

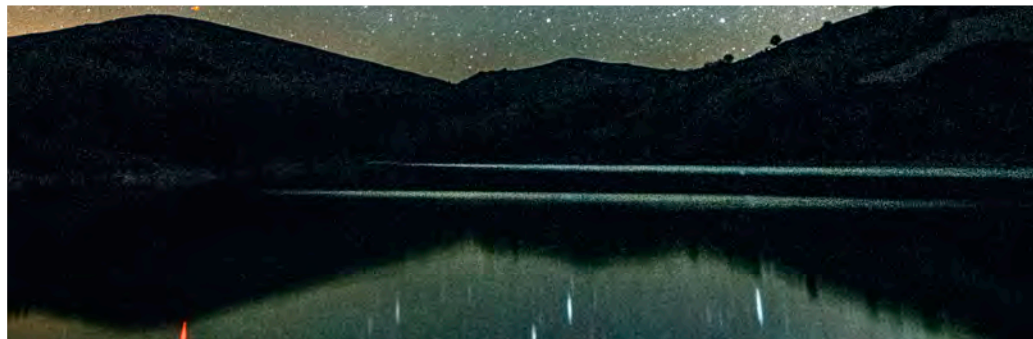
B

MATTER, ECOSYSTEMS, EARTH SYSTEMS, & ENGINEERING DESIGN



FUN FACT

Less than 1% of all water on Earth is fresh water that we can drink.





Thank you for downloading this sample of Sonlight's Science B 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 Weekly Subject List

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

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Science (4-Day)

Matter, Ecosystems, Earth Systems, and Engineering Design

by the Sonlight Team

*“The heavens declare the glory of God; the skies
proclaim the work of his hands.”*

Psalm 19:1 (NIV)

Sonlight Curriculum® Science B “Matter, Ecosystems, Earth Systems, and Engineering Design” (4-Day) Instructor’s Guide and Notes, Fourth Edition

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

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

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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 2021 Edition of the Sonlight Curriculum® Science B “Matter, Ecosystems, Earth Systems, and Engineering Design.” If you purchased it from a source other than Sonlight Curriculum, Ltd., you should know that it may not be the latest edition available.

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For the latest information about changes in this guide, please visit www.sonlight.com/curriculum-updates. 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.

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INSTRUCTOR'S GUIDES SCIENCE

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. The IG provides the framework for what books to read and when, what experiments to do and what videos to watch. No need to create your own lesson plans!

2 DETAILED TEACHING NOTES

Notes explain each assignment and activity, point out fun facts about your reading, include question prompts, explanations, hands-on activities (beyond the experiments), and additional notes to enhance the reading and reinforce what your students are learning.

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 weekly reading. NEW: In levels K-C, these weekly experiments tie *directly* to that week's reading material for an even more linear progression from reading to doing. Experiments provide hands-on learning and reinforce and apply the concepts studied in the days previous so you can see your child's developing mastery of particular science concepts.

Most of the experiments can be done with common household items, but to minimize

Level K: Science
Days 5-8: Date: _____ to _____

Week 2				
Date:	Day 5	Day 6	Day 7	Day 8
Ants	pp. 10-13	pp. 14-15	pp. 16-17	
Activity Sheet Questions	#1-3	#4	#5-6	
Discover & Do Science: Kindergarten Experiments				Experiment #2 How Do Ants Walk?
Do Together		Growing Up		
Supplies	Kindergarten Supplies Kit: clay (enough to make three quarter-sized pieces), 2 pipe cleaners. You Provide: scissors that can cut pipe cleaners, ruler (optional).			
Shopping/Planning List	For next week: 1 cup of warm water, 1 tsp sugar, a small clear plastic bottle with a narrow mouth.			
Additional Subjects:				

Ants pp. 14-15
The natural world is very violent. It can be distressing to imagine defending yourself or being hurt by attackers. Now may be a good time to introduce personal safety and remind

You are probably already familiar with the idea that caterpillars spin cocoons so they can turn into butterflies, but many ants do too! What stages of development have you gone through? (e.g. growing inside your mommy, baby, toddler, and now in school!)

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]

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]

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
#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
"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
"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-

prep time, we've created a Science Supplies Kit that includes many of the supplies you need to conduct each experiment. No planning necessary and minimal prep time!

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

Instructor's Guides K-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. ☀️



“Celebrating our last day of school by looking at all the books we read and learned from! **We love the instructor's guide and all the books!! 100% happy with Sonlight!!**” Jennie W of Puryear, TN. Pictured: Aidan (9, Level D), and Abigail (11, Level F).

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

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

Week 1 Activity Sheet | 5-Day | Biology, Botany, and Physics

5

children would be able to 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 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

When it is summer in:



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



winter spring summer fall

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

6

TRY BEFORE YOU BUY!
Get a three-week sample of any Sonlight Instructor's Guide—FREE!



sonlight.com/samples

Welcome!

In Science B, you will learn about matter, various ecosystems, earth systems, and engineering design.

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. Therefore you will find we follow a spiral pattern of education, touching on certain topics repeatedly this year and again in future years.

In this way the basic *vocabulary* of science becomes ingrained not only in short-term, but also in 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 behaviors cannot be taught simply by reading books; they have to be modeled.

One quick note before you begin: The experiments 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 overarching 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. We encourage you, as the parent, 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 phrasings 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

Inside this Instructor's Guide, 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.

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 it.

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 this guide 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 concepts 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 the 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 prevent 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.

Practical Suggestions for Experiments

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.

Supplementary Websites

We know that there are times throughout our curriculum when we simply cannot cover all the material on a given subject. In these instances we will provide internet search instructions for you to find more information. Please use caution and your own discretion as you look at different internet sites. We highly recommend that you as the parent and teacher look before allowing your student to do the search with you or on their own. 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 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. 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 B/Section Two/Week 1/Schedule.”

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 might 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.

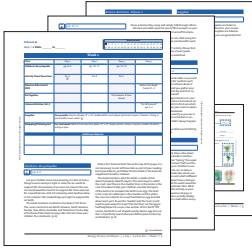
Summary

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! ■

Quick Start Guide—Science

The Sonlight Instructor’s Guide (IG) is designed to make your educational experience as easy as possible. We have carefully organized the materials to help you and your children get the most out of the subjects covered. Subjects are interwoven to avoid redundancy and to get the most out of your day.

This IG includes an entire 36-week schedule, notes, assignments, readings, and other educational activities. Sonlight’s unique literature based approach to education promotes an enjoyable learning experience that will keep your children asking for “just one more chapter, please.” What helpful features can you expect from the IG?

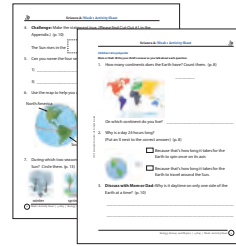


Easy to use

Schedule pages are laid out so a quick glance will tell you exactly what to do each day. Check off each assignment as you go to create instant records. Notes for each book follow directly behind the schedule page.

Activity Sheets

Engage your students with easy-to-follow Activity Sheets to express their growing knowledge as they explore and discover. Same-view answer keys make it easy to check your student’s work.



Science Experiments

Truly explore with hands-on science experiments. Sonlight Science Supply kits contain the hard-to-find materials to complete science experiments.

Notes

When relevant, you’ll find notes about specific books to help you know why we’ve selected a particular resource and what we hope children will learn from reading it. Keep an eye on these notes to also provide you with insights on more difficult concepts or content (look for “Note to Mom or Dad”).

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



Instructor’s Guide Resources and New User Information

Don’t forget to familiarize yourself with some of the great helps you get when purchasing a guide from Sonlight. In the **My Downloads** section of your Sonlight Account, you will find New User Information, extra schedule pages, field trip planning sheets and so much more. An overview of topics covered is located in **Section Three** of the guide.

Section Two

Schedule, Notes, and Activity Sheets

Science B

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
The Magic School Bus: Inside the Earth	pp. 6–17	pp. 18–29	pp. 30–39	
Activity Sheet Questions	#1–4	#5–9	#10–11	
Discover & Do: 2nd Grade Science Experiments				Experiment #1 How does Water Make Caves?
Optional: Do Together	Digging to the Center of the Earth 		Rock’n Roll	
Supplies	We Provide (2SK): 1 cup clay ¹ , 2 sugar cubes, 1 toothpick You Provide: small plastic container about 2” high, dinner plate or aluminum pie tin, water (warm, not hot), pitcher or measuring cup with spout, towels, plastic knife or butter knife, flashlight			
Shopping/Planning List	For Next Week: 4-5 jagged rocks about the size of a quarter, 1 or 2 disposable containers with lid, timer, sheet of white paper			
Additional Subjects:				

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1. Use the full stick of blue clay in this experiment. Be sure to dry and store the clay, it will be used again.

The Magic School Bus: Inside the Earth

Day 1	pp. 6–17
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Studies about the earth and what is inside it fall under the broad category of **geology**. Another study that falls under the geology umbrella is the age and origin of the earth. Since there are no exact records to show how the earth was formed or how long ago the earth was created, scientists continue to study this topic. This book states that the rock layers were formed millions of years ago. If your family believes something different, feel free to say “a long time ago.” This would be a good time to let your students know what you believe and why. [p. 8]

Day 2	pp. 18–29
-----------------	-----------

Regarding “millions of years ago”, see our note in the Introduction. [pp. 17–18]

Later this year, you and your students will learn more about the rock cycle. As Ms. Frizzle explains the three types of rock in the book, you can introduce the concept of this cycle to your students and familiarize them with the words so it’s easier to understand the cycle later. You’ll learn about sedimentary rocks on page 18, metamorphic rocks on page 24, and igneous rocks on page 26. Finally, note that page 28 shows each type of rock within the different layers of the earth. Minerals that make up rocks go through the cycle and, as a result, continue transforming into different kinds of rocks. [pp. 18–28]

Parental Notes

Your students may know that Hawaii is made up of many volcanoes—five to be exact. Over time, these volcanoes, which are shield volcanoes, erupted over and over. These many eruptions eventually created the island chain that we call Hawaii. [pp. 30–33]

Activity Sheet Questions

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 sets of the Activity Sheets may be purchased for each child (Item #BSG1).

Occasionally we assign a “cut-out” activity. We recommend that you find these separate sheets in Section Three of your guide. If you like, color the sheets first, then cut them out and attach them to the worksheet.

Optional: Do Together

Each week throughout Science B, we will provide ideas for fun activities to do with your children. In general, we will try to make the activities actually “active”: performing additional research on a particular topic, playing a game, getting outside, or some other type of “hands-on” activity that seeks to apply what your children have been learning in a meaningful way.

Take our ideas for what they are—mere suggestions—and don’t feel enslaved to them. If your children don’t want to do a particular activity or have a different, better idea, by all means ditch ours and go with theirs!

Note to Mom or Dad: Please be certain that you do not choose an area with utilities underground! If you have any questions or doubts about a particular area, don’t dig!

For today, get your shovels! Picks ... axes ... whatever you need. It’s time to dig! Just like the kids in your book, your children need to get outside and dig. Find a suitably inconspicuous area and have your children dig a hole. How deep they want to dig is entirely up to you.

When you’ve dug your hole, examine it. What is the soil like? Does it change as it gets deeper? If so, how? Did you come across any rocks as you dug? If so, collect some as samples. When you get back inside, use the Internet to try to identify the types of rocks you found. Have fun!

Using your book as a guide, especially the rock collection on p. 37, try to find as many different types of rock as you can. Do you know of any nearby statues made of marble? What about a countertop made of granite? A building made of limestone? A house roof made of slate? A building exterior made of sandstone? Feel free to identify and discuss other types of rock not discussed in your book. Are there specific types of rock common to your area? What are they? Help your children to understand the amazing number of ways we use rock every day.

Supplies/Shopping Planning List

Supplies

Note to Mom or Dad: When supplies are listed as **We provide**, they are materials found in your course-specific (2SK) supplies kit. When supplies are listed as **You provide**, they are materials you can generally find around your home. We will also help provide a list of materials that will be needed for the following week, to help you prepare in advance.

Science Notebook

Scientists keep diaries and journals. In these journals they record their theories, the procedures of their experiments, and their observations as their experiments progress. Their hope is that the results they observe will lead to new discoveries. Skills of observation and data collection are therefore fundamental to scientific research. These are important skills and habits for everyone to learn.

Help your children to learn this discipline by working with them to record their experiments and observations in their own personal Science Notebook.

You can either make your own notebook by tying together sheets of paper with yarn or use a spiral-bound notebook. I prefer to use the bound ruled notebooks that college students use because they are durable and stack so nicely on our bookshelves. Don’t worry about making it too complicated. Just provide a vehicle for recording drawings, questions, and observations. Make a special heading for each new experiment or field trip.

Perhaps someday when your children are grown and working as medical doctors keeping logs on their patients, or are researchers, keeping records of their experiments, you can smile to yourself and remember how you helped to get them started. ■

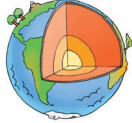
Science B: Week 1 Activity Sheet



Magic School Bus: Inside the Earth

1. Name two things that make up the Earth's crust. (p. 14)

- 1) (Hard rock)
- 2) (Soil)



2. Color the rocks that list things found in soil. (p. 15)



Rock



Birds



Clay



Bits of dead leaves



Cars



Sticks



Pencils

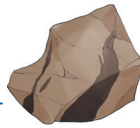


Pebbles

3. Circle all of the statements that are true about the Earth. (pp. 9-15)

The solid part of the Earth is made up of frozen water.

- If there were no rock, there would be no soil.
- The shell on the outside of the Earth is called the crust.
- The tiny specks of color that can be seen in rocks are minerals.



Science B: Week 1 Activity Sheet

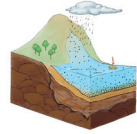


4. No matter where you are standing on the Earth, what is under you? (p. 16)

- Shells
- Clay
- Rock
- Leaves

5. How does sedimentary rock form? Number the steps in the correct order. (p. 18)

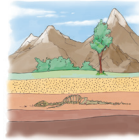
- (1) Dust and sand blow into lakes and oceans.
- (3) Over time the sediment hardens into rock.
- (2) The dust and sand settle on the bottom of the lake or ocean in layers of sediment.



6. How is a fossil formed? (p. 19)

(An animal (or plant) is buried in layers of mud, sand, or crushed shells.

Then it turns to rock along with the layers and becomes a fossil.)

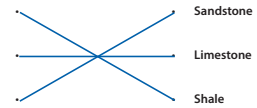


7. Match the rock type with its description. (pp. 18-19)

This rock is made of mud and clay which are all pressed together.

This rock is made of shells that are all pressed together.

This grainy rock is made of grains of sand that are all pressed together.



Science B: Week 1 Activity Sheet



8. What three things do you need to change limestone into marble? (p. 25)



H (eat)



p (ressure)



T (ime)

9. Name three types of rock based on the descriptions given. Use the words in the box.

Sedimentary	Igneous	Metamorphic
-------------	---------	-------------

- 1) (Igneous) : cooled rock that was once melted; this name comes from a word that means "fire" (p. 26)
- 2) (Sedimentary) : rock that hardened as layers; this name comes from a word that means "to settle" (p. 18)
- 3) (Metamorphic) : rock that was changed from one kind to another by heat and pressure; this name comes from a word that means "to change" (p. 24)

Science B: Week 1 Activity Sheet



10. Match the type of volcano to its description. (p. 30)



Shield



Cindercone

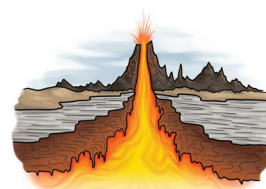


Composite

- steep walls with recessed opening
- gradual walls with recessed opening
- more rounded and flat

11. On each line, write whether each rock is metamorphic (M), sedimentary (S), or igneous (I). (p. 37)

- (I) Basalt
- (S) Limestone
- (M) Slate
- (M) Quartzite
- (S) Shale
- (I) Obsidian



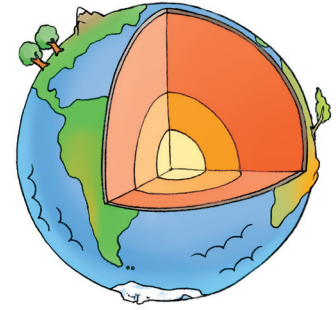


Magic School Bus: Inside the Earth

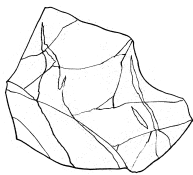
1. Name two things that make up the Earth's crust. (p. 14)

1) _____

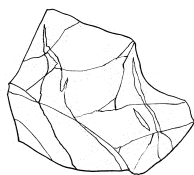
2) _____



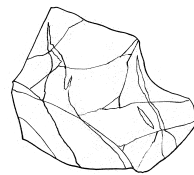
2. Color the rocks that list things found in soil. (p. 15)



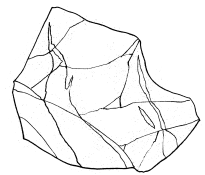
Rock



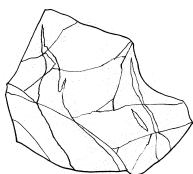
Birds



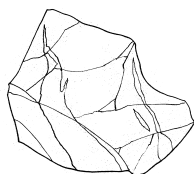
Clay



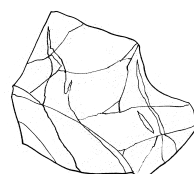
**Bits of
dead leaves**



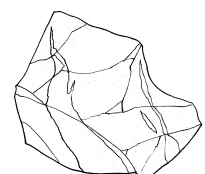
Cars



Sticks



Pencils



Pebbles

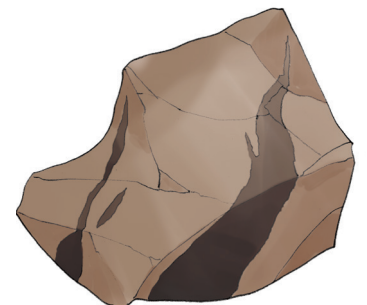
3. Circle all of the statements that are true about the Earth. (pp. 9–15)

The solid part of the Earth is made up of frozen water.

If there were no rock, there would be no soil.

The shell on the outside of the Earth is called the crust.

The tiny specks of color that can be seen in rocks are minerals.





4. No matter where you are standing on the Earth, what is under you? (p. 16) _____

Shells

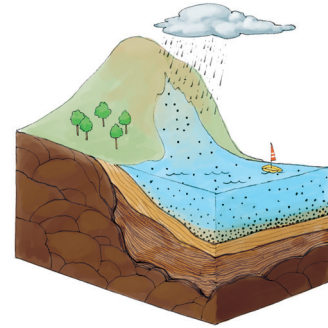
Clay

Rock

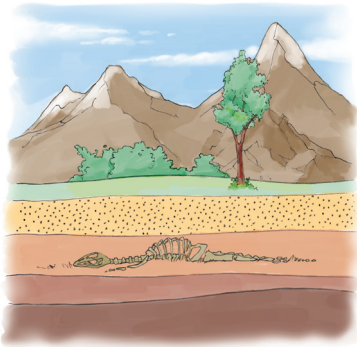
Leaves

5. How does sedimentary rock form? Number the steps in the correct order. (p. 18)

- _____ Dust and sand blow into lakes and oceans.
- _____ Over time the sediment hardens into rock.
- _____ The dust and sand settle on the bottom of the lake or ocean in layers of sediment.



6. How is a fossil formed? (p. 19)



7. Match the rock type with its description. (pp. 18–19)

This rock is made of mud and clay which are all pressed together. •

• **Sandstone**

This rock is made of shells that are all pressed together. •

• **Limestone**

This grainy rock is made of grains of sand that are all pressed together. •

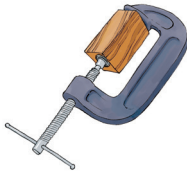
• **Shale**



8. What three things do you need to change limestone into marble? (p. 25)



H _____



P _____



T _____

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9. Name three types of rock based on the descriptions given. Use the words in the box.

Sedimentary	Igneous	Metamorphic
--------------------	----------------	--------------------

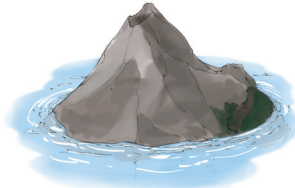
- 1) _____ : cooled rock that was once melted; this name comes from a word that means "fire" (p. 26)
- 2) _____ : rock that hardened as layers; this name comes from a word that means "to settle" (p. 18)
- 3) _____ : rock that was changed from one kind to another by heat and pressure; this name comes from a word that means "to change" (p. 24)



10. Match the type of volcano to its description. (p. 30)



Shield



Cindercone



Composite

steep walls with recessed opening

gradual walls with recessed opening

more rounded and flat

11. On each line, write whether each rock is metamorphic (M), sedimentary (S), or igneous (I). (p. 37)

_____ **Basalt**

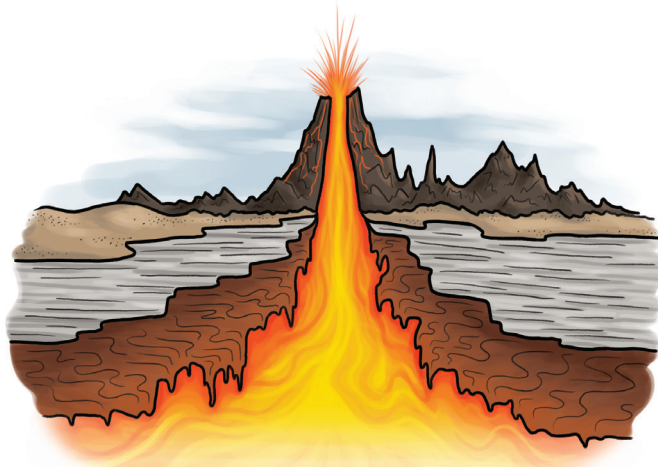
_____ **Limestone**

_____ **Slate**

_____ **Quartzite**

_____ **Shale**

_____ **Obsidian**



Science B

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
DKfindout! Earth	pp. 4–5	pp. 6–7	pp. 8–9	
Activity Sheet Questions	#1–4	#5–6	#7–10	
Discover & Do: 2nd Grade Science Experiments				Experiment # 2 How does Weathering Change Rocks?
Optional: Do Together			Layers Upon Layers	
Supplies	We Provide (2SK): magnifying glass, 1 tablespoon fine play sand, 5 sugar cubes You Provide: 4-5 jagged rocks about the size of a quarter, 1 or 2 disposable containers with lid, timer, sheet of white paper			
Shopping/Planning List	For Next Week: 1 cup flour, 1/2 cup salt, 1-2 cups water, large mixing bowl, sturdy spoon, resealable bag (optional), tissue, paper towels, glue, permanent marker, dinner plate (optional), watercolor paints (optional)			
Additional Subjects:				

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DKfindout! Earth

Day 6

pp. 4–5

Regarding “millions of years ago”, see our note in the Introduction. [p. 4]

Page 5 says that the earth and other planets were formed “as gravity forced material in clouds of gas and dust together.” Again, use this as a transition to talk with your students about what people believe and what your family believes about the origin of the Earth. [p. 5]

Day 7

pp. 6–7

The earth’s atmosphere is the only one in our solar system suitable for humans. Each layer is made of different gases. The troposphere, the layer that is closest to the earth and where people live, is made up of 78% nitrogen. There is also a significant amount of oxygen present (21%) which is great since humans need oxygen to survive. [pp. 6–7]

Day 8

pp. 8–9

Land makes up just 29% of the earth’s surface and the land is divided into continents. There are seven continents: North America, South America, Europe, Asia, Australia, Africa, and Antarctica. Asia is the largest and Australia is the smallest. [pp. 8–9]

Optional: Do Together

Day 8

Layers Upon Layers

Today, you and your students learned that the Earth is made up of layers. Make a fun-layered food. You could make a layered dip such as a 7-Layered Southwestern Dip, a layered salad, a layered main dish such as lasagna, or a tasty layered dessert like a trifle. Be as creative as you want. As you cook, review the layers of the Earth and compare it to the food you are making. Is there a crust? Is one layer more solid or liquid than another? Enjoy your time in the kitchen together and then around the table as you eat your culinary masterpiece. ■

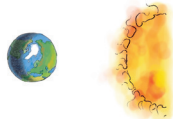
Parental Notes



Find Out! Earth

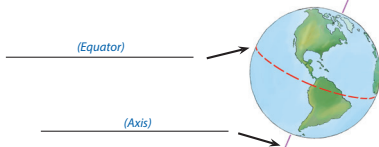
1. The Earth is the only planet with liquid water on its surface. (p. 4) True **False**

2. Explain what is happening with the Earth and the Sun when it is nighttime. (p. 5) An area of the Earth is turned away from the sun, so it is dark.



3. How many days does it take for the earth to orbit all the way around the sun? (p. 5) 365

4. Name and label the area that go through the middle of the Earth. Then name and label the line which shows the Earth is slightly tilted when it spins (p. 5)

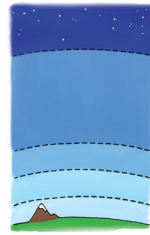


5. What is true of the Earth's atmosphere, the thick layer of gases? Check all that apply. (pp. 6-7)

- Protects Earth from the Sun's rays.
- The uppermost layer has a clear boundary.
- Maintains Earth's temperature at a comfortable level.
- Exists in distinct levels.



6. Label the illustration with the names of the atmosphere layers. Move the statements above the numbered items. (pp. 6-7)



- 4 **Exosphere:** highest layer, merges into space.
- 4 **Thermosphere:** the hottest layer.
- 2 **Mesosphere:** the coldest section with thick gases.
- 1 **Stratosphere:** holds the Ozone layer.
- 3 and 5 **Troposphere:** controls the air we breathe.

- Statement #1:** Protects life from dangerous ultraviolet rays.
- Statement #2:** Thick gases here cause meteors to burn up.
- Statement #3:** Life occurs here.
- Statement #4:** Satellites travel in this layer. (Hint: This statement is used twice.)
- Statement #5:** Weather occurs here.

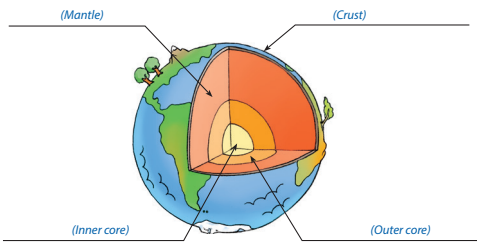
7. Seas and oceans cover most of our planet. What percent of the Earth's surface is covered by water? Circle one. (p. 8)

- 24%
- 53%
- 71%
- 94%



8. Label the layers of the earth using the terms in the box. (pp. 8-9)

Mantle Outer core Crust Inner core



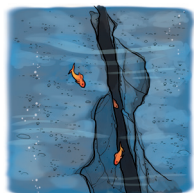
9. How do volcanoes occur? (p. 9)

Liquid rock, called magma, rises up through the cracks in the Earth's crust



10. Circle the correct answer. The continental crust is

Younger Older than oceanic crust. (p. 9)

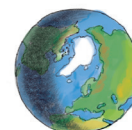




Find Out! Earth

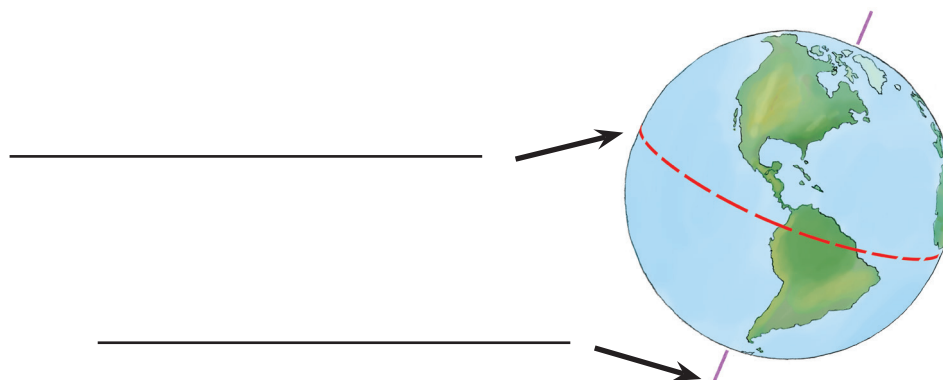
1. The Earth is the only planet with liquid water on its surface. (p. 4) **True** **False**

2. Explain what is happening with the Earth and the Sun when it is nighttime. (p. 5) _____



3. How many days does it take for the earth to orbit all the way around the sun? (p. 5) _____

4. Name and label the area that go through the middle of the Earth. Then name and label the line which shows the Earth is slightly tilted when it spins (p. 5)



5. What is true of the Earth's atmosphere, the thick layer of gases? Check all that apply. (pp. 6–7)

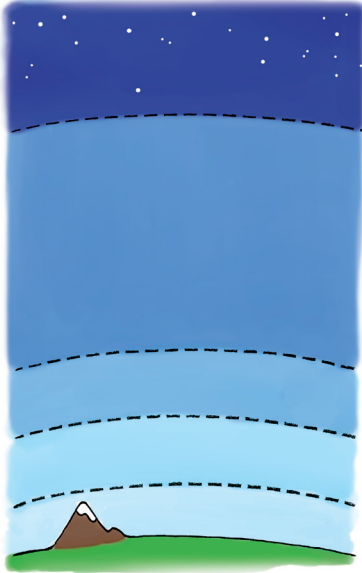
- Protects Earth from the Sun's rays.
- The uppermost layer has a clear boundary.
- Maintains Earth's temperature at a comfortable level.
- Exists in distinct levels.



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6. Label the illustration with the names of the atmosphere layers. Move the statements above the numbered items. (pp. 6-7)



_____ **Exosphere:** highest layer, merges into space.

_____ **Thermosphere:** the hottest layer.

_____ **Mesosphere:** the coldest section with thick gases.

_____ **Stratosphere:** holds the Ozone layer.

_____ and _____ **Troposphere:** controls the air we breathe.

Statement #1: Protects life from dangerous ultraviolet rays.

Statement #2: Thick gases here cause meteors to burn up.

Statement #3: Life occurs here.

Statement #4: Satellites travel in this layer. (Hint: This statement is used twice.)

Statement #5: Weather occurs here.

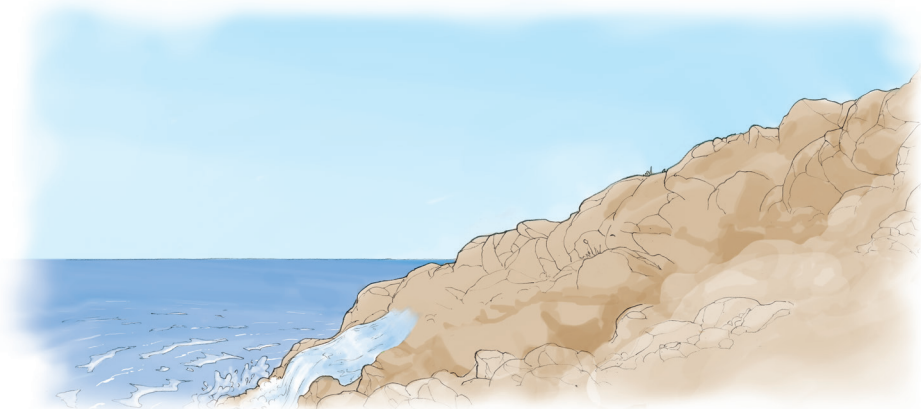
7. Seas and oceans cover most of our planet. What percent of the Earth's surface is covered by water? Circle one. (p. 8)

24%

53%

71%

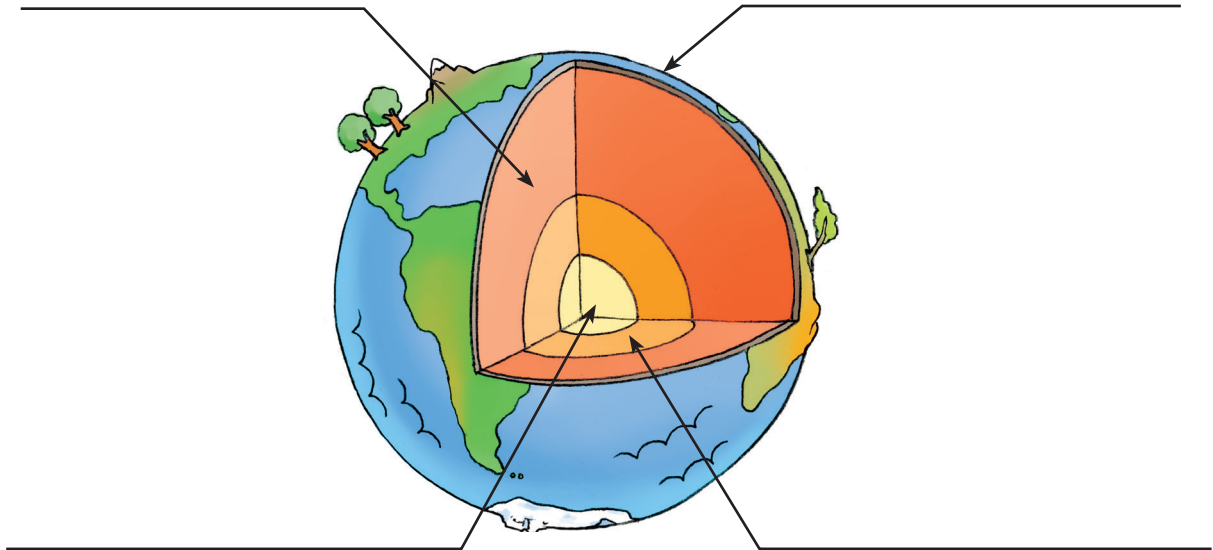
94%





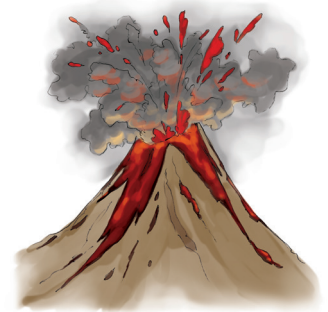
8. Label the layers of the earth using the terms in the box. (pp. 8–9)

Mantle	Outer core	Crust	Inner core
--------	------------	-------	------------



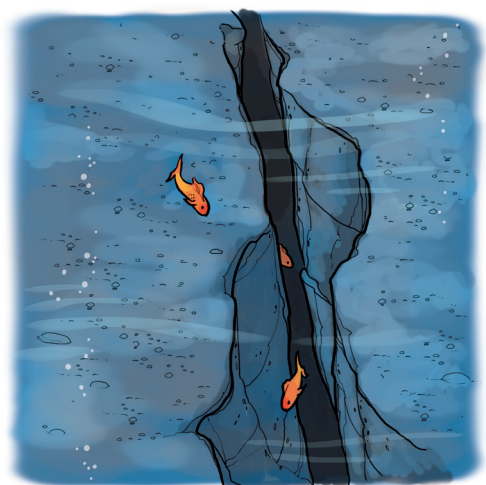
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9. How do volcanoes occur? (p. 9)



10. Circle the correct answer. The continental crust is

Younger **Older** than oceanic crust. (p. 9)



Science B

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
DKfindout! Earth	pp. 10–11	pp. 12–13	pp. 14–15	
Activity Sheet Questions	#1–2	#3–4	#5–9	
Discover & Do: 2nd Grade Science Experiments				Experiment #3 How do Landforms and Water Relate?
Optional: Do Together			Eruption!	
Supplies	We Provide (2SK): 7" Styrofoam plate, 9" plate, eyedropper, 1/4 cup sand, 10 toothpicks, masking tape You Provide: 1 cup flour, 1/2 cup salt, 1-2 cups water, large mixing bowl, sturdy spoon, resealable bag (optional), tissue, paper towels, glue, permanent marker, dinner plate (optional), watercolor paints (optional)			
Shopping/Planning List	For Next Week: warm and cold water to make gelatin, glass or metal pan for gelatin (about 9" x 9"), 1 bag of miniature marshmallows			
Additional Subjects:				

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DKfindout! Earth

Day 11

pp. 10–11

There are more than 450 volcanoes located in the Ring of Fire which is a path along the rim of the Pacific Ocean which extends approximately 24,900 miles. That's about 75% of all of the Earth's volcanoes. Mount St. Helens is located in the state of Washington. When it erupted in May of 1980, it became the deadliest and most economically destructive volcanic event in the history of the United States. [pp. 10–11]

Day 12

pp. 12–13

Regarding “millions of years”, see our note in the Introduction. [p. 13]

What is the difference between magma and lava? Scientists classify molten rock under the surface of the Earth as magma. Once the liquid rock breaks through the Earth's surface, it is called lava.

Day 13

pp. 14–15

The eruptions from shield volcanoes can last for years. The longest lasting eruption started in 1983 from the Kilauea volcano located on the island of Hawai'i. This volcano has several vents, or places, where the lava erupts. Since it is a shield volcano, the lava tends to ooze out rather than shoot out into the air. Even though the lava is moving slowly, dangerous conditions can still exist due to the gases that are emitted from the volcano. [pp. 14–15]

Optional: Do Together

Day 13

Eruption!

Today, you and your students read about volcanoes around the world. Now you can make a volcano right in your own backyard. You will need a spot that has some sand, dirt or gravel, a plastic cup, water, 4-6 tablespoons of baking soda, a teaspoon of dish soap, ½ ounce to 2 ounces of washable paint (if you want your lava to be colored),


Parental Notes

and about a cup of vinegar. Vinegar can harm plants, so make sure to do this away from your yard! If you prefer to do this activity indoors, you can use clay in a sink or large bowl to make your volcano. To make your volcano, put everything but the vinegar in your cup. Mix the ingredients well. It should be about 2/3 of the way full. Use the sand, dirt, or gravel to build the volcano structure around the cup. Once you are happy with your volcano, slowly pour in the vinegar until it starts to erupt. As the eruption slows, you can add more vinegar to keep it going. ■


Science B: Week 3 Activity Sheet

Find Out! Earth


1. Earth's crust is divided into tectonic plates. What can occur when these plates meet together? (p. 10)



(Volcanoes)



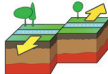
(Mountains)



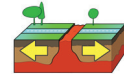
(Earthquakes)

2. There are three main types of plate boundaries. Using the word bank, label them below. (pp. 10-11)

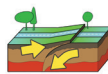
Convergent
Divergent
Transform



(Transform)

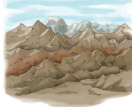


(Divergent)



(Convergent)

3. What is the most common type of mountains, and what causes them to form? (p. 13) (The most common type of mountains are fold mountains and they are formed when two or more tectonic plates are pushed together.)











Matter, Ecosystems, Earth Systems, and Engineering Design | Week 3 Activity Sheet 9

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Science B: Week 3 Activity Sheet

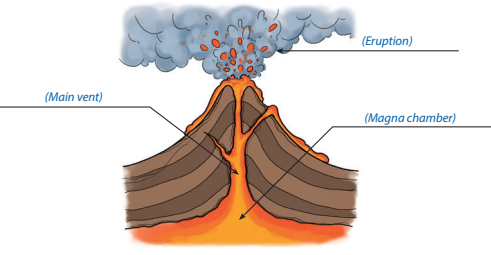
4. Match each word to the correct description. (pp. 12-13)

Fold Mountains		Cracks in the Earth's crust create massive blocks of rock.	
Volcano Mountains		Large amounts of magma bubble up toward the surface and form these mountains.	
Fault Mountains		These mountains form when two or more tectonic plates are pushed together.	
Dome Mountains		Lava flows over the land and before it hardens, the volcano erupts again building up more layers.	

5. Where can most of the Earth's volcanoes be found? (p. 14) (Under the ocean)

6. Label the volcano using the words in the box. (p. 14)

Main vent
Magma chamber
Eruption



(Eruption)

(Main vent)

(Magma chamber)

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Week 3 Activity Sheet | Matter, Ecosystems, Earth Systems, and Engineering Design 10

Science B: Week 3 Activity Sheet

7. Check off all true statements about volcanoes. (p. 14)

- Magma can erupt from smaller vents.
- The force of the eruption can blow the top of the volcano.
- Magma is forced up because the temperature gets too high. *(The pressure gets too high.)*
- Melted rock or lava flows and hardens.
- Volcanoes can be active or dormant but never extinct. *(They can become extinct.)*

8. Match the name of the type of volcano with the description. (pp. 14-15)

Shield		The smallest and most common type of volcano.	
Stratovolcano		Have large, circular hollows that appear like a bowl.	
Cinder cone		Tall and cone-shaped volcanoes with steep sides.	
Caldera		Volcanoes with gently sloping sides.	

9. **Critical Thinking:** What type of volcano does the picture show? Explain why you made that choice.

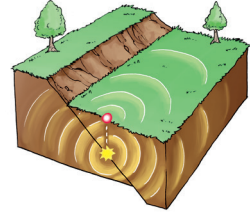
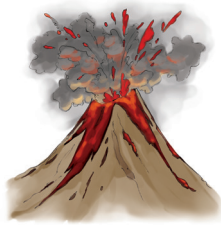
(Stratovolcano: it is tall and cone-shaped with steep sides, like Mt. Fuji.)

Matter, Ecosystems, Earth Systems, and Engineering Design | Week 3 Activity Sheet 11



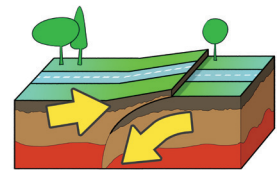
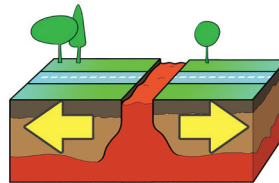
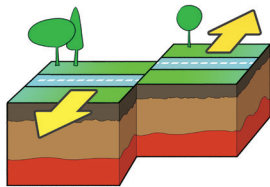
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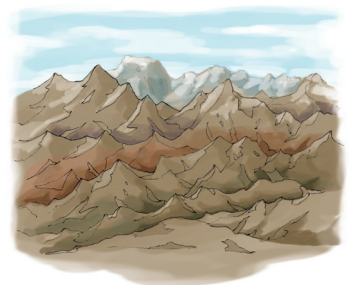


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Convergent	Divergent	Transform
-------------------	------------------	------------------



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Science B: Week 3 Activity Sheet

4. Match each word to the correct description. (pp. 12–13)

Fold Mountains

•

• Cracks in the Earth's crust create massive blocks of rock.

Volcano Mountains

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• Large amounts of magma bubble up toward the surface and form these mountains.

Fault Mountains

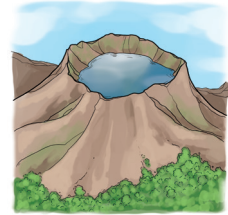
•

• These mountains form when two or more tectonic plates are pushed together.

Dome Mountains

•

• Lava flows over the land and before it hardens, the volcano erupts again building up more layers.



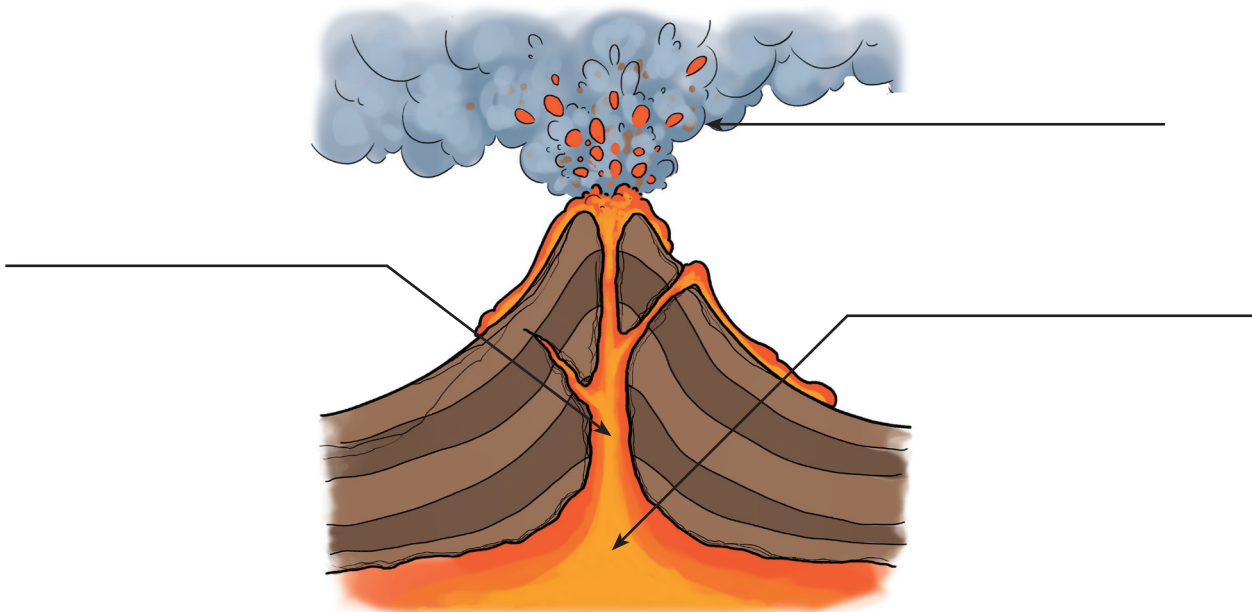
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Magma chamber

Eruption





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- | | | |
|----------------------|---|---|
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| Caldera | • | • Volcanoes with gently sloping sides. |

9. **Critical Thinking:** What type of volcano does the picture show?

Explain why you made that choice.



Appendix 1: Science B—Weekly Subject List

Week	Subject
1	inside the earth/earth's core/caves/volcanoes
2	atmosphere/structure of the earth
3	plate tectonics/mountains/volcanoes
4	earthquakes/deserts/water
5	oceans/rivers/glaciers
6	erosion/caves/famous landmarks
7	biomes/conservation/weather
8	seasons/climate/climate change/soil
9	rock cycle/uses for rocks/continents
10	rural and urban areas/world maps/volcano scientist biography
11	waterworks/filtering/water cycle
12	matter/solid/liquid/gas
13	matter/solid/liquid/gas
14	periodic table structure/reactive metals
15	periodic table metals/soft metals/elements of life
16	solids/liquids/gases/predicting elements/radioactive elements
17	Marie Curie/radium/batteries/meters
18	animal kingdoms/animal movement/animal food
19	animal senses/animal communication/animal mating and growing
20	migration/animal groups/camouflage/animal homes
21	conservation/animals in rainforests
22	animals in grasslands/animals in North America
23	animals in prairies/animals in deserts
24	animals in the Serengeti/animals in Madagascar
25	animals in Europe
26	animals in Asia
27	animals in Australasia
28	animals in New Zealand/animals in the Arctic
29	animals in Antarctica/ocean animals
30	plants/seeds/roots
31	leaf types/leaf colors/photosynthesis/pollination
32	pollinators/seeds/how seeds travel
33	edible plants/plant protection/types of trees
34	tree ecosystem/parasites/carniverous plants
35	climbing plants/water plants/desert plants
36	cold weather plants/plant-made products/strange plants

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PRESCHOOL		Explores Fairy Tales, & Fun											
PRE-K-K		Explores God's World	Explores American History	Language Arts K									
LEVEL K (Kindergarten)			Explores American History	Language Arts K									
LEVEL A			Intro to the World: Cultures	Language Arts 1	Light & Sound Waves, Biological Features, Space Systems, & Engineering								
LEVEL B			Intro to World History, 1 of 2	Language Arts 2	Water, Ecosystems, Earth Systems, and Engineering Design								
LEVEL C			Intro to World History, 2 of 2	Language Arts 3	Forces and Interactions, Life Systems and Cycles, Weather & Climate, and Engineering Design								
LEVEL B+C			Intro to American History, 1 of 2	Language Arts 3									
LEVEL D			Intro to American History, 2 of 2	Language Arts 4	Biography, Taxonomy, & Human Anatomy								
LEVEL E			Language Arts 4	Electricity, Magnetism, & Astronomy	Intro to American History, Condensed								
LEVEL D+E			Language Arts 5	Language Arts 5	Language Arts 5								
LEVEL F			Eastern Hemisphere	Language Arts 6	Health, Medicine, & Human Anatomy								
LEVEL G			World History, 1 of 2	Language Arts 6	World History, 1 of 2								
LEVEL H			World History, 2 of 2	Language Arts 7	Language Arts 7								
LEVEL I			World History, Condensed	Language Arts 8	Physics, Electromagnetism, & Waves								
LEVEL J			World History, Condensed	Language Arts 9	History of Science								

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