



MASTER BOOKS
— CURRICULUM —

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About the Author



Carrie Lindquist is a homeschool graduate, wife to Wayne, and momma to two energetic boys. She is a passionate advocate for homeschooling and loves helping new-to-homeschooling moms realize that homeschooling through the early years isn’t scary — it’s really just an extension of all the fun things they are already doing with their children! When she isn’t cleaning the endless little messes her boys create, you can find her encouraging moms to embrace the calling of everyday faithfulness.

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Course Description

Approximately 20–30 minutes per lesson, five times per week

Designed for third graders in a one-year course

In *Let's Talk Science Level 3: Adventures on Planet Earth*, students will join characters Hannah and Ben as they explore God's amazing creation through ecology. Through conversational lessons, hands-on expression, and activities, students will encounter God's design as they learn about biomes, climates, the food chain, trees, forest structure, decomposers, symbiotic relationships, and more.

As students explore four of the world's major biomes, they'll also compile a personalized Science Notebook to document and share what they've learned each week. Along the way, they'll discover hidden treasures that teach them more about their relationship with God as they encounter God's wisdom, power, and majesty on display in creation.

Course Objectives

Students completing this course will:

- Explore elements of ecology including the food chain, climates, forest structure, symbiotic relationships, stewardship, and decomposition
- Discover that science teaches many lessons about God and our relationship with Him
- Learn to watch for elements of God's design as they study science
- Compile a unique Science Notebook as they document what they've learned and share it with others.



A Note from the Author

Welcome to *Let's Talk Science Level 3: Adventures on Planet Earth*! I'm so excited for children as they begin their learning adventure. This book was inspired many years ago during a trip to Yellowstone National Park. As I learned about different aspects of ecology around the park, I couldn't help but rejoice at seeing the hand of my Creator so evident around me.

When I was a child, I loved to study history because the providence of God was so evident. However, I usually didn't notice His hand at work in science. To me, it seemed to be a series of dry facts that I couldn't relate to.

Once I became an adult, though, I began to see science in a different way. Science is fascinating and awe-inspiring because God's wisdom, understanding, majesty, and grace are so clearly on display in His creation. When we see His hand at work in the intricacies of symbiotic relationships; the beautiful colors of the rainforest; and even in His wise, merciful design for a fallen creation; it draws our hearts to worship Him.

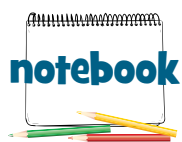
Let's Talk Science Level 3: Adventures on Planet Earth is more than an exploration of biomes, climates, food chains, forest structures, and relationships — through these topics, it's an exploration of God's awe-inspiring creation, a discovery of the depth of His wisdom, a reminder of His faithfulness, and an illustration of many spiritual lessons. Of course, sometimes science also reminds us that the world was broken through sin, and there we find God's mercy and a reminder that we all need Jesus.

This course was also inspired by a desire to teach my children to actively look for God's design as they study science — a skill they can take with them as they continue their education. *Let's Talk Science Level 3: Adventures on Planet Earth* is designed to be relational and to encourage curiosity — if your child is particularly interested in a topic or question, I invite you to spend some time exploring God's world together through books, videos, and resources. See if you can find additional aspects of God's design together. And don't forget, make this course your own — have fun!

It's my prayer that students discover God's amazing design, wisdom, and mercy in creation this year and that they would learn to seek Him in all their pursuits. May God richly bless your school year!

Course Overview and Components

Conversational Lessons: The daily lessons in *Let's Talk Science Level 3: Adventures on Planet Earth* are short and conversational. This allows confident readers to transition to student-led, independent instruction. If the student is younger or developing confidence in independent reading, the lessons may be read together or to the student.



Science Notebook: Students will create a personal Science Notebook to record what they've learned as they complete the course. The Science Notebook will be created in an artist sketchbook, which can be purchased in a craft store or online. It is recommended to purchase one with a sturdy cover, and it should contain a minimum of 36 blank pages.

Each week, the student will use their individual creativity to write and draw on one page of the Notebook. This hands-on expression allows the student to “own” what they've learned and share it in a personalized way. The student may use any medium (colored pencils, markers, paint, etc.) they prefer to complete the Notebook assignment.

Encourage your student to share their Science Notebook with friends and family as they tell them what they've learned. Once the course is completed, the student's Science Notebook may also be saved as a keepsake.

materials needed

- plastic wrap
- paper towels

Materials List: Provides an at-a-glance view of the supplies your student will need to complete course activities, as well as the week those supplies will be required.

Vocabulary: New vocabulary words will be introduced to the student in a **bold green font**. A phonetic pronunciation guide is also shown to help the student read the new word, such as in this example:

environment (said this way: ěn-vī-rŭn-mĕnt)

For some words, the pronunciation may vary slightly depending upon the region in which you live. A vowel pronunciation key is included in the back of the book. Vocabulary words are also included in a glossary at the back of this book.



Apply it: This section features worksheets or activities to help the student apply what they've learned.



Digging Deeper: This section features optional bonus questions, activities, or resources to help the student explore the topic deeper, individually or as a family.



Bonus Activities: Bonus Activities located in the back of the book.

Hidden Treasure

Hidden Treasure: Ecology is all about relationships, and it teaches many things about our relationship with God as well. When we learn about our relationship with God through science, it's like finding a hidden treasure that we can share with others! This section is an opportunity for the student to share the Bible verse they learned during the week in their Science Notebook.

This component may be adjusted to fit the student's level. Older students may copy the verse on the back page of their Science Notebook by themselves, while younger students can help say the verse as the teacher writes it for them.



Model Biomes: After the student has finished exploring each biome, they will put together a model of that biome in a shoe or craft box. The lessons in weeks 9, 18, 27, and 33 provide an instructional guide to create a simple, inexpensive biome. However, you may also customize and personalize the model biome as preferred. Many craft and hobby stores have model animals, trees, grass, and plants available.

Helpful Tips

Tips for completing the Science Notebook:

- Keep a variety of art supplies on hand, such as pencils, paint, colored pencils, markers, or crayons. Some students find watercolor pencils particularly enjoyable to use.
- Encourage creativity. Your student's artwork does not need to look exactly like any of the examples. The goal of the Science Notebook is for the student to express what they've learned in a way that is unique and personalized. This develops the student's ability to "own" what they've learned.
- If your student is concerned about making mistakes, it can be helpful for them to begin drawing with a pencil. This allows them to erase perceived mistakes. Once they're done drawing, they can add colors and/or additional details.
- Encourage enjoyment rather than perfection. Three different students' Science Notebooks are included with each lesson to show different ways the student can draw the prompt. Point out that each Notebook is unique and shows the creativity God has given that student.
- If your student is reluctant to draw, it can be helpful to sit down with them and draw together. Point out a basic shape you can start with, such as a circle, oval, or rectangle, then add additional details such as leaves or limbs.

Additional Tips:

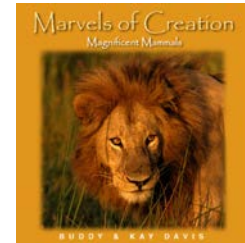
- It can be helpful to find additional videos to illustrate a topic to the student. Some prompts, such as watching a howler monkey howl, are included in the **Digging Deeper** section. It is encouraged to look for and preview videos before watching them with the student.
- *Let's Talk Science Level 3: Adventures on Planet Earth* does touch on difficult topics such as animal death in creation. It is encouraged to discuss these topics deeper with your student, depending on their individual level.

Recommended Resources from Master Books®:

God's Big Book of Animals: This book is a highly recommended resource to have alongside *Adventures on Planet Earth*. Though it is not required to complete the course, prompts for the student to read more about various animals, birds, and insects are included in many **Digging Deeper** sections.



Marvels of Creation: Magnificent Mammals: Your student may enjoy learning more about different animals that can be found in each biome through this resource. Though prompts are not included in the course for this book, the student may use this resource to study the following animals during lessons:



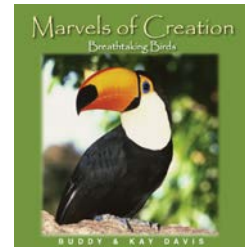
1–9: Beaver, Moose, Wolverine

10–18: Grizzly Bear, Porcupine, Raccoon, Striped Skunk, Wombat, Pronghorn Antelope

19–27: Fruit Bat, Gorilla, Two-toed Sloth

28–36: American Bison, Black Rhinoceros, Cheetah, Elephant, Giant Anteater, Giraffe, Hippopotamus, Leopard, Lion, Red Kangaroo, Tiger, Zebra

Marvels of Creation: Breathtaking Birds: Your student may enjoy learning more about different birds that can be found in each biome. Though prompts are not included in the course for this book, the student may use this resource to study the following birds during lessons:



1–9: Arctic Tern, Common Loon, Ptarmigan

10–18: Bald Eagle, Common Raven, Great Horned Owl, Laughing Kookaburra, Pileated Woodpecker, Turkey Vulture, Wild Turkey, Wood Duck

19–27: Cassowary, Greater Flamingo, Hoatzin, Rainbow Lorikeet, Ruby-Throated Hummingbird, Toco Toucan

28–36: Ostrich, Roadrunner, Secretary Bird

Master Materials List

Basic Supplies:

These supplies will be used often throughout the course.

- Artist sketchbook (36 pages minimum)
- Colored pencils, markers, acrylic paint set, crayons
- Silver or white glitter glue
- Glue stick
- Scissors
- Construction paper
- 4 shoeboxes or craft boxes with lids

Week 2

- Dirt
- Clear bowl or jar
- Plastic wrap
- Paper towels
- A glass of water

Week 3

- 2 pieces of construction paper
- Scissors
- Tape
- Flour
- Baking sheet or plate

Week 9

- Blue, brown, green, yellow construction paper
- 1/8-inch wooden dowels (6–12 inches long)
- Glue stick
- Shoebox with lid
- Scissors
- White paint and brush

- Glitter glue
- Small twigs or toothpicks
- Hot glue gun
- Tape
- Playdough or clay
- Small model animals such as a beaver, wolf, elk or moose, bear, rabbit, etc.

Week 12

- 2 bowls
- Something to make your hand dirty. This could be mud or something like yogurt or honey.
- Sink or bathtub

Week 15

- A ripe banana
- Plate

Week 18

- Paint
- Paintbrushes
- Shoebox or similar size box
- White and green construction paper
- Glue stick
- Scissors
- Gather any items you can find from outside: dirt, a twig, old leaves, or acorns.
- 1/8-inch wooden dowels (6–12 inches long)
- Tape
- Playdough or clay
- Small model forest animals like deer, raccoon, rabbit, fox, bear, cardinal, woodpecker, opossum, skunk, etc.

Week 19

- Flashlight
- Dark room

Bonus Activity:

- 4–5 inch Styrofoam™ ball
- Metal or wooden skewer (12+ inches long)
- Permanent marker
- Flashlight
- Tablecloth to protect table

Week 20

- Craft pipe cleaner
- Flour
- Cocoa powder
- 2 plates

Week 27

- Acrylic paint set
- Tablecloth to protect table
- Paintbrushes
- Shoebox
- Bowl of water
- Paper towels
- Trees saved from the deciduous biome project
- Brown construction paper
- Tape
- Scissors
- Twine or yarn
- Hot glue gun or mini glue dots
- Small model rainforest animals like toucan, snake, tiger, frog, monkey, etc.
























Week 33

- Acrylic paint set
- Tablecloth to protect table
- Paintbrush
- Shoebox
- Bowl of water
- Paper towels
- 2 Ziploc® bags
- Small bag of sand (enough to fill the bottom of the shoebox, with some extra)
- Green food coloring
- Blue food coloring
- Spoon
- Small model savannah animals like elephant, lion, giraffe, zebra, gazelle, etc.


























Week 34

- Tablecloth
- White paper
- Washable paint
- Paintbrush


























Schedule

Date	Day	Assignment	Due Date	✓
Week 1		Introduction to Ecology • Complete reading and activity on pages 19–20		
		Complete reading and activity on pages 21–22		
		Complete reading and activity on pages 23–24		
		Complete reading and activity on pages 25–26		
		Complete reading and activity in your Notebook on pages 27–28		
Week 2		The Boreal Forest Climate Complete reading and activity on pages 29–30		
		Complete reading and activity on pages 31–32		
		Complete reading and activity on pages 33–34		
		Complete reading and activity on pages 35–36		
		Complete reading and activity in your Notebook on pages 37–38		
Week 3		Conifers • Complete reading and activity on pages 39–40		
		Complete reading and activity on pages 41–42		
		Complete reading and activity on pages 43–44		
		Complete reading and activity on pages 45–47		
		Complete reading and activity in your Notebook on pages 48–50		
Week 4		The Lodgepole Pine • Complete reading and activity on pages 51–52		
		Complete reading and activity on pages 53–54		
		Complete reading and activity on pages 55–56		
		Complete reading and activity on pages 57–58		
		Complete reading and activity in your Notebook on pages 59–60		
Week 5		The Food Chain 1 • Complete reading and activity on pages 61–62		
		Complete reading and activity on pages 63–66		
		Complete reading and activity on pages 67–68		
		Complete reading and activity on pages 69–70		
		Complete reading and activity in your Notebook on pages 71–72		


























Schedule

Date	Day	Assignment	Due Date	✓
Week 6	 Day	Food Chain 2 • Complete reading and activity on pages 73–76		
	 Day	Complete reading and activity on pages 77–79		
	 Day	Complete reading and activity on pages 81–83		
	 Day	Complete reading and activity on page 84		
	 Day	Complete reading and activity in your Notebook on pages 85–86		
Week 7	 Day	A Broken Web • Complete reading and activity on pages 87–89		
	 Day	Complete reading and activity on pages 90–91		
	 Day	Complete reading and activity on pages 92–93		
	 Day	Complete reading and activity on page 94		
	 Day	Complete reading and activity in your Notebook on pages 95–96		
Week 8	 Day	A Web Restored • Complete reading and activity on pages 97–98		
	 Day	Complete reading and activity on pages 99–100		
	 Day	Complete reading and activity on pages 101–102		
	 Day	Complete reading and activity on pages 103–104		
	 Day	Complete reading and activity in your Notebook on pages 105–106		
Week 9	 Day	Boreal Biome Project • Complete reading and activity on pages 107–108		
	 Day	Complete reading and activity on pages 109–110		
	 Day	Complete reading and activity on pages 111–112		
	 Day	Complete reading and activity on page 113		
	 Day	Complete reading and activity in your Notebook on page 114		
Week 10	 Day	Temperate Deciduous Forest Complete reading and activity on pages 115–116		
	 Day	Complete reading and activity on pages 117–118		
	 Day	Complete reading and activity on pages 119–120		
	 Day	Complete reading and activity on pages 121–122		
	 Day	Complete reading and activity in your Notebook on pages 123–124		


























Schedule

Date	Day	Assignment	Due Date	✓
Week 11		Deciduous Trees • Complete reading and activity on pages 125–126		
		Complete reading and activity on pages 127–128		
		Complete reading and activity on pages 129–131		
		Complete reading and activity on page 132		
		Complete reading and activity in your Notebook on pages 133–134		
Week 12		The Forest Canopy • Complete reading and activity on pages 135–136		
		Complete reading and activity on pages 137–138		
		Complete reading and activity on pages 139–141		
		Complete reading and activity on page 142		
		Complete reading and activity in your Notebook on pages 143–144		
Week 13		Under the Canopy • Complete reading and activity on pages 145–146		
		Complete reading and activity on pages 147–148		
		Complete reading and activity on pages 149–150		
		Complete reading and activity on pages 151–152		
		Complete reading and activity in your Notebook on pages 153–154		
Week 14		The Forest Floor • Complete reading and activity on pages 155–156		
		Complete reading and activity on pages 157–158		
		Complete reading and activity on pages 159–160		
		Complete reading and activity on pages 161–162		
		Complete reading and activity in your Notebook on pages 163–164		
Week 15		Decomposition • Complete reading and activity on pages 165–167		
		Complete reading and activity on pages 168–169		
		Complete reading and activity on pages 170–172		
		Complete reading and activity on pages 173–174		
		Complete reading and activity in your Notebook on pages 175–176		


























Schedule

Date	Day	Assignment	Due Date	✓
Week 16		Lichens • Complete reading and activity on pages 177–178		
		Complete reading and activity on pages 179–180		
		Complete reading and activity on pages 181–182		
		Complete reading and activity on pages 183–184		
		Complete reading and activity in your Notebook on pages 185–186		
Week 17		Forest Relationships • Complete reading and activity on pages 187–188		
		Complete reading and activity on pages 189–190		
		Complete reading and activity on pages 191–192		
		Complete reading and activity on pages 193–194		
		Complete reading and activity in your Notebook on pages 195–196		
Week 18		Deciduous Biome Project Complete reading and activity on page 197		
		Complete reading and activity on page 198		
		Complete reading and activity on page 199		
		Complete reading and activity on page 200		
		Complete reading and activity on pages 201–202		
Week 19		Tropical Rainforest • Complete reading and activity on pages 203–204		
		Complete reading and activity on pages 205–208		
		Complete reading and activity on pages 209–210		
		Complete reading and activity on pages 211–212		
		Complete reading and activity in your Notebook on pages 213–214		
Week 20		Emergent Layer • Complete reading and activity on pages 215–216		
		Complete reading and activity on pages 217–218		
		Complete reading and activity on pages 219–220		
		Complete reading and activity on pages 221–222		
		Complete reading and activity in your Notebook on pages 223–224		


























Schedule

Date	Day	Assignment	Due Date	✓
Week 21		Canopy • Complete reading and activity on pages 225–226		
		Complete reading and activity on pages 227–228		
		Complete reading and activity on pages 229–230		
		Complete reading and activity on pages 231–232		
		Complete reading and activity in your Notebook on pages 233–234		
Week 22		Birds of the Canopy • Complete reading and activity on pages 235–237		
		Complete reading and activity on pages 238–240		
		Complete reading and activity on pages 241–242		
		Complete reading and activity on page 243		
		Complete reading and activity in your Notebook on pages 244–246		
Week 23		The Sloth • Complete reading and activity on pages 247–248		
		Complete reading and activity on pages 249–250		
		Complete reading and activity on pages 251–252		
		Complete reading and activity on page 253		
		Complete reading and activity in your Notebook on page 254		
Week 24		Monkeys of the Canopy Complete reading and activity on pages 255–256		
		Complete reading and activity on pages 257–258		
		Complete reading and activity on pages 259–260		
		Complete reading and activity on page 261		
		Complete reading and activity in your Notebook on page 262		
Week 25		The Understory • Complete reading and activity on pages 263–264		
		Complete reading and activity on pages 265–266		
		Complete reading and activity on pages 267–268		
		Complete reading and activity on page 269		
		Complete reading and activity in your Notebook on page 270		






Schedule

Date	Day	Assignment	Due Date	✓
Week 26		Rainforest Floor • Complete reading and activity on pages 271–272		
		Complete reading and activity on pages 273–274		
		Complete reading and activity on pages 275–276		
		Complete reading and activity on pages 277–278		
		Complete reading and activity in your Notebook on pages 279–280		
Week 27		Rainforest Biome Project • Complete reading and activity on page 281		
		Complete reading and activity on page 282		
		Complete reading and activity on page 283		
		Complete reading and activity on page 284		
		Complete reading and activity on pages 285–286		
Week 28		The Grassland • Complete reading and activity on pages 287–288		
		Complete reading and activity on pages 289–290		
		Complete reading and activity on pages 291–292		
		Complete reading and activity on pages 293–294		
		Complete reading and activity in your Notebook on pages 295–296		
Week 29		Savannah Grasses • Complete reading and activity on pages 297–298		
		Complete reading and activity on pages 299–300		
		Complete reading and activity on pages 301–302		
		Complete reading and activity on page 303		
		Complete reading and activity in your Notebook on page 304		
Week 30		Acacia Trees • Complete reading and activity on pages 305–306		
		Complete reading and activity on pages 307–308		
		Complete reading and activity on pages 309–310		
		Complete reading and activity on pages 311–312		
		Complete reading and activity in your Notebook on pages 313–314		

Schedule

Date	Day	Assignment	Due Date	✓
Week 31		The Elephant • Complete reading and activity on pages 315–316		
		Complete reading and activity on pages 317–318		
		Complete reading and activity on pages 319–320		
		Complete reading and activity on pages 321–322		
		Complete reading and activity in your Notebook on pages 323–324		
Week 32		Savannah Animals • Complete reading and activity on pages 325–326		
		Complete reading and activity on pages 327–328		
		Complete reading and activity on pages 329–330		
		Complete reading and activity on pages 331–332		
		Complete reading and activity in your Notebook on pages 333–334		
Week 33		Grassland Biome Project Complete reading and activity on pages 335–336		
		Complete reading and activity on page 337		
		Complete reading and activity on page 338		
		Complete reading and activity on page 339		
		Complete reading and activity on page 340		
Week 34		The Image of God • Complete reading and activity on pages 341–342		
		Complete reading and activity on pages 343–344		
		Complete reading and activity on pages 345–346		
		Complete reading and activity on pages 347–348		
		Complete reading and activity in your Notebook on pages 349–350		
Week 35		Stewardship • Complete reading and activity on pages 351–352		
		Complete reading and activity on pages 353–354		
		Complete reading and activity on pages 355–356		
		Complete reading and activity on pages 357–358		
		Complete reading and activity in your Notebook on pages 359–360		

Schedule

Date	Day	Assignment	Due Date	✓
Week 36	 Day	Review • Complete reading and activity on pages 361–362		
	 Day	Complete reading and activity on pages 363–364		
	 Day	Complete reading and activity on pages 365–366		
	 Day	Complete reading and activity on pages 367–368		
	 Day	Complete reading and activity in your Notebook on pages 369–370		

Day

Introduction to Ecology



Oh good! We are so glad you're here! My name is Hannah, and this is my brother Ben. We've been waiting for you to start our science adventure this year! During the summer, we started to explore the places where plants and animals live. We also learned a little about the relationships God created between living and non-living things. It's a type of science called **ecology** (said this way: ĭh-cáll-ō-jē).



As we explored ecology, though, we found that some people believe all the amazing relationships we see in creation just happened through lots of time and chance. We've learned from the Bible in the Book of Genesis, though, that God created the heavens and the earth. He is the One who designed all the relationships we see in creation.

That's right! God should receive the glory and praise for His design. So now, we're on a mission to find and share God's amazing designs.

In Revelation 4:11, it says:

You are worthy, our LORD and God, to receive glory and honor and power, for you created all things, and by your will they were created and have their being.





As we begin our science adventure, we can pray and ask God to give us insight and wisdom as we explore His creation.

Proverbs 2:3–5 says:

Indeed, if you call out for insight and cry aloud for understanding, and if you look for it as for silver and search for it as for hidden treasure, then you will understand the fear of the LORD and find the knowledge of God.

As we look for and document God’s design in creation — like a hidden treasure — we’ll also learn more about God. Oh, one more thing — that verse talks about the “fear of the LORD” — that doesn’t mean that we’ll become scared of God, but that we are amazed by Him and that we respect and follow Him.

So, will you join us on our mission to find and document God’s amazing design in His creation?

Let’s get started!



Prayer is the way we talk to God. As we begin our school adventure each day, we can pray and ask God for insight, wisdom, and understanding as we learn more about Him and the world He made.

• Read Genesis 1 and 2 as a family.





Before we get started, there are a few words we'll need to learn. My brother Ben is good at keeping track of words and their meanings. Where should we start, Ben?



Let's start with environment! An **environment** (said this way: ěn-vī-rŭn-mĕnt) is the place a person, plant, or animal lives. The environment includes what the land looks like, what plants grow there, what animals live there, and even the weather patterns.



We talked about ecology in our last lesson — **ecology** is the study of the environment plants and animals live in. Ecology also studies the relationships between living and non-living things.

Perfect! Thanks, Ben! We're going to be building on those words this year as we explore ecology, and I don't want us to lose track of all the words we're going to learn.

Good point, Hannah, I think we need a glossary. A **glossary** (said this way: glŏss-ŭh-rĕ) is a tool that lists words and their meanings. It's usually found in the back of a book and the words are listed in alphabetical order.

Alphabetical order means that the words that start with the letter A will be listed first. Words that start with the letter B will be next, and so on. If we forget the meaning of a word that was shown in **green**, we can look it up in the glossary.

Let's try it now! Can you find the word **ecology** in the glossary in the back of this book? You can ask your teacher for help if you need to! Once you've found the word, let's go explore our own environment.



Go outside and explore your environment. What types of plants or animals do you see around you? Can you spot two of the same kind of trees or plants? What is the weather like? Is the land around you flat or are there hills and mountains? What do you enjoy about your environment?

Now, draw a picture of your environment. You can show what the land looks like, what plants grow there, what animals live there, and even what the weather is like today.



Day

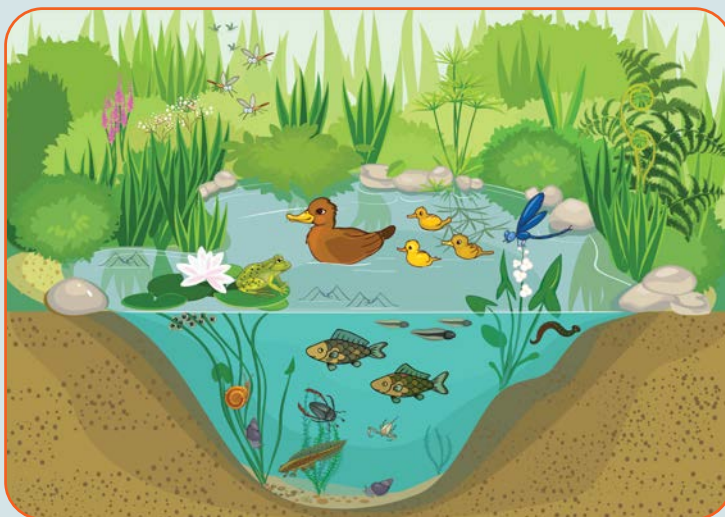


Have you ever looked at a cake with different layers? Maybe it had a layer of vanilla cake, then a layer of chocolate, then another layer of vanilla, and finally a layer of yummy frosting on top. Ecology is a type of science that has many layers too. As we learn new words, they build on each other like a layered cake or a block tower. Let's learn a few new words today so that we're ready to explore deeper!

We can start with the word **habitat**. A **habitat** (said this way: häb-ĭ-tăt) is the natural environment a plant or animal lives in. For example, if you saw a squirrel in the forest, the forest would be the squirrel's habitat.



Ecosystem is also an important word. An **ecosystem** (said this way: ē-cō-sīs-tŭm) is all of the living and non-living things that are together in a place. Let me think of an example of an ecosystem — a pond! The water, plants, fish, birds, and animals in and around the pond form an ecosystem.



We have one more word to build on top of that! A **biome** (said this way: bī-ōm) is a very large habitat that contains many of the same types of plants and animals. A biome can be home to many ecosystems, like a pond and a forest.



Let's practice. Can you match each word with the correct meaning?

Habitat

All of the living and non-living things that are together in a place.

Ecosystem

A natural environment that a plant or animal lives in.

Biome

A very large habitat that contains many of the same types of plants and animals.





The earth has several types of biomes. We're going to explore four biomes together this year:

1. the boreal (said this way: bō-rē-ūhl) forest
2. the deciduous (said this way: dīh-sīj-ū-ūs) forest
3. the grassland
4. the tropical rainforest



We're going to start with the boreal forest. This biome can also be called the taiga (said this way: tī-gūh). I can't wait to dig into our exploration of the boreal forest!



Ecology is all about relationships in creation. One thing that I love about science is how it also teaches me more about God and my relationship with Him. This week, all the talk about habitats, the places we live and dwell, can remind us of Psalm 91:1–2:

Whoever dwells in the shelter of the Most High will rest in the shadow of the Almighty. I will say of the LORD, "He is my refuge and my fortress, my God, in whom I trust."

Sometimes, we get distracted by life and forget to keep our minds and hearts focused on God — to be dwelling in Him as the Psalm talks about. When we get distracted, we also forget that we can trust God — that He is good — and we become fearful and anxious. Have you ever felt fearful and anxious? What is one way you can begin to trust God, to dwell in Him?

When science teaches us more about our relationship with God, it's like finding a hidden treasure that we can share with others!





A biome is a natural habitat that covers a very large amount of land. Biomes can look very different from one another. Let's copy the name of each of the biomes we're going to explore this year!

Boreal Forest



Grassland



Deciduous Forest



Tropical Rainforest





Memorize all, or part, of Psalm 91:1-2.

Day



Before we explore deeper into the boreal forest, we need to get ourselves ready. Do you know what every important mission needs? A notebook to record and collect all the things we gather along the way!

Scientists often draw or take a picture of what they observe so that they can share it with others. As we explore God's creation through ecology this year, we're going to compile a Science Notebook. We'll record the things we learn about and the designs God created in our Notebook. Each week you can share what you've learned with someone else, just like a real scientist.



This week we built our vocabulary — **vocabulary** (said this way: vō-căb-ū-lěh-rē) is a fancy word that means all the words that we know. We talked about our environment, habitats, and biomes. Do you remember what a habitat is? A habitat is the natural environment a plant or animal lives in. Let's add that word to our Science Notebook!

We talked about a squirrel's habitat in the forest, so let's draw a picture of a squirrel. Here's a picture of a squirrel we can look at and the basic shape we can use to draw in our Notebook. You can also use any other picture of a squirrel if you'd like!



Ben and I already added this page to our Notebooks. Ben's squirrel is gathering acorns into a pile in his home. Our little brother Sam even drew a squirrel. His is smiling!





I love how each of our pictures is different; it reminds me of God's creativity. We see God's creativity in creation, in the many different kinds of plants and animals He made. God gave us the ability to be creative just like Him. Each of our pictures is unique, and they show the creativity God has given us.



In your Science Notebook, write:
A **habitat** is the natural environment
a plant or animal lives in.

Then draw a picture of a
squirrel in its habitat.

Hidden Treasure

Learning about habitats this week also reminded us that God is our dwelling place and that we can trust Him. Copy Psalm 91:2 on the back of your Notebook page as a reminder.

I will say of the LORD, "He is my refuge and my fortress, my God, in whom I trust" (Psalm 91:2).



Boreal Biome Project

Day



It has been so much fun learning about the boreal forest biome with you over the last several weeks! But I was reading about the deciduous forest last night — there are some amazing elements of God’s design in that biome too. Do you think we could explore deeper into another biome now?

We sure can! There is so much more to study in other biomes, and many more elements of God’s design to discover through ecology. First though, I have a surprise for you. We’re going to create our own model boreal forest biome this week!



Woohoo! I’m so excited, where do we start?

First, we’ll need a shoebox. Then we can start with the sky. I have some blue paper we can cut to fit inside the shoebox. I also noticed that there are mountains in the background of many pictures from Yellowstone. Let’s add some mountains too! Are you ready to create a biome with us, friend?

- Green, blue & brown construction paper
- Glue stick
- Shoebox with lid
- Scissors
- White paint & brush
- Glitter glue
- 1/8-inch wooden dowels (6–12 inches long)
- Tape
- Playdough or clay
- Small model animals
- Small twigs or toothpicks

Weekly materials list

materials needed

- Blue & brown construction paper
- Glue stick
- White paint & brush
- Shoebox with lid
- Scissors
- Glitter glue

Today, we'll create the background for our biome. We'll add something new to the biome each day this week.

Activity directions:

1. Ask your teacher to help you cut the blue piece of construction paper to the right size so that it can fit inside the bottom of your shoebox.
2. Now it's time to make the mountains! Cut medium-sized triangles from the brown construction paper. They'll need to fit on the blue piece of paper but should be large enough to stand tall in the background.
3. Paint the tops of the mountains white to make it look like there is snow on top. If you'd like, you can also add some glitter glue on top once the paint has dried.
4. Once the mountains have dried, glue them to the blue piece of paper.
5. Insert the blue piece of paper into the bottom of the box.
6. Set your biome in a safe place. We'll continue adding to it all week!



Day

Hannah and I are all ready to make the land in our model biome today!



I'm so excited. I've been thinking about beaver dams — can we add a beaver dam to our model biome?

That's a great idea! Let's create some grassy land, and then add a pond with a little stream flowing from it. Then, we can add the beaver dam around the pond.



Perfect. I've gathered some small twigs we can use! Let's get started.

materials needed

- Green & blue construction paper
- Glue stick
- Hot glue gun
- Scissors
- Small twigs or toothpicks

Activity directions:

1. Tip your shoebox on its side (be sure the background is facing the right direction).
2. Cut the green piece of paper to fit inside the bottom.
3. Cut a circular pond out of the blue piece of paper, then cut a narrow stream. Glue both to the green piece of paper and set it inside the bottom of the model biome.
4. Now it's time to put together our beaver dam. Ask your teacher to use the hot glue gun to glue the sticks or toothpicks into the shape of a beaver dam. Be careful, the glue will be hot! You can also ask your teacher to glue some twigs upright to look like old trees the beaver can cut down.
5. Set your biome in a safe place while the glue dries.





Alright, we've got our mountain background, the ground, and even a beaver dam in our model boreal biome. It's starting to look really good! What should we add today?




Let's add coniferous trees. After all, they are the main type of tree in this biome! I've got a plan to create some coniferous trees. Ready to get started?

materials needed

- Green construction paper
- 1/8-inch wooden dowels (6–12 inches long)
- Tape
- Scissors
- Playdough or clay

Activity directions:

1. Decide how many trees you'd like to add to your biome — 3–6 are recommended, depending on the size of your box. Remember to save room for deciduous trees and animals. Then, ask your teacher to cut or break the wooden dowels to the height you would like your trees to be.
2. With your teacher's help, cut 1-inch wide strips from the sheet of construction paper. Cut one strip for each tree you plan to make.
3. Carefully cut fringe in the paper strips — your teacher may need to help. You'll want each cut to go almost to the edge of the paper strip. Here's what it will look like:

4. Place the wooden dowel at one end of the paper strip. You'll want the paper to be near the bottom of the dowel. Tape the dowel to the paper edge.
5. Begin to roll the paper around the dowel at an angle, so that the paper begins to wind up the dowel. Once you reach the top, tape the paper to secure it. If the paper strip is too long you can cut it. Fluff out the paper fringe. You've created a coniferous tree! Repeat as desired to create more trees.



6. Form a small piece of playdough into a ball and flatten the bottom a bit. Insert the bottom of the dowel into the playdough. This will be the stand that holds the pine tree.
7. Place your coniferous trees in the biome and then put the biome in a safe place until tomorrow.



Day

Our biome is coming along.
We're almost done!



I can't wait to see it tomorrow when we finish everything. Our coniferous trees look so good. The boreal forest is made up of mostly coniferous trees. But we also learned that sometimes we find trees like aspen, willow, or cottonwood around too.

Do you think we should add one or two deciduous trees?

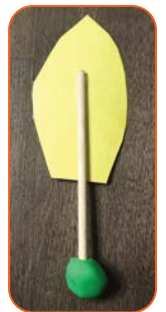
I think so! We can cut some paper into the shape of a deciduous tree and tape it to the dowel, just like we did with the coniferous trees. Let's make yellow aspen trees for our biome!

materials needed

- Green or yellow construction paper
- 1/8-inch wooden dowels (6–12 inches long)
- Tape
- Scissors
- Playdough or clay

Activity directions:

1. Carefully cut one or two tree shapes from the construction paper.
2. Ask your teacher to cut or break the wooden dowels to the height you would like your trees to be.
3. Place the dowel in the middle of the piece you cut from the construction paper and tape the dowel to the paper.
4. Form a small piece of playdough into a ball and flatten the bottom a bit. Insert the bottom of the dowel into the playdough to hold your tree upright.
5. Add the trees to the biome and put it in a safe place — we'll finish off our biome tomorrow.





Today is the day! We'll finish up our biome by adding some animals to it.



We have some small, model animals that we are going to put into our biome. If you don't have any, you can also use playdough to create some or ask your teacher to help you find and print some pictures you can use.

materials needed

- Small model animals such as a beaver, wolf, elk or moose, bear, rabbit, etc.

We also have some coniferous trees around our house. I cut a couple of small pieces off the branch for us to add to our biome. If you have coniferous trees around your house, you can add a small piece of a branch and pine needles to the floor of your biome, or even a small pinecone!

Activity directions:

1. Add the small animals to your boreal biome model.
2. If you have coniferous trees where you live, you can also add a small branch to your biome if you'd like!
3. Share your biome with your family. Be sure to tell them what you've learned about the boreal forest and God's design.



Bonus! Take a picture of your boreal biome and ask your teacher to help you print it out. Then, tape or glue the picture on the next page in your Science Notebook. Write **My Boreal Biome** at the top of the page.

Deciduous Biome Project

Day



Do you know what today is? It's the day we're going to start creating our own temperate deciduous forest biome! I'm super excited to get started.

Me too! I've got a shoebox all ready to go. We'll first need to create our background, and I have an idea. Let's paint the background this time. We can paint the sky and several deciduous trees and bushes.



Activity directions:

1. Cover your table or counter with the plastic tablecloth.
2. Determine if you can paint inside your shoebox or if you will need to paint the background on paper in order for it to show. If your shoebox is dark cardboard, you may need to paint the background on paper. Be sure to cut the paper to the right size before you begin painting.
3. Begin painting your deciduous background. Some things you can paint would be the sky, deciduous trees, grass, flowers, and bushes.
4. Allow the paper or shoebox to dry. If paper was used, glue the background inside the shoebox once it is dry. Set the shoebox in a safe place — we'll add the forest floor tomorrow!

materials needed

- Acrylic paint
- Paintbrushes
- Shoebox or similar size box
- White construction paper
- Glue stick
- Tablecloth (plastic)





It's time to add the forest floor to our biome today. Do you have an idea for what we should do, Ben?



I think I've got a plan. We used paper to create the ground last time, and I think that will work this time too. Let's also go outside and see what we can gather! We may be able to find some acorns, old leaves, a twig, dirt, or grass to add to our forest floor.

Great idea. If we can find a twig, it will look like an old, fallen tree! Ready to get started?

Activity directions:

1. Cut the green construction paper to the right size so that it fits in the bottom of your shoebox.
2. Add any items you found outside to the forest floor. Ben and Hannah added a twig as a fallen tree. They also found some acorns under an old oak tree. If you can find old leaves you can tear them up for the forest floor. If you'd like, you can also draw squiggly earthworms on the forest floor.

materials needed

- Green construction paper
- Scissors
- Gather any items you can find from outside: dirt, a twig, old leaves, leaves, or acorns.





Let's add some deciduous trees to our biome today! We learned a lot about them in our studies. We can cut out deciduous tree shapes just like we did last time and tape them to the wooden dowels.

Okay! Let's get started on our trees. The biome will really start to look like a deciduous forest today!



Activity directions:

1. Determine how many deciduous trees you would like to create. Remember to keep some room in your biome for small plants and animals. Carefully cut tree shapes from the construction paper.
2. Ask your teacher to cut or break the wooden dowels to the height you would like your trees to be.
3. Place the dowel in the middle of the piece you cut from the construction paper and tape the dowel to the paper.
4. Form a small piece of playdough into a ball and flatten the bottom a bit. Insert the bottom of the dowel into the playdough to hold your tree upright.
5. Add the trees to the biome and put it in a safe place.

materials needed

- Green construction paper
- 1/8-inch wooden dowels (6–12 inches long)
- Tape
- Scissors
- Playdough or clay





Me too, it sure is fun to put the biome together! Let's add some small shrubs today.

Our biome is almost complete. I love the way it looks!



Ooh, good idea! That will create our understory and shrub layer. We can cut out some green construction paper again to make the shrubs.

Activity directions:

1. Decide how many bushes you would like to add to your biome. Cut small bush shapes from the green construction paper.
2. Fold up the bottom 1/4 inch of the bush shape as shown in the picture below. This will form a stand for your bush. You can draw fruit or flowers on your bush if you'd like.
3. Place your bush in the biome. You can also add glue to the folded stand to help hold the bush in place. Set the biome in a safe place; we'll finish it tomorrow!

materials needed

- Green construction paper
- Scissors
- Glue stick





I can't believe we're ready to finish our biome today! I have some small, model animals that we are going to put into our biome. If you don't have any, you can also use playdough to create some or ask your teacher to help you find and print some pictures you can use. Let's add our animals to the temperate deciduous forest model!



Activity directions:

1. Add the small animals to your deciduous biome model.
2. Share your biome with your family. Be sure to tell them what you've learned about the temperate deciduous forest and God's design.

materials needed

- Small forest animals like deer, raccoon, rabbit, fox, bear, cardinal, woodpecker, opossum, or skunk.

Bonus! Take a picture of your temperate deciduous biome and ask your teacher to help you print it out. Then, tape or glue the picture on the next page in your Science Notebook. Write **My Temperate Deciduous Biome** at the top of the page.





Color this picture of a deciduous forest.



Rainforest Biome Project

Day

I don't know about you, but I sure had a lot of fun learning about the tropical rainforest biome! I also enjoyed seeing the different ways God designed plants and creatures to live in this biome.



I did too! I'm most excited about creating our own model biome of the tropical rainforest, though.

I knew you would be. I've got our shoebox here all ready to go. Mom thought we should paint our background for the tropical rainforest.

Ooh, painting? This should be fun! What do we need to paint first?

The tropical rainforest has a lot of green due to all the plants. Let's paint the sides, top, and back of the shoebox green first. Then we'll add more to our biome each day this week.

materials needed

- Acrylic paint set
- Tablecloth to protect table
- Paintbrushes
- Shoebox

Activity directions:

1. Spread out a tablecloth to protect the table.
2. Use green acrylic paint to paint the inside of your shoebox. You'll want to paint the back, top, and sides green.
3. Put the shoebox in a safe place to dry. We'll add more tomorrow!
4. Carefully rinse out your paintbrush.





I've got our model biome here.
What are we going to add today?



Our background looks nice and green — now it's time to add some trees or bushes. We can paint tall trees on the back and sides of our shoebox.

Ooh, we can add some epiphytes to the trees, and even some vines winding their way up the tree!

Great ideas, Ben! I've got a few paint colors here for us to use. We'll need to rinse out our paintbrush before we change paint colors. We can dry the brush on the paper towel before we dip it into the next paint color.

Let's get started!

Activity directions:

1. Spread out a tablecloth to protect the table.
2. Begin painting trees on your biome. You can start by painting the trunks and branches. Then rinse the paintbrush in the water and dry it on the paper towel.
3. Next, paint leaves on the tree. You'll need a darker green paint color than the background is. You can paint green circles at the end of your branches, or paint smaller groups of leaves if you'd like.
4. Rinse your paintbrush and choose the next color. Now you can paint some epiphytes or vines on your trees!
5. Once you're done painting, carefully rinse out the paintbrush. Put the shoebox in a safe place to dry. We'll add more tomorrow!

materials needed

- Acrylic paint set
- Tablecloth to protect table
- Paintbrushes
- Bowl of water
- Paper towels



Day

It has been so much fun creating our tropical rainforest biome! Let's create the ground today. We can paint the bottom of the box brown.



Can I paint a river through our biome?

Sure! I'll paint the brown dirt and vines, and you can paint the river. Oh, you can also paint some green along the bottom edge of our box. Let's start painting!

Activity directions:

1. Spread out a tablecloth to protect the table.
2. Paint the bottom of the shoebox brown. Rinse out the paintbrush and then let the brown dry for a bit.
3. Once the brown is dry to the touch, you can begin painting a river through your biome if you'd like.
4. You can also paint long, winding vines along your rainforest floor.
5. Once you're done painting, carefully rinse out the paintbrush. Put the shoebox in a safe place to dry. We'll add more tomorrow!

materials needed

- Acrylic paint set
- Tablecloth to protect table
- Paintbrushes
- Bowl of water
- Paper towels



Day

I love the river you painted through our model rainforest biome, Ben!

Thanks! Today is the day it'll really start coming together — we need to add some more trees. I have an idea for how to add buttress roots to our trees too!

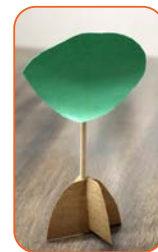
Ooh, I can't wait to get started. I have the trees we made for our deciduous biome. We can re-use those trees.

materials needed

- Trees from the deciduous biome
- Brown construction paper
- Tape
- Scissors
- Twine or yarn
- Hot glue gun or mini glue dots

Activity directions:

1. If you no longer have the trees that were created for the deciduous biome, you can make new trees following that same process.
2. Fold the brown construction paper in half. Cut a semi-oval from the paper to create 2 equal pieces.
3. Cut the bottom of one semi-oval so that the cut is about $\frac{1}{4}$ inch from the top. Cut the second semi-oval from the top so that the cut is about $\frac{1}{4}$ inch from the bottom.
4. Slide the cut slits of the semi-ovals over each other to create a buttress root base.
5. If you are re-using the deciduous trees, remove the playdough base. Tape the bottom of the dowel to the buttress root base.
6. Cut pieces of twine to attach to the biome ceiling. These will be our vines. Use mini glue dots or a hot glue gun (adult only!) to attach the ends of the twine to the shoebox's ceiling.
7. Place the biome in a safe place; we'll be finishing it tomorrow!





Our biome looks so good — but it's missing one important part! We're ready to add some small model birds and animals to our biome today. If you don't have any, you can also use playdough to create some or ask your teacher to help you find and print some pictures you can use. Let's add our animals to the rainforest model!



Activity directions:

1. Add the small animals to your tropical rainforest biome model. If you'd like, you can use mini glue dots to attach some creatures, like frogs, higher in the biome. You can also let animals swing from the vines.
2. Share your biome with your family. Be sure to tell them what you've learned about the tropical rainforest and God's design.

materials needed

- Small rainforest animals like toucan, snake, tiger, frog, monkey, etc.
- Mini glue dots



Bonus! Take a picture of your tropical rainforest biome and ask your teacher to help you print it out. Then, tape or glue the picture on the next page in your Science Notebook. Write **My Tropical Rainforest Biome** at the top of the page.



Color this picture of a toucan from the tropical rainforest.



Answer Keys

Page 24

Habitat – A natural environment that a plant or animal lives in.

Ecosystem – All of the living and non-living things that are together in a place.

Biome – A very large habitat that contains many of the same types of plants and animals.

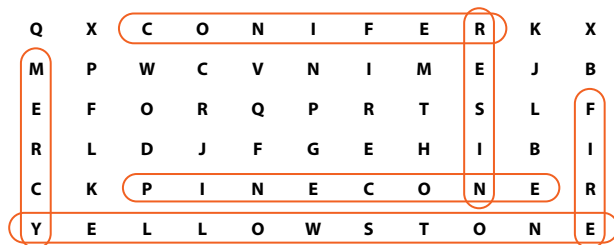
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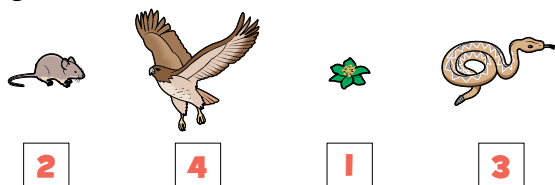
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needles

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Pages 65–66

Answers may include:

Deuteronomy 7:9: God is faithful.

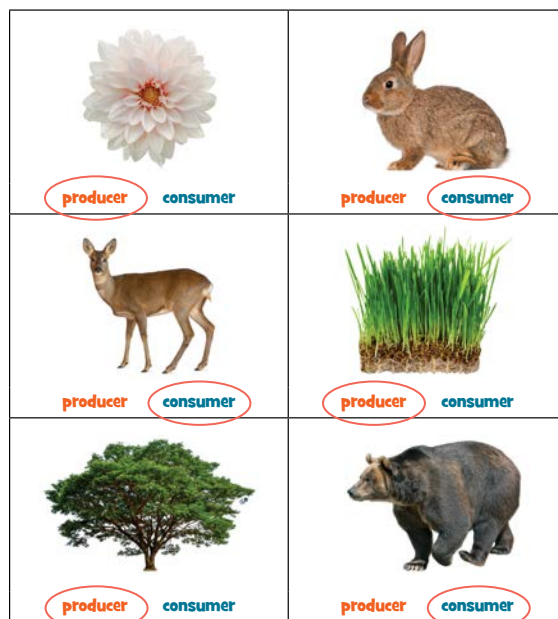
Deuteronomy 32:4: God is faithful, without iniquity, just, and upright.

Psalms 147:5: God is great, abundant in power, and His understanding is beyond measure.

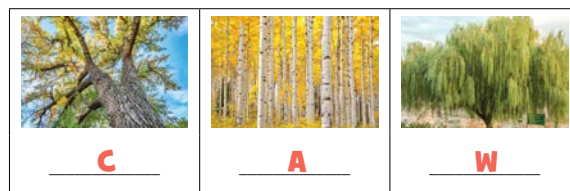
Romans 11:33: God is wise and unsearchable.

1 Corinthians 14:33: God is peaceful.

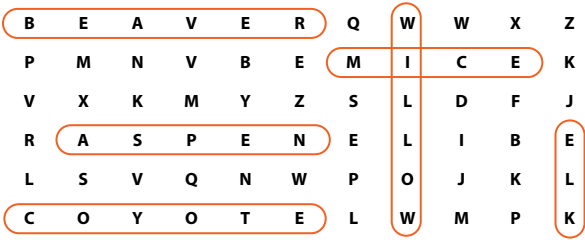
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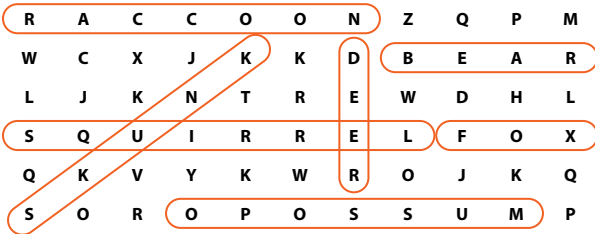
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1. **does not have**
2. **four**
3. **30-60**

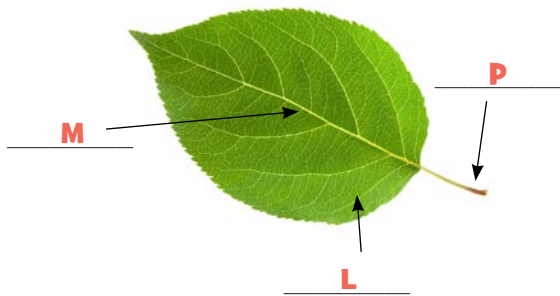
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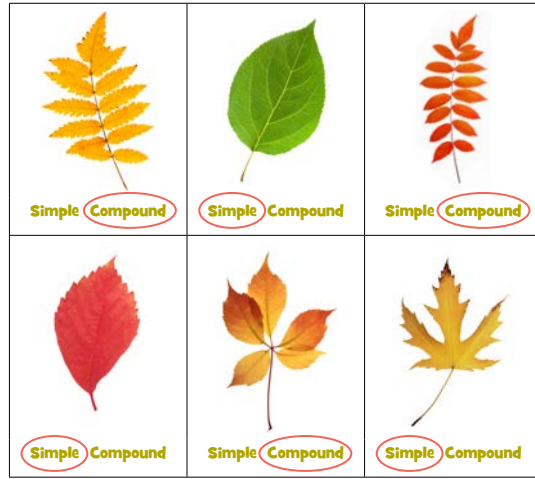
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Shorter days cause a change in the amount of light, and the trees begin preparing for the winter.

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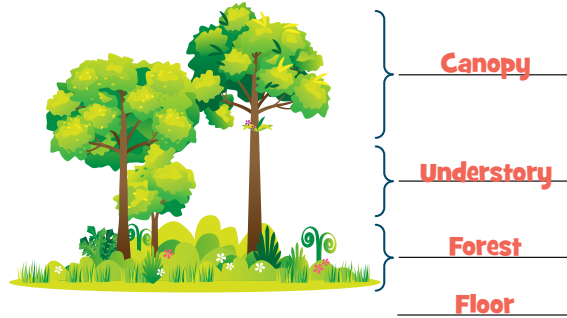
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1. **above**
2. **slowly**
3. **shade**

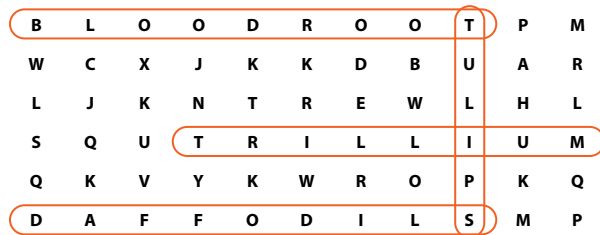
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Approximately 28

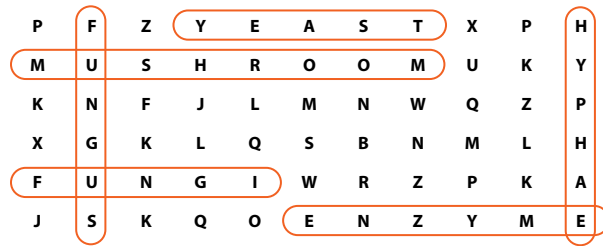
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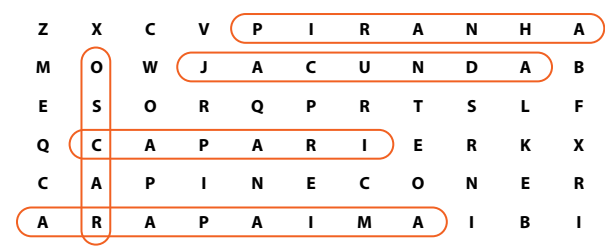
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Page 182

1. keystone
2. food
3. pollution

Page 190

Parasite – An organism that lives inside or on a different organism and receives nutrients from it.

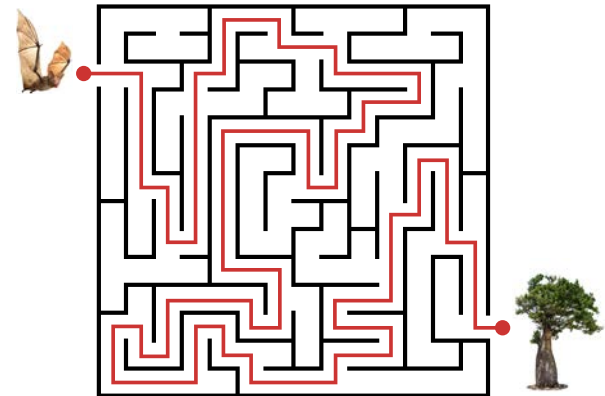
Commensalism – A type of relationship in which two organisms have a relationship, but only one receives a benefit.

Parasitism – A relationship when a parasite lives on a host.

Page 204

1. southern
2. do
3. warm and rainy
4. smallest

Page 220



Page 226

1. 100
2. upper
3. darker
4. evaporating
5. dense

Page 258

1. mammals
2. bigger
3. canopy
4. prehensile

Page 264

1. **large**
2. **very little**
3. **need**
4. **trees**

Page 290

1. continent
2. savannahs
3. Africa
4. wet

Page 292

To adjust or change for certain conditions or a particular environment.

Page 300

Answers may include:

Deep roots reach water that is deep.

The tangled roots hold the soil together tightly. Water tends to get trapped in the tight soil around the tangled roots. This keeps water available for the grass longer.

Page 306

1. There usually isn't enough water to support many trees.
2. Fire

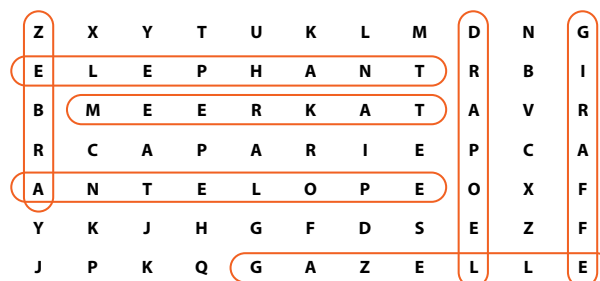
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1. keystone

2. tusks
3. herd

They use their tusks like a shovel to dig holes in the ground. If the elephant reaches stored water, the holes fill up with that water to create a small watering hole.

Page 326



Page 330

Answers may include:

Zebras smell predators and when alerting the other zebras, they are also alerting the ostriches. An ostrich has good vision and while alerting the other ostriches, they are also alerting the zebras.

Page 346

Answers may include:

God only created humans in His image.

Page 354

Steward means to manage.