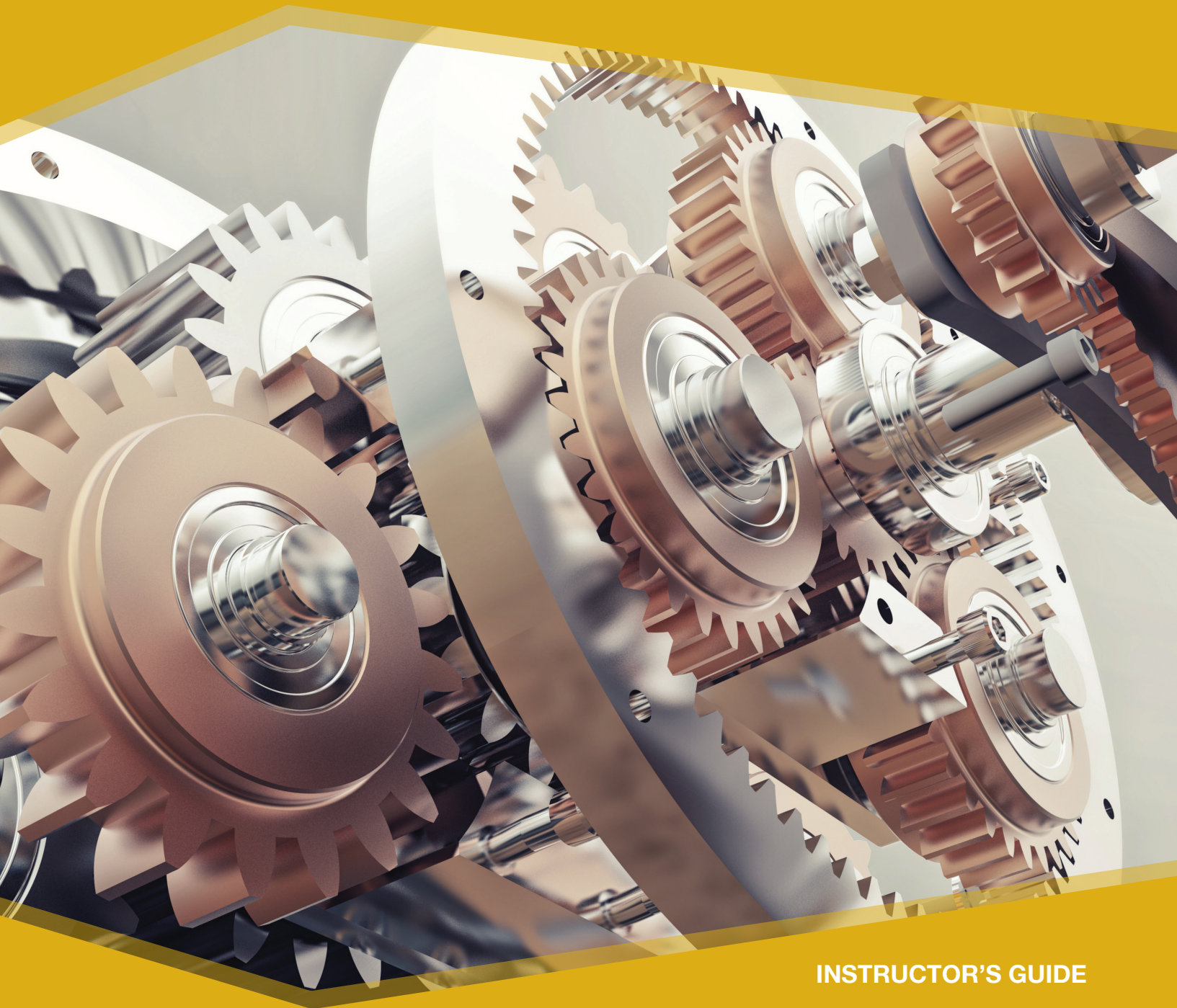




SONLIGHT

Science C

4-DAY



INSTRUCTOR'S GUIDE



SONLIGHT

Thank you for downloading this sample of Sonlight's Science C 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 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!”

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303-730-6292

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advisor@sonlight.com

Science (4-Day)

Geology, Meteorology, and Mechanical Technology
By The Sonlight Team

“Then God said, ‘Let us make man in our image, in our likeness, and let them rule over the fish of the sea and the birds of the air, over the livestock, over all the earth, and over all the creatures that move along the ground.’”

Genesis 1:26 (NIV)

Table of Contents

Sonlight Curriculum® “Intro to the World: Cultures” (5-Day) Instructor’s Guide and Notes, Twenty-Ninth 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

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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.

1 Introduction to Your Instructor’s Guide

- Table of Contents
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- Introduction
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 - Helpful Hints
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2 Schedule, Notes and Activity Sheets

- A Weekly SCHEDULE for Science
- ACTIVITY SHEET ANSWER KEYS

3 Appendices

- Appendix 2: Weekly Subject List

SCIENCE Instructor's Guides

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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 _____

| | | | | | | | | | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 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 | Day 5 |
|--------------------------------------|-------------|-----------------------------------|-----------|---------------------------|-----------|
| <i>Children's Encyclopedia</i> | pp. 8–9 | | pp. 10–11 | pp. 12–13 | pp. 14–15 |
| Activity Sheet Questions | #1–2 [a] | | #3–4 | #5–7 | #8–10 |
| <i>Discover & Do Level K DVD</i> | | "Before You Begin" Tracks #1–3 | | | |
| <i>Science Activities, Vol. 2</i> | | "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. [a]

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:

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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-

of the page. It is of your reading, in the book for

of, but the center is called the layers egg. The shell and the yolk is an egg and talk the "core," you'll cut the egg in the "Earth". Of an egg, but neither on the top

Parental Notes

Week 1 | 1

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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 .

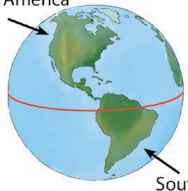
5. Can you name the four seasons? (p. 12)

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

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5

Do Together

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

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. ■

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)

☒ 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 the shadow.)

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.

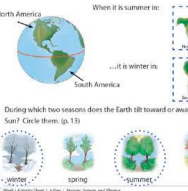
5. Can you name the four seasons? (p. 12)

1) spring 2) summer

3) fall 4) winter

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

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)



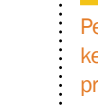
winter



spring



summer



fall

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

6



“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 C, you will learn about historical and mechanical technology (how things are made); geology (rocks and minerals); meteorology; microscopy; and general experimental science.

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. So, 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 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 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 ocean-going 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 world view 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 world view 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 Cor-

inthians 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 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 and 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 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. From this old Earth perspective, the Bible 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 would 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.

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 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.

A Practical Suggestion for Experiments

1. 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

For your convenience, we have created a website that is dedicated to providing you with links that we thought 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 e-mail indicated where the problem is. For instance, "Science C/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 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 these instructions help you. If we can be of any further assistance, please don't hesitate to write, call, or better yet, visit us at forums.sonlight.com. We would love to be of service. **I would especially like to encourage you to visit the Sonlight® Forums.** There, you can converse with other homeschoolers, seek advice, offer your insights, and join our community. If you are looking for help and encouragement, our forums are just for YOU! ■

Science C—Science Supplies

| CSK (Science Supplies Kit) Item | Week(s) Used |
|---|--|
| AA batteries | 29, 31, 33, 34, 35 |
| aluminum foil | 29, 30, 31, 32 |
| balloon 9" | 27 |
| balloons 5" | 7, 8, 25, 28 |
| black construction paper | 24 |
| bulb holders | 29, 31 |
| buzzer | 31, 35 |
| chalk | 21, 22 |
| clay (plasticine, model dough, etc.) | 21, 27, 28, 33, 35 |
| coffee filter | 34 |
| dowel rod | 24 |
| flex straw | 7 |
| glitter pack | 8 |
| magnifying glass | 12, 24 |
| marble | 31 |
| masking tape (sticky tape, adhesive tape, etc.) | 11, 12, 24, 27, 28, 29, 30, 31, 33, 34, 35 |
| mirror | 6, 7 |
| nail, steel 2 ³ / ₈ " | 33 |
| nails (small copper) | 35 |
| paper clips | 28, 29, 30, 33 |
| paper fasteners (brads) | 11, 30, 35 |
| rubber bands | 8, 27, 29 |
| small light bulbs | 29, 31 |
| spool | 24 |
| straws | 21, 27, 28 |
| thermometer | 27 |
| toothpick | 35 |
| washers | 34 |
| wire | 29, 30, 31, 32, 34, 35 |

Section Two

Schedule and Notes

Science C

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 | | | | |
|--------------------------------------|-------------|-----------|------------|-----------|
| Date: | Day 1 | Day 2 | Day 3 | Day 4 |
| The Usborne Book of Knowledge | pp. 52–53 | pp. 54–55 | pp. 56–57 | pp. 58–59 |
| Activity Sheet Questions | #1–2 | #3–4 | #5–6 | #7–8 |
| Do Together | Monkey Bars | | Mocha Bear | |
| Additional Subjects: | | | | |
| | | | | |
| | | | | |

The Usborne Book of Knowledge

Day 1
1 pp. 52–53

Are you or your children bothered by the phrase stating that chimpanzees “are the animals most like people”? It probably depends on what is meant. While the section is not explicit in stating that humans have evolved from apes, which is a typical macroevolutionary assumption, it does suggest the connection.

But, in looking at any data or information, scientists (and non-scientists) must be careful in how the information is evaluated. What explanation makes the most sense? Are there reasonable alternative explanations? Simply because some animals are similar in structure (homogeny) does not necessarily mean that the animals in question evolved rather than being created and designed. Doesn’t it make sense that things with the same designer will sometimes show similar structures? If this is the case, then the fact that apes look somewhat like humans can be explained by saying that since God created all creatures, there are bound to be some similarities.

But, there are also significant differences that clearly separate humans from apes. Human beings are creative, sophisticated, communicating creatures with great intelligence, artistic sensibilities, broad emotions, critical thinking abilities, and religious tendencies. Clearly, we’re vastly different from apes in many important respects. [p. 52]

Day 1
1

Activity Sheet Questions #1–2

Find the Activity Sheets after the notes. They are assigned on each schedule page. Each Activity Sheet has a corresponding Answer Key page following these schedule pages.

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 year (and years to come!) to enable students to learn “naturally” through repetition and practice.

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 that 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.

Remember: This program is designed for you to use to meet your children’s needs. It is not meant to use you!

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 #CSG1).

Day
2

pp. 54-55

While the book is correct in noting that giraffes appear awkward when they need to take a drink, it fails to point out that the mechanisms involved in this process are pretty amazing. Why doesn't the blood rush to a giraffe's head and cause a hemorrhage when it takes a drink? Because special valves in the giraffe's head regulate the pressure. There are other interesting things at work inside a giraffe taking a drink, too, such as the need for a powerful heart and special tissue near the brain. To find out more about how incredible it is when a giraffe takes a drink, see the article, "Do drinking giraffes have headaches?" which can be found on our IG links web page [\[p. 54\]](#)

Do Together

Day
1

Monkey Bars

Do you have a playground with monkey bars nearby? If so, take your children for some playtime. Help them swing on the monkey bars. Explain that monkey bars got their name because you have to swing from rung to rung just like a monkey (or an ape or a chimpanzee) swings

from branch to branch in the jungle. If you can't get to a playground with monkey bars, you can help them swing like a monkey from the branches of a tree at home. As you enjoy your time playing together, talk about what they've learned so far about apes and chimpanzees. Would they ever want one as a pet? Why or why not? Have fun engaging in a little monkey business.

Day
3

Mocha Bear

Help your children create a neat brown bear art project suitable for hanging on the refrigerator. All you'll need is the following: paper, crayons or markers, glue, and coffee grounds. Start with a blank piece of paper and draw the shape of a brown bear on it. If you can't draw very well, feel free to print a picture of a brown bear from the Internet that you can trace or use as a guide. When you're done, have your children cover the bear's shape with glue. While the glue is still wet, gently shake some coffee grounds onto the glue and let it dry. When their brown bear is dry, ask your children to use crayons or markers to color an interesting background behind it. As they work, discuss what they learned this week about brown bears. ■

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Science C: Week 1 Activity Sheet



The Usborne Book of Knowledge

1. Label each animal as an **ape** or a **monkey**. (p. 52)



(monkey)



(ape)

2. How do chimps use tools? (p. 53)

(they get insects to climb on blades of grass and then they eat them; also, sometimes they fight with sticks—they throw them at or hit an enemy with them)

3. Giraffes can run for long distances. (p. 54) **True** **False**



4. How do the following characteristics help giraffes survive? (pp. 54-55)

long neck: (help them reach high in the trees for food)

heavy hooves: (defend themselves from predators)

long tongue: (help strip leaves from trees)

5. Where do bears live? Circle all that apply. (pp. 56-57)

Asia

Europe

South America

Africa

North America

Australia

Hawaii

Antarctica

The Arctic

Geology, Meteorology, and Mechanical Technology | 4-Day | Week 1 Activity Sheet 1



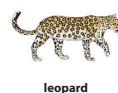
Science C: Week 1 Activity Sheet

6. Describe three ways bears obtain food. (pp. 56-57)

- 1) (Possible: fishing, dig honey out of trees, pounce on seals as they sleep,
- 2) pull seals from the water when they come up for air, forage for berries,
- 3) eat ants, etc.)



7. Circle the biggest cat in the world. (p. 58)



leopard



tiger



house cat

8. Why is a tiger's coat good camouflage? (p. 58)

(because the stripes make it difficult to see the tiger in long grass, shady
places, and moonlight)



2 Week 1 Activity Sheet | 4-Day | Geology, Meteorology, and Mechanical Technology



The Usborne Book of Knowledge

1. Label each animal as an **ape** or a **monkey**. (p. 52)



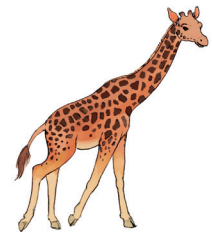


2. How do chimps use tools? (p. 53)

3. Giraffes can run for long distances. (p. 54)

True

False



4. How do the following characteristics help giraffes survive? (pp. 54-55)

long neck: _____

heavy hooves: _____

long tongue: _____

5. Where do bears live? Circle all that apply. (pp. 56-57)

Asia

Europe

South America

Africa

North America

Australia

Hawaii

Antarctica

The Arctic

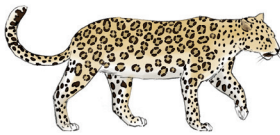


6. Describe three ways bears obtain food. (pp. 56-57)

- 1) _____
- 2) _____
- 3) _____



7. Circle the biggest cat in the world. (p. 58)



leopard



tiger



house cat

8. Why is a tiger's coat good camouflage? (p. 58)



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 |
| The Usborne Book of Knowledge | pp. 60–61 | pp. 62–63 | pp. 64–65 | pp. 66–67 |
| Activity Sheet Questions | #1–2 | #3 | #4–5 | #6–8 |
| Do Together | | | Elephants | |
| Additional Subjects: | | | | |
| | | | | |
| | | | | |

The Usborne Book of Knowledge

Day 6
pp. 62–63

Based on the description of the sloth, your children can probably figure out how the word is sometimes applied to people. What is a slothful person like? Lazy. There are many verses in the Bible warning against slothfulness. Some examples are found in Proverbs, where “slothful” in the King James Version of the Bible is sometimes translated as “lazy” or “laziness” in newer translations. See, for example, Proverbs 12:24; 12:27; 15:19; 18:9; 19:15; 19:24; 21:25; 22:13; 24:30–31; and 26:13–15.

After reading through some of these verses with your children, ask them to describe a slothful person. What kind of characteristics or behavior might someone who is the opposite of slothful have? Note that the Hebrew words translated as “lazy” or “slothful” in many of the above passages also refer to someone who is lax, idle, slack, negligent, or sluggish. What creatures seem to be the opposite of slothful? Possible answers include honeybees, ants, etc. because they are active and organized. [p. 62]

Day 8
pp. 66–67

Now here’s an animal that qualifies as the opposite of sluggish! After reading through these pages, ask your children if a beaver should be considered sluggish or not. Have them come up with specific reasons for their answer.

Do Together

Day 7
Elephants

To reinforce what your children learned today, ask them to tell you all they can remember about elephants. How tall are they? How much do they weigh? What do they like to eat? Then, ask them to act like elephants. Can they show you how a big elephant walks? How would an elephant use its trunk to pick fruit off of a tree or to get water to drink or for a shower? Challenge them to really get into the role. If they were elephants, what could they do easily? What would be really hard? After they’ve had fun pretending to be elephants for a while, ask them: if they could be an elephant for a day, would they want to be? Why or why not? ■



The Usborne Book of Knowledge

1. Why is the white rhino's neck longer than the black rhino's? (Hint: Think about what they eat.) (p. 60) (the white rhino eats grass and must reach down farther to get his food; the black rhino eats leaves, which are easier to get to)

2. Why do rhinos wallow in the mud? Give two reasons. (p. 60)

- 1) (to keep cool)
2) (to get rid of insects)



3. The slowest furry animal in the world is the _____. (p. 62)

anteater

chimp

sloth

4. Circle the largest land animal. (p. 64)



polar bear



elephant



bison

5. Describe how elephants use the features below. (pp. 64-65)

Ears: (fan themselves to keep cool; listen for danger)

Trunk: (eating—pick berries, etc.; drinking; as a snorkel; lift and move heavy objects;
dig holes; rub eyes)


6. What do all beavers have? Circle the correct answers. (p. 66)

flat tails

big ears

two big, sharp front teeth

webbed feet



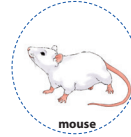
7. Circle the rodent in this group of animals. (p. 66)



giraffe



walrus



mouse

8. List two examples of rodents. (p. 66)

1) (Possible answers: beaver, squirrel,
rat, mouse, rabbits)



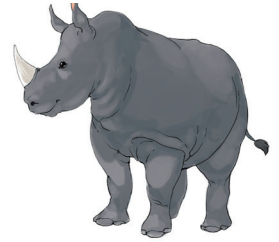
The Usborne Book of Knowledge

1. Why is the white rhino's neck longer than the black rhino's? (Hint: Think about what they eat.)

(p. 60) _____

2. Why do rhinos wallow in the mud? Give two reasons. (p. 60)

1) _____
 2) _____



3. The slowest furry animal in the world is the _____. (p. 62)

anteater

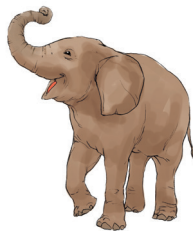
chimp

sloth

4. Circle the largest land animal. (p. 64)



polar bear



elephant



bison

5. Describe how elephants use the features below. (pp. 64-65)

Ears: _____

Trunk: _____



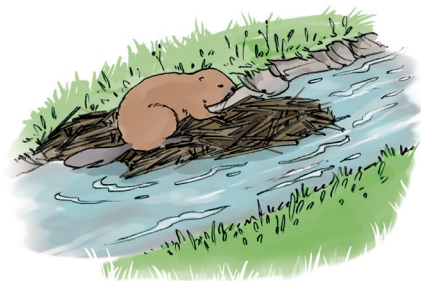
6. What do all beavers have? Circle the correct answers. (p. 66)

flat tails

big ears

two big, sharp front teeth

webbed feet



7. Circle the rodent in this group of animals. (p. 66)



giraffe



walrus



mouse

8. List two examples of rodents. (p. 66)

1) _____

2) _____

Science C

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 |
| The Usborne Book of Knowledge | pp. 68–69 | pp. 70–71 | pp. 72–73 | pp. 74–75 |
| Activity Sheet Questions | #1–2 | #3–4 | #5–6 | #7 |
| Additional Subjects: | | | | |
| | | | | |
| | | | | |

The Usborne Book of Knowledge

Day 10 pp. 70–71

Zebras have unique stripes, sort of like human beings have unique fingerprints. As a result, no two zebras have the same exact stripe pattern. [p. 70]

Day 12 pp. 74–75

Although the book states that wildebeests “do not seem to be very clever,” they are apparently clever enough to migrate to new places to graze, returning to previous locations when the rainy season returns. [p. 75] ■



The Usborne Book of Knowledge

Circle **True** or **False** for each statement. If false, make the statement true.

1. Lions are the only wild cats that can live together in family groups. (p. 68) **True** **False**

2. The male lion does the hunting for the family. (p. 68) **True** **False**
(Possible answer: the lioness does the hunting for the family)

Circle **True** or **False**. If false, make the statement true.

3. Zebras graze mixed in with wildebeests and ostriches. (p. 70) **True** **False**



4. Circle your answers. (p. 71)

Nocturnal animals sleep during the



and feed during the



5. Why don't farmers care for foxes? (p. 72)

(because foxes sometimes like to eat the farmers' turkeys and chickens)

6. Where do giant pandas live? (p. 73)

Australia

Europe

South America

Africa

North America

China

Hawaii

Antarctica

The Arctic



7. What is the most common animal on the African grasslands? (p. 74) *(wildebeest)*

Another name for this animal is **g** *(nu)* (p. 74)





The Usborne Book of Knowledge

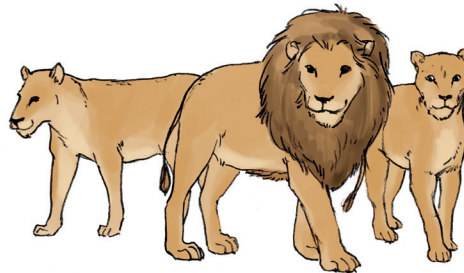
Circle **True** or **False** for each statement. If false, make the statement true.

1. Lions are the only wild cats that can live together in family groups. (p. 68) **True** **False**

2. The male lion does the hunting for the family. (p. 68) **True** **False**

Circle **True** or **False**. If false, make the statement true.

3. Zebras graze mixed in with wildebeests and ostriches. (p. 70) **True** **False**



4. Circle your answers. (p. 71)

Nocturnal animals sleep during the



Day



Night

and feed during the



Day



Night



5. Why don't farmers care for foxes? (p. 72)

6. Where do giant pandas live? (p. 73)

Australia

Europe

South America

Africa

North America

China

Hawaii

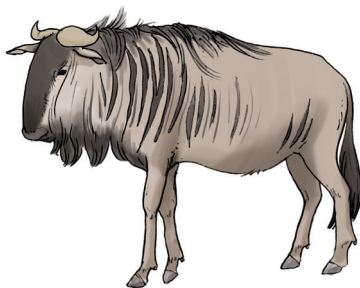
Antarctica

The Arctic



7. What is the most common animal on the African grasslands? (p. 74) _____

Another name for this animal is **g**_____. (p. 74)



Appendix 1: Science C—Weekly Subject List

Week Subject

| | |
|----|---|
| 1 | chimpanzees/apes/giraffes/bears/tigers |
| 2 | rhinos/elephants/sloths/beavers |
| 3 | lions/zebras/foxes/pandas/wildebeests |
| 4 | hunting dogs/camels/kangaroos/bats |
| 5 | leopards/red deer/hippos/monkeys/maps |
| 6 | digestion/feeding the body/teeth and tongue/blood |
| 7 | how blood travels/pumping blood/respiration/breathing |
| 8 | talking/ears |
| 9 | eyes/nose/touch |
| 10 | touch/brain |
| 11 | skeleton/muscles/skin |
| 12 | skin/finger prints/how the body fights germs/sex ed |
| 13 | how a baby is born/how the body fits together/systems/cells/body facts |
| 14 | how birds live/feathers/migration/what birds do/names of birds/ostriches/penguins |
| 15 | grebes/divers/pelicans/cormorants/storks/herons/flamingo |
| 16 | swans/geese/ducks/birds of prey/chickens/grouse |
| 17 | waders/gulls/terns/auks/pigeons/cuckoos/parrots |
| 18 | owls/swifts/hummingbirds/kingfisher/hornbill/woodpeckers/toucans |
| 19 | perching birds/bird facts/rocks/crust/soil/rock types/fossils |
| 20 | caves/mantle/volcano/lava/rock types/what is weather/watch weather |
| 21 | seasons/summer/winter/sun's power/sun/shadows |
| 22 | clouds/cloud types/fog/smog/haze/water in the air |
| 23 | rain clouds and rain/snow/hail |
| 24 | dew and frost/cold weather/wind |
| 25 | electrical storms/tornados/hurricanes |
| 26 | rainbows/light/seas/deserts/weird weather |
| 27 | forecasts/how air pushes/climate change |
| 28 | harnessing weather/weather power |
| 29 | space machines/planes/batteries/current |
| 30 | hovercraft/helicopters/hover planes/electricity |
| 31 | ships/railroads/other circuits/how to make sounds |
| 32 | racing machines/underwater machines/tanks/guided missiles/electricity and water |
| 33 | fighting planes/fighting subs and ships/rescue machines/making magnets |
| 34 | building machines/road making machines/mining/excavating/batteries/magnets |
| 35 | oil rigs/farming machines/dairy machines |
| 36 | home machines/how motors work/then and now |



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