottle. You'll need:

- Two 2-liter clear plastic bottles (empty and clean)
- Water
- 1-inch metal washer
- Duct tape
- Optional: food coloring and/or glitter

Fill one of the bottles two-thirds full of water. Place a metal washer over the opening of the bottle and then turn the second bottle upside down and place it on the washer. Use duct tape to fasten the two containers and the metal washer together. Tape it tightly to make sure no water will leak out when you turn the bottle over. To create the tornado, flip your creation over so that the bottle with the water is on top. Swirl it in a circular motion, and a tornado will form in the top bottle as the water rushes into the bottom bottle. If you want to get creative, use food coloring to give the tornado color and/or glitter to represent debris. Explain to your children that when you swirl the bottle, a vortex forms that creates the tornado!

Day 10 Disaster Relief

Discuss the various weather-related disasters that have occurred in your area in recent memory. Have there been tornadoes? Hurricanes? Floods? Drought? Talk with your children about how people are affected by these disasters. Also discuss what ways—if any—are available to avoid or lessen the effects of such disasters. Finally, brainstorm ideas of how your family might be able to help people affected by recent weather-related disasters (or ones yet to come). Could you donate money or supplies needed by families affected by disasters? Could you raise funds from family or church members? If your family was the victim of a weather-related disaster, how would you cope? What would you do? What kind of assistance would you hope to receive from others? Through this discussion, reinforce what your children have learned about weather-related disasters and their effects. Then make it real by discussing recent events. Find articles and pictures in local papers or on the Internet to help your children understand the sometimes furious nature of weather.

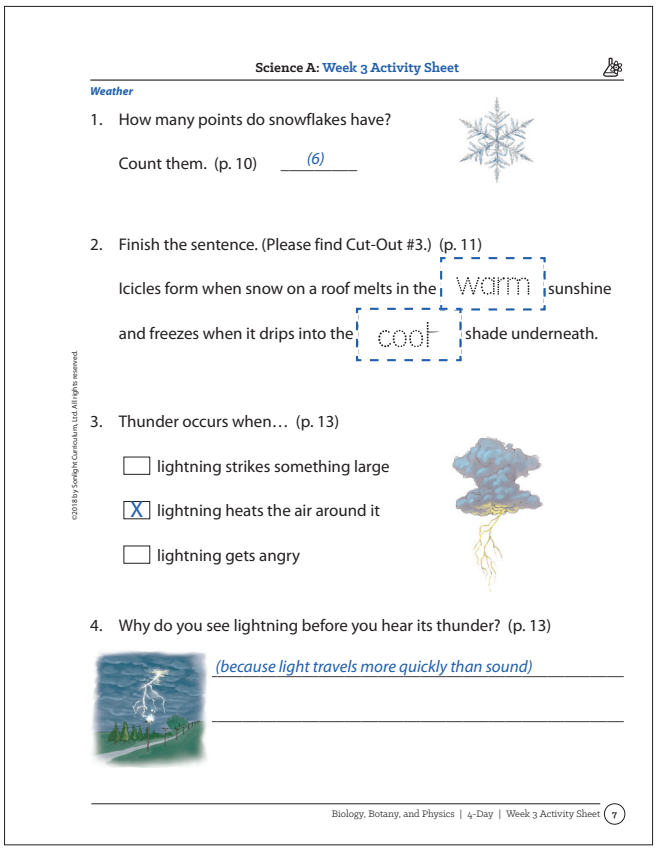
Day 11 Make a Windsock

To help your children better understand wind and the air around them, help them make their very own windsock. You'll need the following supplies:

- A cylindrical cardboard oatmeal box
- Construction paper
- Crepe paper or more construction paper for streamers
- Glue
- String
- Scissors
- Hole punch

Cut the bottom off a cylindrical cardboard oatmeal box. Cover the box with construction paper and then let your children decorate it however they want. Cut some crepe paper (or construction paper) streamers and glue or staple them to one end of the windsock. Punch four holes along the top of the windsock. Cut two pieces of string about a foot long. Tie the strings to the windsock (tie the opposite ends of a string to holes on opposite sides of the cylinder). Tie a longer piece of string to the smaller pieces—you'll

hang the windsock from this piece of string. Hang your windsock from your window or porch. As it blows in the wind, reinforce what your children have learned this week about air and the atmosphere! ■



Science A: Week 3 Activity Sheet

Weather

1. How many points do snowflakes have?

   Count them. (p. 10) *(6)*

2. Finish the sentence. (Please find Cut-Out #3.) (p. 11)

   Icicles form when snow on a roof melts in the warm sunshine and freezes when it drips into the cool shade underneath.

3. Thunder occurs when… (p. 13)

   ☐ lightning strikes something large

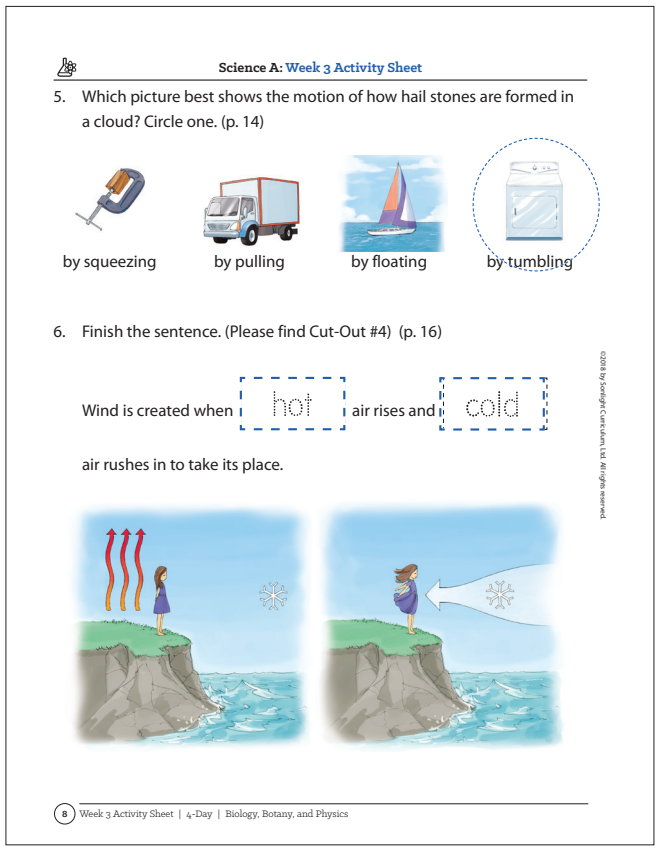
   ☒ lightning heats the air around it

   ☐ lightning gets angry

4. Why do you see lightning before you hear its thunder? (p. 13)

   (because light travels more quickly than sound)

Biology, Botany, and Physics | 4-Day | Week 3 Activity Sheet 7



Science A: Week 3 Activity Sheet

5. Which picture best shows the motion of how hail stones are formed in a cloud? Circle one. (p. 14)

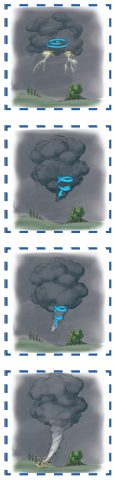
   by squeezing | by pulling | by floating | by tumbling

6. Finish the sentence. (Please find Cut-Out #4) (p. 16)

   Wind is created when hot air rises and cold air rushes in to take its place.

8 Week 3 Activity Sheet | 4-Day | Biology, Botany, and Physics

7. Place the pictures in order to show how a tornado forms. (Please find Cut-Out #5). (p. 19)



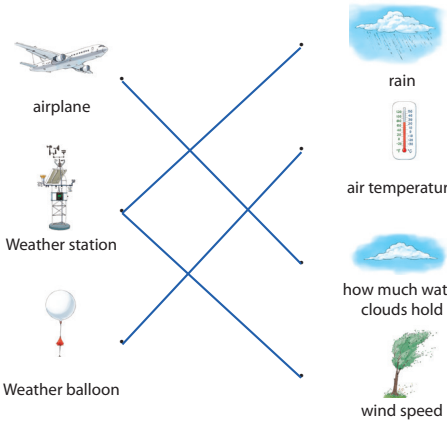
1) The air inside a thunderhead begins to circle.

2) The air moves more quickly and the cloud begins to change shape.

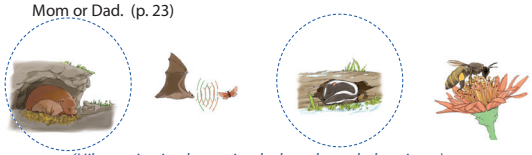
3) Warm air is sucked into the cloud and it begins to look like a funnel.

4) As the cloud moves, the tornado destroys anything it touches.

8. Draw a line to show the tool scientists use to measure each part of weather. (pp. 20-21)



9. Circle the animals that are hibernating. Then explain hibernation to Mom or Dad. (p. 23)



(Hibernation is when animals sleep through the winter.)

10. Use the words in the box to finish the sentence. (p. 28)

penguins	desert	camels	Antarctica

(Camels) live in the *(desert)* because they can survive a long time without water. *(Penguins)* live in *(Antarctica)* and they huddle together to keep each other warm.

11. What two things cause Earth's atmosphere to trap heat? (pp. 28-29)

(gases released by burning fuel)

(animal gases)

Why is this a problem? *(ice and snow would melt and could cause floods)*

Weather

1. How many points do snowflakes have?

   Count them. (p. 10) _____

2. Finish the sentence. (Please find Cut-Out #3.) (p. 11)

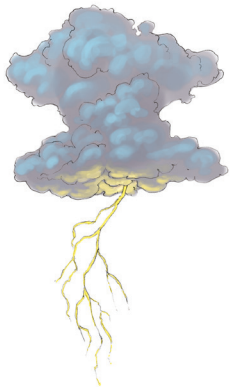
   Icicles form when snow on a roof melts in the _____ sunshine and freezes when it drips into the _____ shade underneath.

3. Thunder occurs when… (p. 13)

   ☐ lightning strikes something large

   ☐ lightning heats the air around it

   ☐ lightning gets angry

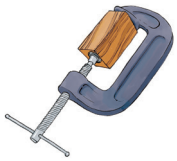


4. Why do you see lightning before you hear its thunder? (p. 13)

_____

_____

5. Which picture best shows the motion of how hail stones are formed in a cloud? Circle one. (p. 14)



by squeezing

by pulling

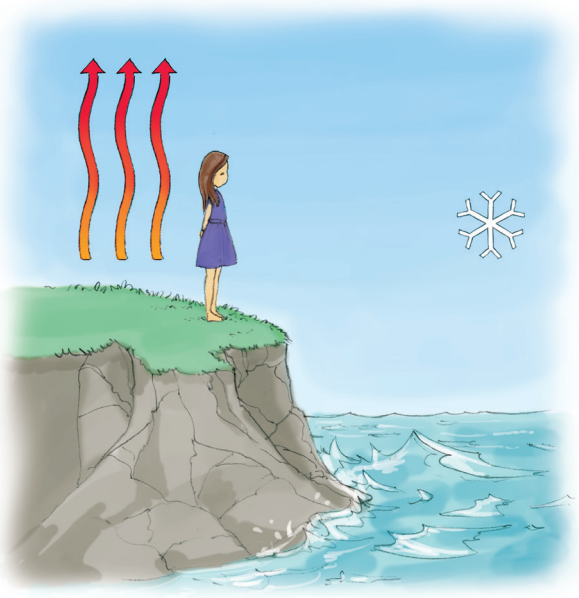
by floating

by tumbling

6. Finish the sentence. (Please find Cut-Out #4) (p. 16)

Wind is created when _____ air rises and _____

air rushes in to take its place.



7. Place the pictures in order to show how a tornado forms. (Please find Cut-Out #5). (p. 19)

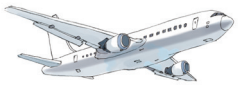
1) The air inside a thunderhead begins to circle.

2) The air moves more quickly and the cloud begins to change shape.

3) Warm air is sucked into the cloud and it begins to look like a funnel.

4) As the cloud moves, the tornado destroys anything it touches.

8. Draw a line to show the tool scientists use to measure each part of weather. (pp. 20-21)

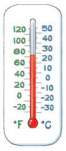


airplane

Weather station

Weather balloon

rain

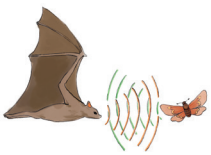


air temperature

how much water clouds hold

wind speed

9. Circle the animals that are hibernating. Then explain hibernation to Mom or Dad. (p. 23)



10. Use the words in the box to finish the sentence. (p. 28)

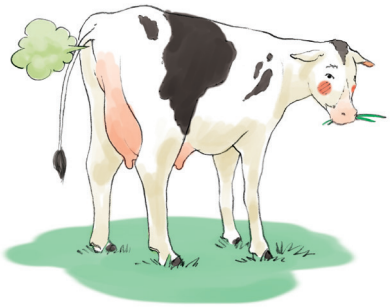
penguins	desert	camels	Antarctica

_____ live in the _____ because they can survive a long time without water. _____ live in _____ and they huddle together to keep each other warm.

11. What two things cause Earth's atmosphere to trap heat? (pp. 28-29)

_____

_____



Why is this a problem? _____

Appendix 1: Science A—Weekly Subject List

Week	Subject
1	earth/day and night/seasons
2	weather/storms and floods/water cycle/clouds/ice/rainbows
3	weather/storms/hail/tornadoes/wind
4	rocks and fossils/earthquakes/tsunamis/volcanoes/plants and soil
5	rivers/mountains/deserts/plants and water
6	grasslands/rainforests/seas and oceans/plants
7	waves/currents and tides/polar regions/freezing and melting
8	coasts/caves and caverns/natural resources/plants
9	conservation/climate change
10	life/cells/animals
11	mammals/birds
12	birds/reptiles
13	amphibians/insects/butterfly/flowers
14	seashore life/underwater life/coral reefs/sharks
15	whales/dolphins/deep sea
16	plants/plant growth/flowers
17	plants/flowers
18	plants/flowers
19	trees/leaves/fungi/flowers
20	human body/bones and muscles/digestion
21	brain/senses/babies/health and nutrition
22	medicine/science/scientists
23	atoms/molecules/solids/liquids/gases
24	energy/forces/hot and cold/wet and dry
25	gravity/floating/friction
26	magnets/light and color/electricity/cameras
27	sound/science words/clocks/springs/gears/levers
28	telephones/refrigerators/microwaves/cars/motorcycles/engines
29	diggers/tractors/trains/planes
30	plumbing/ships and boats/submarines/cameras/floating
31	space/space travel
32	living in space/satellites/probes/solar system
33	Moon/Sun/Mercury/Venus
34	Mars/Jupiter/Saturn/Uranus/Neptune/Pluto/probes
35	space objects/galaxies/moon phases/constellations
36	Isaac Newton/physics/laws of motion

SONLIGHT

2019-2020 CATALOG

Request A FREE COPY!

SONLIGHT.COM