

GOD'S
DESIGN®

Life

for beginners

Plants
for Beginners

The Human Body
for Beginners

Animals
for Beginners



MASTERBOOKS
— CURRICULUM —

Debbie & Richard Lawrence

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Teacher Introduction

Welcome to God's Design Science for Beginners! *God's Design for Life for Beginners* includes Plants, Animals, and Human Body. This book includes the student textbook material and a teacher supplement with answer keys.

This textbook contains three separate sections and each of which has 35 lessons. Each lesson includes text to read, vocabulary words to trace, review questions, and one or more activities, which may be a pen-on-paper activity, a Scripture verse to trace, or a hands-on experiment. Each unit concludes with a vocabulary review.

Answer keys for any puzzles, answers to the review questions, and optional activities and experiments you can do with your student are found in the back of this book. Optional activities are labeled with a logo in corresponding lessons. We greatly encourage you to do as many optional activities and experiments as possible, since children learn more and retain more when they are actively engaged with the material.



The supply lists for each unit can be found on pages 8–10. Be sure to consult these and gather the supplies you'll need in advance.

There is no set timeline for completing the book. You can decide how many days each week you want to do science. We suggest that you review previous lessons often to help your student retain the information they've learned.

This course also includes unit vocabulary reviews. These can be used as assessments like a quiz or test if you wish.

A course schedule is included in this book. And as always, you can adjust it per the needs of your student. All activities can also be modified as needed at your discretion.

We hope that you have a wonderful time of discovery as you explore a wide variety of plants, the amazing human body, and different types of animals that God created!

If you are using both the *God's Design for Life for Beginners* book in conjunction with the God's Design for Life course for older students to create a multi-age level study for your students, please keep in mind the following tips:

1

Be flexible with the schedule for your students. Adjust as needed.

2

Focus on the ability of each student to master the material and make it fun!

3

Encourage students to help one another as they learn the material.

You can download a schedule that will help you teach this course at the same time as the course for the older student. It is available at www.nlpg.com/classroom-aids.

Special Project

At the end of this course, the student will have the opportunity to do a special project. This can be:

- ✓ A poster sharing something learned from the course (ex., an animal and where it lives, a plant and how it functions, or a diagram of one system of the human body).
- ✓ A short report from any of the three sections – plants, human body, or animals. Can be focused on a specific area of interest (ex. digestive system, arthropods, or unusual plants)
- ✓ A short oral presentation for your teacher: explain what you enjoyed most about the course and why.

Be as creative as you want to be!

Plants for Beginners – Supply List

Lesson	✓	Supplies
7		Sheet of paper, drawing supplies
8 & 9		Bean seeds, jar or cup, paper towels
10		Several types of fruits and vegetables with seeds
11		Unpeeled carrots, magnifying glass
16		2 identical plants, box to cover one of the plants
18		Fresh leaf, cup, water, food coloring
21		Construction paper, glue
23		One or more fresh flowers with obvious reproductive parts (lily, alstroemeria, etc.)
24		A selection of fresh fruit
25		Pinecone
26		Box, stick, small toy
28		House plant
29		Cactus
34		Mushroom
35		Construction paper, glue, any dried parts of plants you have available such as leaves, seeds, seed pods, flowers, twigs, etc.

Optional Activities Supply List

4		A box of yellow gelatin, zipper bag, a red grape, several green grapes
6		Two pieces of green construction paper, glue, scissors
13		Celery stem, knife*, food coloring, a glass of water
14		Assorted vegetables: lettuce, spinach, carrots, radishes, tomatoes, cucumbers, sunflower seeds; assorted fall leaves (all shapes and sizes); plain white paper; crayons (darker colors work well)
17		Fall leaves, various crayons, and white paper
19		Construction paper: orange, yellow, red, and brown; hole punch, string, clothes hanger

*Have an adult use the knife to do the cutting and preparing the fruits and vegetables.

Human Body for Beginners – Supply List

Lesson	✓	Supplies
3		Lego® bricks or building blocks
5		Sticky notes
18		Sugar, items with distinctive scents such as cinnamon and cocoa
21		Toothbrush, tooth paste, dental floss
22		Broccoli pieces or carrot sticks, apple slices, crackers, peanut butter, raisins, milk
27		Red and blue construction paper
32		Apple, plastic wrap, food coloring
34		Newsprint (paper large enough to trace around your child)

Optional Activities Supply List

4		Dry pasta (spaghetti, wagon-wheel type pasta, macaroni noodles); dried beans; construction paper (any color); glue
10		Finger paint (color of choice), blank sheets of paper
12		Modeling clay
17		Two paper cups, length of string
18		Medium potato, a medium apple, knife*, blindfold, small plate, assorted fruits and vegetables
28		Small package of balloons

*Have an adult use the knife to do the cutting and preparing the fruits and vegetables.

Animals for Beginners – Supply List

Lesson	✓	Supplies
9		Bird feather
16		Sequins, glue
24		Powdered sugar
25		Modeling clay
27		Seashells
29		Flour, salt, mini-chocolate chips
31		Jar with lid, dirt, sand, black construction paper, tape, compost
32		Magnifying glass

Optional Activities Supply List

3		Play-dough
6		Chopped up carrot or nuts, glass or cup, water, toothbrush
8		Old magazines with bird images
11		Blue construction paper, glue, a small package of goldfish crackers
13		Modeling clay
22		Three foam balls, toothpicks, pipe cleaners, color marker
23		Two scarves, a blanket
24		Round crackers, peanut butter, pretzel sticks, raisins
28		Empty egg carton, pipe cleaners
30		Sponges (cut to different shapes and sizes), finger paint, blank paper
31		One package of instant chocolate pudding mix, chocolate cookie crumbs (crushed), four plastic cups, four gummy worms. Worm habitat: live worms, sand, jar with lid, taps, black construction paper, dirt, hammer, nail

Date	Day	Assignment	Due Date	✓	Grade
First Semester-First Quarter					
Week 1	Day 1	Plants for Beginners Unit 1: Introduction to Life Science Do Lesson 1: Is It Alive? • Pages 17–20 • God's Design: Life Beginners			
	Day 2	Do Lesson 2: Plant or Animal? • Pages 21–23			
	Day 3	Do Lesson 3: Classifying Plants and Animals • Pages 24–28			
	Day 4				
	Day 5				
Week 2	Day 6	Do Lesson 4: Plant and Animal Cells • Pages 29–31*			
	Day 7	Do the Introduction to Life Science Unit Vocabulary Review (Lessons 1-4) • Page 32			
	Day 8	Plants for Beginners Unit 2: Flowering Plants and Seeds Do Lesson 5: Parts of Plants • Pages 33–35			
	Day 9				
	Day 10				
Week 3	Day 11	Do Lesson 6: Grasses • Pages 36–38*			
	Day 12	Do Lesson 7: Trees • Pages 39–41			
	Day 13	Do Lesson 8: Seeds • Pages 42–43			
	Day 14				
	Day 15				
Week 4	Day 16	Do Lesson 9: Inside a Seed • Pages 44–45			
	Day 17	Do Lesson 10: Seeds—Where Are They? • Pages 46–47			
	Day 18	Complete Flowering Plants and Seeds Unit Vocabulary Review (Lessons 5-10) • Page 48			
	Day 19				
	Day 20				
Week 5	Day 21	Plants for Beginners Unit 3: Roots and Stems Do Lesson 11: Roots • Pages 49–53			
	Day 22	Do Lesson 12: Special Roots • Pages 54–57			
	Day 23	Do Lesson 13: Stems • Pages 58–59*			
	Day 24	Do Lesson 14: Stem Structure • Pages 60–61*			
	Day 25				
Week 6	Day 26	Do Lesson 15: Stem Growth • Pages 62–63			
	Day 27	Complete Roots and Stems Unit Vocabulary Review (Lessons 11-15) • Page 64			
	Day 28	Plants for Beginners Unit 4: Leaves Do Lesson 16: Photosynthesis • Pages 65–68			
	Day 29	Do Lesson 17: Leaf Arrangement • Pages 69–70*			
	Day 30				

* This lesson includes an optional activity. See Optional Activity section starting on page 293.

Schedule

Date	Day	Assignment	Due Date	✓	Grade
Week 7	Day 31	Do Lesson 18: Leaves Have Veins • Pages 71–73			
	Day 32	Do Lesson 19: Changing Colors • Pages 74–76*			
	Day 33	Do Lesson 20: Leaf Identification • Pages 77–79			
	Day 34	Complete Leaves Unit Vocabulary Review (Lessons 16–20) • Page 80			
	Day 35				
Week 8	Day 36	Plants for Beginners Unit 5: Flowers and Fruits Do Lesson 21: Flowers • Pages 81–84			
	Day 37	Do Lesson 22: Pollination • Pages 85–87			
	Day 38	Do Lesson 23: Looking at a Real Flower • Pages 88–89			
	Day 39				
	Day 40				
Week 9	Day 41	Do Lesson 24: Fruits • Pages 90–91			
	Day 42	Do Lesson 25: Plant Life Cycle • Pages 92–95			
	Day 43	Complete Flowers and Fruit Unit Vocabulary Review (Lessons 21–25) • Page 96			
	Day 44				
	Day 45				
First Semester-Second Quarter					
Week 1	Day 46	Plants for Beginners Unit 6: Unusual Plants Do Lesson 26: Meat-eating Plants • Pages 97–100			
	Day 47	Do Lesson 27: Passenger and Parasite Plants • Pages 101–102			
	Day 48	Do Lesson 28: Plants Have Special Abilities • Pages 103–105			
	Day 49	Do Lesson 29: Surviving in Harsh Climates • Pages 106–107			
	Day 50				
Week 2	Day 51	Do Lesson 30: New Plants without Seeds • Pages 108–109			
	Day 52	Do Lesson 31: Ferns • Pages 110–111			
	Day 53	Do Lesson 32: Mosses • Pages 112–113			
	Day 54	Do Lesson 33: Algae • Pages 114–115			
	Day 55				
Week 3	Day 56	Do Lesson 34: Mushrooms • Pages 116–117			
	Day 57	Do Lesson 35: Appreciating Plants • Pages 118–119			
	Day 58	Complete Unusual Plants Unit Vocabulary Review (Lessons 26–35) • Page 120			
	Day 59				
	Day 60				
Week 4	Day 61	Human Body for Beginners Unit 1: Body Overview Do Lesson 1: The Creation of Life • Pages 121–123			
	Day 62	Do Lesson 2: The Human Body • Pages 124–125*			
	Day 63	Do Lesson 3: Cells • Pages 126–127			
	Day 64				
	Day 65				

Date	Day	Assignment	Due Date	✓	Grade
Week 5	Day 66	Complete Body Overview Unit Vocabulary Review (Lessons 1–3) • Page 128			
	Day 67	Human Body for Beginners Body Unit 2: Bones and Muscles Do Lesson 4: Your Skeleton • Pages 129–132*			
	Day 68	Do Lesson 5: Name Those Bones • Pages 133–134			
	Day 69	Do Lesson 6: Types of Bones • Page 135*			
	Day 70				
Week 6	Day 71	Do Lesson 7: Joints • Pages 136–137*			
	Day 72	Do Lesson 8: Muscles • Pages 138–139			
	Day 73	Do Lesson 9: Using Your Muscles • Pages 140–141			
	Day 74	Do Lesson 10: Hands and Feet • Pages 142–143*			
	Day 75				
Week 7	Day 76	Complete Bones and Muscles Unit Vocabulary Review (Lessons 4–10) Page 144			
	Day 77	Human Body for Beginners Body Unit 3: Nerves and Senses Do Lesson 11: The Nervous System • Pages 145–147			
	Day 78	Do Lesson 12: The Brain • Pages 148–149*			
	Day 79	Do Lesson 13: Learning and Thinking • Pages 150–152			
	Day 80				
Week 8	Day 81	Do Lesson 14: Reflexes and Nerves • Pages 153–154			
	Day 82	Do Lesson 15: The Five Senses • Pages 155–156			
	Day 83	Do Lesson 16: The Eye • Pages 157–158*			
	Day 84				
	Day 85				
Week 9	Day 86	Do Lesson 17: The Ear • Pages 159–160*			
	Day 87	Do Lesson 18: Taste and Smell • Pages 161–163*			
	Day 88	Complete Nerves and Senses Unit Vocabulary Review (Lessons 11–18) • Page 164			
	Day 89	Body Unit 4: Digestion Do Lesson 19: The Digestive System • Pages 165–167*			
	Day 90				
		Mid-Term Grade			
Second Semester-Third Quarter					
Week 1	Day 91	Do Lesson 20: Teeth • Pages 168–169			
	Day 92	Do Lesson 21: Caring for Your Teeth • Pages 170–171			
	Day 93	Do Lesson 22: Eating the Right Foods • Pages 172–173			
	Day 94				
	Day 95				

* This lesson includes an optional activity. See Optional Activity section starting on page 293.

Schedule

Date	Day	Assignment	Due Date	✓	Grade
Week 2	Day 96	Do Lesson 23: Vitamins and Minerals • Pages 174–175			
	Day 97	Complete Digestion Unit Vocabulary Review (Lessons 19-23) • Pages 176			
	Day 98	Body Unit 5: Heart and Lungs • Do Lesson 24: The Circulatory System • Pages 177–179			
	Day 99	Do Lesson 25: The Heart • Pages 180–181			
	Day 100				
Week 3	Day 101	Do Lesson 26: Blood • Pages 182–183			
	Day 102	Do Lesson 27: The Respiratory System Pages • 184–185			
	Day 103	Do Lesson 28: The Lungs • Pages 186–187*			
	Day 104				
	Day 105				
Week 4	Day 106	Complete Heart and Lungs Unit Vocabulary Review (Lessons 24-28) Page 188			
	Day 107	Body Unit 6: Skin & Immunity Do Lesson 29: The Skin • Pages 189–191			
	Day 108	Do Lesson 30: What Is Inside My Skin? • Pages 192–193			
	Day 109	Lesson 31: Skin Color • Pages 194–196			
	Day 110				
Week 5	Day 111	Do Lesson 32: Staying Well • Pages 197–198			
	Day 112	Do Lesson 33: DNA • Pages 199–200			
	Day 113	Do Lesson 34: Final Project • Page 201			
	Day 114				
	Day 115				
Week 6	Day 116	Do Lesson 35: God Made Me Special • Page 202–203			
	Day 117	Complete Skin and Immunity Unit Vocabulary Review (Lessons 29-33) Page 204			
	Day 118	Animals for Beginners Unit 1: Mammals Do Lesson 1: World of Animals • Pages 205–207			
	Day 119				
	Day 120				
Week 7	Day 121	Do Lesson 2: Learning about Animals • Pages 208–209			
	Day 122	Do Lesson 3: What Is a Mammal? • Pages 210–211*			
	Day 123	Do Lesson 4: Large and Small Mammals • Pages • 212–215			
	Day 124	Do Lesson 5: Monkeys & Apes • Pages 216–217*			
	Day 125				
Week 8	Day 126	Do Lesson 6: Water Mammals • Pages 218–220*			
	Day 127	Do Lesson 7: Marsupials • Pages 221–223			
	Day 128	Complete Mammals Unit Vocabulary Review (Lessons 1-7) • Page 224 (TG)			
	Day 129				
	Day 130				

Date	Day	Assignment	Due Date	✓	Grade
Week 9	Day 131	Animals for Beginners Unit 2: Birds and Fish Do Lesson 8: Birds • Pages 225–227*			
	Day 132	Do Lesson 9: Flight • Pages 228–229			
	Day 133	Do Lesson 10: Birds That Don't Fly • Pages 230–231			
	Day 134				
	Day 135				
Second Semester-Fourth Quarter					
Week 1	Day 136	Do Lesson 11: Fish • Pages 232–233*			
	Day 137	Do Lesson 12: Fish Were Designed to Swim • Pages 234–235			
	Day 138	Do Lesson 13: Sharks and Rays • Pages 236–239*			
	Day 139	Complete Birds and Fish Unit Vocabulary Review (Lessons 8–13) • Pages 240			
	Day 140				
Week 2	Day 141	Animals for Beginners Unit 3: Amphibians and Reptiles Do Lesson 14: Frogs and Toads • Pages 241–243*			
	Day 142	Do Lesson 15: A Frog's Life Cycle • Pages 244–245			
	Day 143	Do Lesson 16: Reptiles • Pages 246–247			
	Day 144				
	Day 145				
Week 3	Day 146	Do Lesson 17: Snakes • Pages 248–250*			
	Day 147	Do Lesson 18: Lizards • Pages 251–253			
	Day 148	Do Lesson 19: Turtles and Crocodiles • Pages 254–255			
	Day 149				
	Day 150				
Week 4	Day 151	Complete Amphibians and Reptiles Unit Vocabulary Review (Lessons 14–19) Page 256			
	Day 152	Animals for Beginners Unit 4: Arthropods Do Lesson 20: Animals Without Backbones • Pages 257–259*			
	Day 153	Do Lesson 21: Arthropods • Pages 260–261			
	Day 154	Do Lesson 22: Insects • Pages 262–263*			
	Day 155				
Week 5	Day 156	Do Lesson 23: Insect Life Cycle • Pages 264–265*			
	Day 157	Do Lesson 24: Spiders • Pages 266–267*			
	Day 158	Do Lesson 25: Crabs and Crayfish • Pages 268–269			
	Day 159	Do Lesson 26: Animals with Many Legs • Pages 270–271			
	Day 160				
Week 6	Day 161	Complete Arthropods Unit Vocabulary Review (Lessons 20–26) • Page 272			
	Day 162	Animals for Beginners Unit 5: Other Invertebrates Do Lesson 27: Mollusks • Pages 273–275			
	Day 163	Do Lesson 28: Jellyfish and Coral • Pages 276–277*			
	Day 164	Do Lesson 29: Starfish • Pages 278–279			
	Day 165				

* This lesson includes an optional activity. See Optional Activity section starting on page 293.

Schedule

Date	Day	Assignment	Due Date	✓	Grade
Week 7	Day 166	Do Lesson 30: Sponges • Pages 280–281*			
	Day 167	Do Lesson 31: Worms • Pages 282–283*			
	Day 168	Complete Other Invertebrates Unit Vocabulary Review (Lessons 27–31) • Pages 284			
	Day 169	Animals for Beginners Unit 6: Simple Organisms Do Lesson 32: Very Tiny Animals • Pages 285–287			
	Day 170				
Week 8	Day 171	Do Lesson 33: Bacteria • Pages 288–289			
	Day 172	Do Lesson 34: Animal Review • Page 290*			
	Day 173	Do Lesson 35: Animals in the Bible • Page 291			
	Day 174				
	Day 175				
Week 9	Day 176	Complete Simple Organisms Unit Vocabulary Review (Lessons 32–33) • Page 292			
	Day 177	Start your Special Project.			
	Day 178	Complete your Special Project.			
	Day 179				
	Day 180				
		Final Grade			

* This lesson includes an optional activity. See Optional Activity section starting on page 293.

Introduction to Life Science

UNIT
1



GOD'S
DESIGN®

Lessons 1-4

Plants
for Beginners

Lesson 1

Is It Alive?

If you had a gummy worm and an earthworm in front of you, how could you tell which one is alive?

A gummy worm cannot eat. An earthworm eats dead plants in the soil.

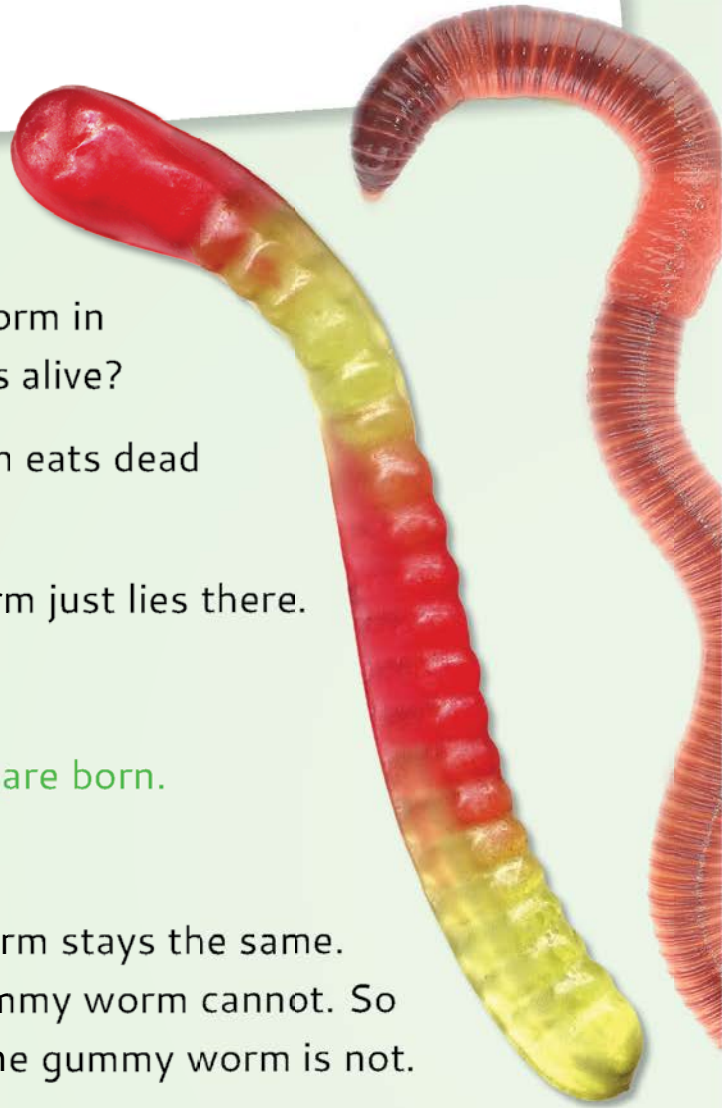
The earthworm wriggles. The gummy worm just lies there.

Living things are born.
They grow and eventually die.

The earthworm can grow. The gummy worm stays the same. The earthworm can have babies. But the gummy worm cannot. So you know that the earthworm is alive, and the gummy worm is not.

Animals are alive. Plants are alive, too. And of course people are alive. They can all do the things that the earthworm can do.

- ? How can you tell if something is a living thing?
- ? Is a cat alive? Is a couch alive?
- ? Is God alive?





Scripture Trace

May the glory of the LORD endure
forever; may the LORD rejoice in his
works. Psalm 104:31



Outdoor Scavenger Hunt

Go outside and collect lots of things, some that are alive and some that are not. Then fill in the chart below.

Living


Nonliving

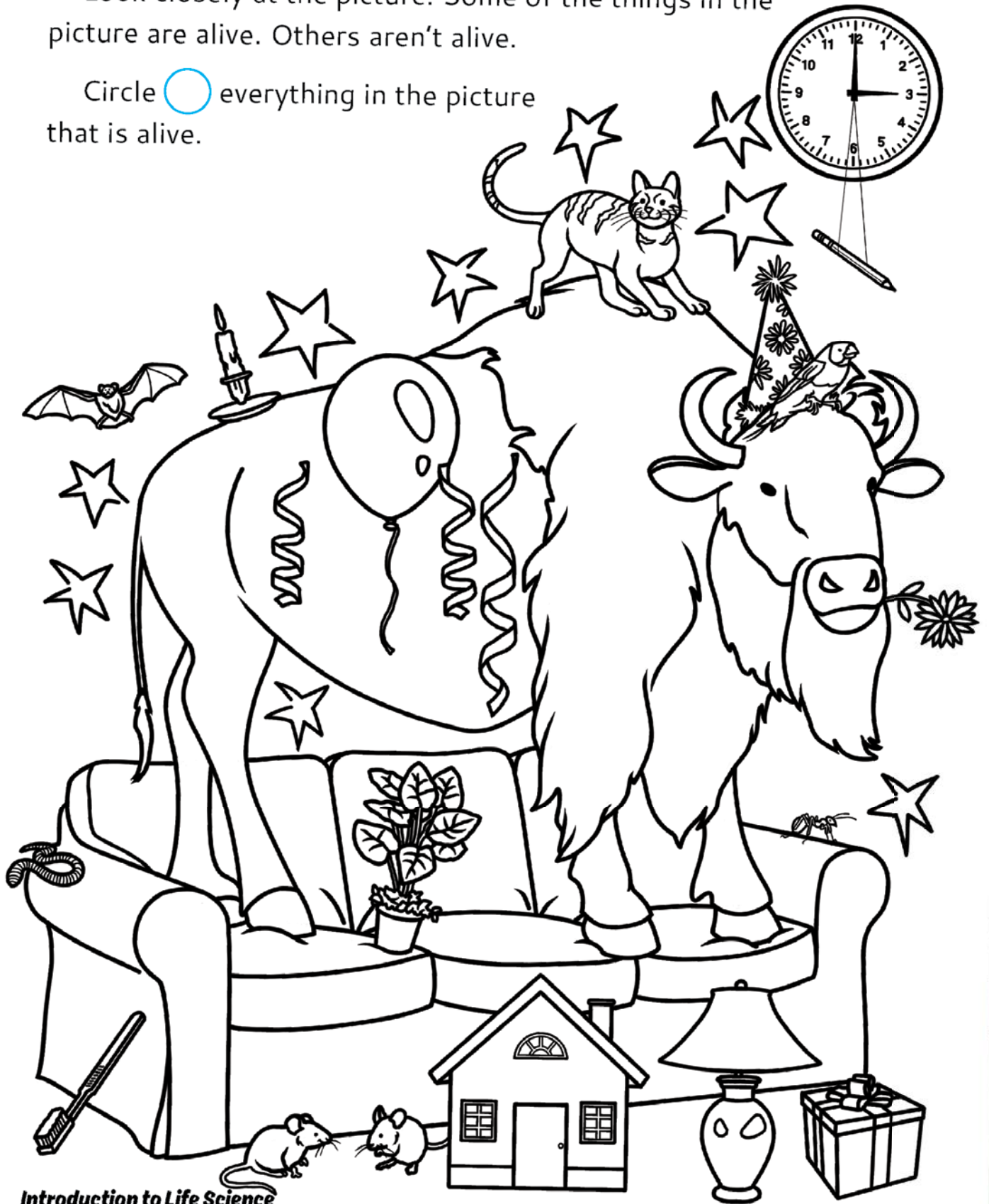
Living	Nonliving



Is It Alive Scavenger Hunt

Look closely at the picture. Some of the things in the picture are alive. Others aren't alive.

Circle  everything in the picture that is alive.



Plant or Animal

Lesson 2

Plants and animals are both alive, but plants and animals are different.

Plants

Plants have green leaves. They are planted in the ground. Plants must have sunlight to grow. Plants use sunlight to make their food.

Animals

Animals do not have to be planted in the ground. Animals can live in places without sunlight.

Bats live in caves. There is no sunlight in a cave. But animals cannot make their own food. Animals have to eat plants or other food.

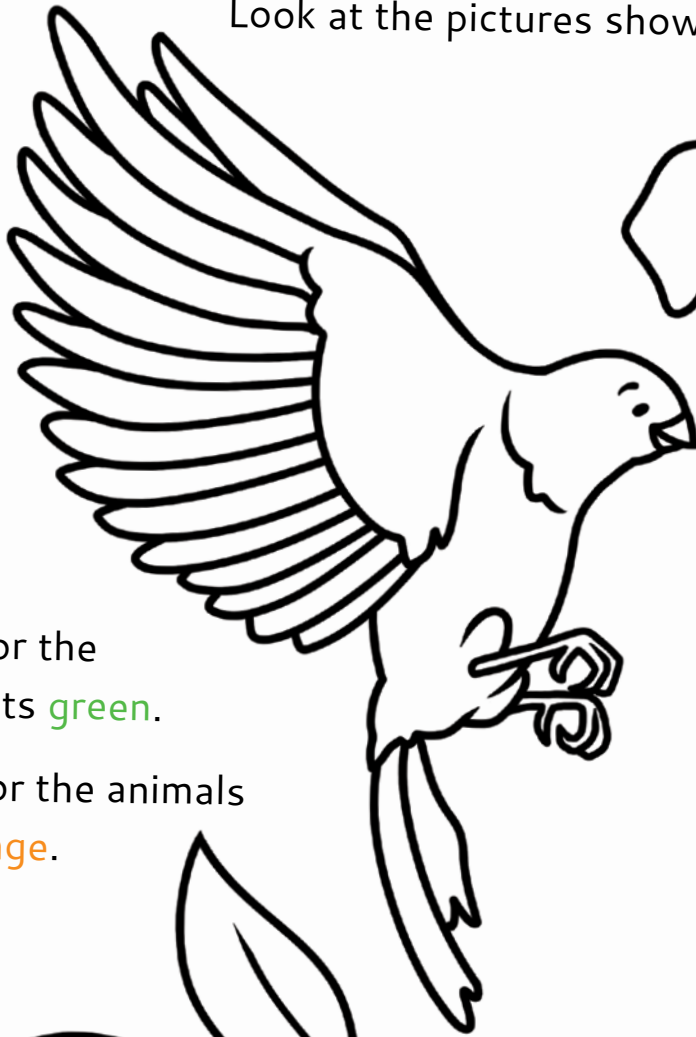
Animals can move around. Plants can turn their leaves to face the sun, but the whole plant cannot get up and walk around.





Plant or Animal Worksheet

Look at the pictures shown here.



Color the plants **green**.

Color the animals **orange**.



- ? What do plants need in order to make their food?
- ? Can plants move like people?
- ? Name one important difference between plants and animals.



On What Day Were They Created?

Draw a line from the day of creation to the correct thing made on that day. See Genesis 1 in the Bible for help.



Day 3

Day 5

Day 6



Lesson 3

Classifying Plants and Animals

Classification

is putting things into groups based on features they have in common. Adam would have used a classification method by grouping animal kinds together when he named them.

Scientists classify living things based on similar features. They group things into categories. The biggest category is the Kingdom. All living things fit into just five or six kingdoms. The smallest category is species.

Since all plants are not alike, scientists put them into different groups. One group is trees.

Most trees have tall trunks. Trees have branches. And trees have lots of leaves.

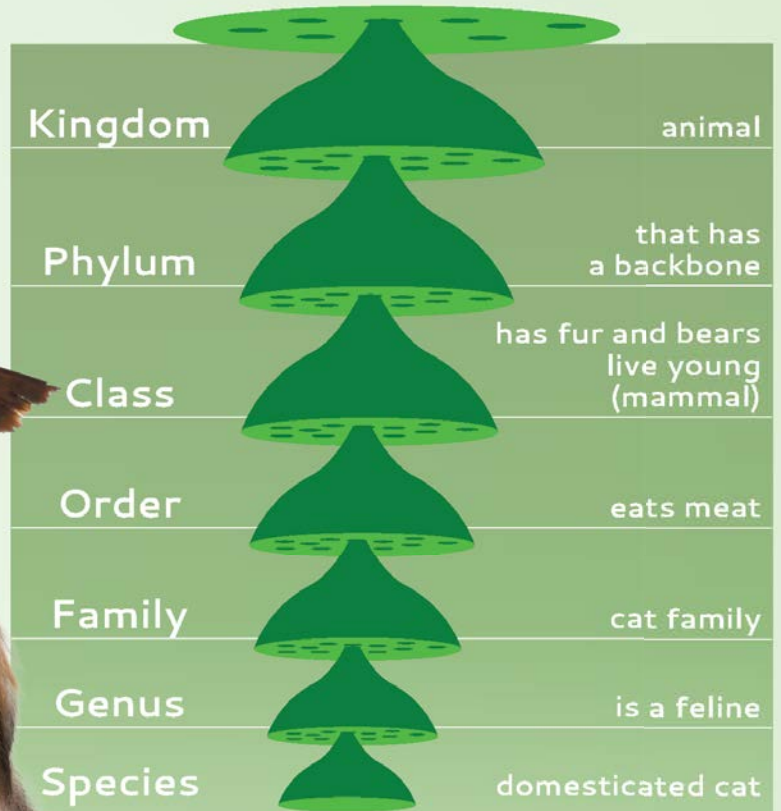
Other plants have beautiful flowers. These plants are much smaller than trees.

Grass is a plant, too. But grass does not have big colorful flowers. These different plants are in different groups.



name

How Scientists Classify Living Things



All animals are not alike.

Some animals have fur. Dogs, cats, and rabbits all have fur.



Birds have feathers. Birds fly through the air. An eagle is a bird. So is a blue jay.


Fish are animals that live in the water. Fish have scales instead of fur.



What Am I?

Look at the plants and animals shown here.

Circle  the trees. Draw a triangle  around the flowers.

Draw a square  around the animals with fur (mammals).

Put an **X** on the animals with feathers (birds).



name





Scripture Trace

Now out of the ground the LORD God had formed every beast of the field and every bird of the heavens and brought them to the man to see what he would call them.

Genesis 2:19

? How are dogs and cats alike?

? How are dogs and birds different?

? Who was the first human to classify, or name, the animals?



Classify Your Closet!

Try your hand at being a scientist and classify your closet. Grouping your clothes together based on color may make it easier for you to put together a matching outfit or find your favorite shirt for that special day. You can group clothes based on color, short or long sleeves, pants or shorts, etc. When you decide how to organize your clothes, you get to be the scientist and make your own groups!

Plant and Animal Cells

Lesson 4

Every plant and animal is made up of millions of tiny cells.



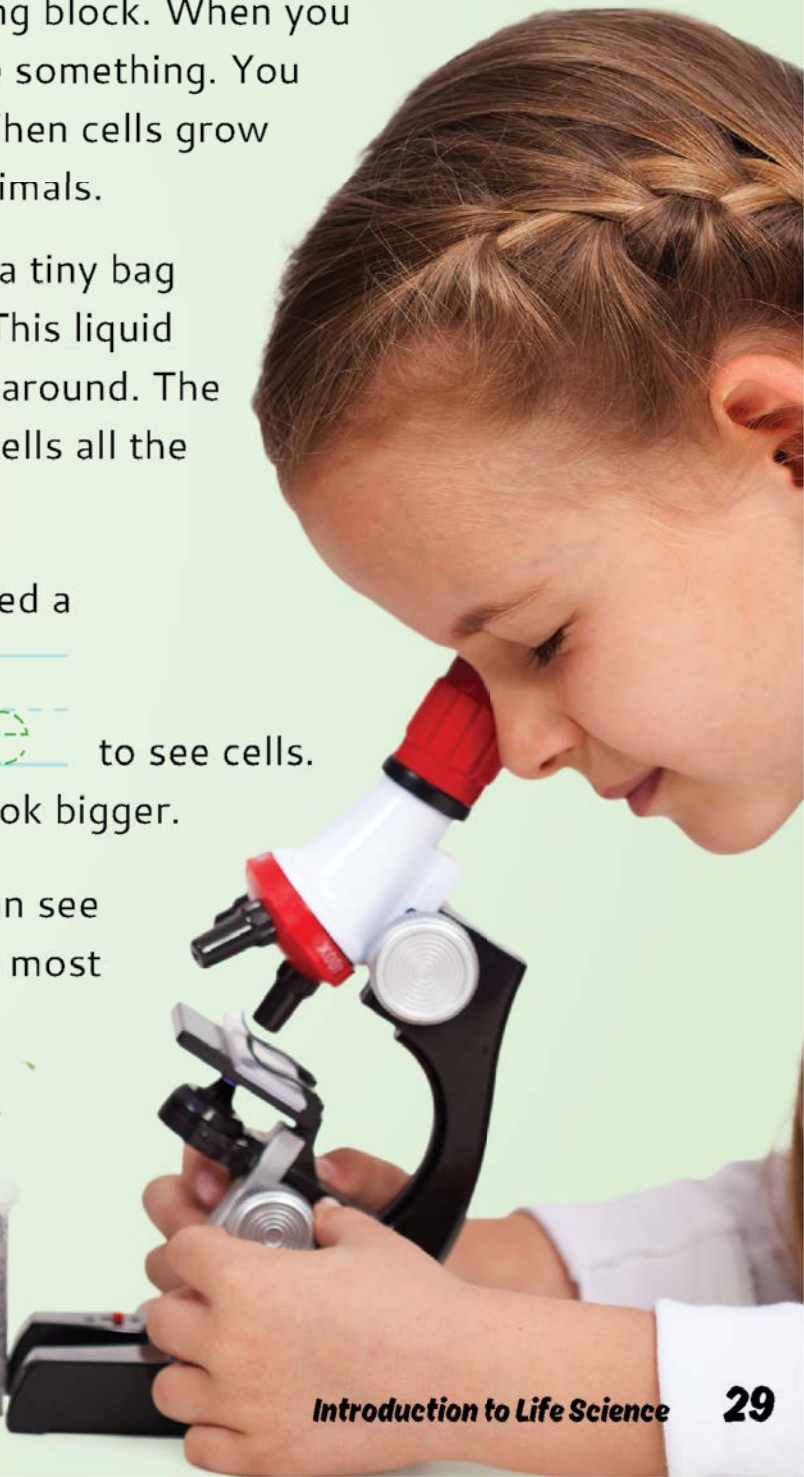
A cell is like a building block. When you put blocks together, you can make something. You might make a tower or a castle. When cells grow together, they make plants and animals.

Cells are very tiny. A cell is like a tiny bag that is filled with a special liquid. This liquid helps other parts of the cell move around. The nucleus is the brain of the cell. It tells all the other parts what to do.

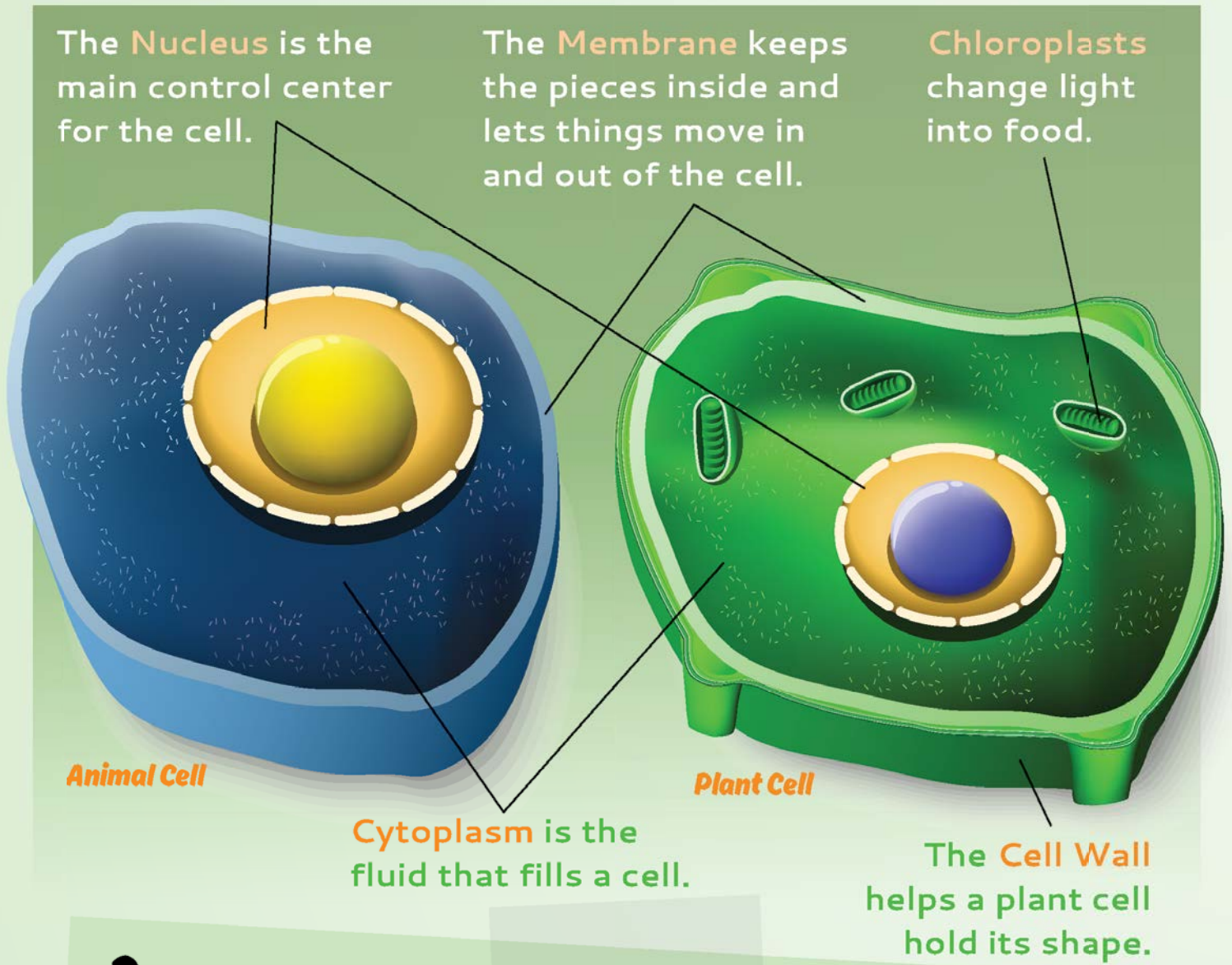
You need a special machine called a

microscope to see cells.
A microscope makes tiny things look bigger.

When we use a microscope, we can see what a cell looks like. We see that most animal's cells are round. Most plant cells are shaped like a square or rectangle.



Plant cells also have special parts that change sunlight into food. You can look at the pictures of plant and animal cells to see where all these parts are inside the cell.



- ? What shape are most animal cells?
- ? What shape are most plant cells?
- ? Can you name the parts of an animal cell? What about a plant cell?
- ? What is the special machine called that helps us see tiny things?

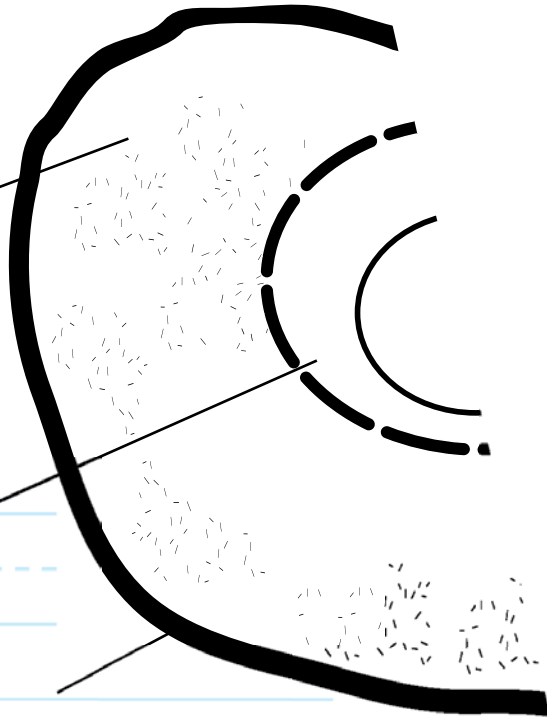
name _____

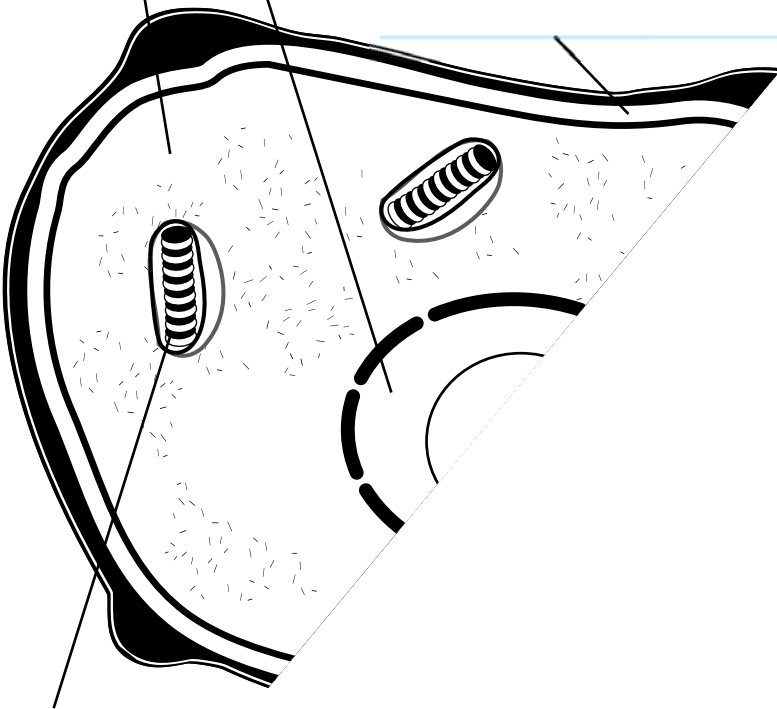


Plant and Animal Cells

Complete the cells, then label and color them.

cell





cell



Unit Vocabulary Review

Find the words and answer the questions below.

ANIMALS

CELL

CLASSIFICATION

LIVING THINGS

MICROSCOPE

PLANTS

P	L	A	N	T	S	I	L	X	G	O	P	Z	I
L	I	V	I	N	G	T	H	I	N	G	S	E	U
A	K	I	L	A	N	I	M	A	L	S	Q	U	J
N	Y	O	R	M	I	C	R	O	S	C	O	P	E
T	P	D	O	A	M	I	N	S	L	S	L	I	W
S	E	H	P	L	S	A	N	T	O	K	E	H	Y
C	L	A	S	S	I	F	I	C	A	T	I	O	N
E	J	Y	L	F	E	R	K	P	C	E	L	L	Q

Copy the four orange letters in the found words to reveal a secret word.

Which word means putting things in groups by things they have in common?

What is the word for something that has leaves?

Flowering Plants and Seeds

UNIT
2



GOD'S
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Lessons 5-10

Plants
for Beginners

Lesson 5

Parts of Plants

God created plants on the third day of creation. Plants come in many different shapes and sizes. Plants have four parts: flowers, leaves, stems, and roots.

Plants have flowers. Flowers are important because they make seeds. This helps new plants grow.

Plants have leaves. Leaves help the plant turn sunlight into food.

Plants also have stems. The stems help the plant to stand up. Stems give the plant its shape.

Stems also move water and food from one part of the plant to another.

Plants have roots that hold them in the ground. Roots suck up water and food from the ground to help the plant grow.



? Can you name the four parts of a plant?

? Tell me about your favorite plant.

? Why is that your favorite?

name

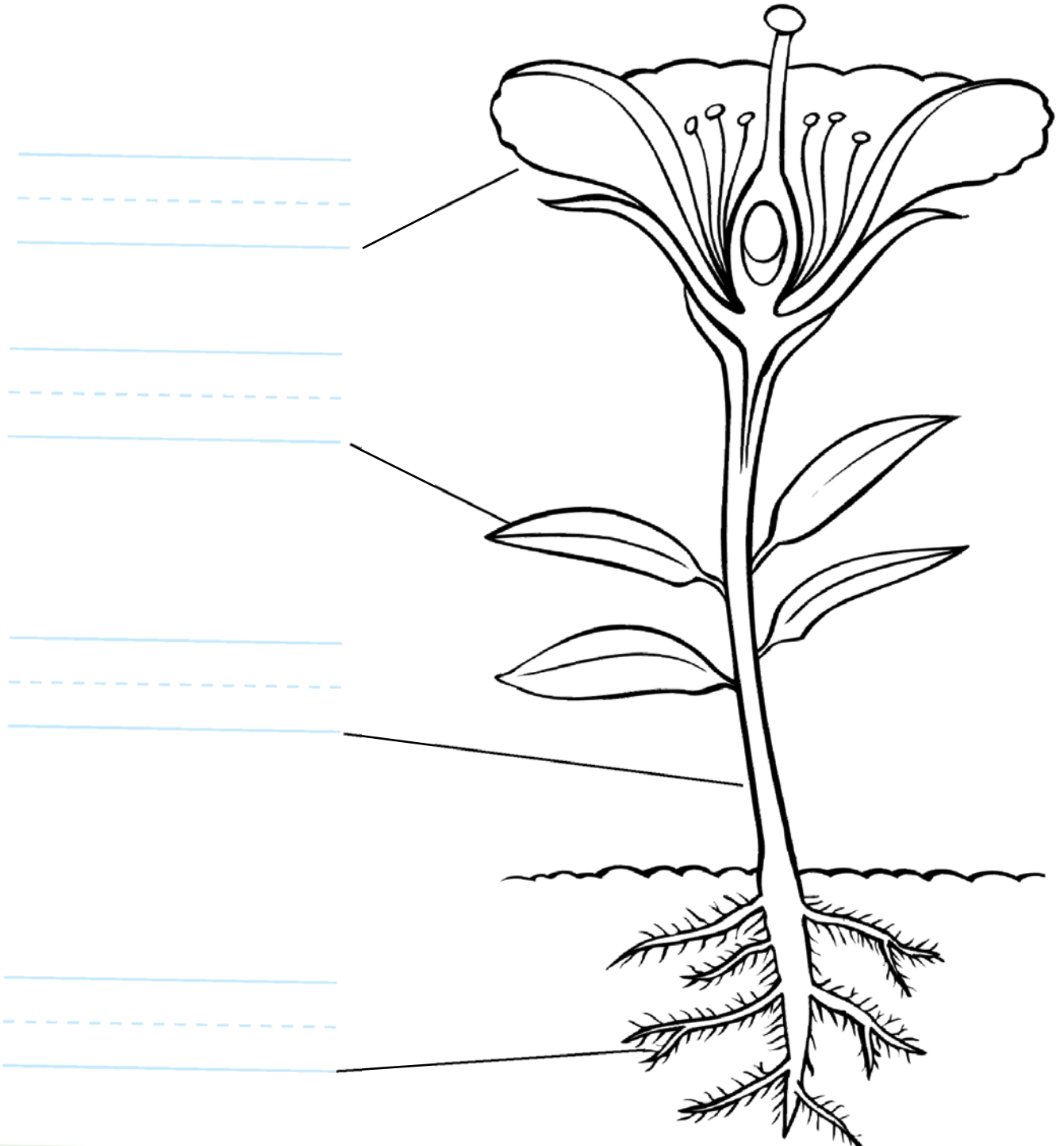


Flowering Plant Coloring Sheet

Label the four different parts of this plant.

Color the roots **brown**. Color the stem and leaves **green**.

Color the flower **red**.



Lesson 6

Grasses



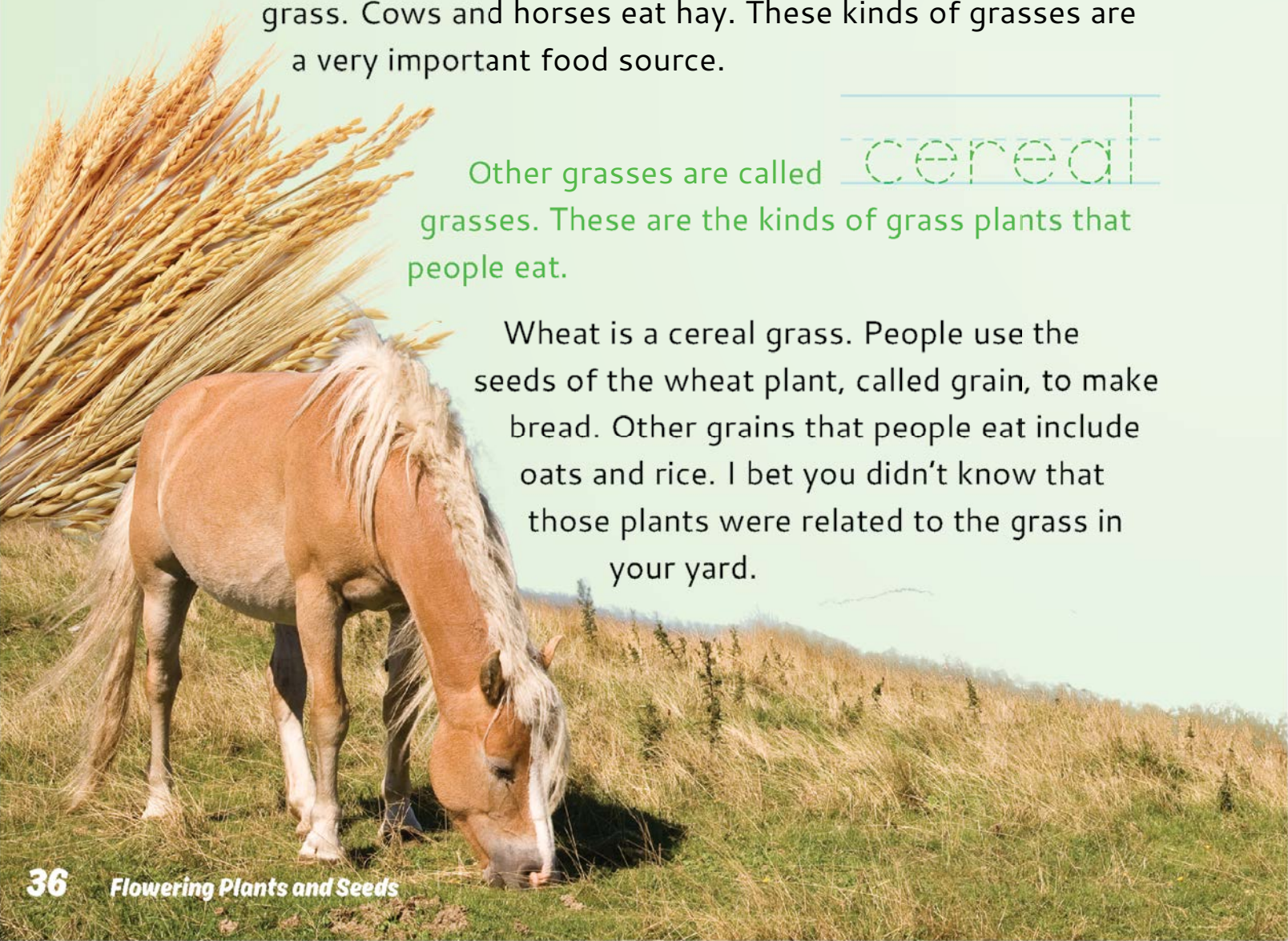
You probably know what grass looks like.

You might have some in your yard. Did you know there are other types of grass that don't grow in people's yards? These grass plants can provide food for people and for animals.

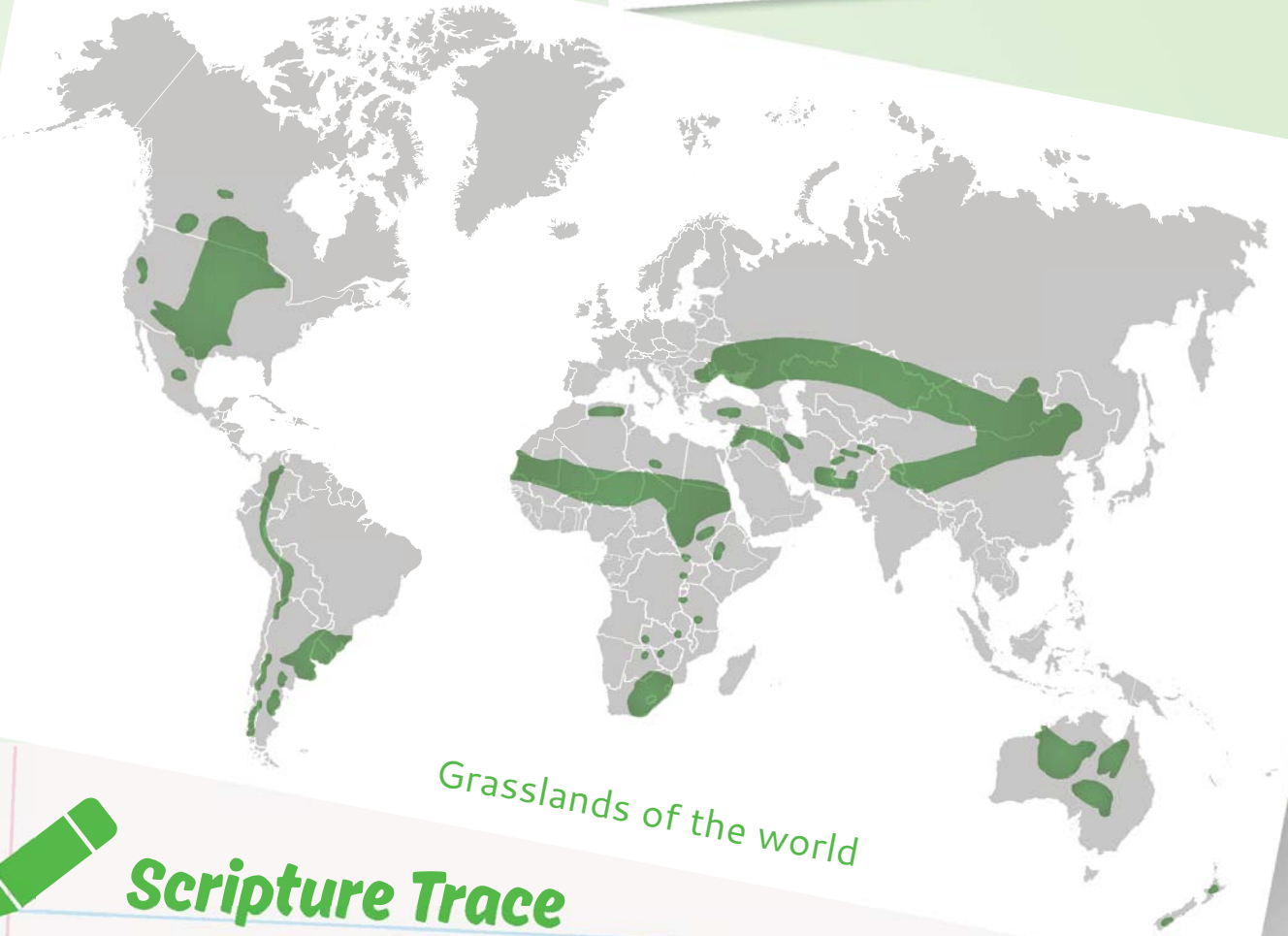
Grass that grows on the prairies provides food for wild animals. This is called forage grass. Antelope and deer eat wild grass. Hay is made from grass. Cows and horses eat hay. These kinds of grasses are a very important food source.

Other grasses are called cereal grasses. These are the kinds of grass plants that people eat.

Wheat is a cereal grass. People use the seeds of the wheat plant, called grain, to make bread. Other grains that people eat include oats and rice. I bet you didn't know that those plants were related to the grass in your yard.



name



Scripture Trace

The grass withers, the flower
fades, but the word of our God will
stand forever. Isaiah 40:8

- ? Name two animals that eat grass.
- ? Do you remember what type of grass wheat is called?
- ? What types of cereal do you have in your house? What grains were they made from?



What Lives in the Grass?

Find and circle all of the animals.

Color the picture.



Trees

Lesson 7

A tree is a plant that has a special kind of stem called a trunk. A tree's trunk makes it very strong.

Bark helps to protect the tree. Tree trunks are covered with bark. Trees can grow to be very tall but can also be very small.

Shrubs or bushes are similar to trees. But they have more than one stem. Bushes are not as strong or as tall as trees.

Deciduous trees lose their leaves each winter. They grow new leaves each spring. Oak, maple, and cherry trees are examples of this kind of tree.



Evergreen trees do not lose their leaves. Many of these trees have needles instead of flat leaves. Fir, pine, and spruce are examples of evergreen trees.


Trees are very useful. We not only get building material, baseball bats, and paper from trees, but they also provide materials that are important ingredients in paint, lipstick, toothpaste, shoe polish, medicines, and maple syrup.

- ? What is the difference between a tree and a shrub or bush?
- ? Can you name a deciduous tree? An evergreen?
 - ? What protects a tree's trunk?



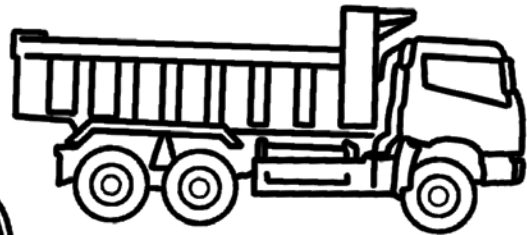
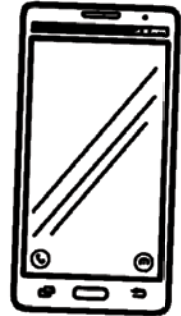
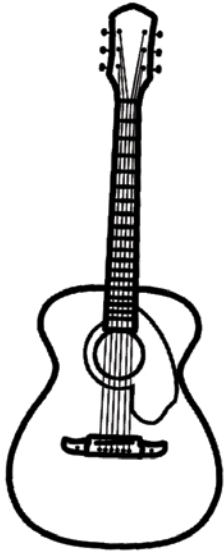
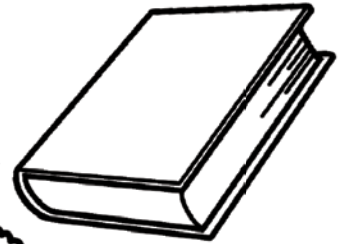
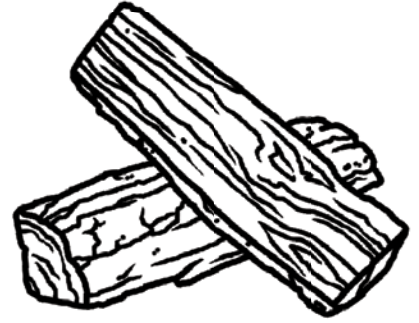
Create your own forest

Use these tree and bush shapes to trace or draw your own forest onto a separate sheet of paper. Can you tell which are evergreen and which are deciduous from their shape?





Tree Products



Circle the products that come from trees.

Put an **X** on products that do not come from trees.



Lesson 8

Seeds



seeds

Have you ever planted and watched them grow into new plants? You put the seed into some dirt, and then you water it. After a few days, a new plant pokes up out of the ground. Then you can watch it grow.

God designed plants to make seeds so that new plants can grow. Each seed grows into the type of plant it came from. A tomato seed grows into a tomato plant. An apple seed grows into an apple tree.

- ? Can you think of a seed that we eat?
- ? If we planted carrot seeds, what would grow?



Scripture Trace

If you have faith like a grain of mustard seed, you will say to this mountain, "Move from here to there," and it will move. Matthew 17:20



Grow Your Own Bean Plant

Place a couple of moist paper towels loosely in a jar or clear cup. Place 3 or 4 bean seeds between the paper towels and the side of the jar. Place the jar in a warm place. Keep the towels moist but not drippy. In a few days you should see the bean sprouts begin to grow.



Lesson 9

Inside a Seed

Seeds were designed by God to grow into new plants. Inside each seed is a “baby” plant that will begin to grow if the conditions

are right. If a seed has air, water, and warmth it will begin to grow.

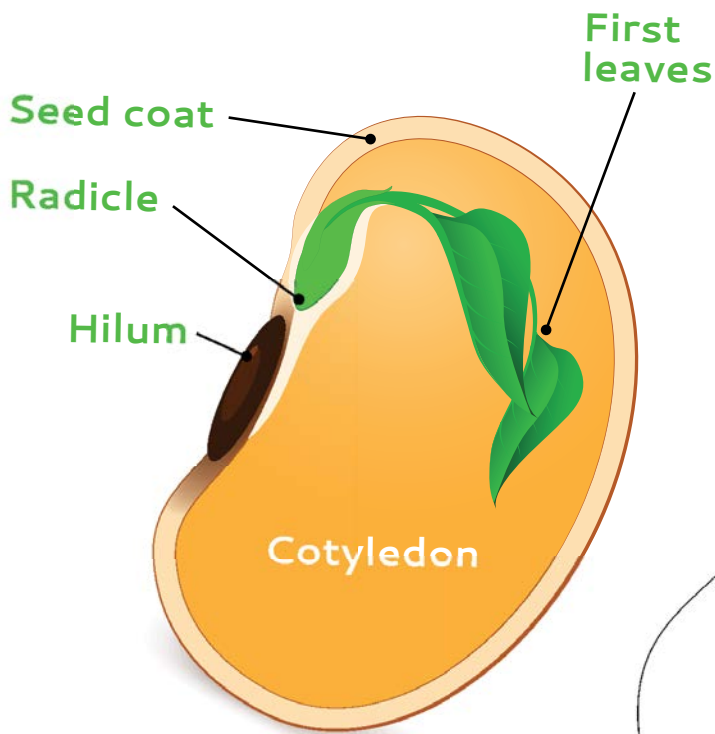
The seed also contains food to feed the new plant. This food is what makes up most of the seed.

The plant does not need dirt right away because there is food in the seed. This food helps the plant grow until it has good roots. God created seeds to do a very important job.

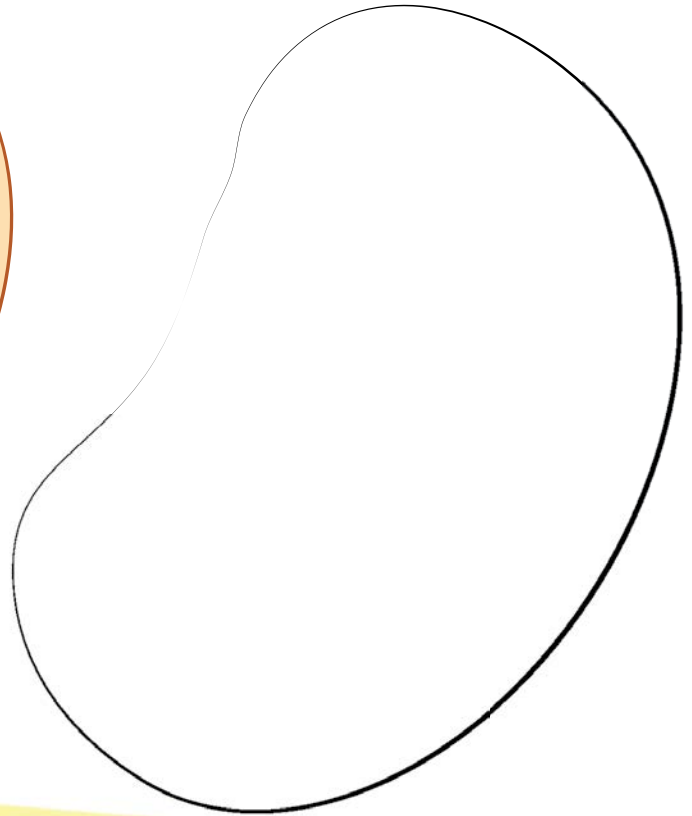
- ? What are three things a seed needs in order to grow?
- ? Who created seeds?
- ? What important job do seeds have?



name




Copy the seed diagram and label it.



Look Inside a Bean Seed

Soak several bean seeds in water overnight. This will soften the outside of the seeds. Remove a seed from the water. Remove the outside of the seed. It should pull easily away from the seed. Gently break the seed open. Carefully examine the inside of the seed. You should see what looks like a very small plant inside. It will probably be white and flat. It should look like a small leaf. This is the new plant waiting to grow. It will grow when it has water, air, and warmth.

Seeds—Where Are They?



Have you eaten an apple and seen the seeds inside the core? Most fruits and vegetables have seeds inside them. You can find seeds in other places, too. Pine tree seeds are in the pinecones.

Many plants do not produce fruit to eat, but they still make seeds. These seeds are usually very small. They can be found inside the flower after it is done blooming.



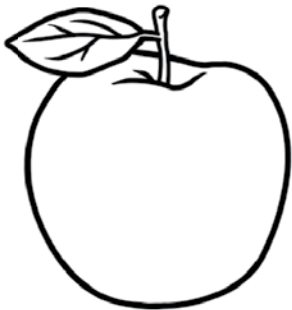
Have you eaten seeds?

Some seeds people eat are from grasses and are ground for flour. Seeds that you eat cooked include corn, peas, and beans. People also eat some seeds uncooked, like sunflower seeds, pecans, walnuts, and peanuts. Find as many different kinds of seeds as you can in your kitchen. Be sure to look in the cupboards, refrigerator, and freezer. Some seeds may still be inside fruits or vegetables. Your teacher can help you cut them open to find the seeds. Discuss how the seeds are the same and how they are different from each other.



Matching seeds

Draw a line from the fruit to the place where their seeds are held. Color the pictures.



- ? Where can you find a plant's seeds?
- ? Seeds are normally small. Why do you think God made them like that?



Unit Vocabulary Review

Find the words then answer the question below.

D A I R
 O W U D I
 O K C E R E A L
 F R I B A R K L E G A L A
 M L E A V E S S H R U B S
 O N R W A R M T H Y S T E M S
 S E E X K T S E E D S Z R L F
 A P P L E O G R A S S U E O
 F L O W E R S T R O O T S
 Y E Q J O C W A T E R
 E O T A
 T R E E

- | | |
|---------|--------|
| AIR | ROOTS |
| APPLE | SEEDS |
| BARK | SHRUBS |
| CEREAL | STEMS |
| FLOWERS | TREE |
| GRASS | WARMTH |
| LEAVES | WATER |

What is this puzzle shaped like?

Roots and Stems

UNIT
3



GOD'S
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Lessons 11-15

Plants
for Beginners

Roots



What do roots do?

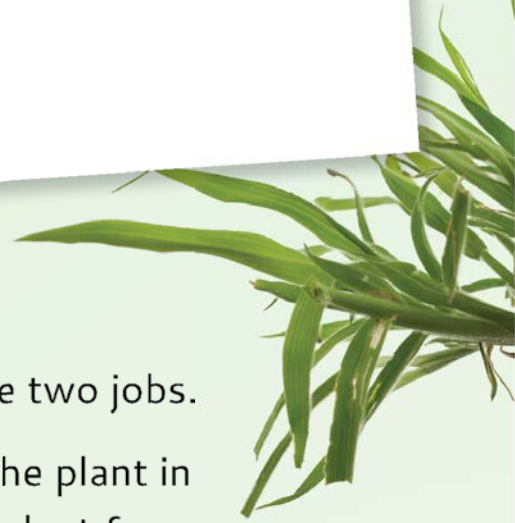
The roots of a plant have two jobs.

1. First, the roots hold the plant in place. This keeps the plant from blowing over in the wind.
2. Second, the roots also take water and food out of the soil and send them up to the stem.

Some plants have a big root in the center. There are lots of little roots growing out of the sides of the big root. This type of root is called a

taproot.

Plants with taproots include dandelions, carrots, and turnips.



name

Other plants do not have a big root in the center. They just have lots of smaller roots spreading out in all directions. These roots are

called fibrous roots.

Plants with fibrous roots include white clover, marigold, and grasses like wheat and rice.

Have you ever eaten a root?

Plants make food. Sometimes this food is stored in its roots. And some of these roots are very tasty. You have probably eaten some roots.

Carrots, radishes, turnips, and beets are all plant roots that people eat.

Eat a Root

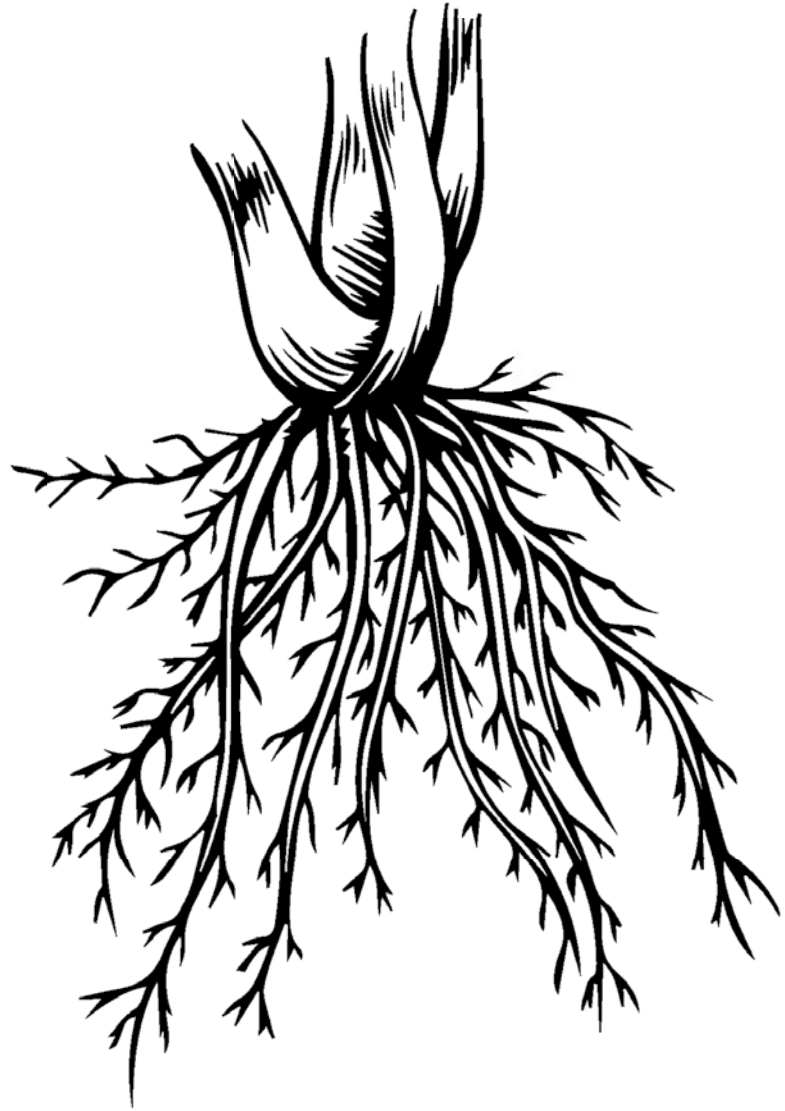
Look at an unpeeled carrot with a magnifying glass. The orange part of the carrot is the root. Can you see little hairs growing out the sides of the carrot? These are part of the root. Now peel the carrot and have a tasty treat!





Color the pictured roots **yellow** and the base of the plant **green**. Color **brown** dirt around the roots.





Label the roots as taproot or fibrous roots.



Scripture Trace

The root of the righteous will
never be moved. Proverbs 12:3

- ? What are the two jobs of roots?
- ? What two kinds of roots do plants have?
- ? What roots do you eat?



Root hunting

Search online for photos of plant roots. Make a collage of the images and classify them as fibrous roots or taproot.

Lesson 12

Special Roots

Most plants have the kinds of roots we have learned about. But some plants have special roots.

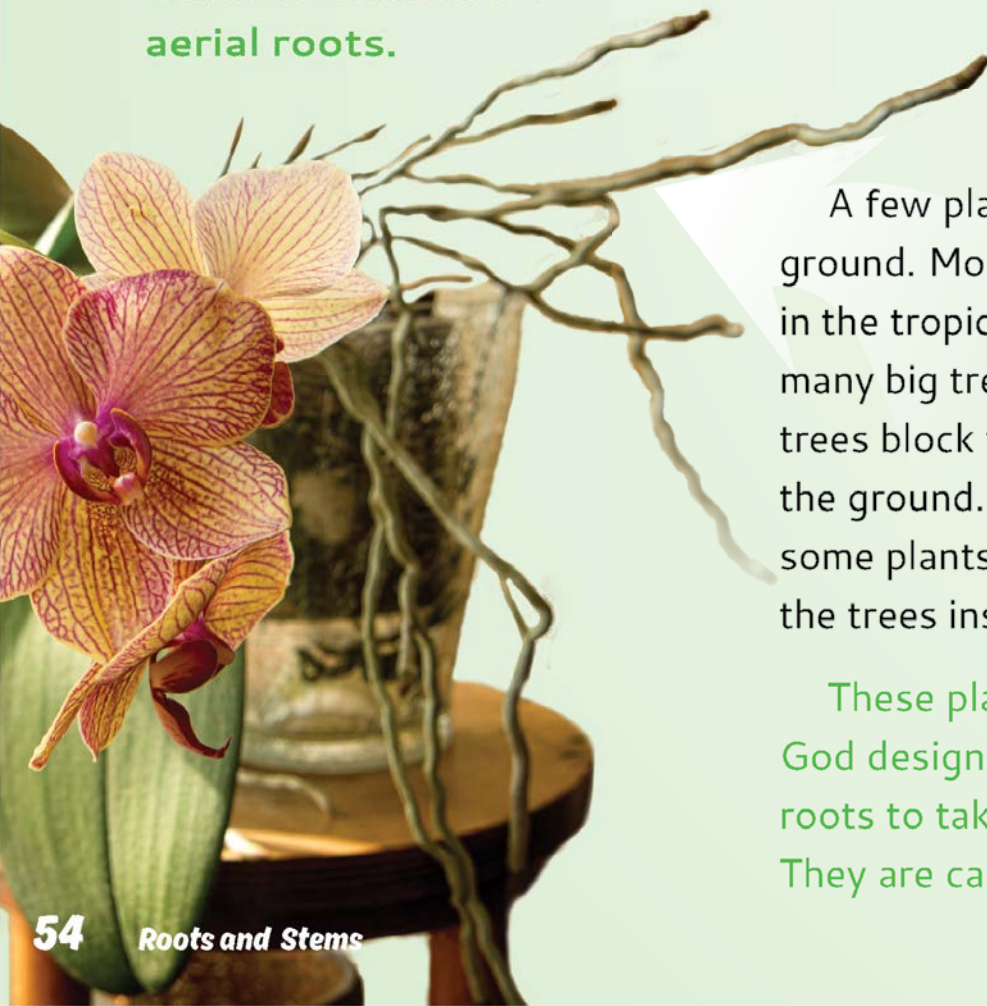
Some flowers and vegetables have roots that grow out

of the bottom of a **bulb**, which is really part of the stem. These roots look like little hairs. Tulips, daffodils, and onions are plants with these special kinds of roots.

Some orchids have aerial roots.

A few plants do not grow in the ground. Most of these plants grow in the tropical rain forest. There are many big trees in the forest. These trees block the sun from reaching the ground. Plants need sunlight. So some plants grow up on the sides of the trees instead of on the ground.

These plants still need water, so God designed them with special roots to take water out of the air. They are called aerial roots.



name

Some plants have special roots called

prop roots.

These roots help prop up the plant.

Plants with prop roots usually grow in very wet areas. The soil is often muddy. The regular roots have a hard time holding a large plant up in muddy soil. So, God designed these plants to have special roots that keep the plant from falling over. These roots grow out of the side of the trunk. They then grow down into the ground. Some types of mangrove trees have prop roots.

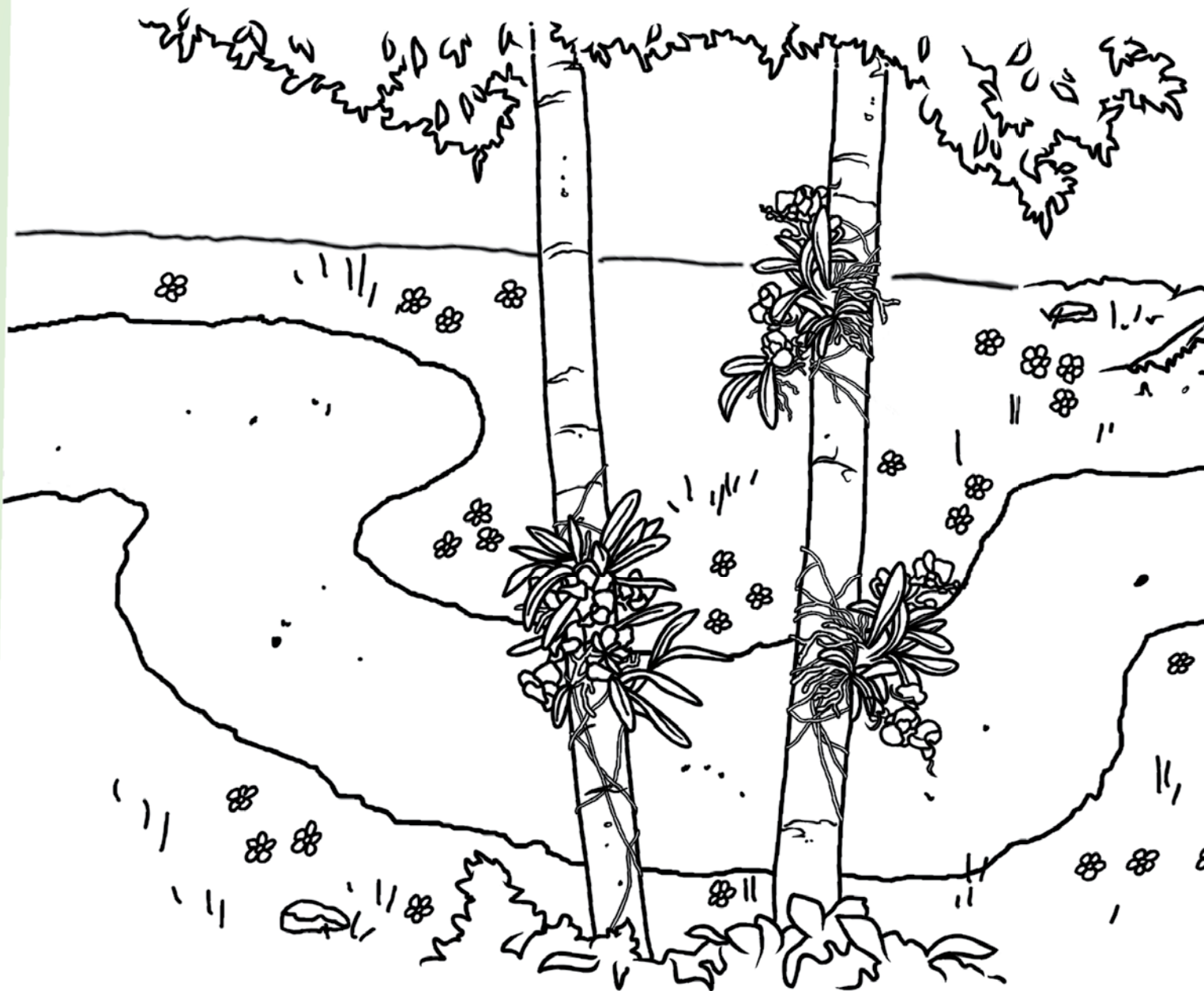


- ? What do the roots on a tulip bulb look like?
- ? What type of roots do plants in really wet areas usually have? Why did God make them like that?



Special Root Scavenger Hunt

These children are looking for special roots. Join them on their journey. Help them find plants with special roots along the path. Circle any special roots that you see. Then color the picture.



name



Lesson 13

Stems




Some plants, like trees and bushes, have woody stems. The trunk of a tree is its stem. It is covered with bark. Some vegetable plants and flowers have

bendable stems. The stem connects the roots with the leaves and flowers. Roots suck up water from the soil. The stem moves the water up into the leaves and flowers. The leaves make food for the plant. The stem moves that food from the leaves to the rest of the plant. So, the stem's main job is moving things around.

Some plants called vines have little parts of the stem that grab onto things. This helps the vine climb and cling to fences or nearby plants.

Bulbs are special stems that were mentioned in the last lesson. If you have eaten an onion, you have eaten a bulb.

- 
- ? What is the main job of the stem?
 - ? Does a tree have a stem?

name



Scripture Trace

There shall come forth a shoot from the stump of Jesse, and a branch from his roots shall bear fruit. - Isaiah 11:1



Stem Match

Match each stem to the top of its plant.



Stem Structure



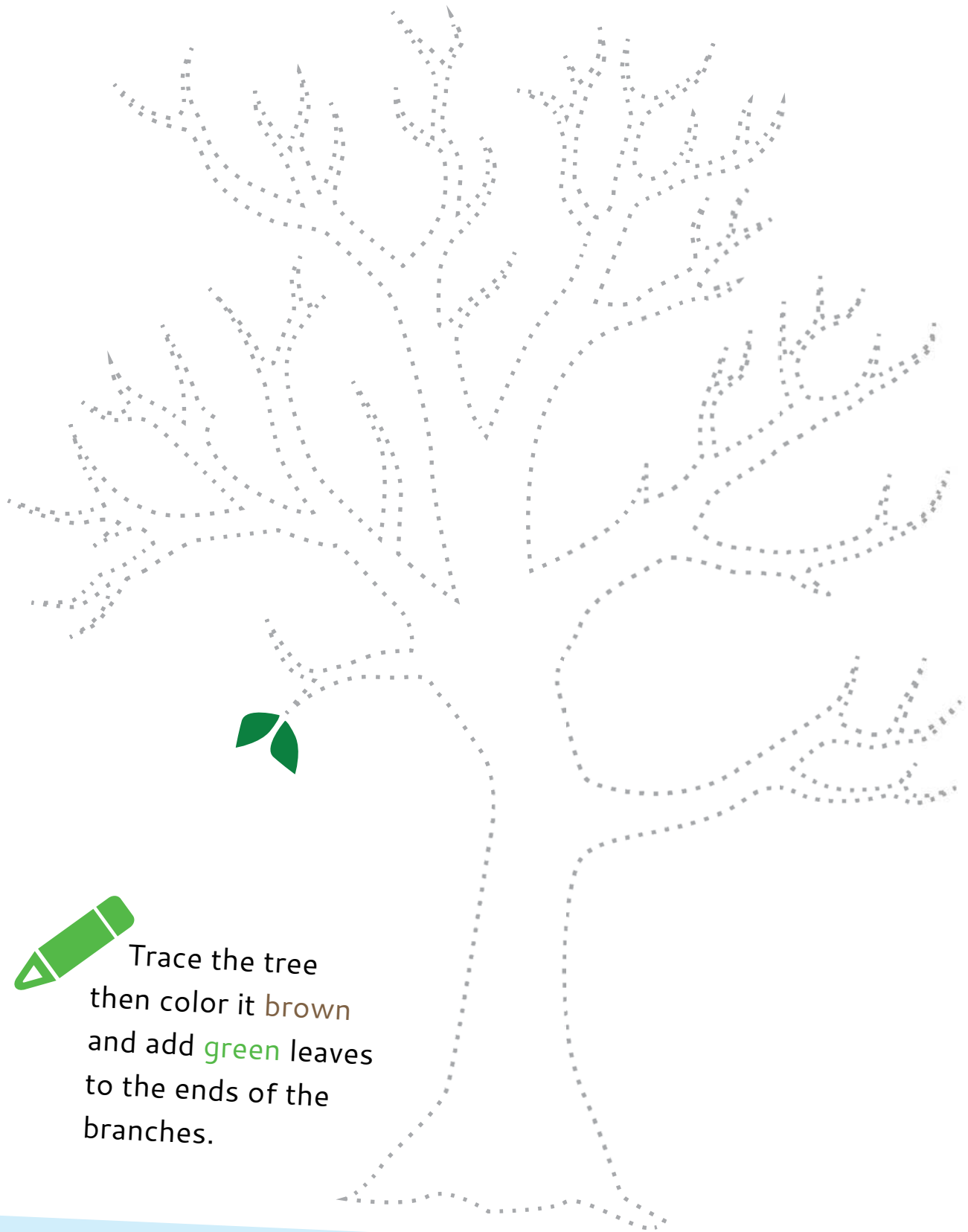
There are many different kinds of plants and many different kinds of stems. Most plants have a main stem with several smaller branches coming off the main stem. Branches are actually part of the stem and move things through the plant just like the main stem does.

Branches are not

the only things to grow on the stem. The leaves and flowers also grow out of the stem. Look at as many different plants as you can. See how their branches, leaves, and flowers are all connected together?

- ? What part of the plant are branches?
- ? Name two things that grow from the stem.
- ? How are branches, leaves, and flowers all connected?

name



Trace the tree
then color it **brown**
and add **green** leaves
to the ends of the
branches.

Lesson 15

Stem Growth

Have you ever noticed that the trunk of an old tree is much bigger around than the trunk of a young tree? As a tree grows, it gets taller. But it gets bigger around, too.

When the tree grows, it makes new cells inside the trunk. These cells push the bark out. This makes the trunk bigger around.

Most of the new cells are made in warm weather. The tree takes a break from growing when it gets cold. When it warms up, it begins to grow again.

This cycle of growing new cells and then resting creates rings inside the tree trunk. These are called

growth rings

They give you a history of the tree.

Count the Rings

Count the rings of this tree from the center to the outside. How many did you count?

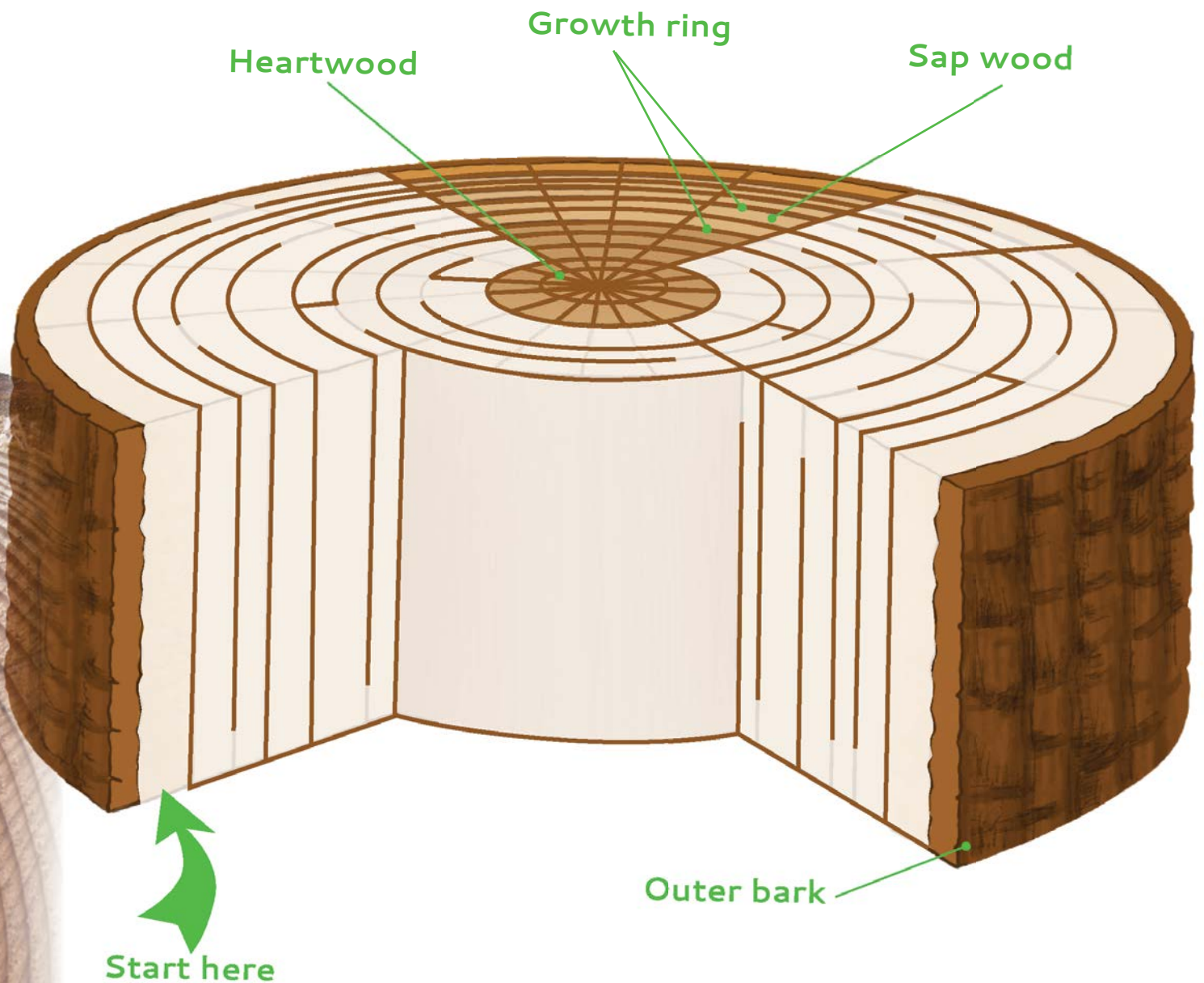


name

- ? When are most cells made inside a tree?
- ? What are growth rings?



Find the path through the growth rings to reach the heartwood.





Unit Vocabulary Review

Fill in the missing vowels in the words below.

GR WTH R NGS

BR NCH S

B LB

PR P R TS

ST M

TR NK

Draw an example:

TAPROOT

FIBROUS ROOTS

UNIT
4

Leaves



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Lessons 16-20

Plants
for Beginners

Lesson 16

Photosynthesis

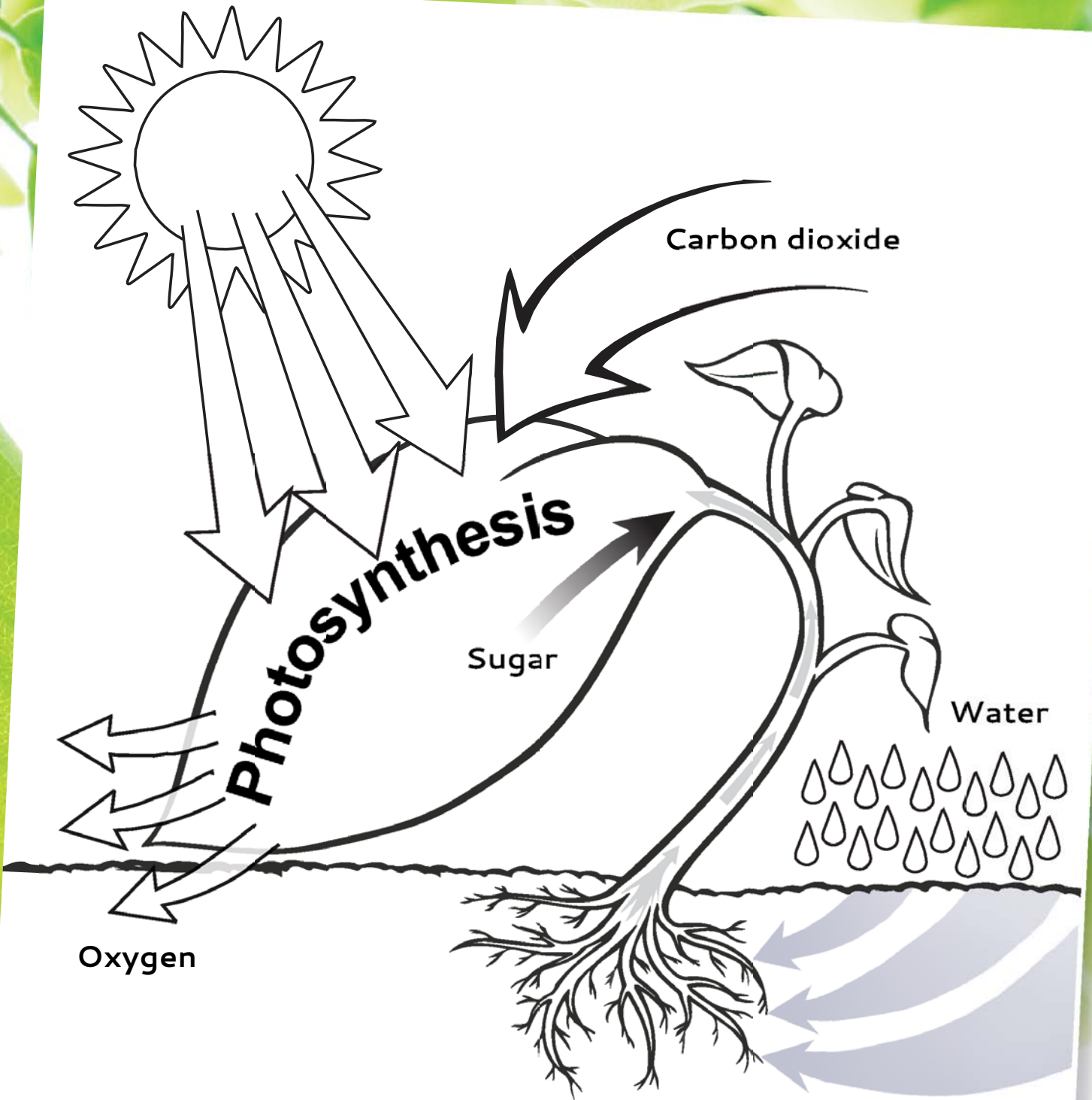
Most leaves are green. This is because leaves contain chlorophyll.

Chlorophyll is green. Chlorophyll helps the leaves do something very important. Water comes into the leaves from the ground. Carbon dioxide comes into the leaves from the air. When sunlight shines on the leaves, chlorophyll turns the water and carbon dioxide into sugar and oxygen.

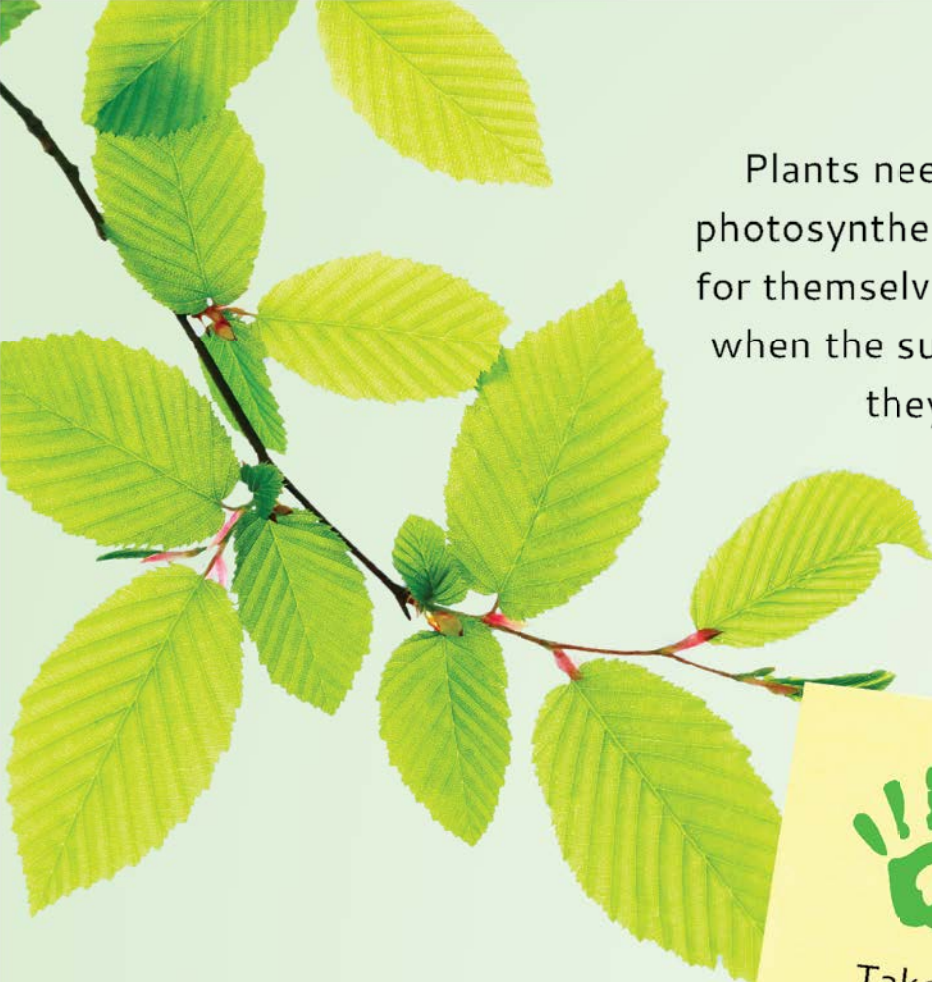
This process is called photosynthesis.

The plant stores this sugar in its fruit, stems, leaves, and roots. This provides food for nearly every animal and human in the world. When you eat fruits and vegetables, you are eating the food that was made by the leaves of the plant.

name



Color the sun **yellow**. Color the leaves and stem of the plant **green**. Color the sky and water drops **blue**. Color the area around the roots **brown**.



Plants need carbon dioxide for photosynthesis in order to make sugar for themselves. Leaves make sugar when the sun shines on them. When they do this, the leaves release oxygen into the air.

People and animals need to breathe oxygen to live. They get the oxygen

from the air. People and animals breathe out carbon dioxide. So, plants and animals help each other by making what the other one needs. This is a wonderful system that God created.



Sunlight Is Important

Take two identical plants. Place them in a sunny location. Cover one plant with a box to block the sunlight. Water both plants whenever the soil becomes dry. Examine both plants for several days to see the difference that sunlight makes in how they grow.

- ? What do animals and people put into the air that helps plants live?
- ? What do plants put into the air that helps animals and people live?

Leaf Arrangement

Lesson 17



Have you noticed that leaves grow in different ways on different kinds of plants? The leaves use sunlight to help make food so the sun needs to shine on them for many hours each day. God arranged the leaves on each plant in such a way that sunlight will easily reach them.

Some plants have leaves that grow in pairs from opposite sides of the stem at the same level. These plants are said to have an

opposite leaf arrangement. Maple trees have an opposite arrangement for their leaves.

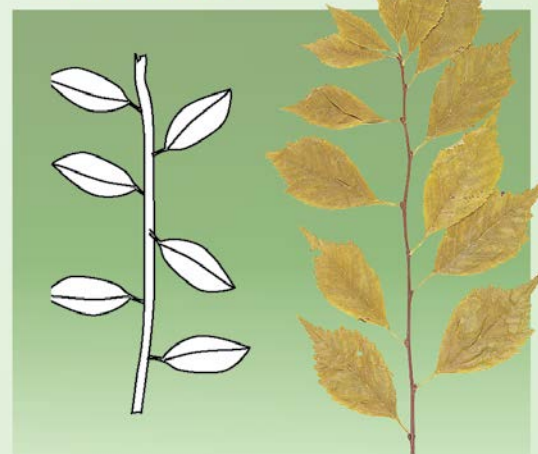
Many trees' leaves are arranged in an

alternate pattern. A leaf grows on one side of the stem, and then the next leaf grows farther up and on the other side of the stem. Plants with alternate leaves include apple, oak, and birch trees.

Opposite



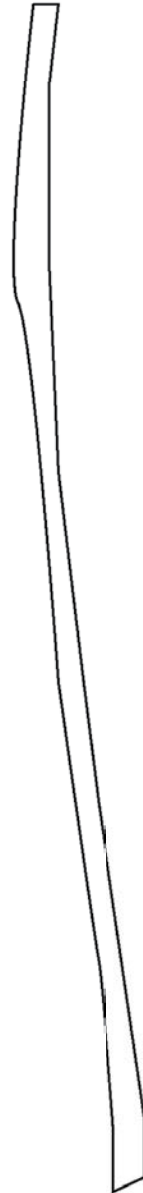
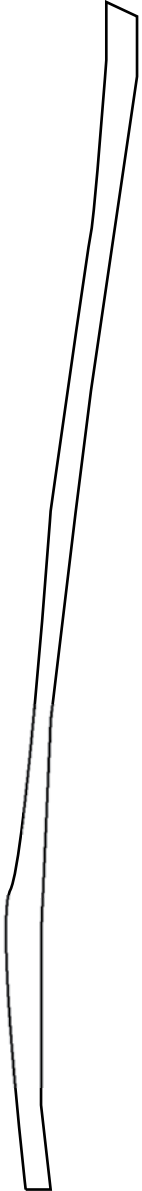
Alternate



- ? What is the main job of the leaves?
- ? Why are leaves placed in different ways?
- ? What are two different ways leaves can be arranged on a stem?



On the first stem, draw 6 alternate leaves. On the second stem, draw 8 opposite leaves. Color both stems and leaves **green**.



Leaves Have Veins

Stems move water up to the leaves. Stems also move food out of the leaves. The leaves have tubes

called veins that are connected to the stem. Narrow leaves, like grass, have veins that go from the top to the bottom of the leaf. Broad leaves have big veins down the middle of the leaf. They also have smaller veins branching off the big veins. *These veins bring water into the leaves so they can perform photosynthesis. Then the veins take the food from the leaves to the rest of the plant after photosynthesis.*

Seeing Veins

Remove a fresh leaf from a tree and cut off the end of the leaf's stem. Place the leaf in a cup of colored water and watch the veins become more obvious as the colored water moves into the leaf. Are the veins in your leaf more like a corn leaf or a maple leaf?



corn leaf



maple leaf



Complete the leaves





Scripture Trace

Whoever trusts in his riches will fall, but the righteous will flourish like a green leaf. Proverbs 11:28

- ? How does food and water move around in the leaves?
- ? What are the two ways veins are arranged in the leaves?

Lesson 19

Changing Colors



In the fall, the leaves on

deciduous trees turn

red, yellow, orange, or brown before they fall off the trees.

This process helps the trees get ready for a cold, harsh winter. In the fall, the sun goes down earlier than it does in the summer.

The amount of sunlight the trees get is less each day. This is a signal to the trees that winter is coming. The trees stop sending water up to the leaves. The chlorophyll that makes the leaves green gets used up. When the chlorophyll is gone, you can see other colors in the leaves.


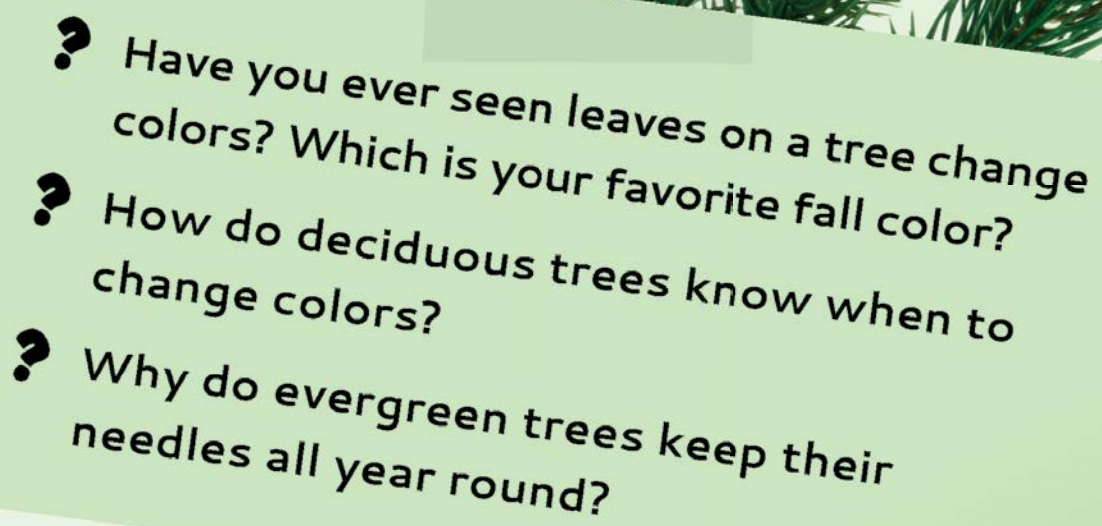


name

Some trees do not lose their leaves in the winter. These are

evergreen
trees.

Evergreen trees usually have needles or scale-like leaves. These leaves are not harmed by the freezing temperatures of winter.

- 
- 
- ? Have you ever seen leaves on a tree change colors? Which is your favorite fall color?
 - ? How do deciduous trees know when to change colors?
 - ? Why do evergreen trees keep their needles all year round?



Color the evergreen trees green and the deciduous trees other colors.



Leaf Identification

Lesson 20

There are many ways to identify a plant or a tree. You can use fruit, flowers, and bark to help you know the name of a tree. Since every plant has leaves that are unique, one of the best ways to identify a plant or a tree is to look closely at the leaves.

Some common trees you might have in your yard include

maple, elm, oak,

and pine trees.

Here is an elm leaf.



An oak leaf looks like this.



Pine trees have needles that look like this.



A maple leaf looks like this.



DON'T TOUCH

Some plants are poisonous, so it is very important to know how to identify them so you can avoid them. Have you seen any of these plants?



Poison ivy



Poison oak



Poison sumac

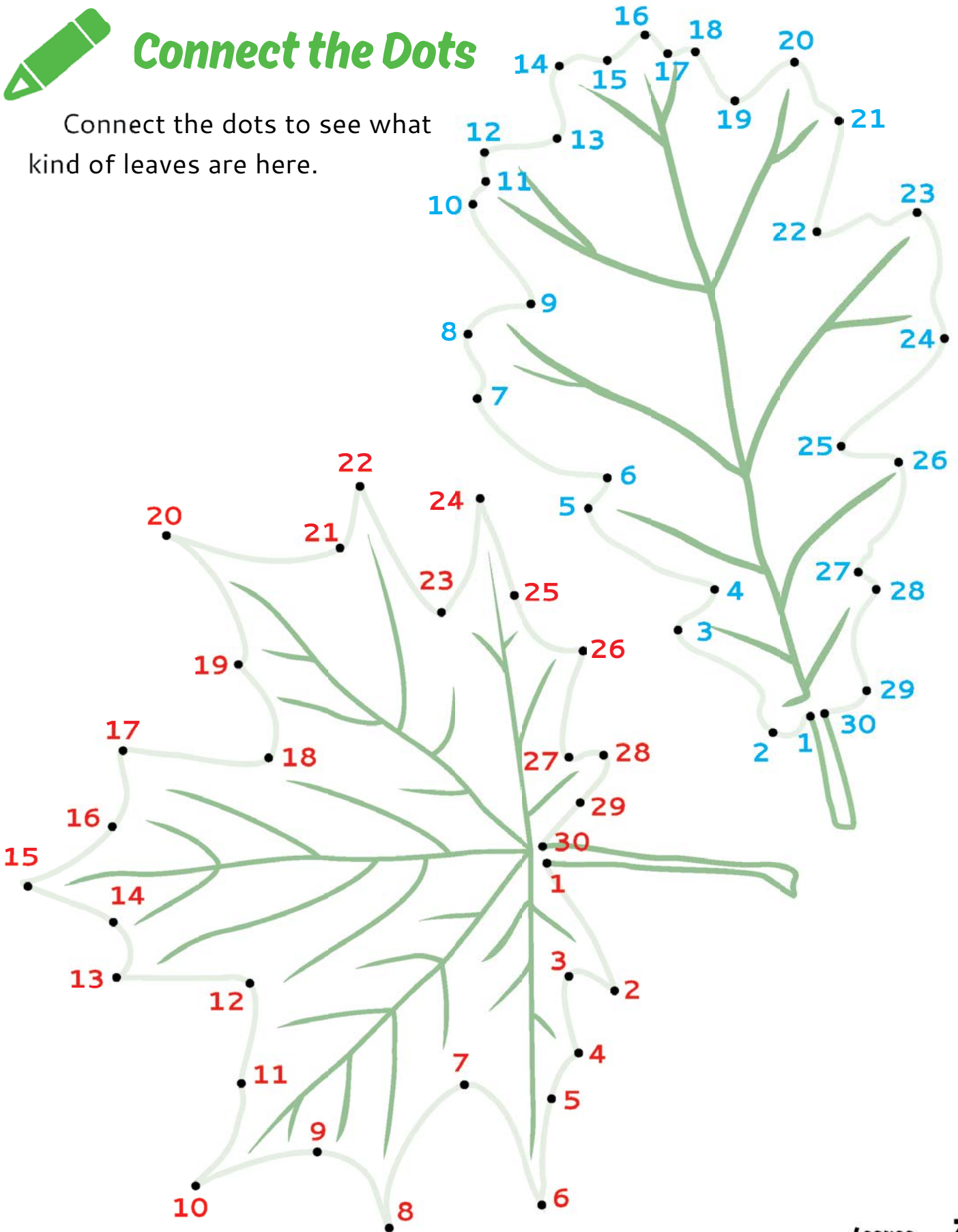
- ? Why would you want to learn to identify leaves?
- ? Name different ways to identify a tree.
- ? What is your favorite tree?

name _____



Connect the Dots

Connect the dots to see what kind of leaves are here.





Unit Vocabulary Review

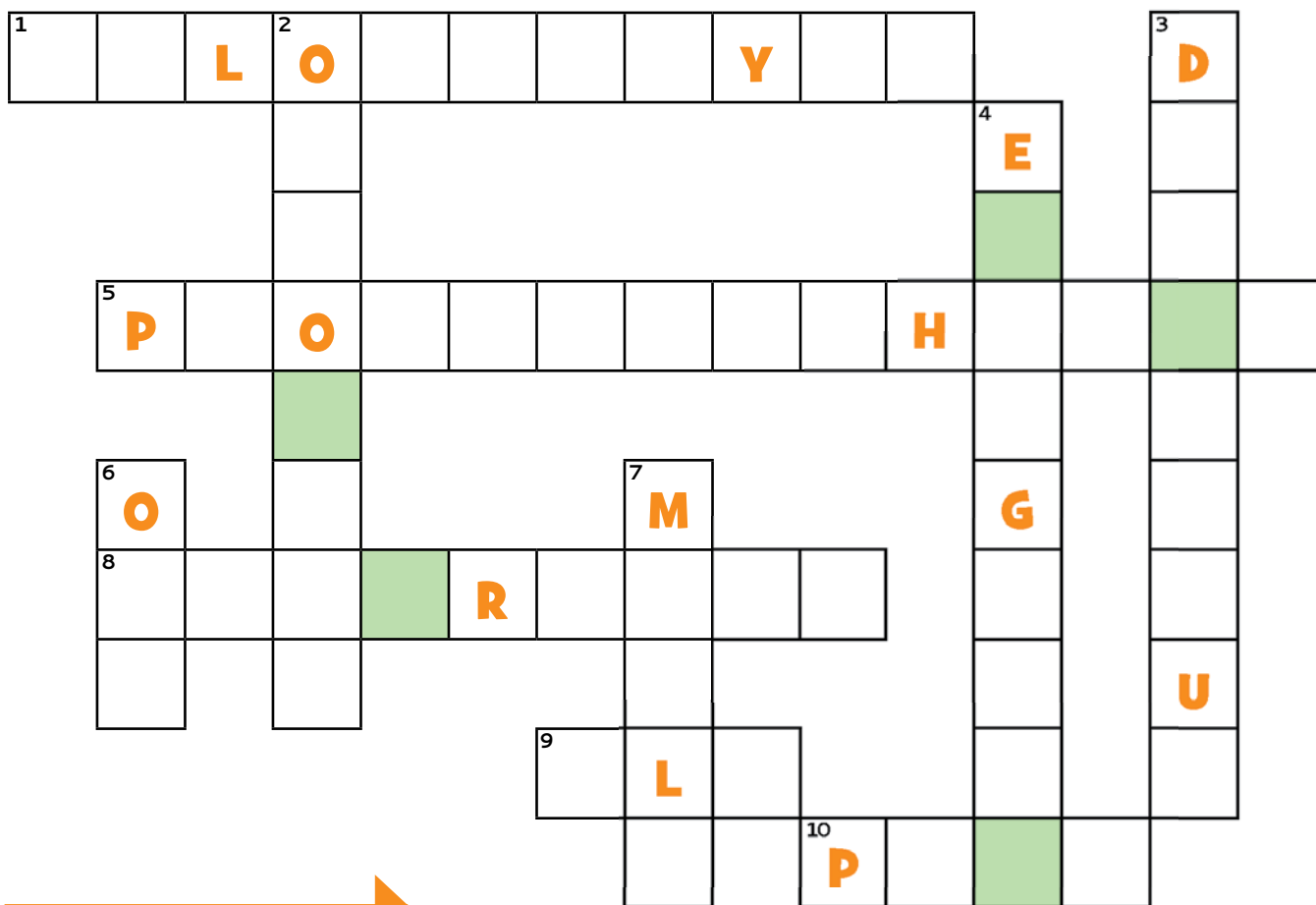
Complete the crossword puzzle by answering the questions.

ACROSS

- Makes leaves green
- Process chlorophyll is used in
- An arrangement of leaves
- Type of common tree
- Type of common tree

DOWN

- An arrangement of leaves
- Leaves fall off these trees
- These trees don't lose leaves
- Type of common tree
- Type of common tree



Unscramble the five letters in the green boxes to reveal a secret word.

Flowers and Fruits

UNIT
5



GOD'S
DESIGN®

Lessons 21-25

Plants
for Beginners

Flowers come in all sizes, shapes, and colors. The main job of a flower is to make seeds. Seeds grow into new plants.

Flowers have four important parts.

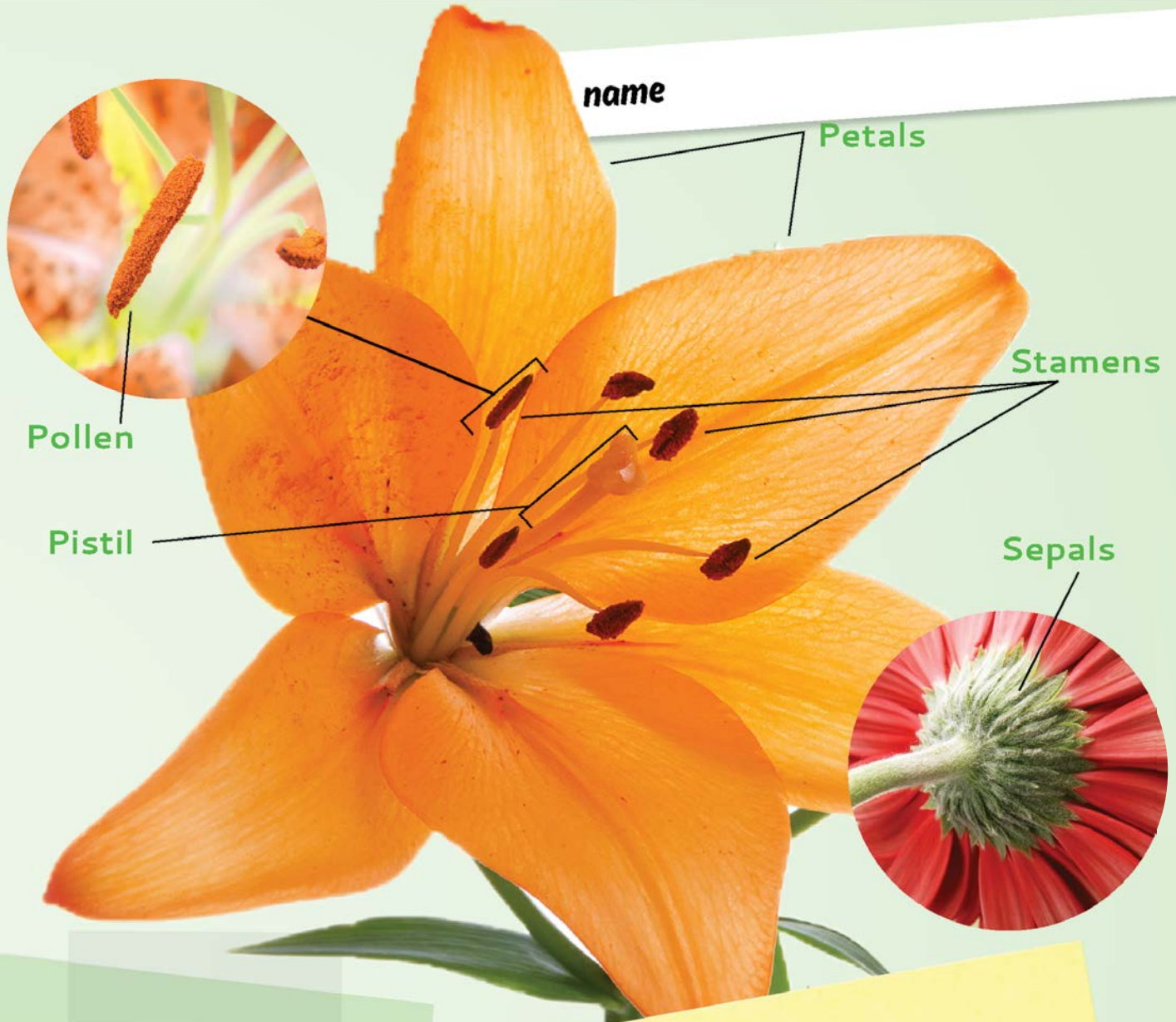
First, flowers have what look like small leaves covering the bud before the flower opens.

These are called sepals. They protect the flower until it is ready to bloom.

The second part of the flower is the petals. Flower petals can be many different colors. Their job is to attract bees or other insects.

The other parts are inside the flower. The stamen is the part that makes pollen.

The pistil is the part that receives pollen. The pistil makes the seeds. All of these parts work together to produce new plants.



? What is your favorite flower?

? What is the main job of flowers?

? Why is that important?



Make a Flower

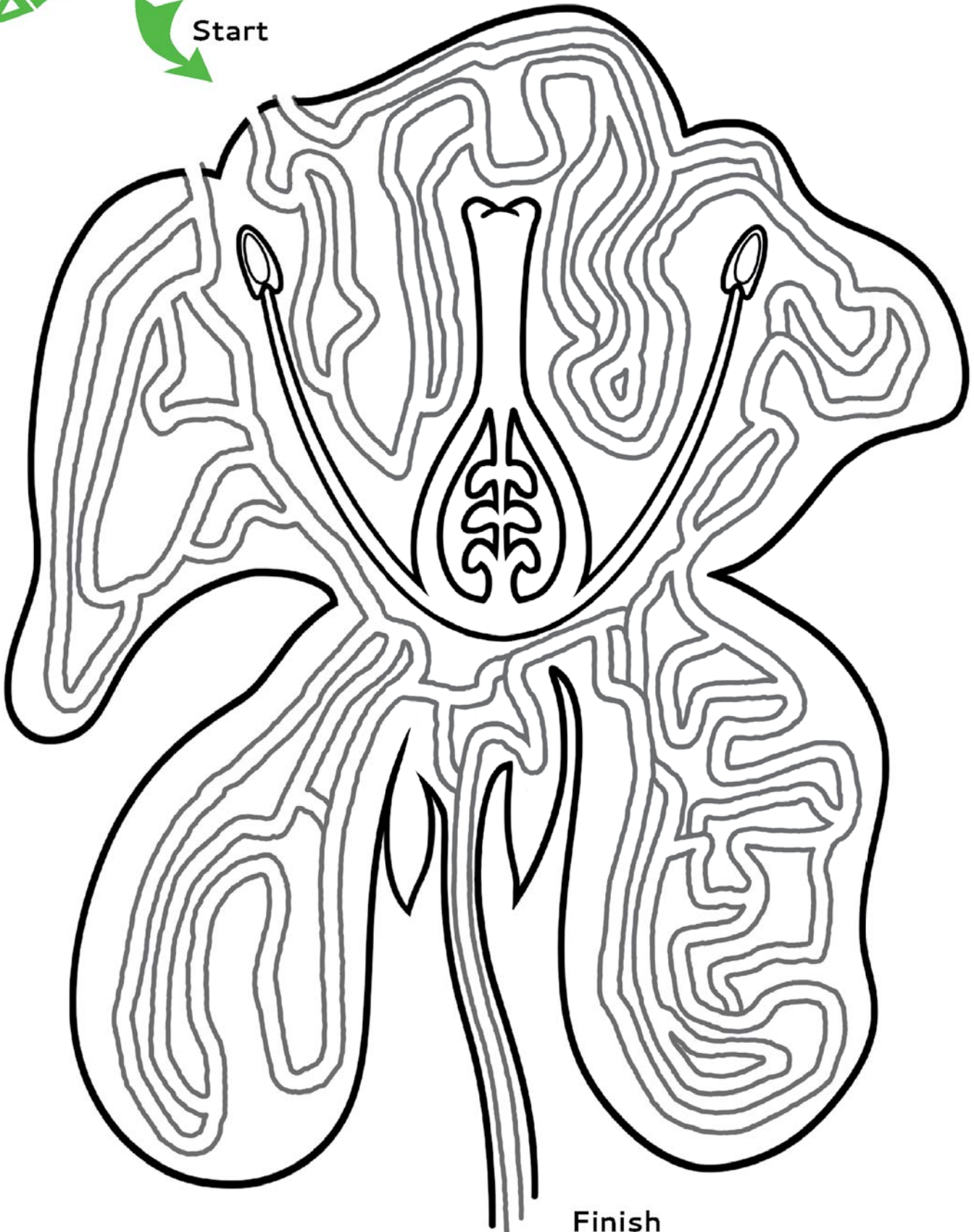
Cut a stem from a piece of green construction paper. Glue it to another piece of paper. Cut leaves from green construction paper and glue them to the stem. Cut petals from a different color of construction paper. Glue them to the top of the stem. Draw stamens and a pistil in the center of the flower.



Find your way through the flower; then color the picture.



Start



Finish



Pollination

Lesson 22



Before a flower can make seeds, it needs pollen.

Pollen is the substance that causes plants to form seeds. New plants can then grow from the seeds.

Pollen is moved from one flower to another by bees, wasps, moths, or other insects.

The flower makes a sweet liquid

called **n**ectar.

The nectar is stored deep inside the flower.

Bees and other insects like to eat the nectar. They look for brightly colored flowers to find their next meal.

A bee lands on a flower. It then crawls inside to get the nectar. As it does this, it brushes up against the pollen on the stamens. Some of the pollen sticks to its body. Then it flies to another flower. There some of the pollen sticks to the pistil in the second flower. This allows that flower to start making seeds.



The process of moving pollen from one flower to another is called

pollination.

- ? What is nectar?
- ? How does pollen get from one flower to another?



Scripture Trace

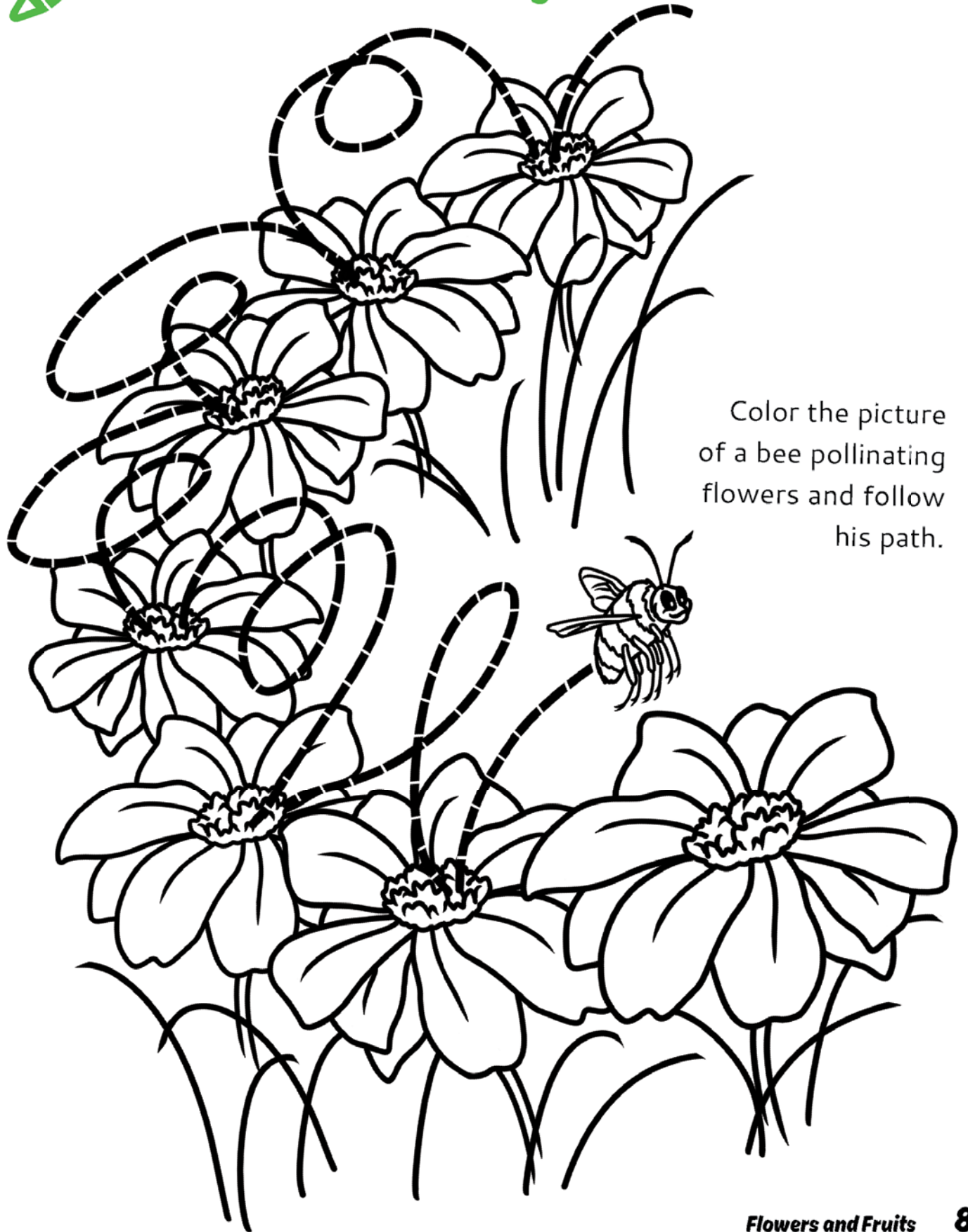
You shall eat the fruit of the labor of your hands, you shall be blessed, and it shall be well with you.

Psalms 128:2

name



Pollination Coloring Sheet



Color the picture
of a bee pollinating
flowers and follow
his path.

Lesson 23

Looking at a Real Flower

flower

Do you remember the four main parts of a flower ?
The sepals protect the growing bud. The petals attract insects. The stamens produce pollen. The pistil receives the pollen and makes the seeds.

Looking at pictures is one way to learn about flowers. But it is even more fun to look at real flowers.



Look Inside a Flower

Examine a fresh flower. See if you can identify each of the parts mentioned in the lesson. Ask your parent to cut open the pistil. See if you can find the seeds.

- ? What are the four main parts of a flower?
- ? How is the flower you looked at similar to the pictures in this lesson? How is it different?
- ? Were you able to find all of the parts of the flower?



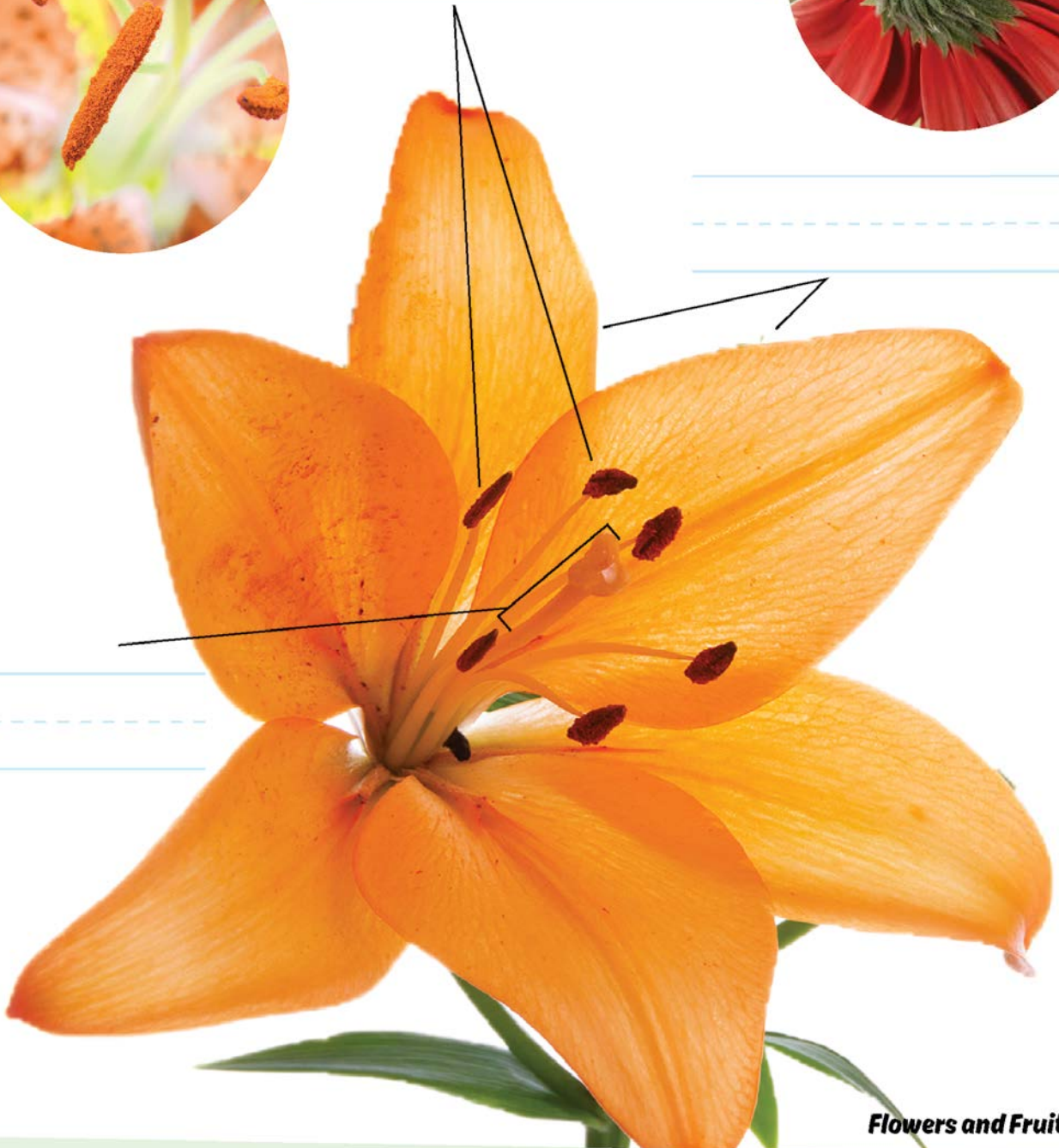
name _____



Flower Parts

Label the different parts of the flower.





When a flower is done blooming, it often produces fruit.

Fruit

protects the seeds.

It also provides food for people and animals to eat. Bananas, oranges, and apples are all fruits. It might surprise you, but many vegetables are fruit, too. A green pepper protects the seeds and provides food. So it is the fruit of a pepper plant. Cucumbers are the fruit of a cucumber plant. You can enjoy eating many different fruits, even if you call them vegetables.



Fruit Salad

Make a fruit salad using your favorite fruits.

? Can you name four kinds of fruit?

? Are you surprised that some vegetables are the fruit of their plants?

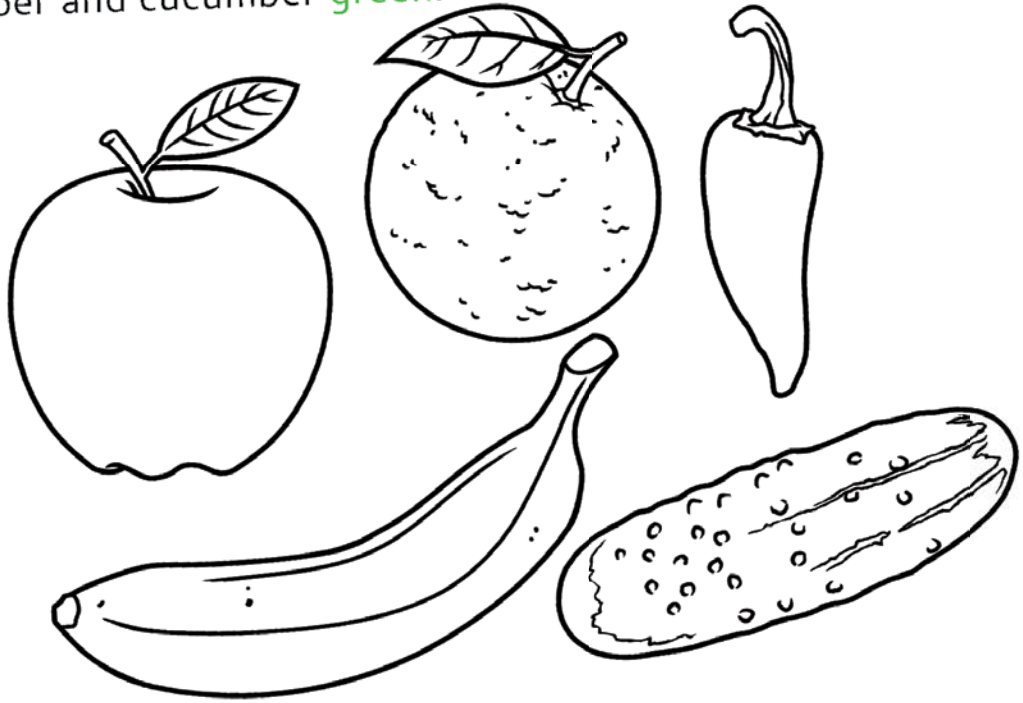
name



Fruit!

Each of these is a fruit because it contains the seeds of its plant, even though we call some of them vegetables.

Color the apple **red**, the banana **yellow**, the orange **orange**, and the pepper and cucumber **green**.



Scripture Trace

But the fruit of the Spirit is love,
joy, peace, patience, kindness,
goodness, faithfulness, gentleness,
self-control; against such things there
is no law. Galatians 5:22-23

Lesson 25

Plant Life Cycle

life cycle

You have now learned about the plant life cycle. First, a seed is planted in the ground. The seed grows roots and a stem. As it gets bigger, leaves grow on the stem. The leaves perform photosynthesis to produce food for the plant, and it grows even bigger. Eventually, the plant produces flowers. Flowers are beautiful.

And they attract bees and other insects. The bees move pollen from one flower to another.

When a flower gets pollen, it makes seeds. The seeds are often protected by fruit. The seed falls to the ground, and the life cycle starts all over again.

Some plants have a life cycle that lasts only one year. They grow from seed, bloom, produce seeds, and die in one growing season. They then need to be replanted each spring. These plants are called

annuals



name

Plants that continue to grow bigger and bigger each year are called

perennials.



Leaf, Leaf, Pinecone

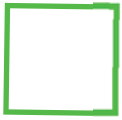
Play a plant version of Duck, Duck, Goose. Everyone sits in a circle on the floor. The person who is "it" receives a pinecone. He/she walks around behind the others. As "it" passes each person, he/she lightly taps the person on the head and says "leaf." This person eventually drops the pinecone in someone's lap, calling, "pinecone." Both people run around the circle. Whoever gets to the empty spot first sits down. The other person becomes "it."

- ? Why do bees and other insects move from flower to flower?
- ? Can you name an annual plant?
- ? What about a perennial?
- ? What is a plant's life cycle?

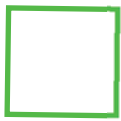


Plant Life Cycle

Number the different stages of the plant life cycle in the correct order. Trace the words and color the pictures.



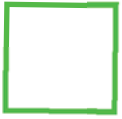
fruit



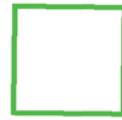
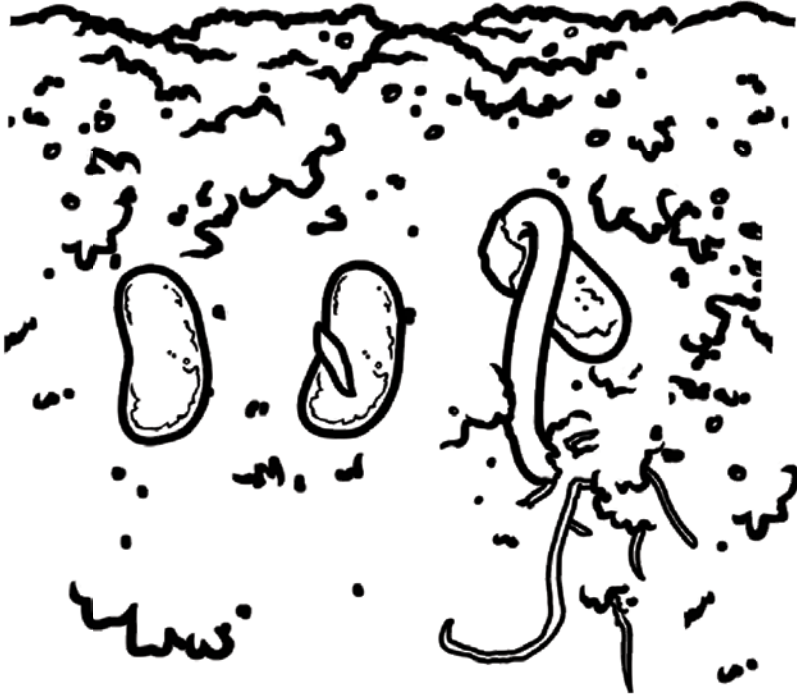
flowers



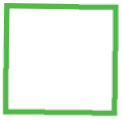
name



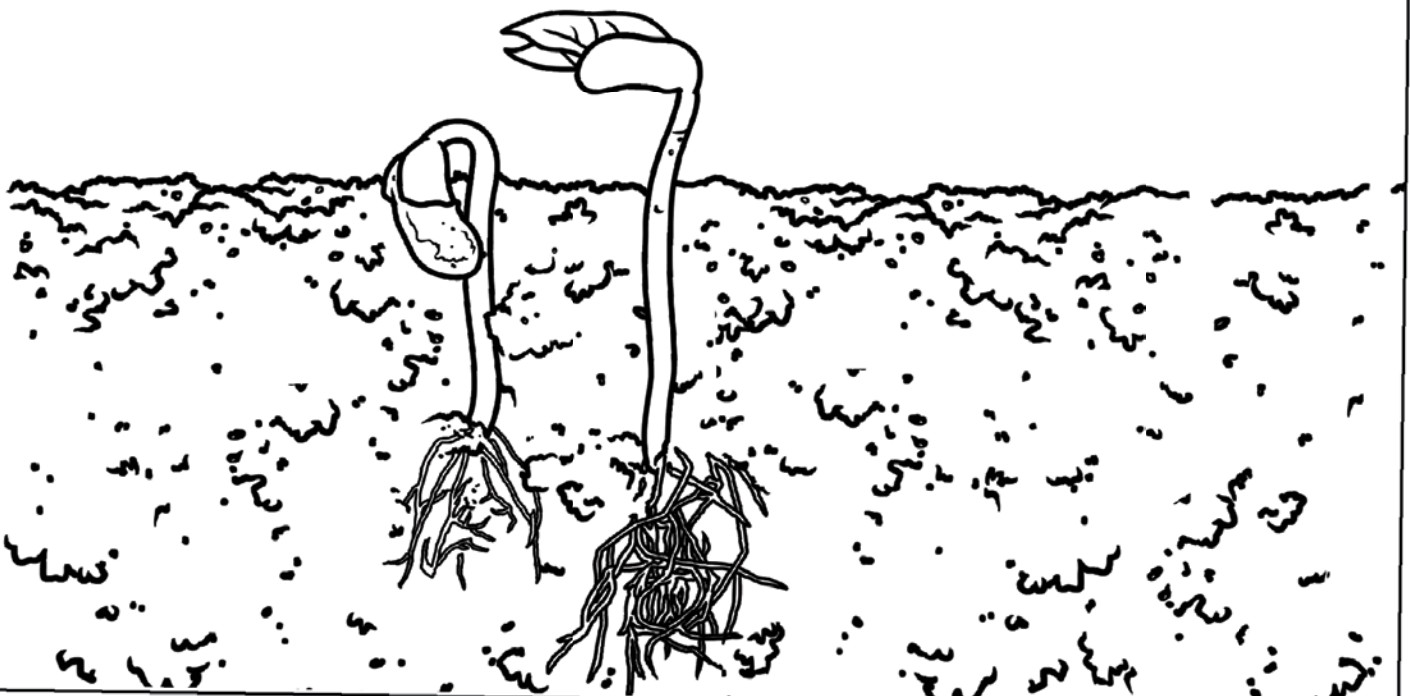
seed



leaves



roots and stem





Unit Vocabulary Review

Match the vocabulary words to the correct picture.



PETALS



STAMENS



FRUIT



POLLINATION



SEPAL



PISTIL

F	O	N	E	C	T	A	R	I	P	N
L	Y	R	A	N	N	I	R	I	O	L
O	P	E	R	E	N	N	I	A	L	S
W	A	N	N	U	A	L	S	T	L	E
E	I	N	U	L	U	A	D	I	E	O
R	P	S	E	E	D	S	Y	O	N	A
L	I	F	E	C	Y	C	L	E	R	N

Find the words.

FLOWER

SEEDS

POLLEN

NECTAR

LIFE CYCLE

ANNUALS

PERENNIALS

UNIT
6

Unusual Plants



GOD'S
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Lessons 26-35

Plants
for Beginners

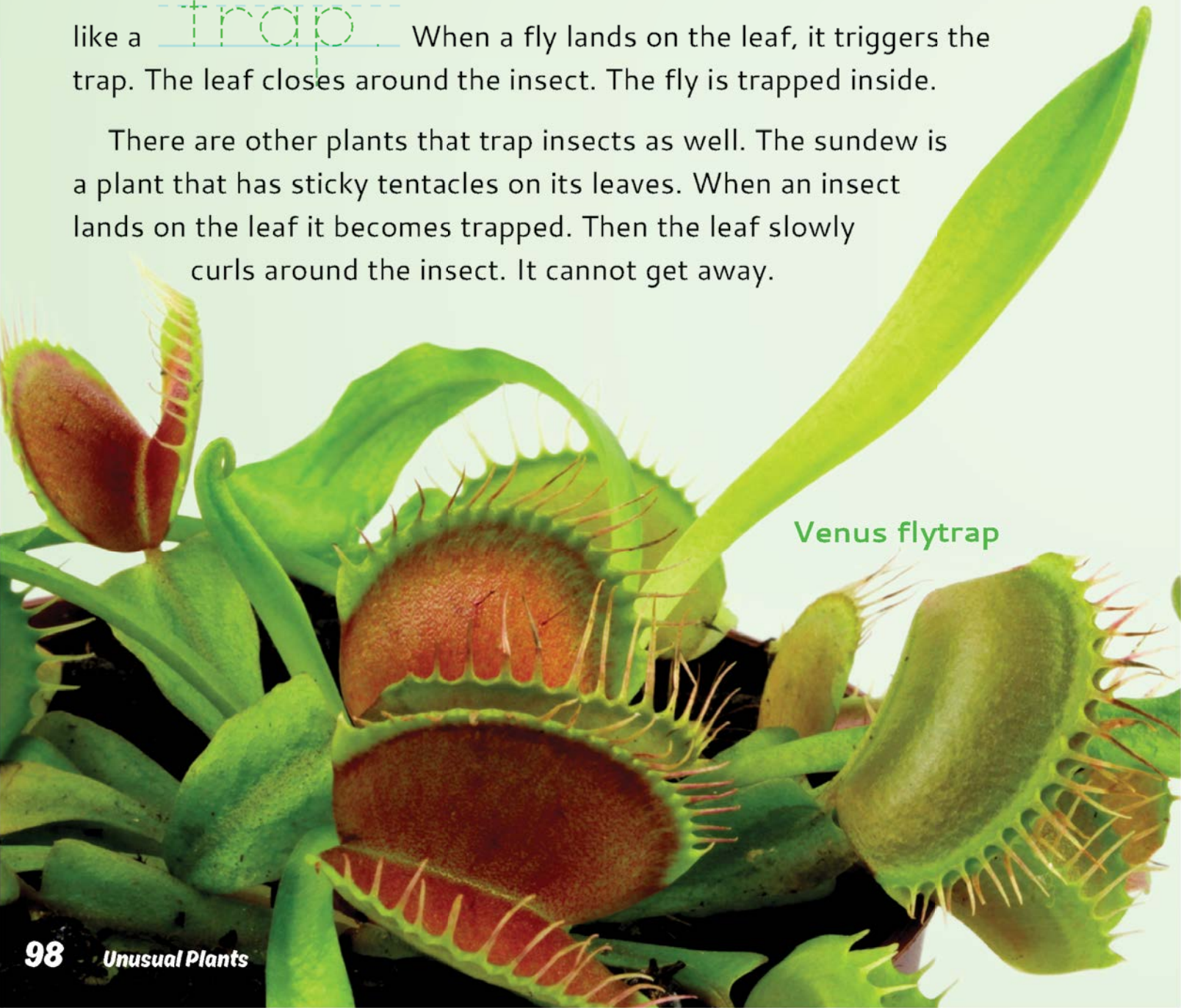
Meat-eating Plants

Did you know that some plants eat insects? It's true! The Venus flytrap is a famous meat-eating plant. It has special leaves that work

like a trap. When a fly lands on the leaf, it triggers the trap. The leaf closes around the insect. The fly is trapped inside.

There are other plants that trap insects as well. The sundew is a plant that has sticky tentacles on its leaves. When an insect lands on the leaf it becomes trapped. Then the leaf slowly curls around the insect. It cannot get away.

Venus flytrap





Pitcher plant

name

The pitcher plant has an opening at the top of a bag, or pitcher. When a bug starts to enter the opening, it slips down and falls to the bottom of the pitcher. It can't get out, and the plant eats it up.

Plants that eat insects usually grow in areas that do not have good soil. They need more food than they can get from the ground. So they eat insects.

- ? What are three kinds of meat-eating plants?
- ? Why do some plants need to eat insects?



Making a Trap

Pretend you are meat-eating plant. Design a trap to catch insects. The simplest trap is a box that is propped up by a stick. When the insect bumps the stick, the box falls on top of it. Make a trap like this or one of your own design. Use a small toy as the insect and see if you can trap it.



Sundew



Draw your own meat-eating plant!

Passenger and Parasite Plants

Lesson 27



Rafflesia

Most plants use their roots to get water and food from the ground. But a few plants live by stealing water and food from other plants. These plants are called

parasite

plants. A parasite's roots drill into another plant's roots. It can then suck out water and food.

Mistletoe is a parasite. So is the rafflesia. It grows in the jungles of Asia. It produces the world's largest flowers. One flower can be so big you could barely reach across it with both of your arms. The rafflesia flower smells really bad. It smells like rotting meat. But flies like rotting meat. So they go to the flower. Flies help pollinate rafflesia flowers.

Other plants live on the sides of trees. They do not harm the trees. These plants are called

passenger

plants.

Passenger plants include Spanish moss and kudzu.

Spanish moss

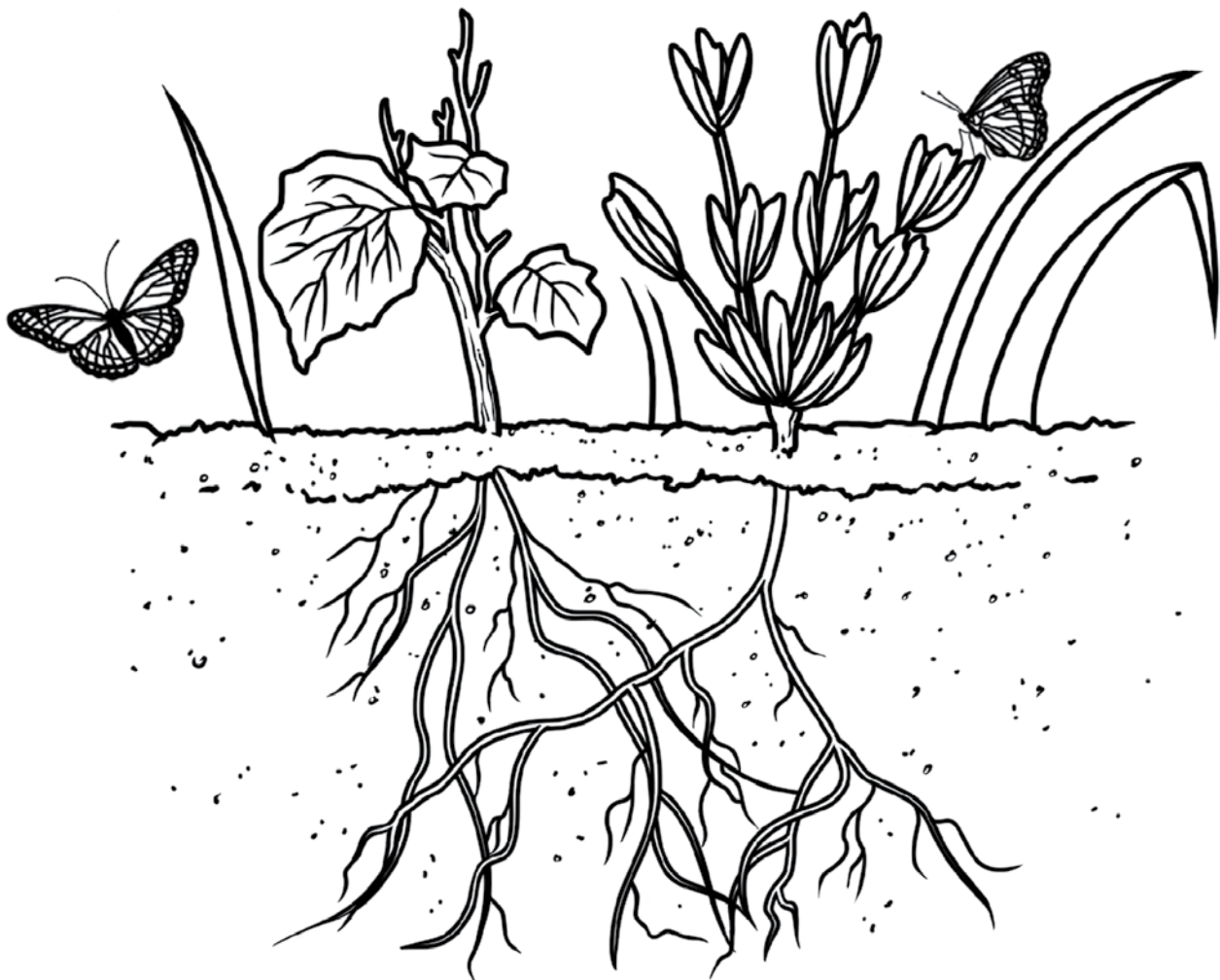


- ? How do most plants get water and food?
- ? How does a parasite plant get water and food?
- ? What is the difference between a parasite and a passenger plant?



Parasite Plant Coloring Sheet

Color the parasite plant **red** and the other plant **brown**.
Then finish coloring the picture.



Plants Have Special Abilities

Lesson 28

If you plant a seed upside down, will the plant try to grow upside down? No, it won't. God designed plants to be able to tell which way is up and which way is down. **Roots always grow down. Stems always grow up.** If a plant that is already growing gets knocked over, the roots will start growing down and the stem will grow up again. The plant can sense which way is up.

God also gave plants the **ability** to sense water. **Roots will grow toward water even if the water is several feet away.** This helps the plants survive. They can find water even when it doesn't rain.

Plants are also able to sense light. Plants need light for photosynthesis. **Leaves turn toward the light as the sun moves through the sky.** Plants can grow around something that blocks the light. They are able to grow toward the light they need. God has designed plants with special abilities to help them

survive



- ? What are three abilities that God has given to plants to help them survive?
- ? Will a plant grow upside down?
- ? Have you ever seen a plant move?

Growing Toward the Light

You can see a plant grow toward the light. Place a house plant near a window. Look at how the leaves are facing. After a day or two, look at the plant again. You should see that the leaves have turned toward the window so they can get more sunlight. Now turn the plant around so the leaves are facing away from the window. Wait a couple of days and look at the plant again. The leaves will be facing the window again.

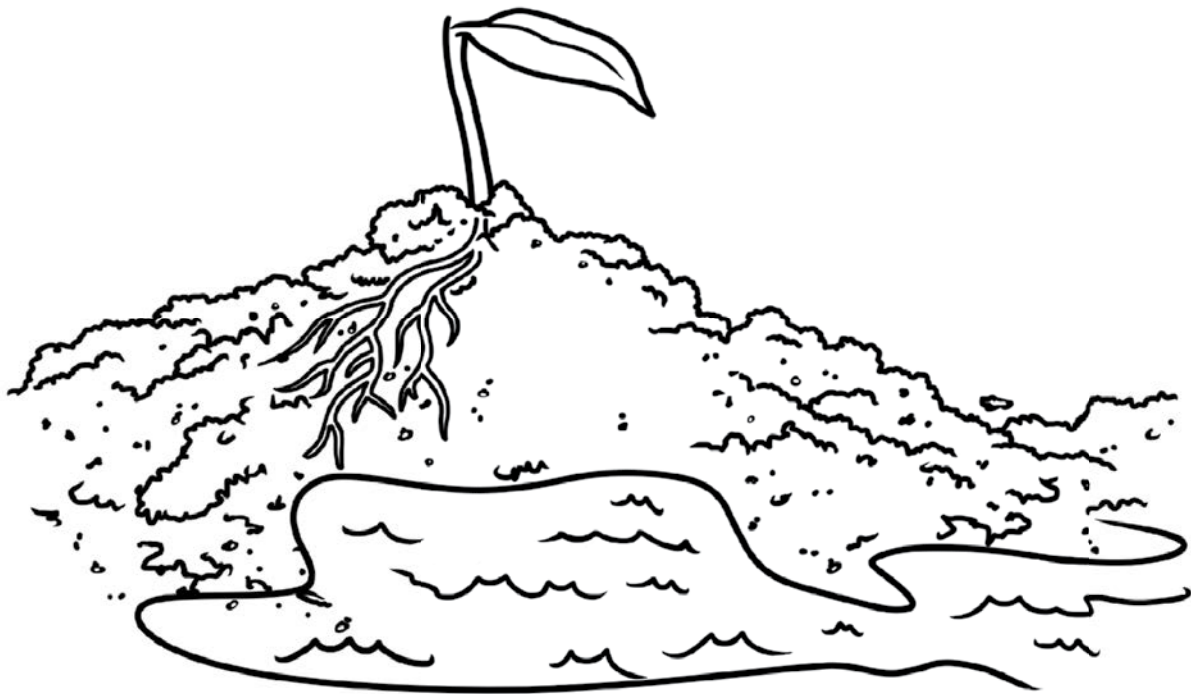
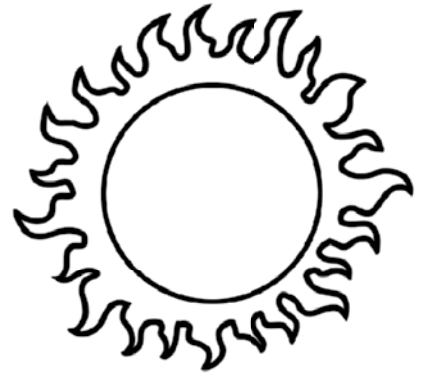




Plant Growth Coloring Sheet

Finish drawing the picture of the plant. Draw the leaves facing the sun, the stem growing up from the ground, and the roots growing down toward a water source.


Then color the picture.



Lesson 29

Surviving in Harsh Climates

Some plants live in extremely windy areas. These plants grow low to the ground so the wind does not hurt them. In colder areas, plants grow close together to keep warm in the winter.



The cactus is a plant that grows in the desert. It hardly ever rains in a desert. The cactus is specially designed to survive with very little water. It has needle-like leaves instead of wide, flat leaves. Wide leaves let water escape into the air.

Needles keep the water inside the plant. Also, the stem of a cactus can store large amounts of water. When it rains, the cactus sucks up as much water as possible. Its stem can expand to store lots of water. This helps it to survive for a long time before the next rain.

- ? Can you name a way God has made plants to survive harsh conditions?
- ? Where could you find a cactus?
- ? How did God design them to survive in deserts?

name



Examining a Cactus

Carefully examine a cactus. Remember that the needles are very sharp, so be careful not to touch them. Look at the stem. How is the stem of a cactus different from the stem of a flower or bush? It is much thicker and wider so it can store water when it rains. The stem might fold in and out. This gives the stem room to expand when it absorbs water.



Scripture Trace

For thus says the LORD, who created the heavens (he is God!), who formed the earth and made it (he established it; he did not create it empty, he formed it to be inhabited!) "I am the LORD, and there is no other" Isaiah 45:18

New Plants Without Seeds

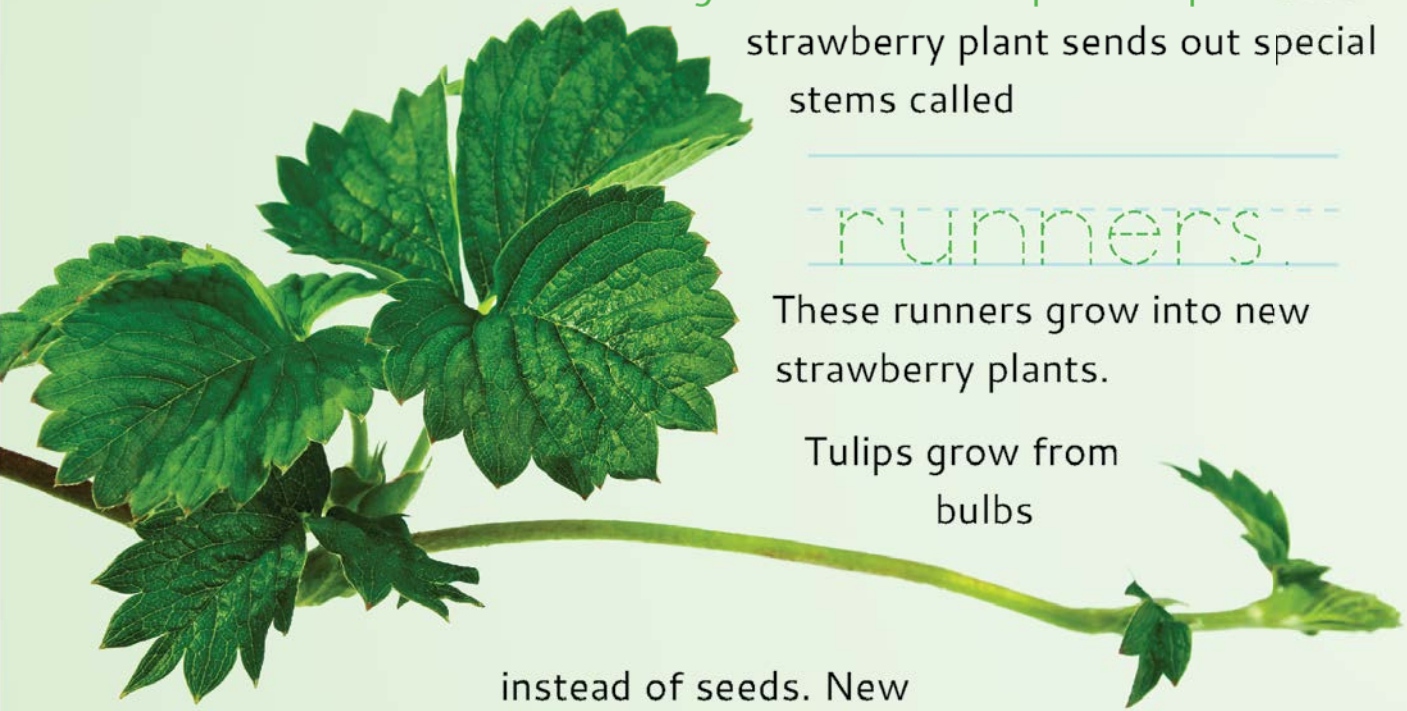
How do we get new plants? You probably said by planting seeds. That is correct. Most new plants come from seeds that were made by flowers. However, some new plants can be grown from other parts of plants. A strawberry plant sends out special stems called

runners.

These runners grow into new strawberry plants.

Tulips grow from bulbs

instead of seeds. New bulbs grow from existing bulbs. New potatoes grow from special stems that grow underground. Many of these plants also produce seeds. But it is faster to grow new plants from the bulbs or stems.



name

Ivy can be grown from a piece that is cut off of an ivy plant. Just place the cutting in water. The water will encourage new roots to grow. Then the new plant can be planted in the ground.

- ? How are new plants usually started?
- ? What are some other ways to start a new plant?
- ? Have you ever worked in a garden?
- ? What did you grow in your garden?



Scripture Trace

You cause the grass to grow for the livestock and plants for man to cultivate, that he may bring forth food from the earth. Psalm 104:14

Ferns grow in places that get lots of rain. Ferns often grow in rainforests. Most ferns are small. But some ferns grow to be nearly 60 feet tall. Ferns have long leaves with lots of small leaflets.

These leaves are called

fronds.

Ferns do not grow from seeds. Ferns grow from spores. Spores look a little like seeds but they are not made by flowers. When the fern is ready to grow new plants it produces thousands of spores on the underside of its leaves. The spores eventually fall off and land on the ground. There they begin to grow into new ferns.



name

- ? How are spores different from seeds?
- ? Where do ferns grow?
- ? How do ferns reproduce?



Fern Coloring Sheet

Color the fern leaf. If you like, you can glue little bits of sand to the leaf to represent the spores.



FERN

Mosses are very tiny plants. They have little leaves and stems. They have something similar to roots. But they do not have flowers or seeds. Like ferns, moss plants make spores that grow into new plants. Moss usually grows in big clumps. So you may not realize that a moss is a very tiny plant.

Moss

grows in wet areas.

You might find it under a log or in the shade. Moss grows in forests and swamps. It grows in the mountains, too. You might have moss growing in your yard.



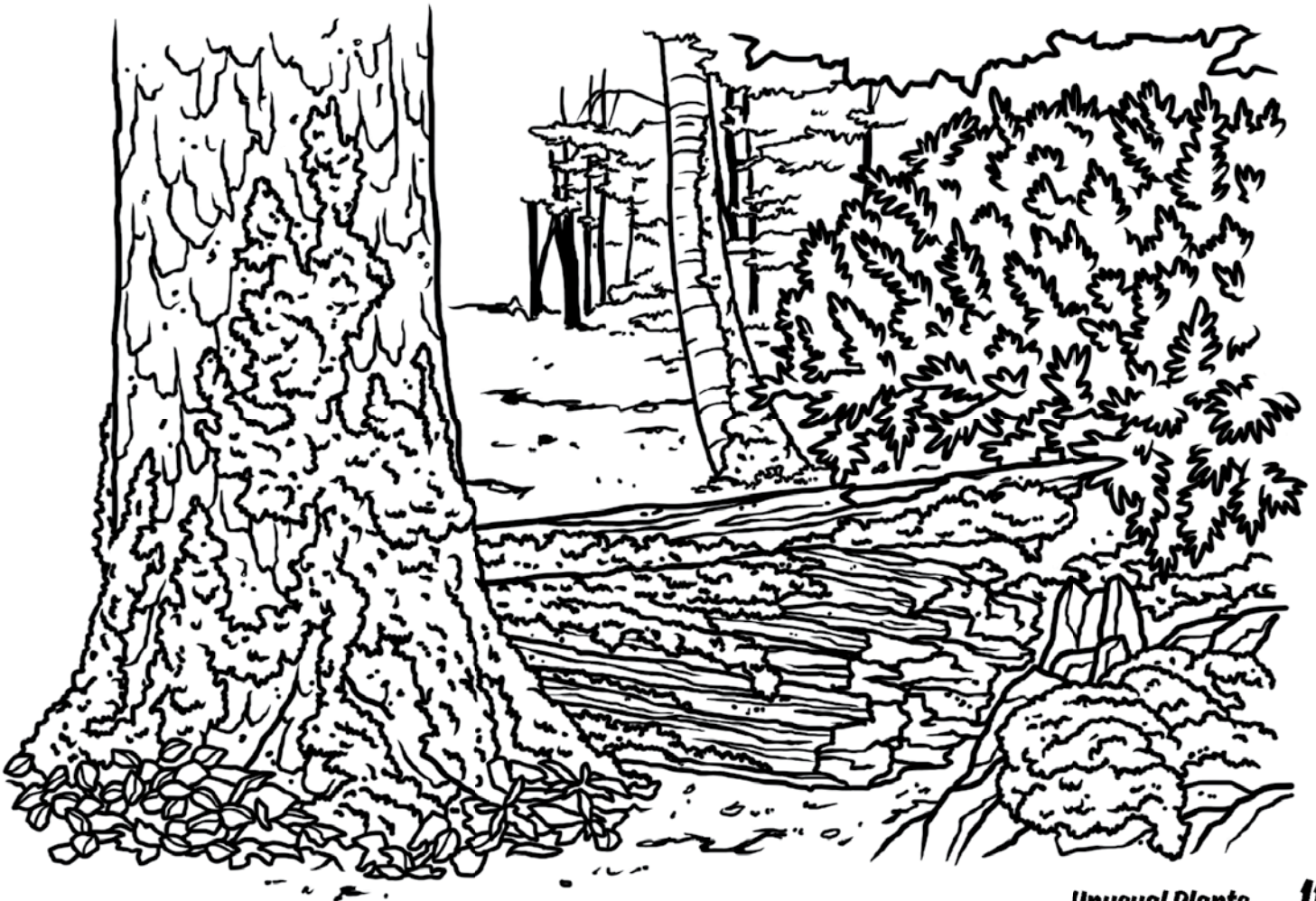
name

- ? Where might you find moss growing?
- ? How do mosses reproduce?
- ? Have you touched moss? What does it feel like?



Find the Moss Coloring Sheet

Moss grows well in the forest because there are lots of wet, shady areas. Look at this picture and see how many places you can find moss. Circle all of the moss that you can find. Then color the picture.

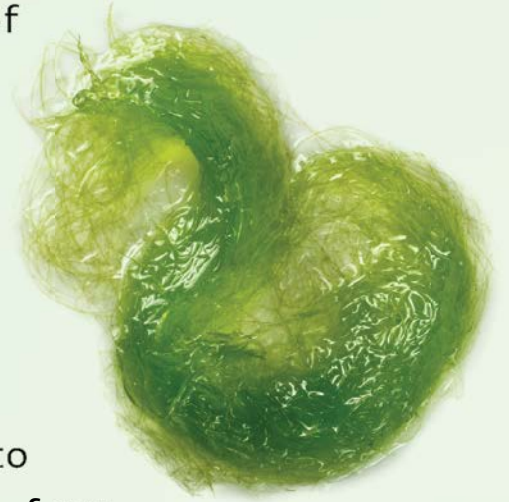


Have you ever seen green scum on the surface of a pond? Then you have seen

algae

Most algae are very tiny. Some algae are large. Seaweed is a large algae that grows in the ocean.

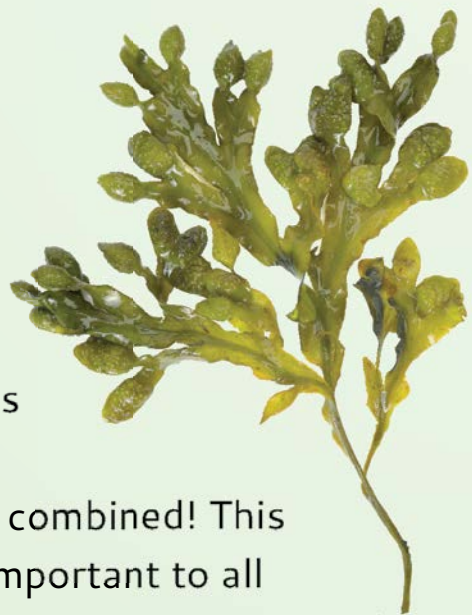
Algae do not have leaves, roots, stems, flowers, or seeds. So algae are not plants. They are similar to plants because they have chlorophyll. Algae also perform photosynthesis to make food. But they are not plants.



Algae are very important because many water animals eat algae. Most other sea creatures eat the animals that eat the algae. Without algae, the ocean animals would have nothing to eat.

Algae are also important because they produce oxygen when they perform photosynthesis.

Algae perform more photosynthesis than all of the land plants in the world combined! This makes them very important to all animals and humans.



- ? How are algae different from plants?
- ? Why are algae important?
- ? Have you ever eaten seaweed? Did you like it?



Food Chain Coloring Sheet

Color the picture. This picture shows that most living things in the ocean depend on algae for food. The tiny animal eats the algae. Then the tiny fish eats the tiny animal. A bigger fish eats the tiny fish, and the bird eats the big fish. If algae did not grow in the sea, none of these animals would have anything to eat.



Mushrooms



Have you ever eaten a

mushroom?

Did you think it was a vegetable? Although mushrooms look a little like vegetables, they are really very different. A mushroom is a

fungus.

Mushrooms do not have leaves, roots, flowers, or seeds. Mushrooms do not have chlorophyll. They do not perform photosynthesis. So a mushroom is not a plant.

Some mushrooms are good to eat. But others are poisonous. You should never eat mushrooms unless they come from a food store.

name



Examine a Mushroom

Closely examine a mushroom. It has a stem. The top of the stem looks like an umbrella. This is called the cap. Pull off the stem and look at the underside of the cap. You should see lots of little lines. These are called gills. The gills produce spores that grow into new mushrooms.



- ? Are mushrooms plants? Why or why not?
- ? Do you like to eat mushrooms?
- ? Are all mushrooms safe to eat?

Lesson 35

Appreciating Plants

You have learned about the amazing world of plants that God has created for us to enjoy. Look around you, and you will see trees, flowers, bushes, and grass. God has created plants that produce fruits, vegetables, and other things for us to eat.

Aren't you glad that God made all the plants?



Plant Collage

Make a picture using pieces of plants. You can glue dried leaves, flowers, seeds, seed pods, twigs, and other parts of plants on a piece of construction paper to make a beautiful picture.

name



Draw your favorite plant

Find a plant that you like, and draw a picture of it.



Unit Vocabulary Review

Fill in each blank with one of the vocabulary words below.

1. A meat-eating plant has a _____ to capture insects.
2. A plant that steals water and food from another plant is a _____.
3. God gave plants the _____ to sense up and down.
4. A _____ is a plant that is specially designed to survive where there is very little water.
5. Strawberry plants reproduce using _____.
6. The leaves of a fern are called _____.
7. _____ is a very tiny plant you might find in a shady, wet area.
8. _____ produce oxygen in the ocean.

ability

runners

parasite

Algae

cactus

fronds

trap

Moss

Body Overview

UNIT
1



GOD'S
DESIGN®

Lessons 1-3

Human Body
for Beginners

Lesson 1

The Creation of Life

God created the earth. He created the plants, sun, moon, stars, and animals. Then he created man. God took some of the dust from the ground and used his hands to form a man. Then God breathed into the

man and made him alive. This first man was named

Adam.

He was made in the image of God. This was different from God's relationship with the animals.

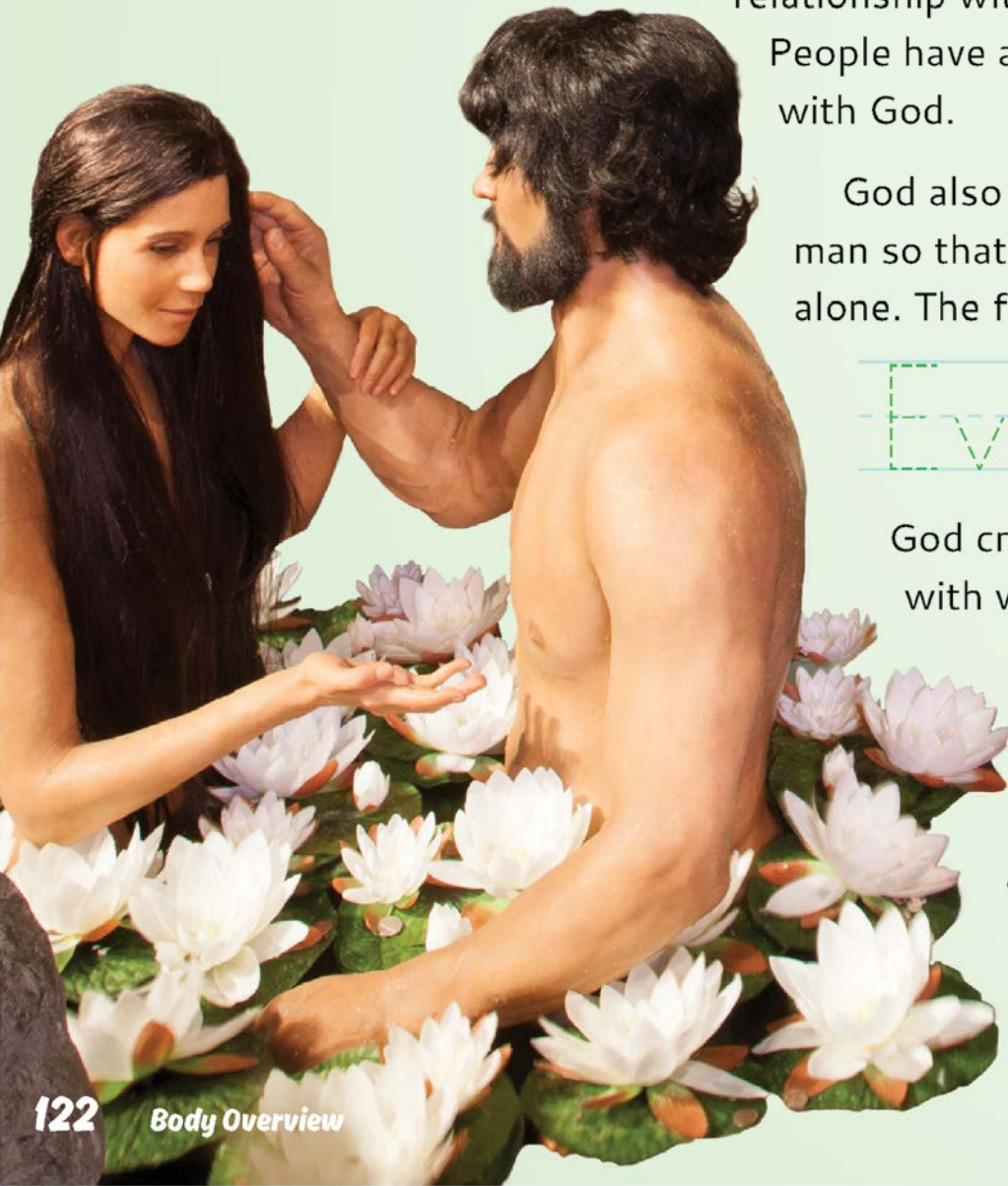
People have a special relationship with God.

God also made a woman for man so that he would not be alone. The first woman was called

Eve.

God created Adam and Eve with wonderful bodies.

In this unit, you are going to learn about the wonderful body that God gave you. God made you special!



name



God Made Me Special

God made you to be a special person who is different from everyone else. Draw a picture of yourself, and remember that God loves you very much.

- ? What did God use to make man?
- ? In whose image did God create man?

Lesson 2

The Human Body



Do you look just like your mom or dad? Do you look just like your brothers or your sisters? No. (Unless you are an identical twin!) You look

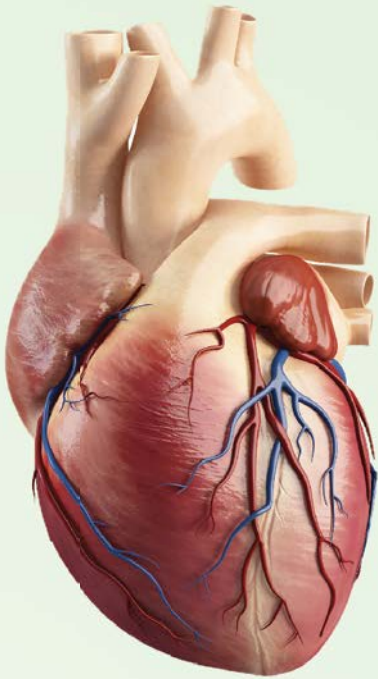
different from everyone else. Yet your body has all of the

same basic parts. You have eyes, ears, and hair. You have a

nose and a mouth.



name



You have a heart that moves your blood. Your body has a stomach so you can eat food. You can see, hear, taste, smell, and feel. You also have bones and muscles that help you move. These are all special body parts that God gave you. Your body lets you run, jump, play, and even clean up your room.

- ? What parts of your body help you to move?
- ? Who created all the special parts of the human body?



Scripture Trace

Then the LORD God formed the man of dust from the ground and breathed into his nostrils the breath of life. Genesis 2:7a

Lesson 3

Cells

Your body is made up of many different parts. The smallest parts of your body are called cells. Cells are so tiny, you cannot see just one cell with your eye. You would need a special machine called a microscope to see your cells.

Your body has many different kinds of cells. You have blood cells, bone cells, nerve cells, and skin cells. And all of the cells look and act very differently



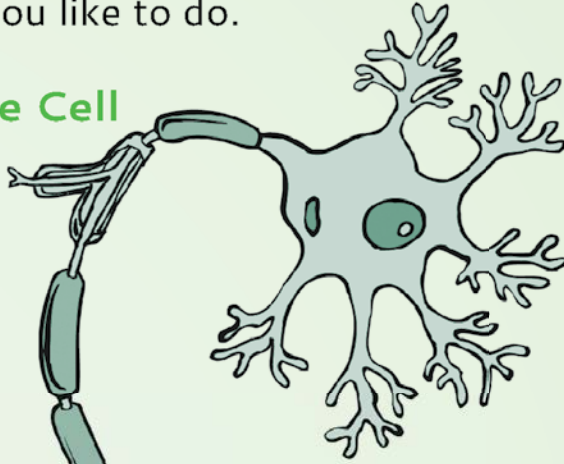
Putting Pieces Together

Use Lego® bricks or other building blocks to make a house. The blocks fit together to make the house. Your cells fit together to make the house. The blocks are all different shapes and sizes. And the cells in your body are different shapes and sizes. Different blocks have different jobs. Different types of cells also have different jobs.

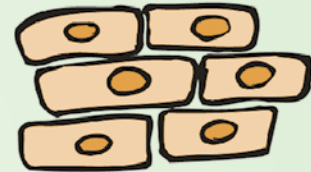


from each other. They each have a special job to do. But all of these different cells work together in your body to help you grow and do all the things you like to do.

Nerve Cell



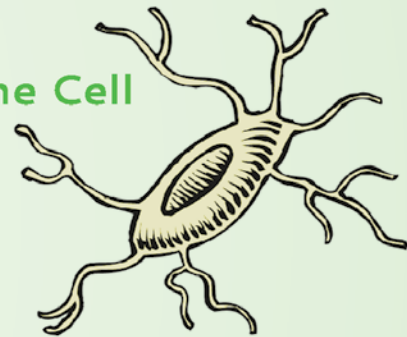
Skin Cells



White Blood Cell



Bone Cell



Red Blood Cells

Muscle Cells



- ? What is the smallest part of your body?
- ? What do you need to use in order to see your cells?



Unit Vocabulary Review

Find the vocabulary words in the word search.

Remember to search both down and across.

ADAM

EVE

BODY

EYES

NOSE

CELLS

SKIN

W	J	W	C	H	W	S	I	M	Y	H	G	C	C	A
S	K	I	N	T	S	H	X	B	X	P	H	H	L	C
A	C	U	B	J	Q	H	H	I	U	J	N	E	H	C
H	X	N	O	S	E	G	Y	Q	R	D	M	B	P	C
S	N	Y	D	C	O	S	W	V	Z	E	F	J	Q	B
C	V	M	Y	I	P	Z	D	C	G	T	E	Y	G	M
E	R	Q	M	C	D	D	M	P	J	R	Z	C	N	K
L	Q	P	G	V	U	D	Z	I	G	Y	N	X	A	M
L	G	U	P	G	R	Y	Z	P	N	X	L	K	D	G
S	E	Y	E	S	E	W	I	M	T	L	B	T	A	Y
M	L	E	N	K	Y	K	K	M	A	P	E	Q	M	D
Y	X	S	P	J	J	W	P	X	N	U	Z	P	J	J
P	T	U	T	I	Z	U	F	M	V	Q	E	C	Q	H
Y	T	G	V	P	W	H	W	Y	Y	J	V	R	N	A
O	B	D	A	I	N	C	Y	Y	T	W	E	T	D	J

Bones and Muscles

UNIT
2



GOD'S
DESIGN®

Lessons 4-10

Human Body
for Beginners

Lesson 4

Your Skeleton



God gave you an amazing body! Your skeleton is the framework of your body, and it is made up of bones.

If you could look all the way inside, the very first thing

you would see is your skeleton. Your

skeleton is made up of the bones in your body. There are bones in your arms and legs. There are bones in your hands and feet. Your ribs, backbone, and skull are bones, too.

Bones

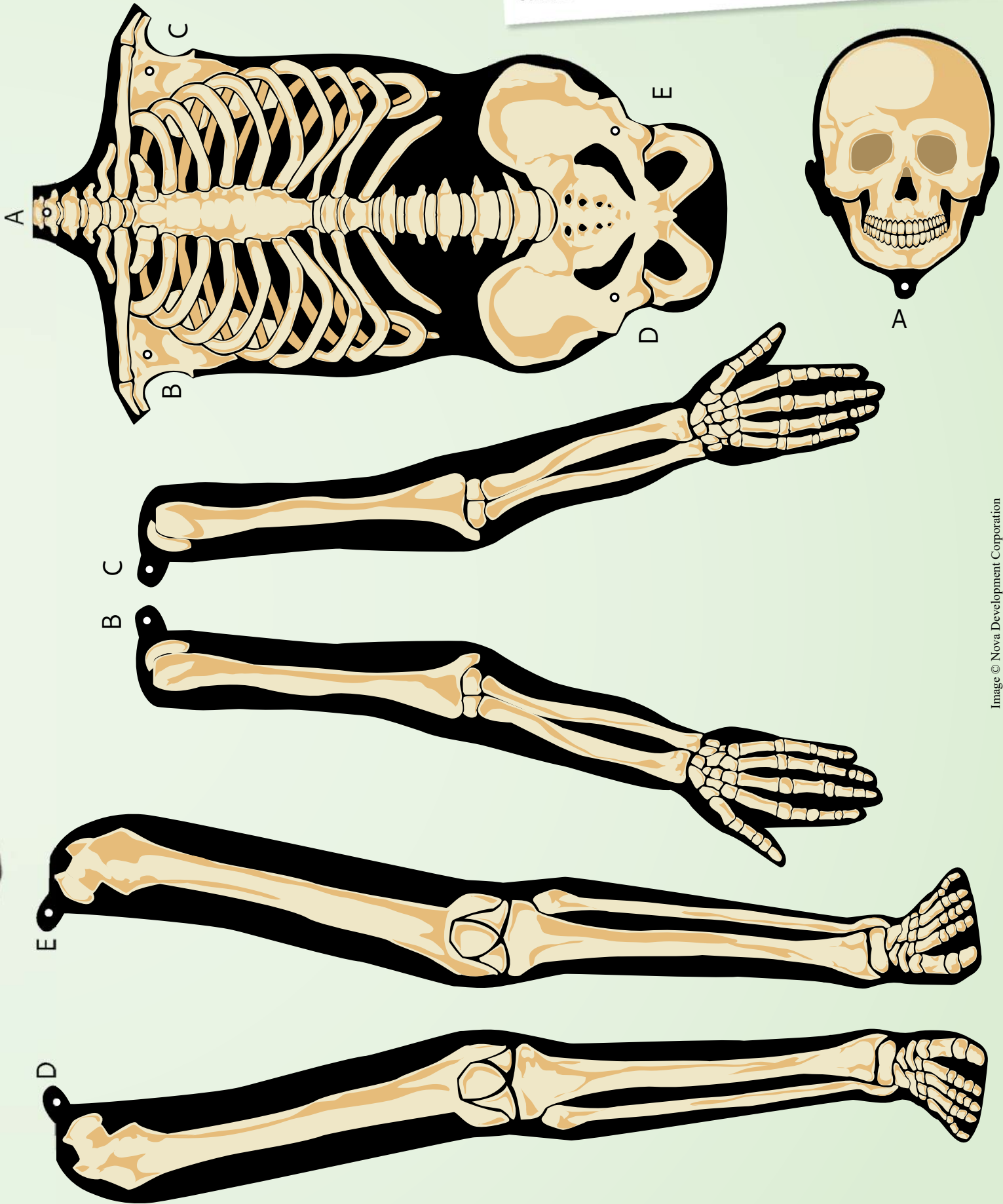
are very hard and stiff. They do not bend. Your bones determine your general shape and size. Bones help you to be strong. They help you to move around. The bones in your legs and arms are big. You have small bones in your fingers and toes. These small bones help you to pick things up and to walk.

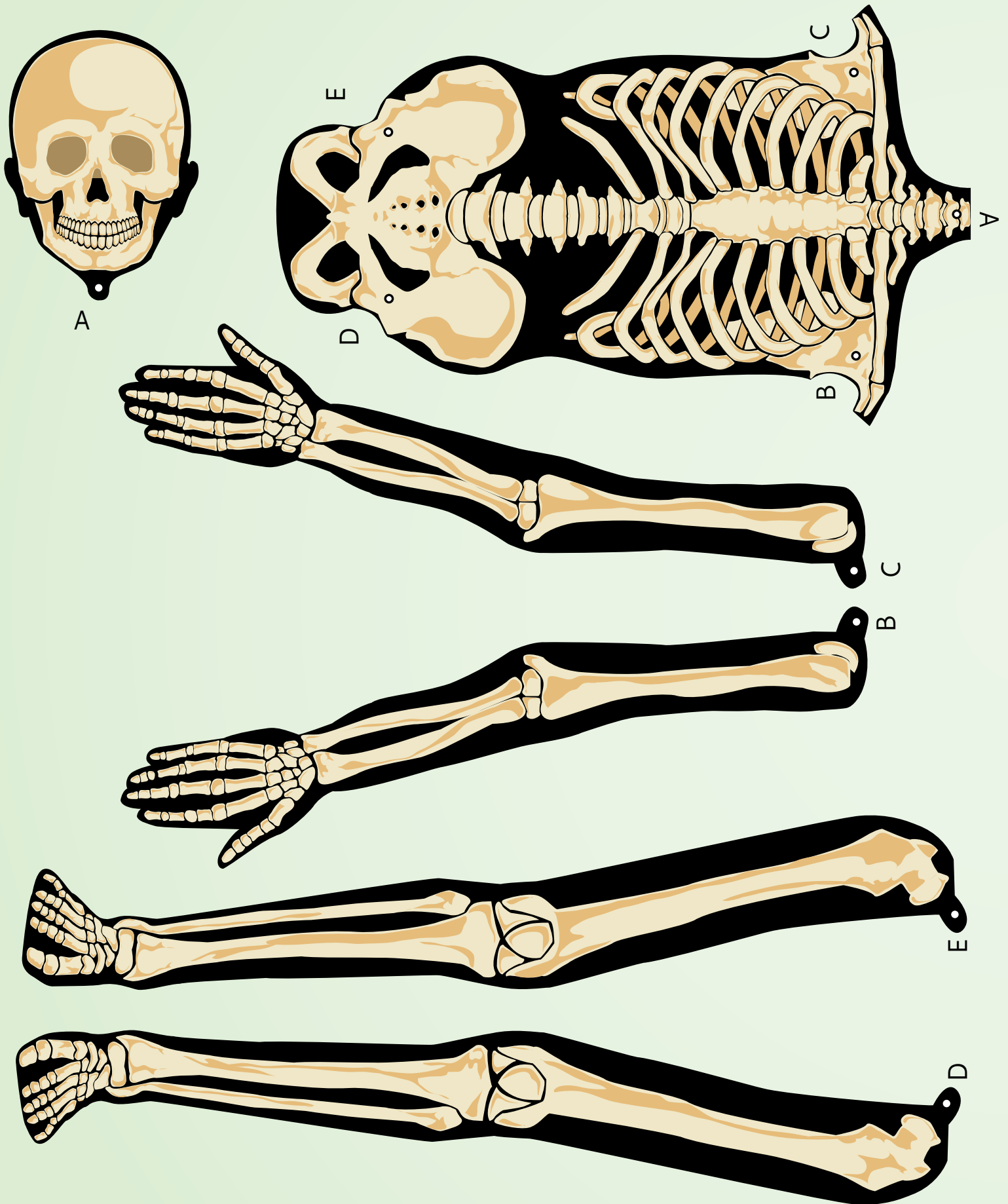


Sandy Skeleton

Cut out and assemble Sandy Skeleton on the next page to see what the bones in your body look like.


name _____





Name Those Bones

Lesson 5



Did you know that you have more bones than an adult? It is true. A child has about 270 bones at birth. The adult body has 206 bones. Isn't that amazing? And each bone has a special name.

At the top of your body is your skull. Your skull protects your brain. In the middle of your back is your backbone. You can feel the bumps of your backbone going down the center of your back.

At the tops of your arms are your shoulders.

The bones connected to the front of your shoulders are your collar bones.

Wrapping around the center of your body

are your ribs. Ribs protect your heart and lungs. And on the front of your knee is a special small bone called your kneecap.

- ? What is the bone that protects your brain called?
- ? What bones did God give you to protect your heart and your lungs?



Label Your Bones

Have an adult write the name of one of the bones listed below on a sticky note. Put that note in the right location on your body. Repeat for all of the bones listed below.

- Skull
- Backbone
- Arm bone
- Collarbone
- Ribs
- Leg bone
- Kneecap



Scripture Trace

A joyful heart is good medicine, but
a crushed spirit dries up the bones.

Proverbs 17:22

Types of Bones

Lesson 6

Do you think all the bones in your body look alike?

No, some bones are long and some bones are short. Does your jawbone have the same shape as a rib? No. God has made each bone for a special job. Some bones are long like the ones in your arms and legs. These long bones give you strength. The bones in your

hands and feet are called short bones. Short bones can move in many different ways. They help you pick things up and walk.

Your ribs are flat with a bit of a curve. These flat bones are designed to protect your lungs and heart. Although bones are strong, sometimes they can break. If you fall out of a tree, you might break your arm. If you break one of your bones, you will have to go to the doctor. The doctor can put the bone back together. Then you might have to wear a cast. A cast is hard material that keeps the bone from moving. After a few weeks, the doctor will take the cast off. Your bone will be healed. It will be strong again.



- ? Can you find a long bone in your body? What does it do?
- ? Can you find a short bone in your body? What does it do?

Lesson 7

Joints



How many different ways can you wiggle your fingers? What ways can you move your head? How can you move your legs?

Joints are where two bones come together. Some joints allow the bones to move in only one direction. Your knees have these kinds of joints. Let's try it. Can you move your knee up and down? Now try to bend your knee side to side. We call this

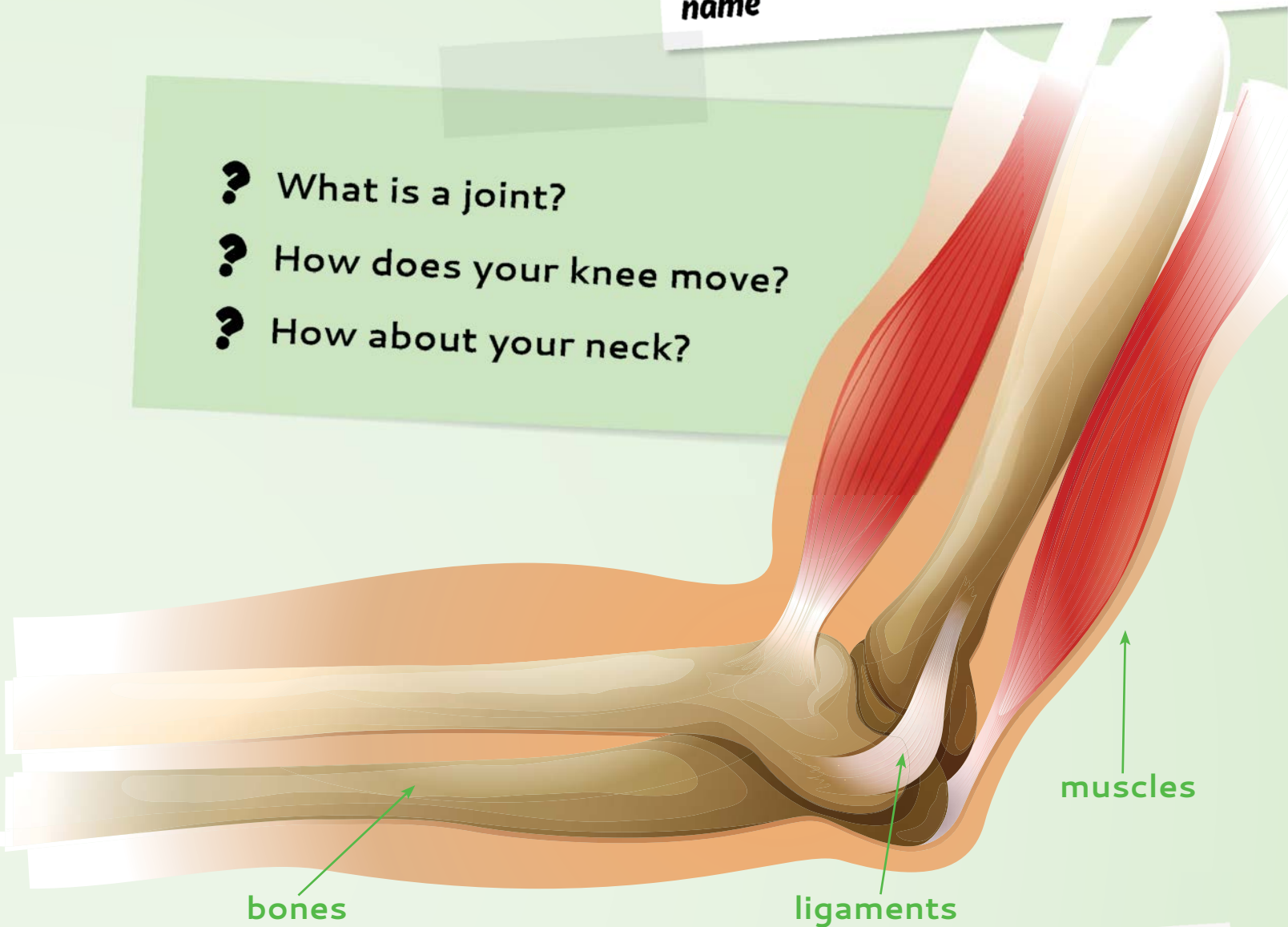


a hinge joint. Your fingers have this kind of joint as well. The joints in your thumbs allow you to move them around in many ways. This makes it easy for you to hold onto things. You can move your shoulders in nearly every direction. This is called a ball and socket joint. Shoulders need to move this way so you can scratch your back. Your neck rotates so you can see all around you. This is

called a pivot joint. There are many other types of joints in your body. God knew exactly what He was doing when He designed your joints.

name

- ? What is a joint?
- ? How does your knee move?
- ? How about your neck?



Scripture Trace

The whole body, nourished and knit together through its joints and ligaments, grows with a growth that is from God. Colossians 2:19

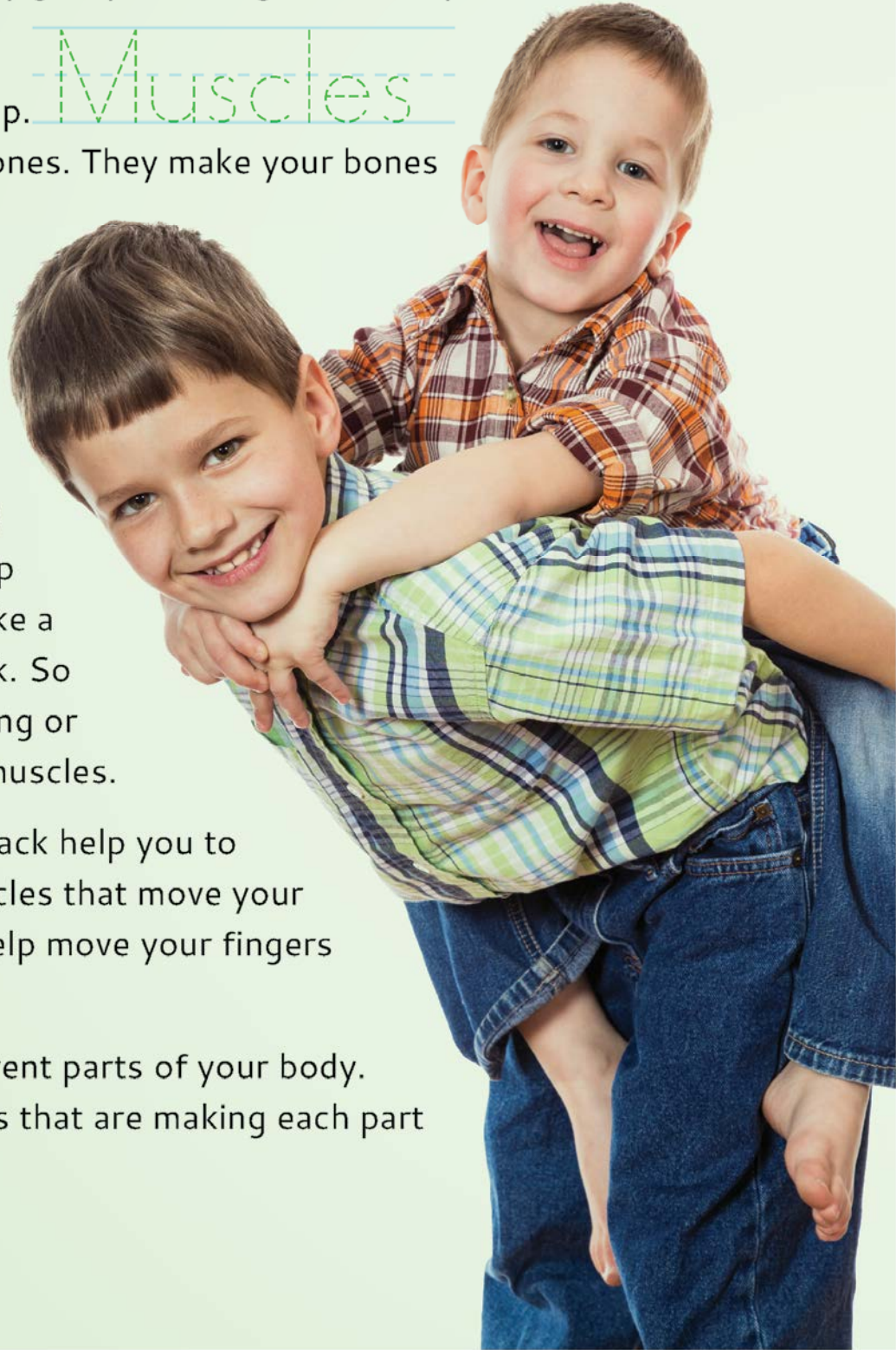
Lesson 8

Muscles

The bones in your body give you strength, but they cannot move without help. Muscles are connected to your bones. They make your bones move. Muscles also give your body shape. Are you using muscles right now? Yes! You have muscles in every part of your body. There are muscles in your face and head. These muscles help you move your eyes, make a smile, and turn your neck. So even when you are reading or coloring, you are using muscles.

The muscles in your back help you to stand up. There are muscles that move your arms and legs. Others help move your fingers and toes.

Practice moving different parts of your body. Can you find the muscles that are making each part move?



name



Muscle Man Coloring Sheet

Muscle Man is very strong. His muscles are big. Color his picture.



- ? What is the job of your muscles?
- ? Can you think of a time when you use your muscles? When?
- ? What muscles are you using now?

Lesson 9

Using Your Muscles

When you walk, run, or ride your bike, you are using your muscles. Blink your eyes. Stick out your tongue. Now make a funny face. These activities use muscles, too. God made muscles for this. Your muscles get bigger and stronger the more you use them. If you

exercise every day, your body will be healthier, and you will be stronger.

Most muscles only move when you think about moving them. Your arm does not move unless you want it to. Some muscles in your body work without you even knowing about them. One of these muscles is your heart. Can you tell your heart to beat? Or how fast to beat? No. Your heart keeps beating

- ? Why should you exercise every day?
- ? What muscle in your body moves blood instead of bones?

when you are awake and when you are asleep. That is a good thing, because your heart moves blood around inside your body. It beats 60 to 100 times every minute to do this. When you exercise, your heart beats faster. You do not have to think about it. Your body takes care of it all by itself.

You have muscles in your stomach. These muscles move the food around. You also have muscles to help you breathe. These muscles work even when you are asleep.



Make Your Muscles Stronger

Muscles get strong when we use them. Exercise is one way to make your muscles stronger. Let's do some exercises.

- Run in place for 2 minutes. Do 10 jumping jacks. These exercises make your legs stronger. They also help your heart get stronger.
- See how many push-ups you can do. Push-ups help to strengthen your arm and back muscles.
- See how many sit-ups you can do. Sit-ups make your tummy muscles strong.

Lesson 10

Hands and Feet



God made each part of your body special. Two of the most amazing

parts of the body are your hands and feet.

Hands

can pick up a tiny pin. They can pet a soft kitten. Hands help us to play musical instruments. They are truly amazing. Feet are just

as important. Your

feet

support your body. They help you to walk and balance. Look closely at the skin on your fingertips and the bottoms of your feet. What do you notice about this skin? It is different from the rest of your skin. This skin has ridges. This special skin helps you to pick things up without dropping them. This skin also helps you to walk barefoot without slipping. Now, look again at your fingertips. Do you see a design on each finger? We call these designs fingerprints. Your



name

fingerprints are

different from everyone else's in the world. Even identical twins have different fingerprints.

The patterns on your fingertips usually form one of three different pictures. Fingerprints can make little hills. This is called an arch. They can form circles. This is called a whirl. Some can make loops. Can you guess what we call those? Loops!

Finally, look at the ends of your fingers and toes. What do you see there? You have nails. These nails help protect your fingers and toes from getting hurt when you bump into things. Thank God today for your wonderful hands and feet!



Make Your Own Fingerprints

Look at your own fingerprints.

1. Trace the outline of both your hands on a blank sheet of paper.
2. Rub a pencil across a scrap of paper to make a very dark area.
3. Rub your finger across this area until the pad of your finger is dark gray.
4. Press a piece of clear tape against your finger. Remove the tape. Your finger print should clearly show on the tape.
5. Place the tape on the correct finger on the drawn outlines of your hands.
6. Repeat steps 2–5 for each of your fingers.





Unit Vocabulary Review

Find the vocabulary words in the word search.

SKELETON

BONES

SKULL

RIBS

LONG

SHORT

FLAT

JOINTS

HINGE

PIVOT

MUSCLES

EXERCISE

HANDS

FEET

FINGERPRINTS

V I P I V O T K H G U I A F F
D D F O U I C E A B N N J R I
F E E T T P A O N D Z A J Q N
L A K Q O L U R D B E R J F G
A Q J M N A V K S Y L I V J E
T R A F J O I N T S Z D V R R
S G J T M Y T P M K R I D E P
S H O R T B C I Z E R I B S R
H R H M P Q V W J L S K U L I
L P I U M U S C L E S S X P N
O W N G T L R H B T P V V X T
N S G E F N S G O O J Y S Z S
G V E E V W Q K N N S V F T R
E Q N M O V E X E R C I S E H
S K U L L A V N S O A U F M E

Nerves and Senses

UNIT
3



GOD'S
DESIGN®

Lessons 11-18

Human Body
for Beginners

Lesson 11

The Nervous System

Your body has a special highway that carries messages. This highway is called your

nervous

system

and begins with your brain. The brain talks to your spinal cord. Your spinal cord is in the center of your backbone. Your

spinal cord

then sends the message to nerves. Nerves are cells that talk to muscles. The nerves tell your muscles to move.

The nervous system is a two-way road. Messages travel from the brain to other parts of the body. They also travel from different parts of the body to the brain. This is how you feel, see, hear, taste, and smell things.

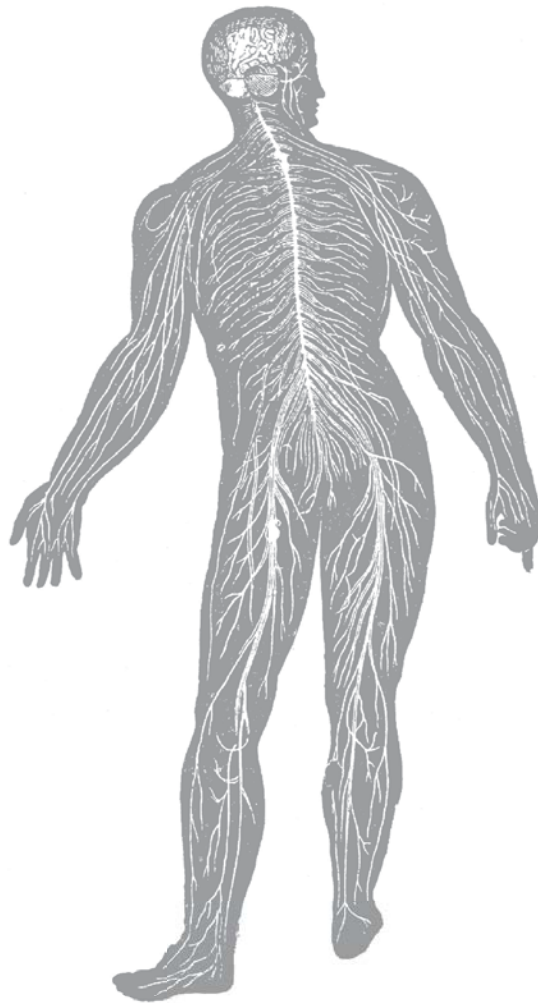
nervous system





Nervous System Coloring Page

This picture shows how the nerves are connected throughout your body. Color the brain blue. Color the spinal cord down the back green. Color the nerves red.



- ? What is the name of the system that acts like a highway in your body?
- ? How do messages get from your brain to other parts of your body?

Lesson 12

The Brain



Do you know where your brain is?

It is inside your head. God gave you a very strong skull to protect your

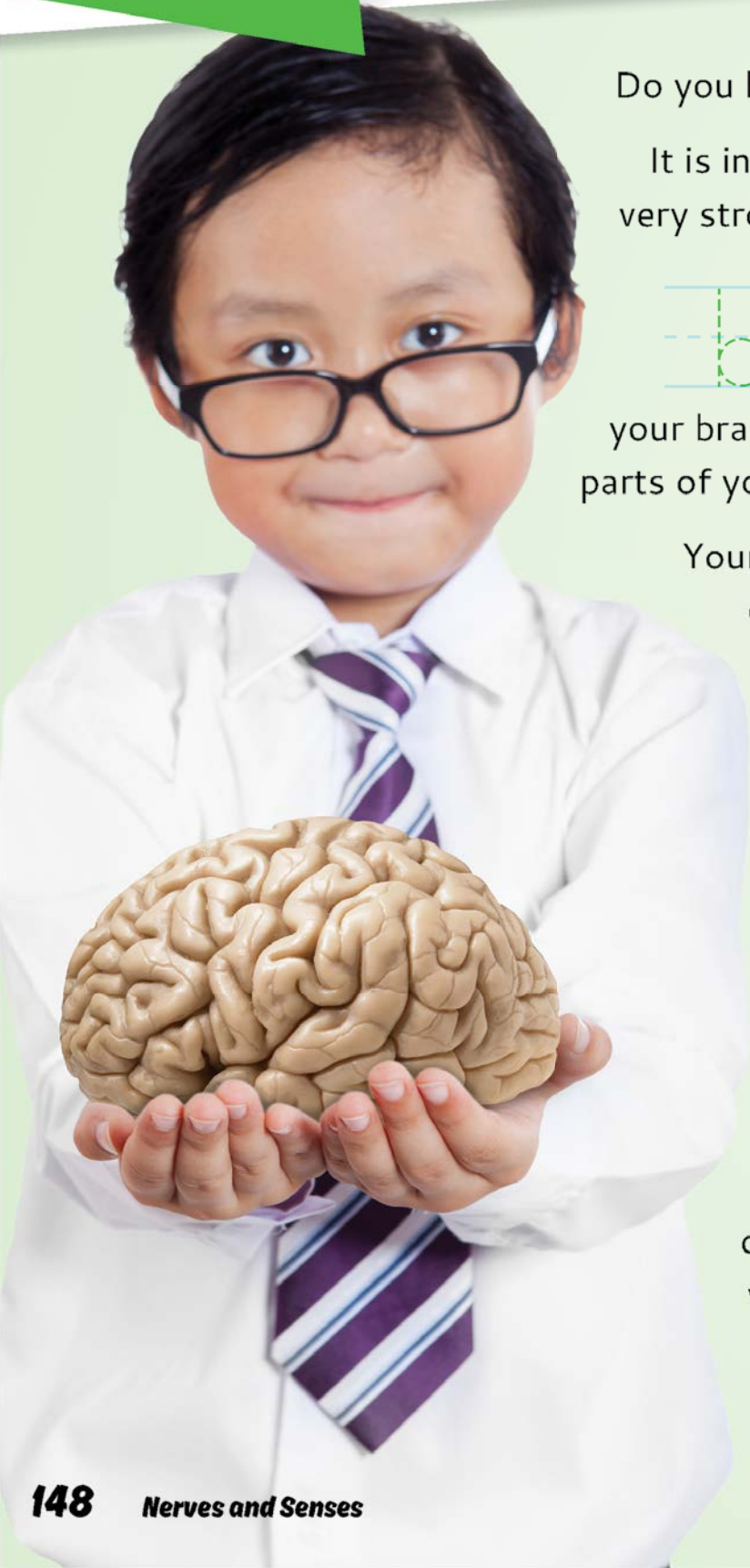
brain.

This is because your brain is one of the most important parts of your body.

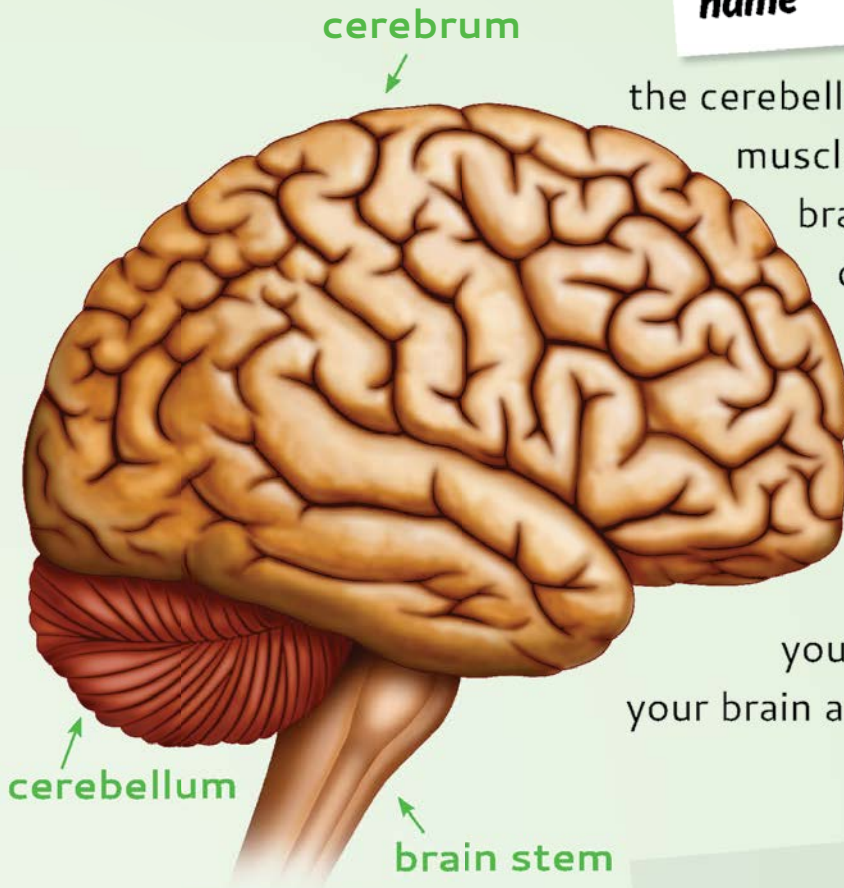
Your brain controls everything you do. It tells your muscles to move. But the brain can do much more. It is where you think all of your thoughts. You use your brain to learn and remember.

Your brain lets you see, hear, smell, and feel things, too.

Your brain has three parts. The upper part of the brain is called the cerebrum. It is where you think. This cerebrum is divided into two halves, the left side and the right side. The lower part of the brain is called



name



the cerebellum, and it controls your muscles. The third part is the brain stem. The brain stem connects your brain to your spinal cord. It controls things like breathing and your heartbeat.

These parts of the brain control everything you do. So, take good care of your brain and use it well.

- ? Name some things that you do that use your brain.
- ? How many parts of the brain are there?



Scripture Trace

You shall love the Lord your God
with all your heart and with all your
soul and with all your mind.

Matthew 22:37

Lesson 13

Learning and Thinking

God made animals and people different. And he gave them different brains. People are much smarter than animals. An animal cannot read and understand a book. A monkey can't build a building. A parrot can repeat words, but it cannot talk with you. Animals' brains were not created to

learn and think in the same way that human brains can. God designed our brain so we can learn about him by reading the Bible. Thinking takes place in your brain.

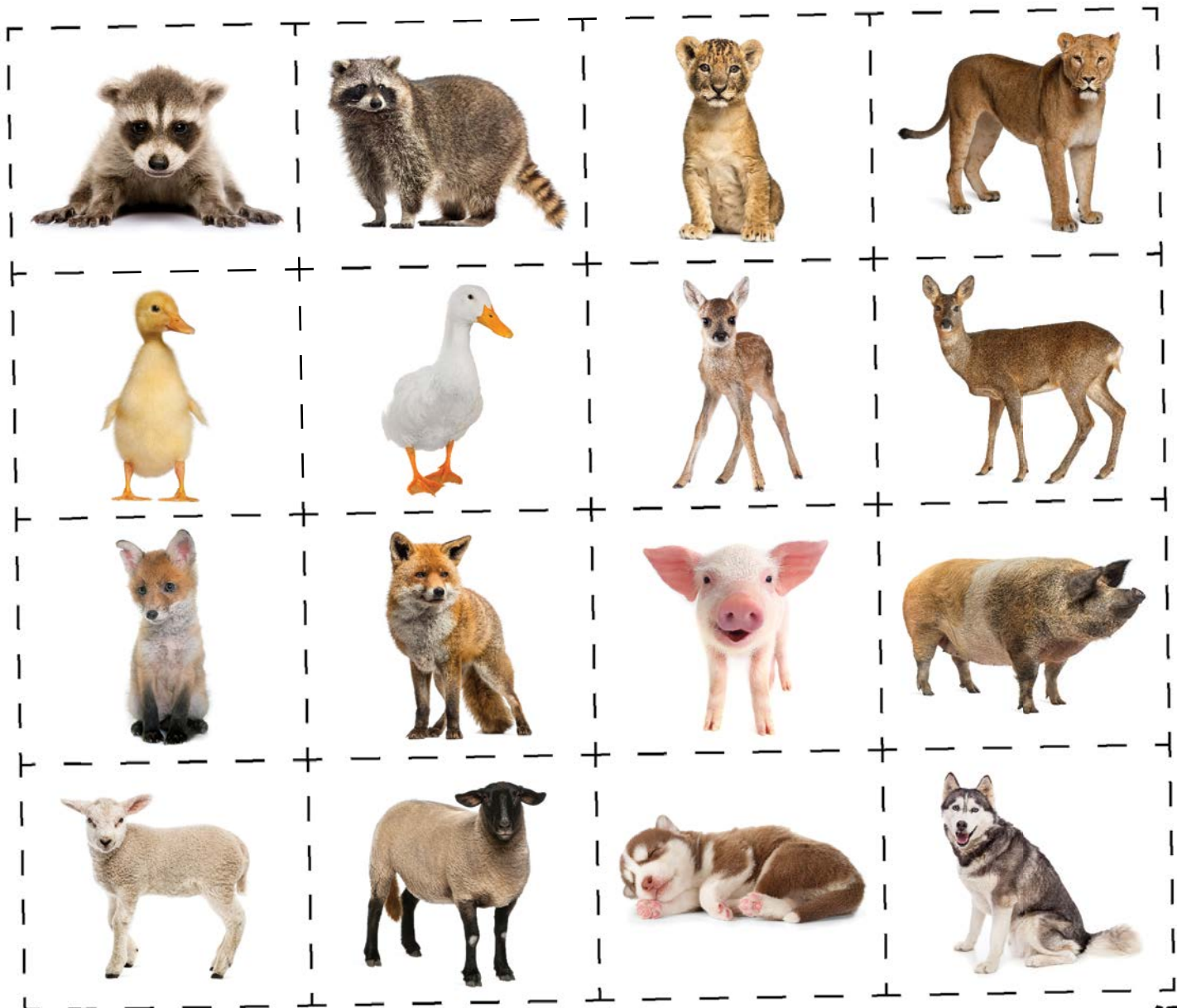
When you exercise, you make your muscles get stronger. When you use your brain it gets stronger, too. The more you do things like reading and practicing your math facts, the easier they become. Then you can go on and learn even more things. Be glad that God gave you a special brain. And be sure to exercise it every day.



- ? Can you exercise your brain?
- ? What is one way you have exercised your brain today?

 **Memory Games**

Cut out the memory cards. Notice that there are pictures of mother animals and baby animals. Make sure you know which baby goes with which mother. Mix the cards up. Place them face down on the table in two rows. Turn over two cards. If they are a mother and baby that match, you can keep the cards. If not, turn them back over and turn over two more cards. Continue playing until you match all of the cards.



Now play another memory game. The first person must name a food. The second person must repeat that food and name a different food. The next person repeats both foods and adds another food to the list. Continue taking turns repeating the list and adding to it. When players cannot correctly remember the list they are out of the game. Continue until only one person remains. You can repeat the game listing animals, colors, or any other items that sound fun.

Playing these games is good exercise for your brain.



Reflexes and Nerves

Lesson 14

Close your eyes. Let someone hand you something. Keep your eyes closed. Try to describe the item. How does it feel? What is its shape? Can you tell what it is?

You could tell its shape and size because you could feel it. You can feel things because your

skin contains nerves. Nerves are special cells that take messages to and from the brain. When you touch something, the nerves in your hand feel it. They then tell your brain about it. Then your brain sends a message to your hand. It might have you pick the item up. Nerves help you pick up a pencil or pet a soft puppy.

If you touch something that is very hot, you need to move your hand away very quickly. You don't have time for a message to get all the way to your brain and back to your hand before you get burned.



God designed your body with the ability to move very quickly when you are in danger. This very quick movement is called a

reflex. The message for a reflex only travels to your spinal cord instead of to your brain, so it is faster.

What happens when something is flying at your face? You are sure to close your eyes quickly. This is another type of reflex. God made your body to be safe in this fallen world.

- ? What is in your skin that helps you feel things?
- ? What did God design your body with that helps you move quickly?
- ? Can you remember a time when your reflexes protected you?



Testing Your Reflexes

Sit in a chair with one leg crossed over the other. Have someone gently strike your leg just below the kneecap with the side of his hand. If you are relaxed, you should see your leg kick out even though you didn't mean for it to. This is a way to test if your reflexes are working.

The Five Senses

Lesson 15

There are five ways that your body tells your brain what is going on around you. These are called your five senses. Your five senses are touch, sight, hearing, taste, and smell.

When you feel something, you use your sense of

touch. You mostly use your hands to feel things. But you can feel with other parts of your body, too. The only parts of your body that cannot feel anything are your fingernails, toenails, and hair.

You use your eyes for

sight.

You use your ears for

hearing.



Scripture Trace

I praise you, for I am fearfully
and wonderfully made.

Psalm 139:14



Senses Worksheet

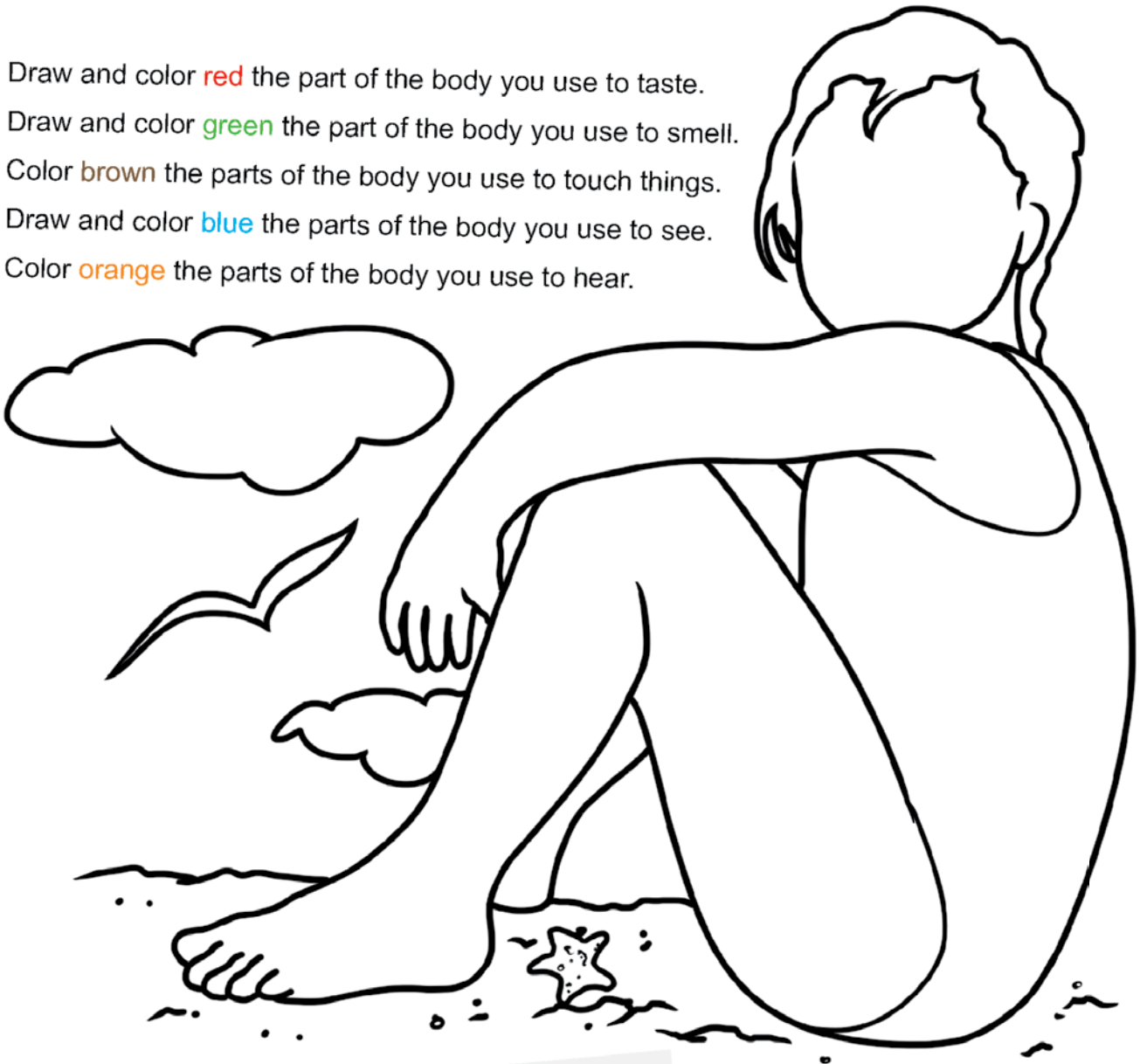
Draw and color **red** the part of the body you use to taste.

Draw and color **green** the part of the body you use to smell.

Color **brown** the parts of the body you use to touch things.

Draw and color **blue** the parts of the body you use to see.

Color **orange** the parts of the body you use to hear.



- ? Which part of your body helps you taste things?
- ? What helps you smell things?

The Eye

Lesson 16



Your eyes let you see the world around you. Look at your eye in a mirror.

You should see a dark circle in the middle of your eye.

This is called the

pupil.

The pupil lets light into your eye. When the light is very bright, your pupil gets very small. This protects your eyes from too much light. When the room is very dark, your pupil gets very big to allow more light in. This helps you see even in the dark.

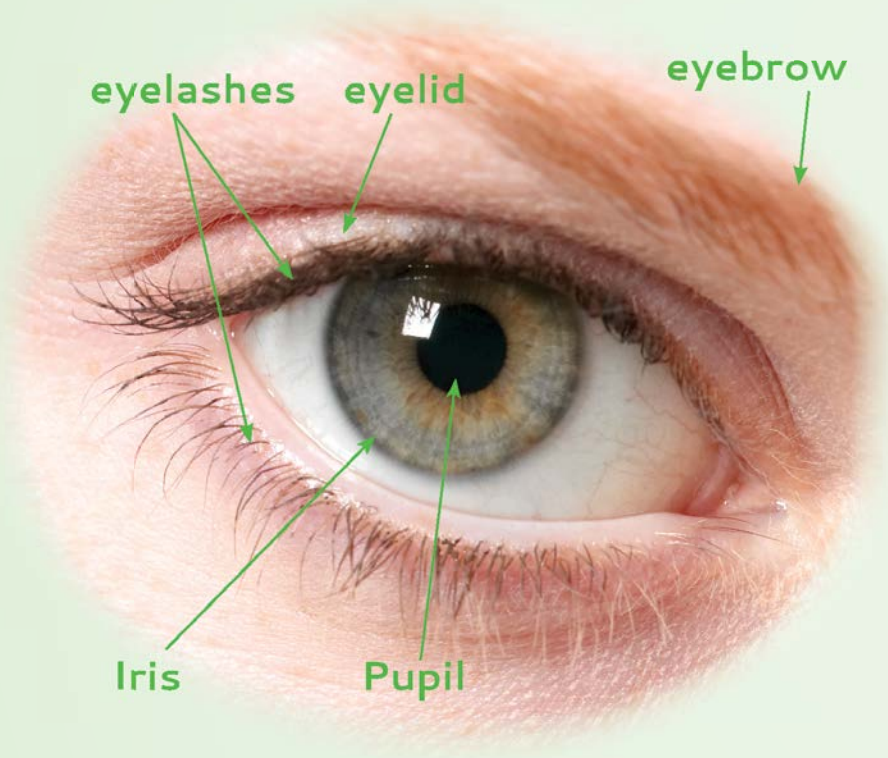


Around your pupil is a colored circle. This is called the

iris.

The iris controls how big your pupil is. Some people have blue irises. Others have brown or green irises. What color are your eyes?

You should also see eyelids, eyelashes, and eyebrows. These protect your eyes from dirt and other things that might get into them. The eyes God gave us are truly amazing.



- ? What happens to your pupil in a dark room?
- ? What do your eyelids, eyelashes, and eyebrows do?

The Ear

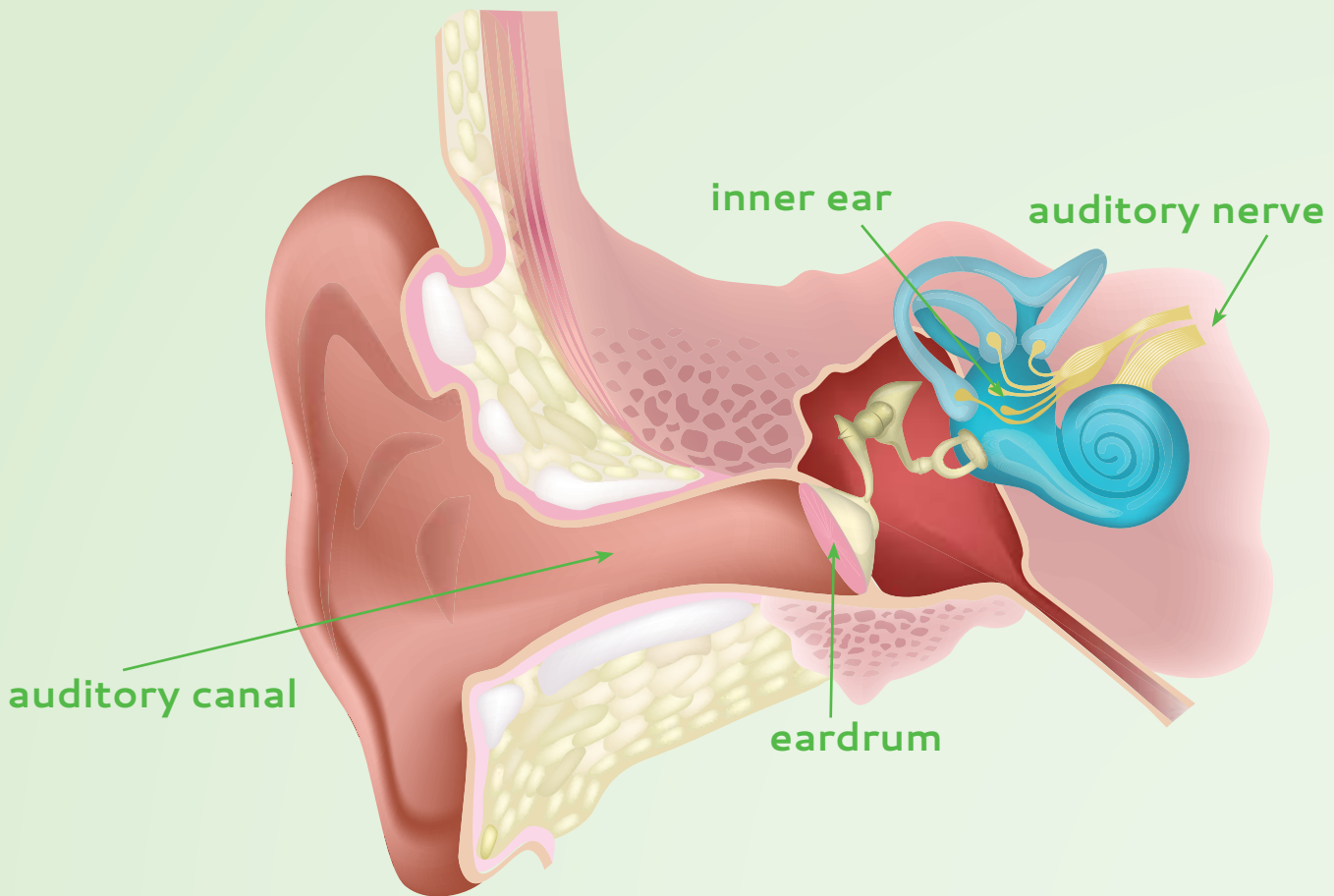
Lesson 17

Close your eyes. What do you hear? Do you hear someone talking? Do you hear your own breathing? Do you hear birds outside? Do you hear the refrigerator running in the kitchen? God designed your ears to hear even small sounds.



Only part of your ear is on the side of your head. The other parts are inside. The outside part collects sounds. The sound then pushes against your eardrum. This causes three tiny bones inside your ear to move. These three are the smallest bones in your body. The sound then moves to a nerve. This nerve carries the sound to your brain.





Some people cannot hear. If you cannot hear, it is hard to learn to speak. These people learn to speak using their hands. This is called sign language.

Look at the diagram to see where all of these parts are inside your ear.

- ? Is there more to your ear than what you see on the outside?
- ? How do people who cannot hear learn to speak?

Taste and Smell

Lesson 18



So far you have learned about three important senses—touch, sight, and hearing. Today you will learn about two more senses that you enjoy every day. These are

taste and smell. Imagine your favorite food. What does it taste like? You taste things with your tongue. Your tongue has special cells called taste buds. Taste buds send signals to your brain. These signals let you taste what is in your mouth.

Your tongue can taste different tastes. Candy, ice cream, and cookies are sweet. Chips and popcorn usually taste salty. A lemon is very sour. Unsweetened cocoa is very bitter. We have to add sugar to cocoa to make chocolate taste delicious. Most foods are a combination of these tastes.



smell

Think about how your favorite food smells. The smell enters your nose. Special cells in your nose send signals to your brain. Then your brain can decide what you are smelling. Your sense of taste and smell work together. They both help you enjoy the food that you eat. When you have a bad cold, your nose gets stuffy. You cannot smell your food very well. And the food does not taste as good as it will when you are well. So, enjoy the tastes and smells of the things God has given you to eat.

- ? What are the different flavors your tongue can taste?
- ? Have you ever injured your tongue? What did it feel like?













Smell Detective

Collect several items with strong smells. Close your eyes. Have someone hold an item near your nose. Sniff the air. How many items can you identify just by smell?



Match the Senses

Put a ✓ in the boxes that match the objects to the senses you use to interact with those objects.

Taste Without Saliva

Dry your tongue with a paper towel. Now sprinkle a little sugar on your tongue. Can you taste it? Probably not. Your taste buds can only taste things that are dissolved in saliva. This is why your mouth starts to water when you get ready to eat something you like.



Unit Vocabulary Review

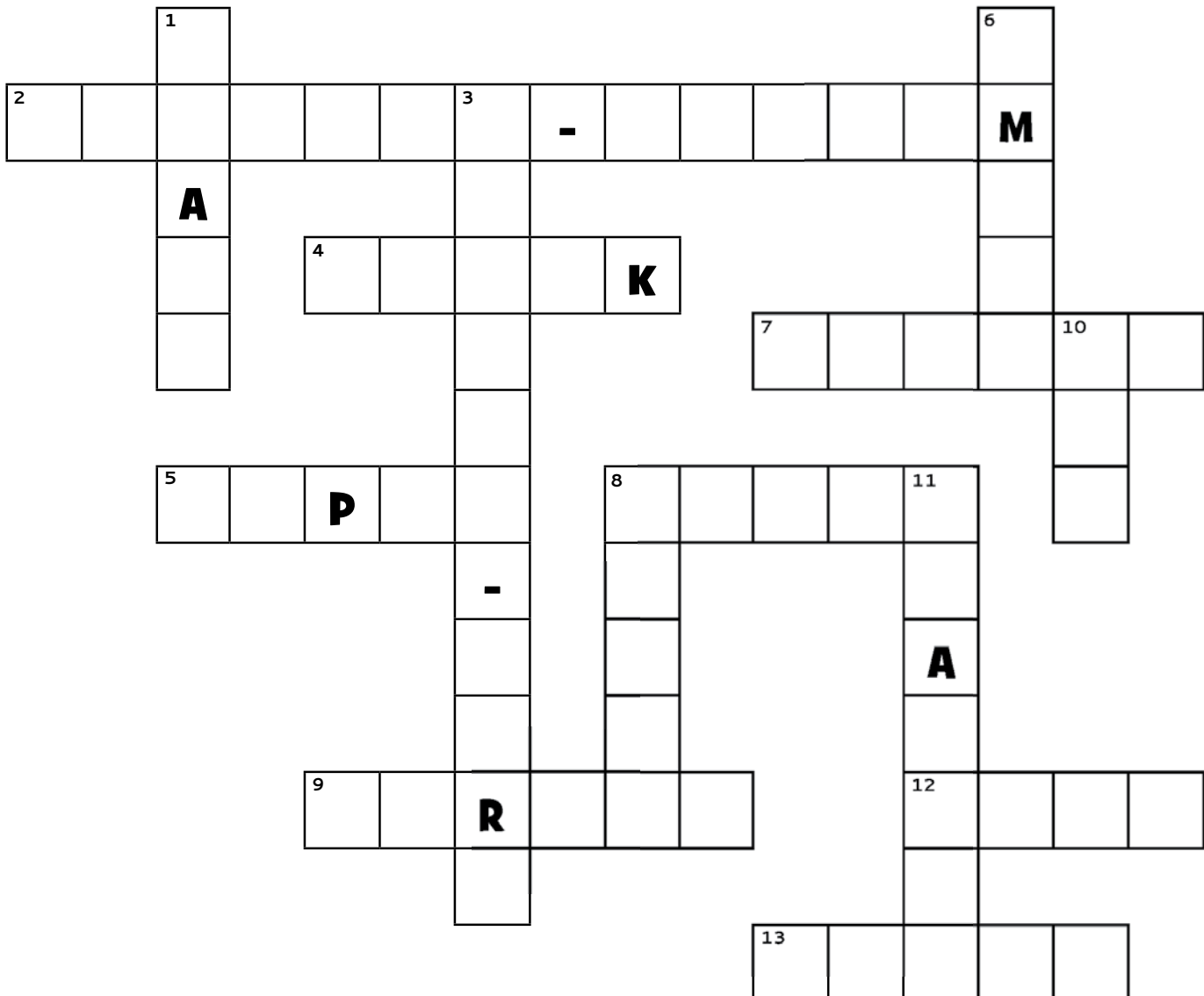
Complete the crossword puzzle by using the clues.

DOWN

1. Organ you think with.
3. Found in the center of your backbone.
6. Your nose does this.
- 8d. Your tongue does this.
10. You hear with this.
11. Use your ears for this.

ACROSS

2. "Highway" that carries messages to your body.
4. Do this with your brain.
5. Dark area in the center of your eye.
7. Very quick reaction to danger.
- 8a. Your hands do this.
9. Cells that send messages in your body.
12. Colored part of your eye.
13. The sense that uses your eyes.



UNIT
4

Digestion



GOD'S
DESIGN®

Lessons 19-23

Human Body
for Beginners

Lesson 19

The Digestive System



Your body needs energy to move and play. You get this energy from the food you eat. The part of your body that gets

energy from food is your digestive
system.

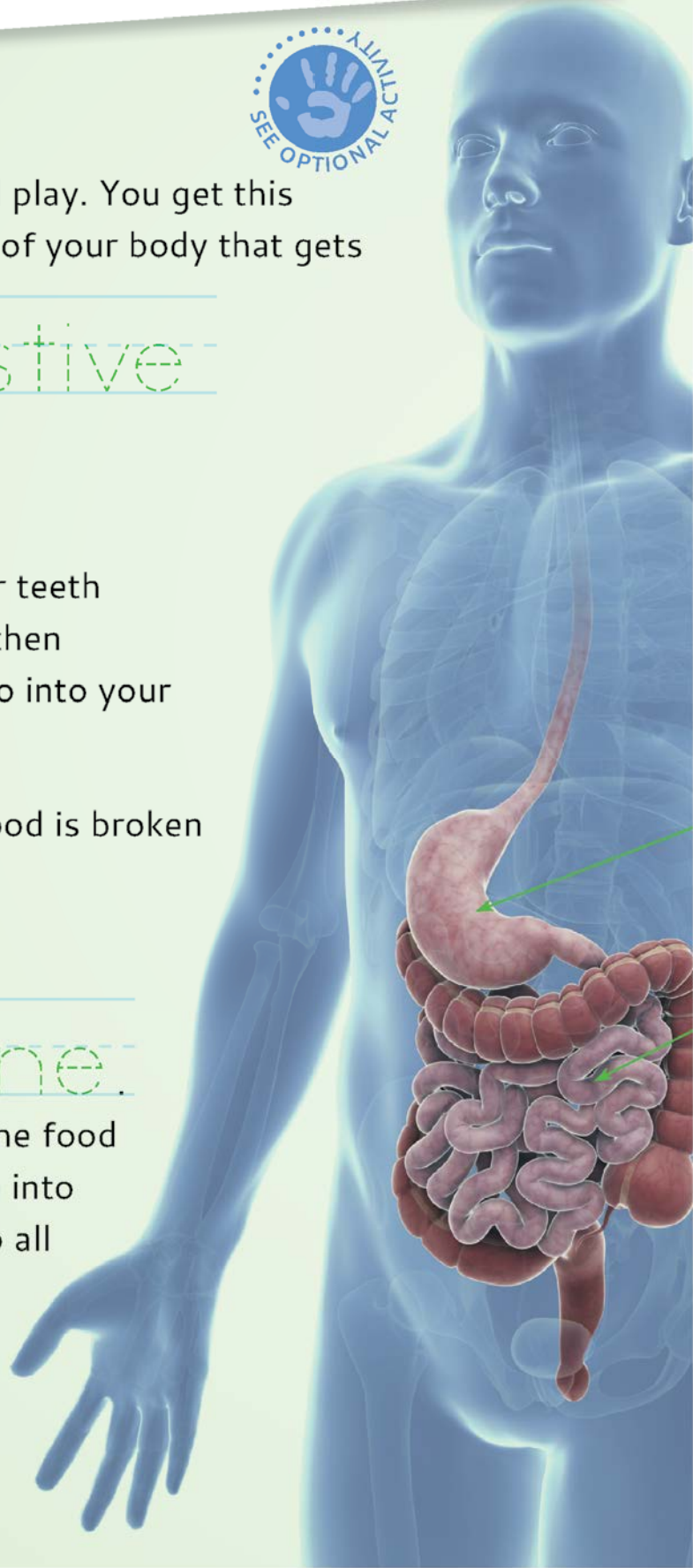
Digestion begins in your mouth. Your teeth break your food into small pieces. You then swallow the food. These small pieces go into your

stomach. There the food is broken up into very tiny pieces.

Next, the food goes into your

small intestine.

Your small intestine is a long tube. As the food moves through this tube, tiny bits move into your blood. The blood takes the food to all parts of your body. This food gives you energy.



Some parts of what you eat cannot be used for energy. These parts pass out of the small intestine into another tube

called the large intestine.

Then the unused parts pass out of your body when you go to the bathroom. You need to eat the right foods. This will give your body the energy it needs.



stomach

small intestine

large intestine



- ? Can you name at least three parts of the digestive system?
- ? What is your favorite food to eat?

When you smile, you show your

beautiful 

to the world. Your teeth are important. They help you eat your food. You bite into food with your teeth. You then chew your food into small enough pieces to swallow. The teeth in the front of your mouth are sharp.

This makes them good for biting into things like apples and corn on the cob. The teeth in the back of your mouth are more flat. They are good for grinding your food into small pieces.

God designed your mouth so that you grow two sets



name

of teeth. You get your first tooth when you are a baby. So your first set of teeth are often called baby teeth. You should have about 20 baby teeth in all. As you get older, your mouth gets bigger. But your teeth do not grow. So your baby teeth begin to fall out. This makes room for bigger teeth to grow. Have you lost any teeth yet?

- ? How are the teeth in the front of your mouth different from the teeth in the back?
- ? Why are teeth important?



Count Your Teeth

Look at your teeth in a mirror. Notice the shapes of your teeth. The ones in front have sharper edges. The ones in back are rounder. And they have a flat bumpy surface.

Count and see how many teeth you have. Ask your parents to count their teeth. Do they have more teeth than you do? Most first and second graders have 20 to 24 teeth. Most adults have 32 teeth.

Lesson 21

Caring For Your Teeth



You need to take good care of your teeth. It is important that you

brush your teeth at

least twice a day. This helps to get rid of any bits of food that are stuck on your teeth. This will help to keep you from getting tiny holes in your teeth called cavities.

name

floss

You should also use dental floss. Dental floss is special string you can use to clean out between your teeth. If you clean your teeth every day, it will help to keep your teeth healthy and strong.

You should also visit your dentist. Your dentist can clean your teeth even better than you can at home. Dentists can also check for cavities in your teeth. If you get a cavity, the dentist can fix it.

You need to eat and drink the right foods to keep your teeth healthy. If you eat healthy foods, your teeth will be strong. Sugar that stays on your teeth can cause cavities. So you need to brush your teeth after you eat or drink sweet things.

Brushing Your Teeth

Stand in front of a mirror and practice brushing your teeth. If you are not sure the right way to do it, ask your parent. After you are done brushing, have your parent teach you how to floss your teeth. These are important habits to have to keep your teeth strong and healthy.



- ? Why should you brush and floss every day?
- ? How do dentists help us?

Lesson 22

Eating the Right Foods

Do you like cookies and candy? Most kids do. But your parents

probably want you to eat more fruits and

vegetables. This is because fruits and vegetables have more of the things your body needs. Cheese, yogurt, and bread are good for you, too. Many sweet

snacks do not have a lot of what your body needs.

Foods have been divided into groups. One group contains bread, crackers, and cereal.

Another group has fruits and vegetables. The third group includes milk, cheese, and yogurt.

And the last group has meat, fish, nuts, and dried beans.

Each of these groups provides different



name

things that your body needs. You need to eat some foods from each group every day. There is not a group for cookies, candy, or soft drinks. So you should only eat these types of sweet treats in small amounts from time to time.



Healthy Lunch

Eat a healthy lunch by making a happy face with your food. Place broccoli pieces or carrot sticks at the bottom of your plate. Arrange them to make a smile. Use apple slices for ears. Crackers with peanut butter can be the eyes. Raisins can be used to make a nose. Add a glass of milk and you have a healthy, happy meal.



- ? Why should you not eat treats all day?
- ? What are some healthy foods that you like to eat?

Lesson 23

Vitamins and Minerals

You need to eat many different kinds of food because different foods provide different things that your body needs. Foods provide energy. They also give you building blocks to make new cells in your body.

Vitamins and minerals are important things you get from your food. Vitamins are usually given letter names such as vitamin A or vitamin B. Eggs and milk give your body vitamin A. Meat and most vegetables give your body vitamin B. Oranges and tomatoes give your body vitamin C. Of course, these are not all the vitamins God made for your body.

Foods also contain minerals. These often have names that sound like

metals. One mineral that your body needs is iron. You don't eat a nail to get iron. Instead, you can eat meat or dried beans to get the iron you need. You get calcium from milk and cheese. You get potassium from bananas.

Eating different foods is a good way to make sure you get what you need to keep you healthy.



name

- ? What are two things you learned that you get from your food?
- ? What kind of names do vitamins normally have?



Vitamin Coloring Sheet

Color the picture of Captain Vitamin and First Mate Mineral on their ship.





Unit Vocabulary Review

Put a star next to each word that has the correct definition next to it. Put an X next to any words that do not have the correct definition.

_____ **Digestive System** – how your body gets energy from food

_____ **Stomach** – where your teeth are

_____ **Small intestine** – tube that moves food into your blood

_____ **Large intestine** – tube that gets rid of unused food parts

_____ **Teeth** – what you have at the end of your fingers

_____ **Brush** – what you should do to your teeth every day

_____ **Floss** – string for cleaning between your teeth

_____ **Fruits and Vegetables** – foods such as bananas and broccoli

_____ **Snacks** – what you should eat as much of as possible

_____ **Vitamins** – important parts of food that have letter names

_____ **Minerals** – important parts of food that have metal names

UNIT
5

Heart and Lungs



GOD'S
DESIGN®

Lessons 24-28

Human Body
for Beginners

Lesson 24

The Circulatory System

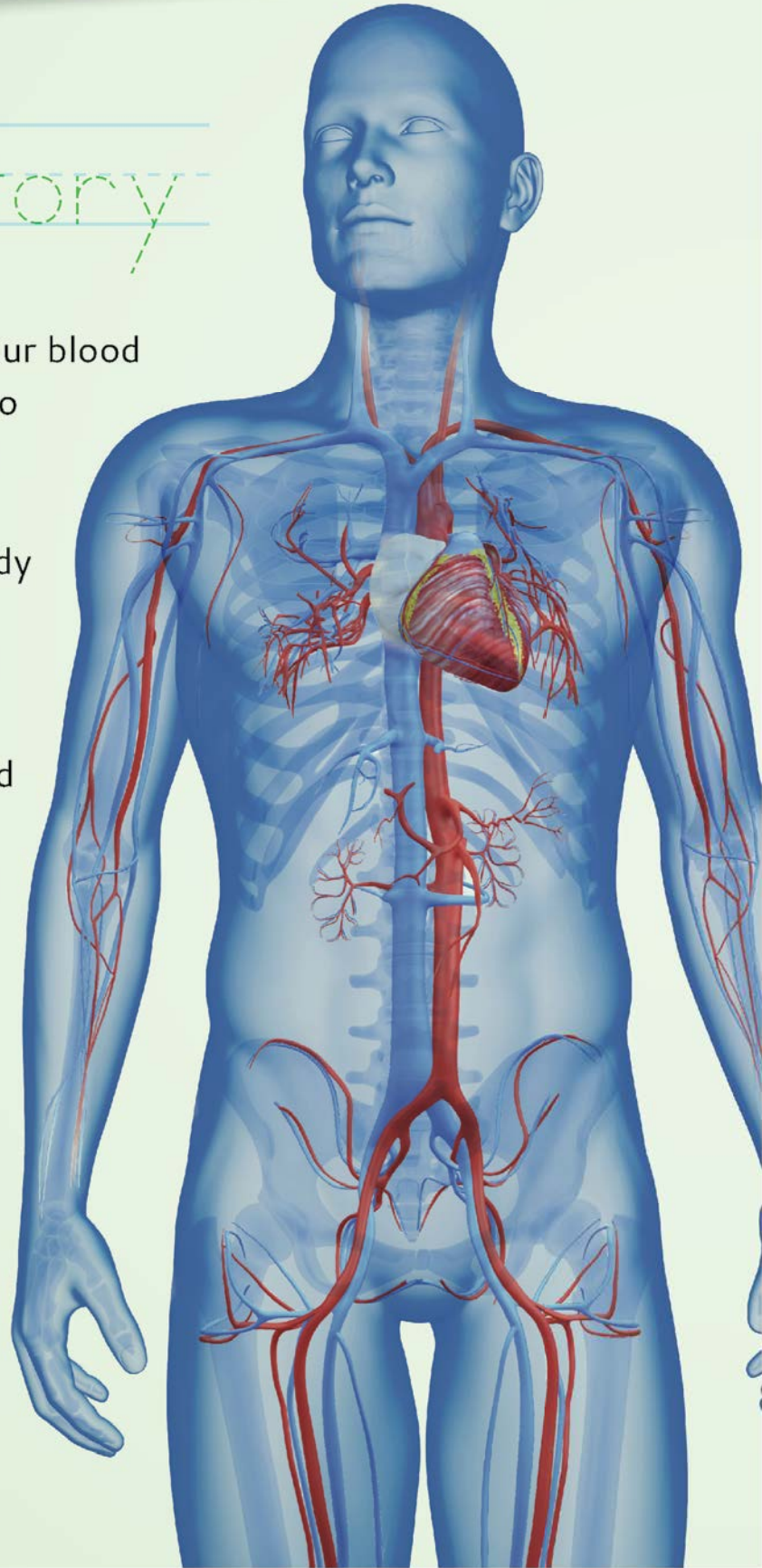
The

circulatory

system

moves your blood around. The blood takes food to every part of your body. This is how your body gets energy. Blood takes oxygen to your body as well. Blood also picks up things your body doesn't need. Carbon dioxide is something your body does not need. Blood picks up carbon dioxide and takes it to the lungs. There the carbon dioxide can leave your body when you breathe out.

Your heart is what makes the blood move. Your heart is a muscle that acts like a pump. It pushes the blood through tiny tubes that go away from the heart called



name

arteries. First the heart pushes blood to the lungs. There, carbon dioxide leaves the blood and oxygen enters the blood. Then it is pushed throughout the rest of the body. This blood

returns to the heart through more tubes called

veins.

- ? Name two things your blood helps to move around.
- ? What organ pumps your blood?



Feeling Your Pulse

You can feel your heart pushing your blood by feeling your pulse. You can feel your pulse on the inside of your wrist just above your thumb. Place a finger on your wrist. You should feel a bumping under the skin. The bumps are caused when the heart squeezes the blood out. Feel your pulse for a few seconds. Think about how fast your heart beats.

When you exercise your heart has to work harder. So it beats faster. Run in place for 1 minute. Now feel your pulse. Is it faster than it was before? It should be.

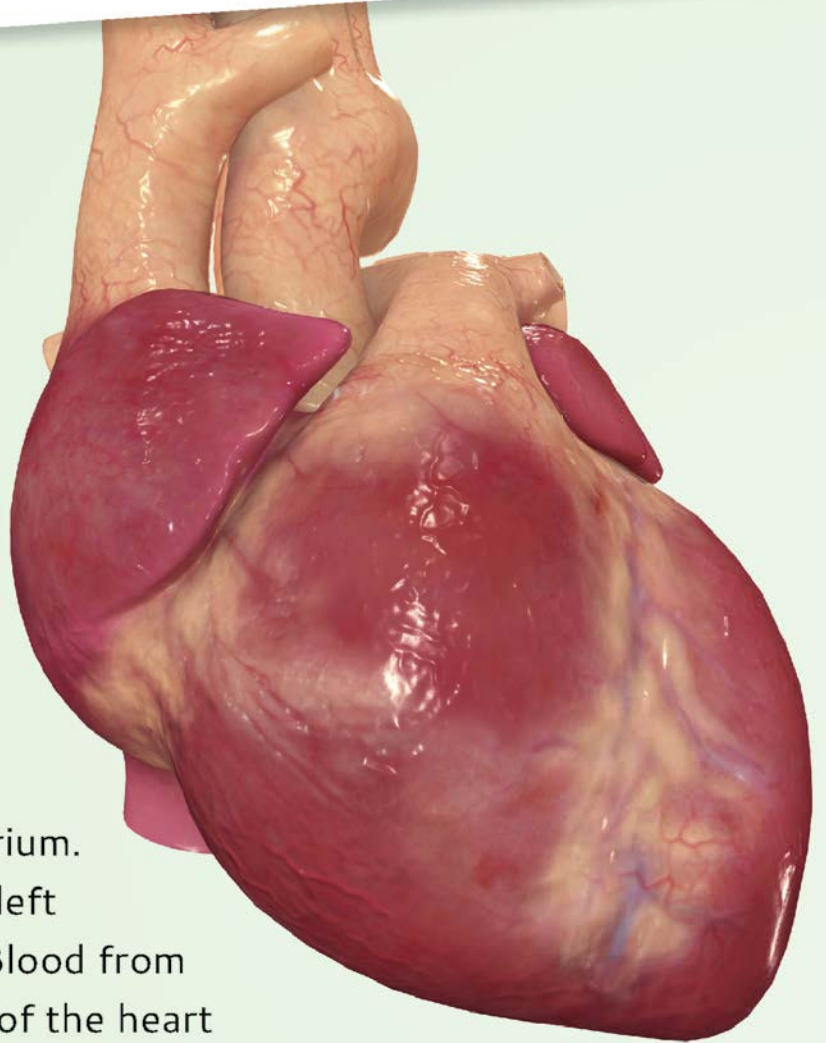
Lesson 25

The Heart

Your heart is a very strong muscle. Did you know it is about the size of your fist? God placed it in the middle of your chest where it is protected by your ribs.

Your heart has four parts which are like little rooms. The top rooms are called the left atrium and right atrium. The bottom rooms are called the left ventricle and the right ventricle. Blood from all over your body enters the top of the heart on the right side. It then flows into the bottom of the heart where it is squeezed out to go to the lungs to get rid of carbon dioxide and get oxygen. Blood comes back from the lungs and enters the top of the heart on the left side. It then flows into the bottom part of the heart and is squeezed out to go to all the other parts of the body.

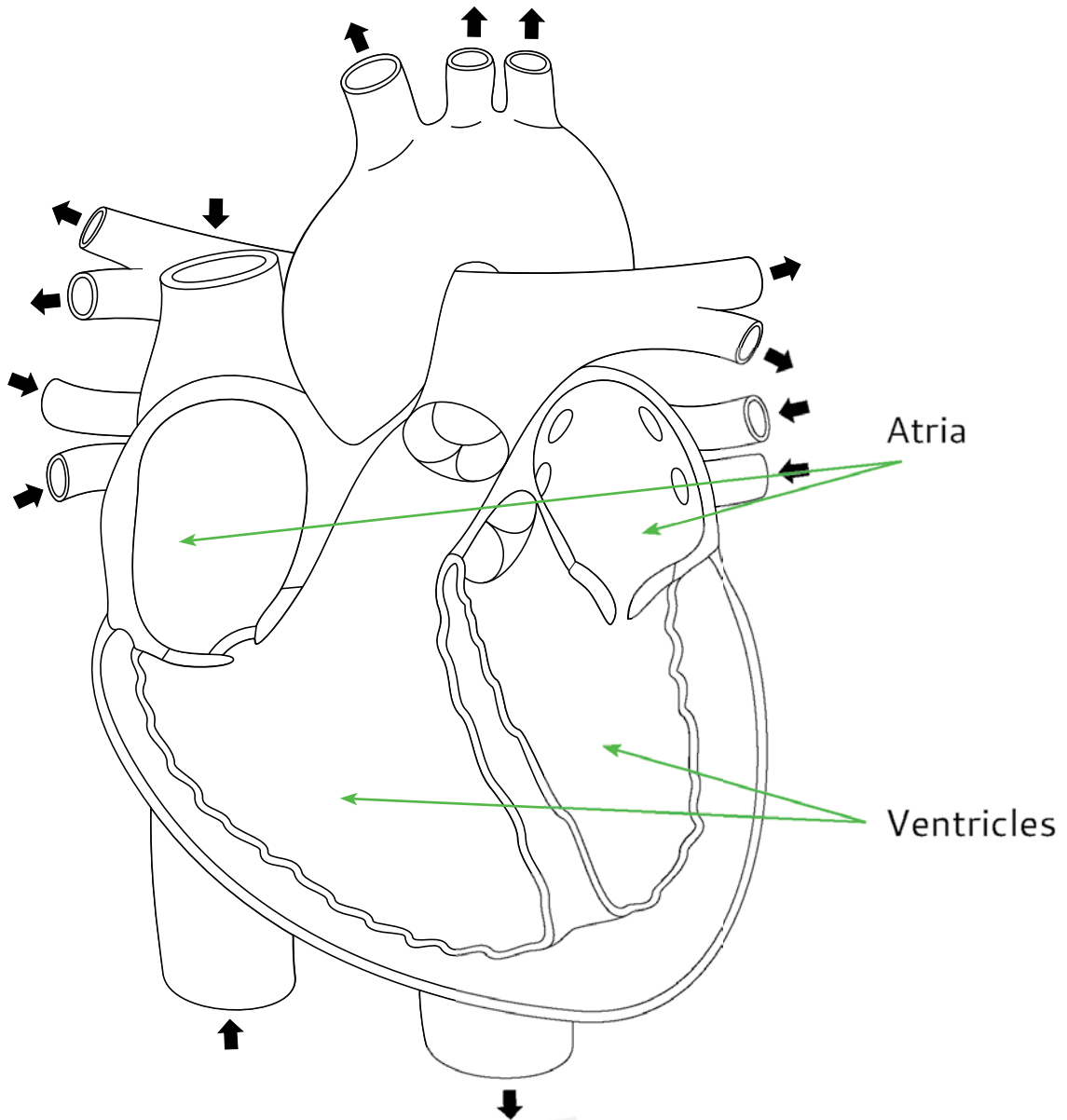
Your heart works very hard for you. It pumps all day long. Then it pumps all night long. It never stops. God designed your heart to be strong enough to pump all the time for your whole life. You can make your heart even stronger by exercising. Aren't you glad God gave you such a special heart?





Heart Coloring Sheet

Look at the shapes of the different "rooms" in the heart.
Color each room a different color.



- ? How many parts does the heart have?
- ? What can you do to make your heart stronger?

Lesson 26

Blood

Your blood contains four important things. Plasma is a yellowish liquid that all the blood cells float in. Red blood cells look like small round disks. These cells carry oxygen and food to the body. And they carry carbon dioxide away. There are many more

red blood cells than any other type of cells in your blood.

White blood cells help protect you from germs. Germs can make you sick. So God made white blood cells to get rid of them.

White blood cells quickly surround a germ.

They destroy it so it cannot hurt you. This helps to keep you from getting sick.

Platelets are cells that help you stop bleeding when you get a cut. These little cells rush to the cut. They help seal it off. Platelets help form a scab so your cut can heal.



Blood Cell Matching

Match each type of blood cell with the pictures that best show what that cell's job is. Remember that red blood cells carry food and oxygen to the other cells in the body. White blood cells capture and get rid of germs. Platelets quickly cover cuts to stop the bleeding.



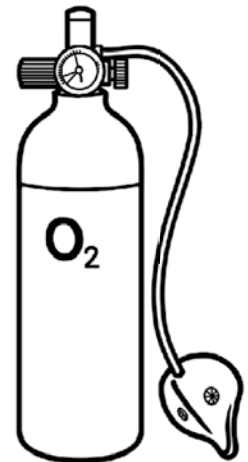
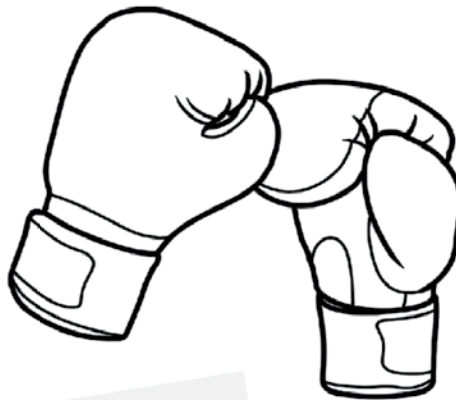
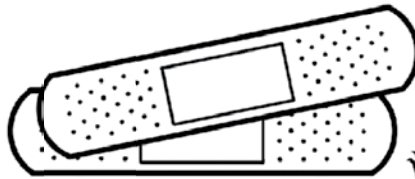
Randy Red



Winston White



Patty Platelet



- ❓ What do red blood cells do?
- ❓ What do white blood cells do?

Lesson 27

The Respiratory System

Take a deep breath and hold it as long as you can. Eventually you have to let your breath out. When you breathe air in, you take in the oxygen your body needs. When you breathe air out, your body gets rid of carbon dioxide that you do not need. Your body needs oxygen to function. It gets that oxygen from the air you breathe. So you can't go very long without breathing.

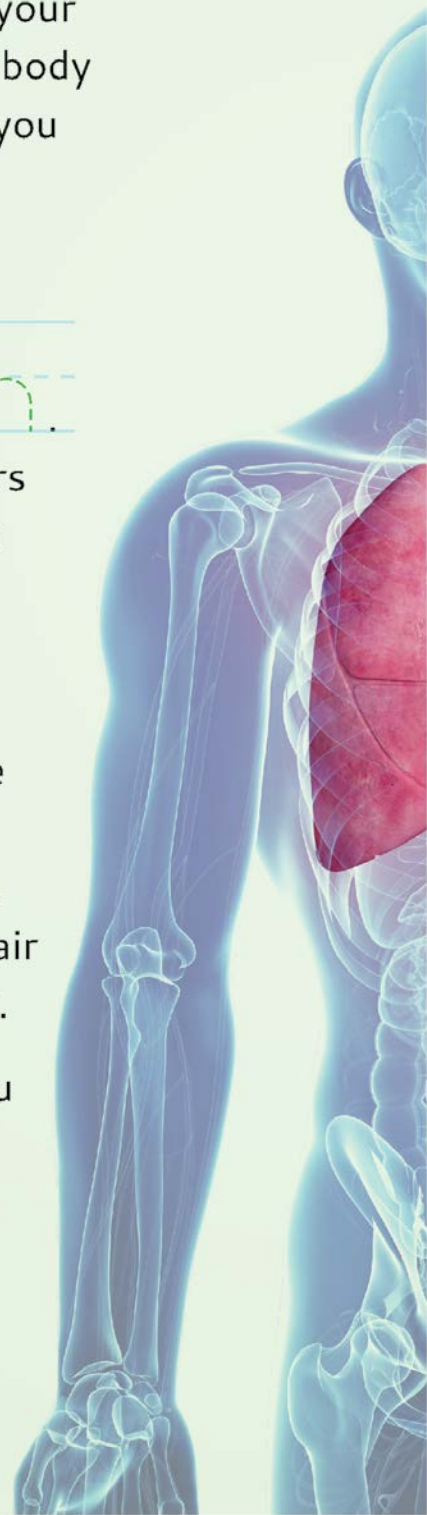
The part of your body that helps you breathe is your

respiratory system.

This system includes your nose, throat, and lungs. Air enters through your mouth or nose. It goes down your throat into your lungs.


Your lungs are filled with tiny sacs. These sacs are surrounded by blood vessels. Inside the sacs, oxygen leaves the air and enters the blood that surrounds the sac. Carbon dioxide leaves your blood and enters the air in the sac. Then it leaves your body when you breathe out.

Your respiratory system is also important for helping you talk and sing. The air passing through your throat can be used to make noise. The muscles in your throat and mouth allow you to make just the right sound. This allows you to talk and sing.





Exchange Activity



One person should stand on one side of a partially closed door. Another person should stand on the other side. Both people should be able to see through the crack between the door and the door frame. The person on the inside of the room is in the lungs. The person outside the room is in the blood vessel. The person in the lungs should have a stack of red paper. The red paper is oxygen. The person outside the room should have a stack of blue paper. The blue paper is carbon dioxide. Each person should pass one of their papers to the other person through the crack. This is an exchange of oxygen and carbon dioxide. The exchange should continue until all of the oxygen is in the blood and all of the carbon dioxide is in the lungs. The carbon dioxide is now ready to leave the body when the air leaves the lungs. The oxygen is ready to be taken to other parts of the body by the blood.

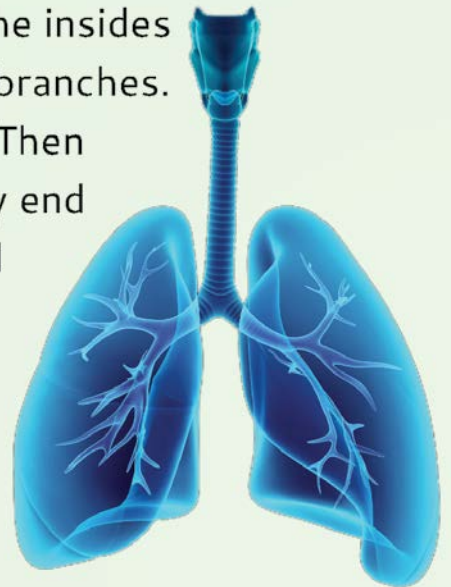
- ❓ What do you take in when you breathe in?
- ❓ What leaves your body when you breathe out?
- ❓ How long can you hold your breath?

Lesson 28

The Lungs



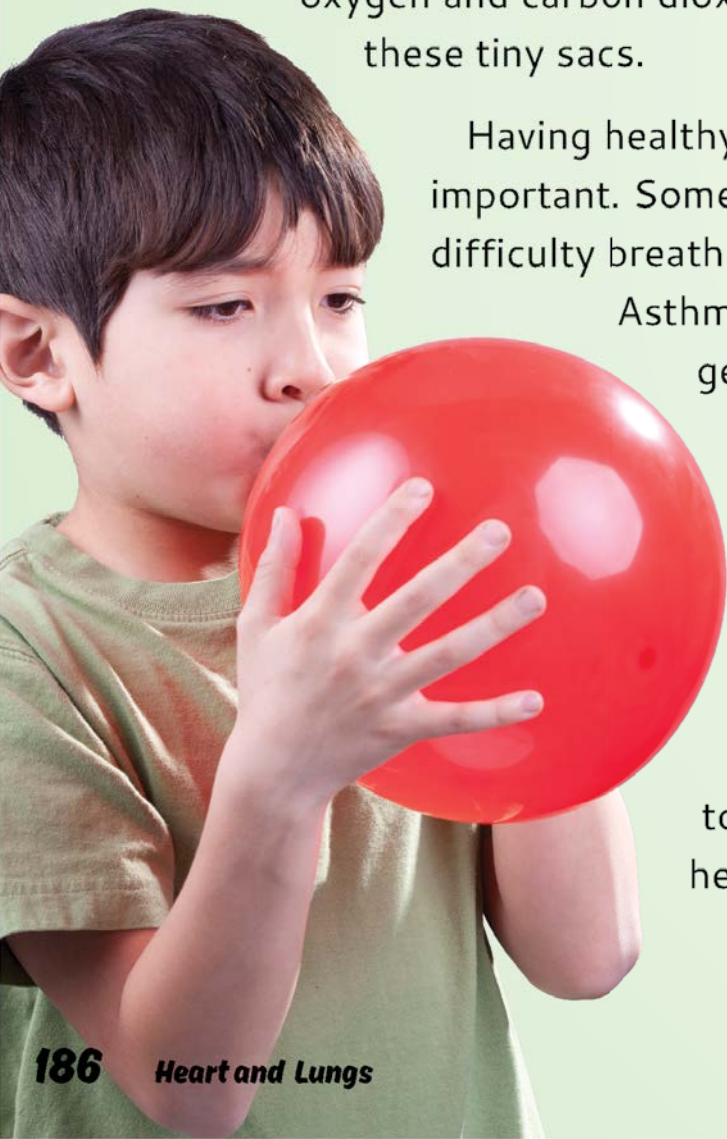
Many people think that their lungs are like balloons. They think they are empty until you fill them with air. But the insides of your lungs really look more like a tree with hollow branches. The tubes going into your lungs start out fairly large. Then they divide into smaller and smaller tubes. Finally they end in tiny sacs. So the insides of your lungs are really full of millions of tiny air sacs. Look at the picture to see how the insides of your lungs look. The exchange of oxygen and carbon dioxide takes place in these tiny sacs.



Having healthy lungs is very important. Sometimes people get sick and have difficulty breathing. Some people have asthma. Asthma makes the tubes in the lungs get smaller. This makes it harder

to breathe.

One of the worst things that people do to hurt their lungs is to smoke cigarettes. You should do everything you can to keep the lungs God gave you healthy.





Count Your Breaths

Stand still and count how many breaths you take in one minute. Record that number on the chart below. Now run in place for one minute. Finally, count how many breaths you take in one minute and record it in the second column. How did the numbers compare?

Your breathing rate goes up when you exercise because your body uses oxygen more quickly. You breathe faster to get oxygen into your lungs. Your heart pumps faster too since blood carries the oxygen throughout your body.

Breaths Per Minute (standing)	Breaths Per Minute (running in place)

- ? Do the inside of your lungs look more like balloons or trees?
- ? What is one way you can keep your lungs healthy?



Unit Vocabulary Review

Unscramble the letters to form vocabulary words.

The first letter of each word is colored orange.

EHETAB**R**

breathe

NGL**SU**

SOTRAPY**I**RRE

RDE **O**BDLO **S**L**C**EL

ITHE**W** **L**B**D**OO **E**L**C**SL

LSP**A**MA

EH**R**TA

RCIATL**U**YO**C**R

TSR**I**R**A**EE

ISV**N**E

UNIT
6

Skin and Immunity



GOD'S
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Lessons 29-35

***Human Body
for Beginners***

Skin covers nearly every part of your body. Skin cells live about two to three weeks. So God made our body to make new skin cells.

Your skin helps to keep out things that shouldn't get into your body. It keeps out dirt and germs. Your skin also helps to keep things inside that should stay inside. It keeps your bones, muscles, heart, and blood inside. The inside of your body is much wetter than the outside air. Your skin helps to keep your body from drying out.

Your skin does other things, too. When you get hot, your skin produces sweat that helps to cool you off. Your skin also contains millions of nerves that let you feel the world around you. Finally, your

skin protects you from the harmful rays of the sun.

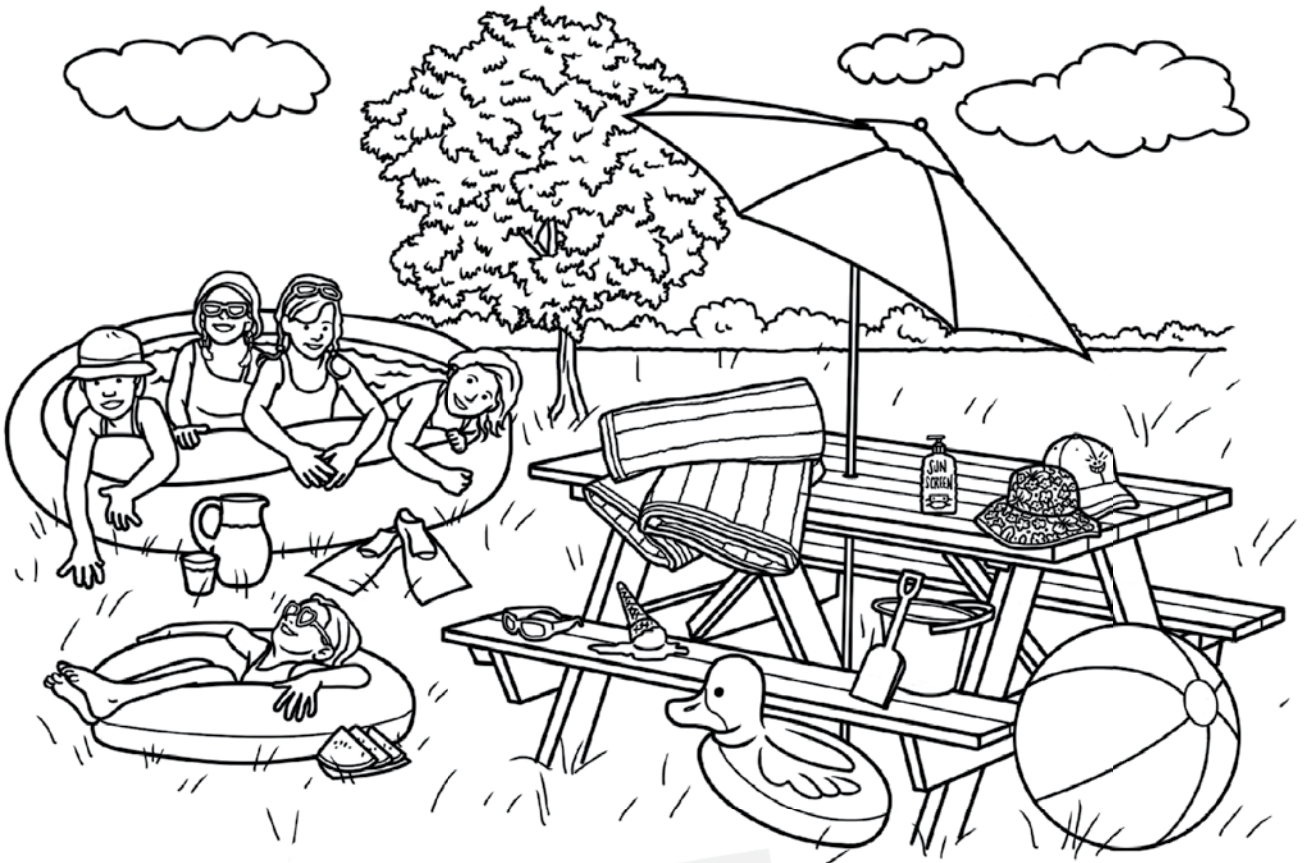
Your skin is stretchy and elastic. This allows you to move easily. It moves in every direction, and then goes back to its original shape. Be glad that God gave you such a special covering.



Protection from the Sun



Your skin helps to protect you from the sun. But you can still get a sunburn if you are out in the sun too long. Look at the picture of children at the swimming pool. Circle everything in the picture that could be used to help protect them from the sun.



- ? What are two things your skin protects the inside of your body from?
- ? How does your skin help control your temperature?

Lesson 30

What Is Inside My Skin?

The cells in your skin are very close together. This helps to keep things out of your body. Your skin also has many other things in it. It contains nerves so you can feel things. There are different kinds of nerves in your skin. Some nerves feel pain. Other nerves can feel pressure. And different nerves can feel if something is hot or cold.

Your skin also contains

sweat glands.

Sweat helps cool you off when you get hot. Your skin has oil

glands. This oil keeps your skin soft. Skin has hair in it, too. Many parts of your body have hair, not just your head. The bottom part of your skin contains

fat cells. This thin layer of fat helps keep you warm.

In one inch of skin, you have about 650 sweat glands and 1,000 or more nerve endings.

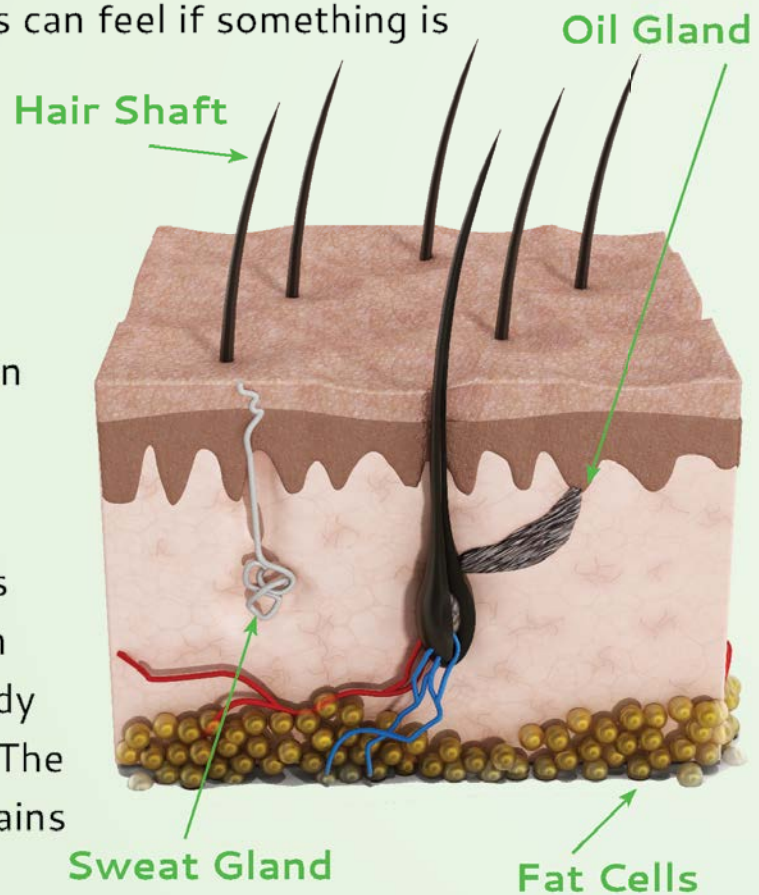
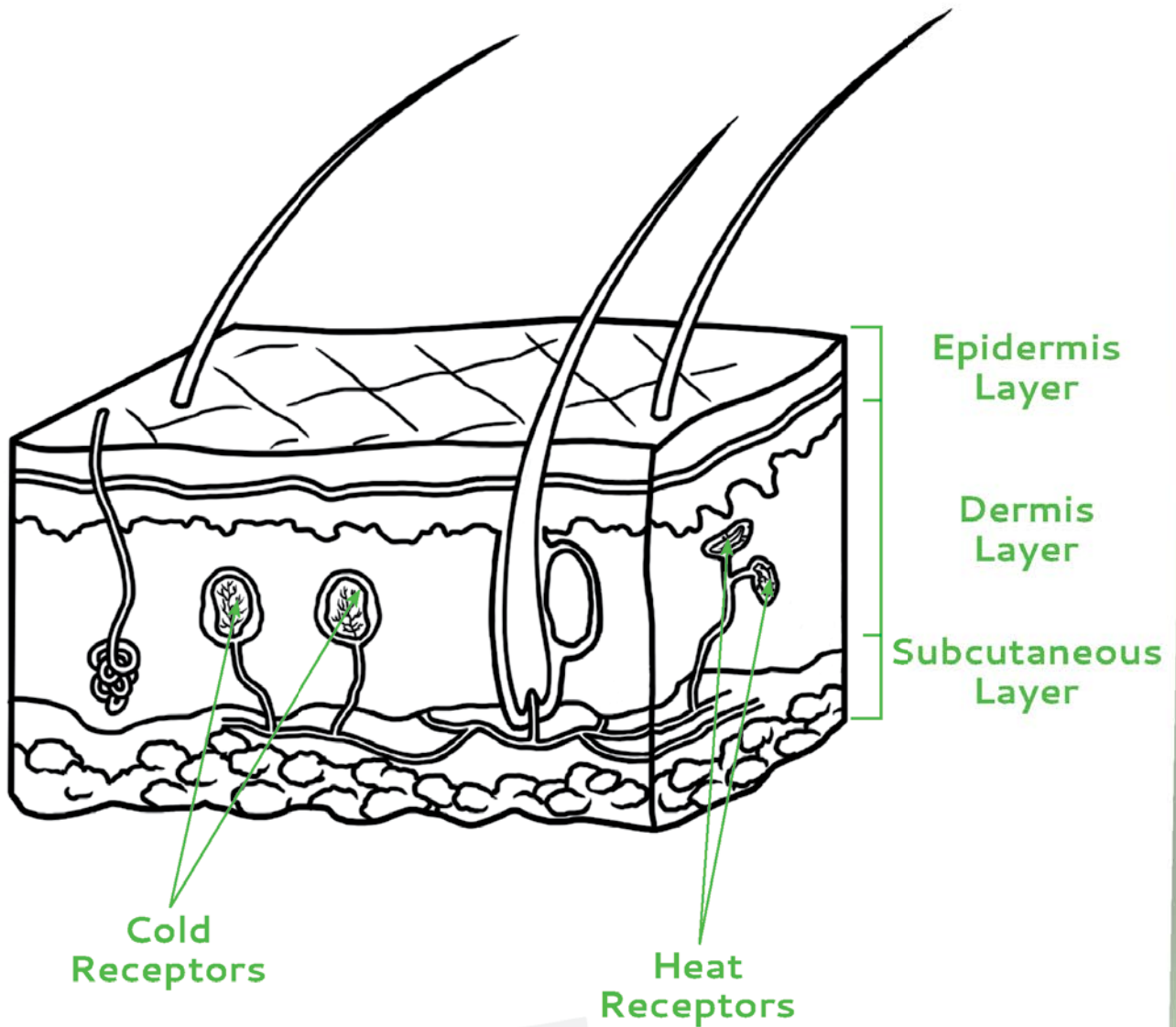




Diagram of Skin

Color the diagram of the skin layers.



- ? What can the nerves in your skin feel?
- ? Why do you have sweat glands?
- ? Why do you have fat cells?

Lesson 31

Skin Color

Have you noticed how some people have darker skin and some have lighter skin? The color in your skin comes from a substance called

_____ melanin _____

Melanin also gives hair its color.

We might call people “white” or “black,” but people are really just different shades of brown, depending on how much melanin their body makes.

God probably created the first people, Adam and Eve, with a middle brown skin color. Their bodies had a lot of information that they passed on to their children so they would have many different eye colors, hair colors, skin shades, and so on. Their children would have looked very different from each other.

So, there are not different “races” of people, but merely people that have different facial features and different levels of melanin. All people on earth are related. We all come from the first two people—Adam and Eve. And all people are special creations of God created in his image!

- ❓ What gives people their skin color?
- ❓ Are there really any “white” or “black” people?
- ❓ Who are all people made in the image of?

name



Scripture Trace

And he made from one man every
nation of mankind to live on all the
face of the earth. Acts 17:26a



What Do I Look Like?

Draw a picture of yourself. Then write several sentences describing your appearance. Talk about your eyes, hair, skin, height, etc.

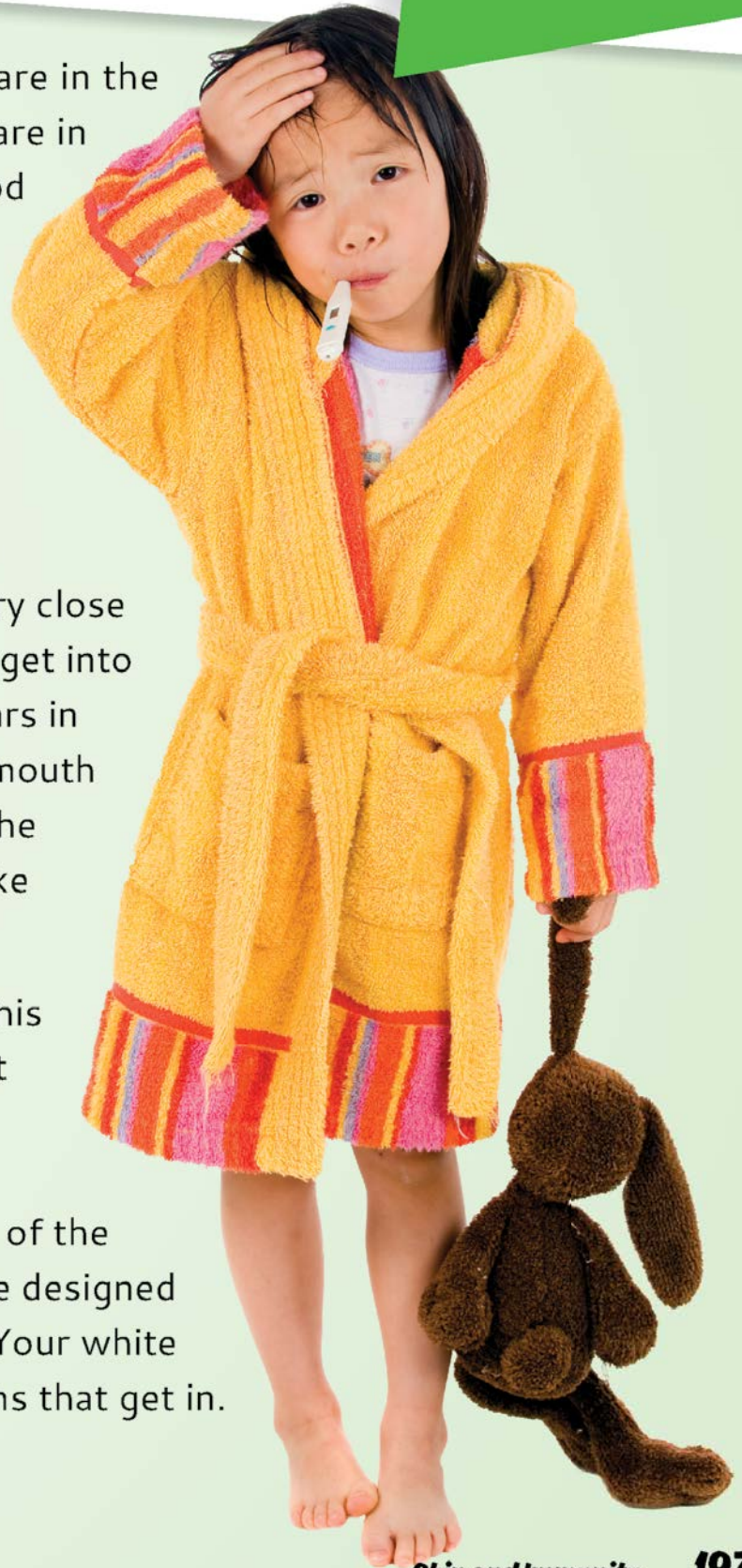
Staying Well

Lesson 32

Germs are everywhere! They are in the air. They are in the water. They are in the food you eat. Thankfully, God designed your body to take care of all the germs around you. Your skin keeps out almost all of the

germs around you. The cells in your skin are very close together. So almost nothing can get into your body through your skin. Tears in your eyes and the saliva in your mouth also help to get rid of germs. If the germs can't get in, they can't make you sick.

Sometimes germs do get in. This does not automatically mean that you will get sick. Your body can kill many of the germs that get inside. Do you remember the job of the white blood cells? These cells are designed to destroy invaders in the body. Your white blood cells can handle most germs that get in.



Even with all these defenses, sometimes germs will make you sick. When this happens, your body produces many more white blood cells. These new cells work until they kill all the germs. You may feel sick for a little while, but God designed your body to be able to fight off sickness. Aren't you glad?



Skin Keeps Out Invaders

Have an adult cut an apple in half. Cover one half with plastic wrap. This plastic wrap is like your skin. It covers the apple to keep things out that don't belong. Drop a few drops of food coloring on both halves. What happened to the food coloring? The food coloring soaks into the uncovered apple. But it just rolls off the covered apple. Most things cannot get through your skin. They just roll off.

Let the apple halves sit in the open for 1 hour. The uncovered half is probably starting to turn brown. But the wrapped half is still white. The plastic protects the apple. This is similar to how your skin protects your body. It keeps out invaders that might make you sick.

- ❓ What defenses does your body have to fight off germs?
- ❓ What happens inside your body when you are sick that helps you to get well?

Brothers and sisters usually look a lot alike. This is because they have the same parents. The instructions for how you will look came from your parents. The information for how your parents look came from your grandparents. This information is stored in a special part of the cells of your body. This part is called DNA.

The DNA tells your body what color eyes and hair you will have. It tells how dark your skin will be. It tells your body how tall to grow. Half of your DNA came from your mother. The other half came from your father. So you will probably look a lot like your parents.





Danny DNA

Color the picture of Danny DNA.



- ? What tells your body what color your eyes and hair will be?
- ? Where does the information for your parents' DNA come from?

Final Project

Lesson 34

You have learned about all of the major parts of the body. God gave you bones and muscles to help you move. He gave you a brain to control your nerves. Your nerves tell your muscles what to do. Your nerves help you smell, see, hear, taste, and touch things. God gave you a digestive system so you can get energy from your food. God gave you a heart to pump your blood. And your blood cells carry food and oxygen throughout your body. Isn't it amazing how God created your body so you can enjoy His world?



Body Poster

Lie down on a large piece of paper. Have someone trace around your body. Now draw the following parts of your body where they belong inside of you:

- Brain
- Eyes, ears, nose, and mouth
- Arm and leg bones and muscles
- Throat, stomach, small and large intestines
- Heart and lungs



Lesson 35

God Made Me Special

God created Adam and Eve with amazing bodies. Because of the Fall, however, our bodies no longer work as well as theirs did. We now get sick and eventually die. But our bodies are still very special. God designed them to work very well. As scientists learn more about the human body, they are amazed at how complex and beautiful it is. God created your wonderful body.



Scripture Trace

Thus says the LORD, your Redeemer, who formed you from the womb: "I am the LORD, who made all things, who alone stretched out the heavens, who spread out the earth by myself" Isaiah 44:24

name

Not only did God create you, but He also cares deeply for you. Go back and read all of the Scriptures you have traced in this book to see how much He loves you.



God Made Me Special

Make a list of some of the ways God made you special.



Unit Vocabulary Review

Color the vocabulary words.

SKIN

PROTECTS

SWEAT

OIL

FAT CELLS

MELANIN

GERMS

UNIT
1

Mammals



GOD'S
DESIGN®

Lessons 1-7

Animals
for Beginners

Lesson 1

World of Animals

Animals

Do you like animals? Most people do. They are very interesting. They come in all shapes and sizes.

Some animals are big, such as an elephant or whale. Others are small, such as butterflies and ants.

In the Bible, God tells us that he created the heavens and the earth, and he created animals according to their kinds (Genesis 1:24–25). We still see these kinds today!

You probably know the cat kind and the dog kind and the horse kind. Each kind of animal makes more animals like itself. Cats never give birth to dogs, and horses never give birth to elephants.

In this book we will be looking at many different animals and learning how God made each of them special.



name

- ? What are some of your favorite animals?
- ? What animals would you like to learn about?



Animal Charades

Make a list of animals you know, starting with big animals and ending with small.



Now, pretend to be each animal. See if anyone else can guess what animal you are.

Lesson 2

Learning about Animals

Some people study animals, plants, and other parts of nature for their job. These people are called

scientists.

Scientists share what they learn with others. Most of what we know about animals was discovered by scientists.

Scientists group animals by things they have in common. In this book we are going to be learning about some of these groups like mammals, amphibians, reptiles, birds, fish, and more!

- ? What are some things that animals have in common?
- ? How are animals different from one another?



name

Mice and horses may seem very different to you. One is small and one is big. But they both have eyes, ears, and mouths. They both have hair. And they both have tails.

There are many things that animals have in common.



Same and Different

Draw a circle ○ around the animals that have fur.

Draw a square □ around the animals that have feathers.

Draw a triangle △ around the animals that live in the water.



Lesson 3

What Is a Mammal?



Mammals

are animals that have fur or hair. Mice and bears are both mammals because they have fur. Most mammals give birth to live young, or babies. They also feed milk to their babies. This is called nursing.



Some mammal babies nurse for a few weeks, while others nurse for many months.

Lions, dogs, cats, horses, and cows have fur or hair, too. And there are hundreds of other mammals as well.

This fur often helps to keep the animal warm in the winter. Sometimes this fur helps the animal to blend in with its surroundings so it can hide from its enemies. God gave mammals their fur or hair.

If you have a pet that is a mammal, like a dog, cat, or hamster, look at its fur. How does it feel? Where does it grow on your pet's body? Do you think its fur helps to keep your pet warm?



name



Mammals Have Fur

Look closely at the pictures of these mammals. Circle the hair on each one. Some mammals have a lot of hair. Other animals have only a little hair.

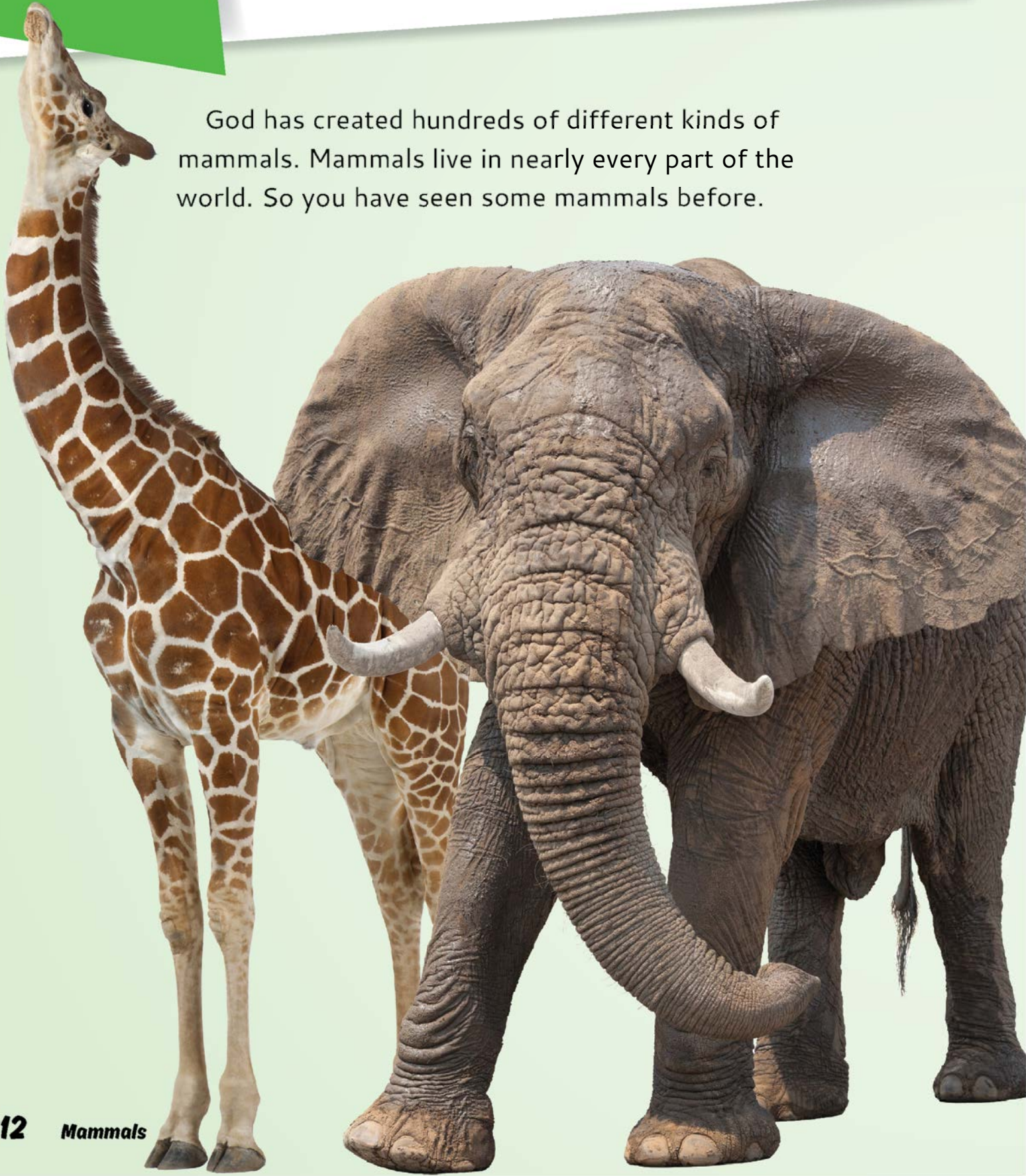


- ? What other animals can you think of that have fur or hair?
- ? What do mammals feed to their babies?

Lesson
4

Large and Small Mammals

God has created hundreds of different kinds of mammals. Mammals live in nearly every part of the world. So you have seen some mammals before.



Giraffes are the tallest land mammals. They are so tall they can eat leaves from the tops of many trees. Giraffes have very long tongues. They use their tongues to pull leaves off trees.

Elephants are very large. They have long noses called trunks. They use their trunks for drinking water and putting food into their mouths.

Bears

are also big mammals. Bears usually live by themselves, but mother bears can often be seen with their cubs. Bears usually eat plants and berries, but sometimes they eat small animals and fish. A bear cub drinks milk from its mother until it is old enough to eat what its mother eats.





Did you think a bat was a bird? It does not have feathers, so it is not a bird.

Bats have hair, so they are mammals. Bats are mammals that fly!



Other mammals are very small, like a mouse or a hamster. These animals are mammals, too.

- ? Can you name a really large mammal?
- ? Can you name a really small mammal?

name



Bats Coloring Page

Color the picture of the bats.



Lesson 5

Monkeys and Apes



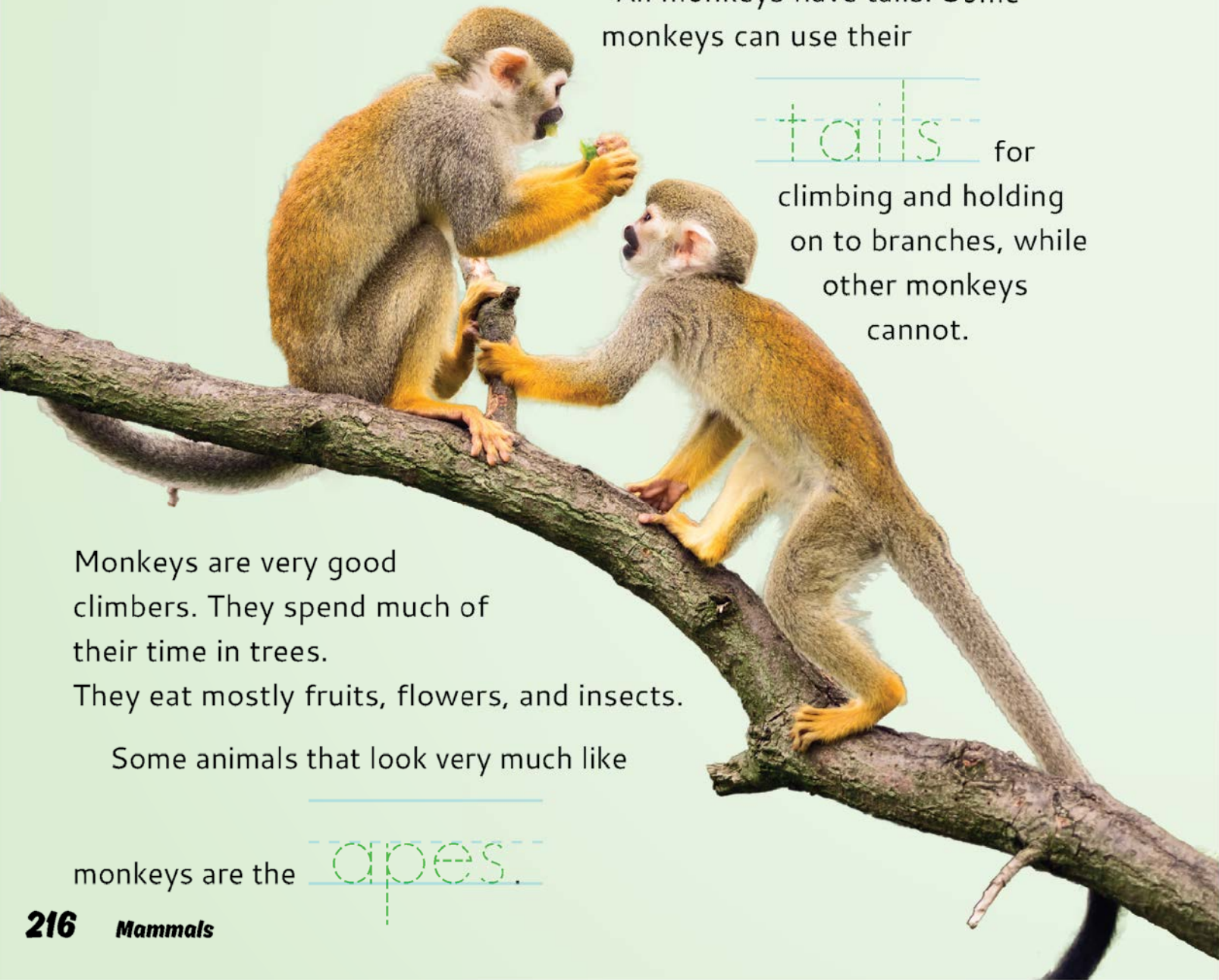
Monkeys

are always a favorite at the zoo. It is fun to watch them as they play and swing from place to place. Monkeys have ten fingers and ten toes—just like you do!

All monkeys have tails. Some monkeys can use their

tails

for climbing and holding on to branches, while other monkeys cannot.



Monkeys are very good climbers. They spend much of their time in trees.

They eat mostly fruits, flowers, and insects.

Some animals that look very much like

monkeys are the apes.



name

You may have thought that apes were the same as monkeys. But there is one big difference. Apes do not have tails. Gorillas are the largest apes. Chimpanzees are also apes. Chimps are very playful.

Some scientists try to show that mankind came from apes, but is this true?

There is no proof for this idea. The Bible says that God formed man from the ground and woman from man's rib (Genesis 2:7, 2:22). The Bible also tells us that people are made in God's own image (Genesis 1:26–27). So we can see that apes are apes and humans are humans. We can believe the Bible.

? What do all monkeys have that apes do not?

? What do monkeys typically eat?



Scripture Trace

"The LORD God formed the man of dust from the ground"

Genesis 2:7

Lesson 6

Water Mammals



dolphins

Some mammals live near and around water, such as seals, otters, and sea lions. Other mammals live their entire lives only in the water, such as dolphins, whales, and manatees.

Dolphins and whales look very much like fish, but they are not fish. They are actually mammals that live in the water.

- ? Have you ever seen a dolphin? What about a manatee or a whale?
- ? How are whales different from fish?

Dolphins

and whales have hair. Fish have scales. Dolphins and whales breathe air with their lungs. Fish breathe by using their gills to get oxygen from the water. Whales give birth to live babies instead of laying eggs, and they feed their babies milk from their bodies. These facts make them mammals. So dolphins and whales are not fish.

whales

God specially designed dolphins and whales to live in the water. They have a special hole called a blowhole on the tops of their heads. This helps them get a quick breath when they reach the surface of the water. These animals also have special tails that help them to dive and move through the water.

Another mammal that spends its entire life in the water is a manatee. Manatees live in areas with warm water such as Florida.



manatee

whales





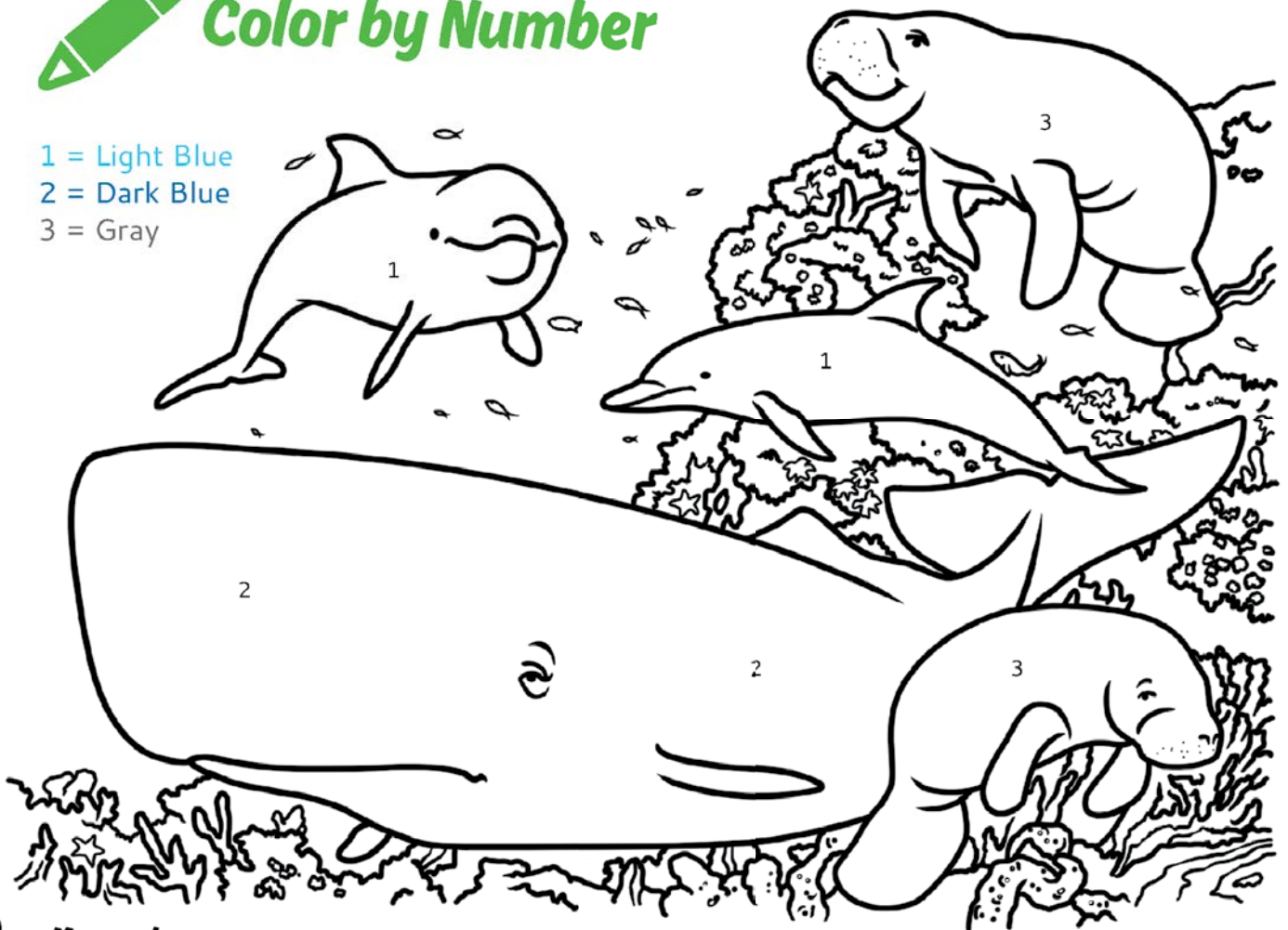
Holding Your Breath

Whales and dolphins live in the water, but they breathe air. So they have to hold their breath when they are underwater just like you do when you go swimming. God designed these animals to be able to hold their breath for a long time compared to humans. Some dolphins can stay underwater for 15 minutes. The sperm whale can hold its breath for more than an hour. How long can you hold your breath? Take a deep breath and have someone time how long you can hold it.



Color by Number

- 1 = Light Blue
- 2 = Dark Blue
- 3 = Gray



Marsupials

are mammals that have pouches. This means that a baby marsupial lives in a pouch on its mother's belly. Kangaroos are a well-known marsupial. Other marsupials include the koala, the opossum, and the Tasmanian devil.

Kangaroos are some of the funniest animals to watch. Kangaroos live in Australia. They hop instead of walking or running.

When a kangaroo baby is born, it is very tiny. It does not look like its parents at all. It looks more like a jelly bean. This tiny baby is

called a joey. A joey is hairless and blind. Shortly after it is born, it slowly crawls to its mother's pouch. Inside the pouch it nurses and grows for several months.

Kangaroos

have large hind legs and very large feet that are perfect for hopping.

Kangaroos can hop faster than many animals can run. Kangaroos

kangaroo



are usually awake at night and sleep during the day.

The opossum is the only marsupial that lives in the United States. It's about the size of a large cat. If an opossum is threatened, the first thing it does is hiss and show its sharp teeth. If the predator doesn't go away, the opossum rolls over, goes stiff, and stays perfectly still, as if it were dead.



koala



Tasmanian devil

Some predators lose interest and go away. After a while, the opossum "wakes up" and goes on its way.



Most of the marsupials in the world come from Australia.

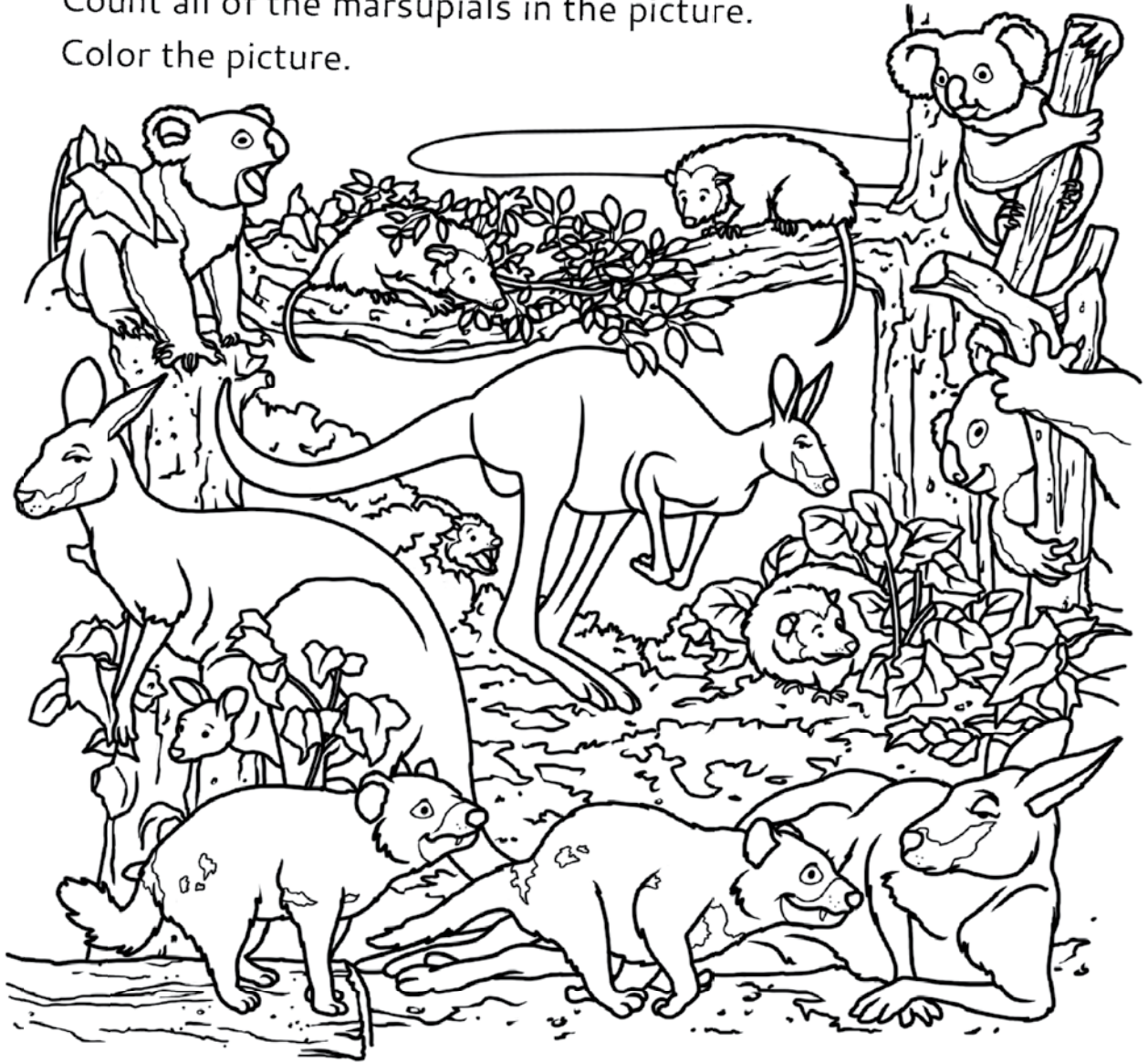


opossum



Count the Marsupials

Count all of the marsupials in the picture.
Color the picture.



How many marsupials did you find?

- ? What is special about a marsupial?
- ? Can you name three marsupials?



Unit Vocabulary Review

Complete the crossword puzzle by using the clues.

DOWN

1. Monkeys have these
3. People who study nature
4. Animals with fur or hair
6. Mammals with fingers, toes, and a tail
8. Large mammals that look like fish
9. Small mammals that fly
10. Gorillas and chimpanzees

ACROSS

2. Large mammals whose young are called cubs
5. Living creatures
7. Mammals that live in water
11. Mammals with pouches
12. Baby kangaroo

The crossword puzzle grid is shown with the following details:

- Down 1:** Starts at row 1, column 7. The letter 'T' is in the first cell.
- Down 2:** Starts at row 2, column 3. The letter 'B' is in the first cell.
- Down 3:** Starts at row 2, column 5.
- Down 4:** Starts at row 4, column 8.
- Down 5:** Starts at row 5, column 4. The first cell is green.
- Down 6:** Starts at row 5, column 3. The first cell is green.
- Down 7:** Starts at row 6, column 2. The letter 'D' is in the first cell. The second and sixth cells are green.
- Down 8:** Starts at row 6, column 7. The first cell is green.
- Down 9:** Starts at row 7, column 4. The first cell is green.
- Down 10:** Starts at row 7, column 6. The first cell is green.
- Down 11:** Starts at row 8, column 3. The letter 'A' is in the fourth cell. The second cell is green.
- Down 12:** Starts at row 8, column 1. The second cell is green.

Unscramble the letters in the green boxes to reveal a special animal.



UNIT
2

Birds and Fish



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Lessons 8-13

**Animals
for Beginners**

Lesson 8

Birds



Birds

are easy to watch. They often fly into our backyards.

Birds share two features: they have feathers, and

they lay eggs. These features make birds special.

God designed most birds to be great fliers. God also gave birds beaks that are just right for the food they eat. He gave them feet that are just right for where they live.

Birds that perch in trees have special toes for holding on to the tree limbs. They have pointed beaks for eating seeds. Sparrows and bluebirds are perching birds.

Other birds have sharp beaks and claws.

Eagles use their sharp claws to catch mice.

Birds that live in the water have webbed feet that help them swim. They also have wide beaks. They use their beaks to catch their food in the water.



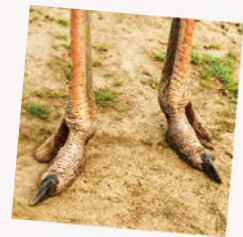
Some birds do not fly. Some, like the ostrich, have feet that help them run very fast. Others, like the penguin, are designed to move very fast in water.

- ? How are birds different from other animals?
- ? How are a duck's feet designed to help it swim in the water?



Bird Match

Match each bird to its feet to see how God specially designed each bird for the place that it lives.



Lesson 9

Flight



God gave most birds bodies that are just right for flying.

Birds have very strong breast muscles. This helps them flap their wings. They also have very light bones.

A bird's wing has a special shape that helps lift the bird up. The wing is also covered with special feathers that help the bird to fly. These feathers all point toward the back of the bird. This makes the air flow smoothly over the feathers as the bird is flying.

Finally, the bird can move its tail back and forth. This helps it steer as it is flying. God made birds just right for flying.

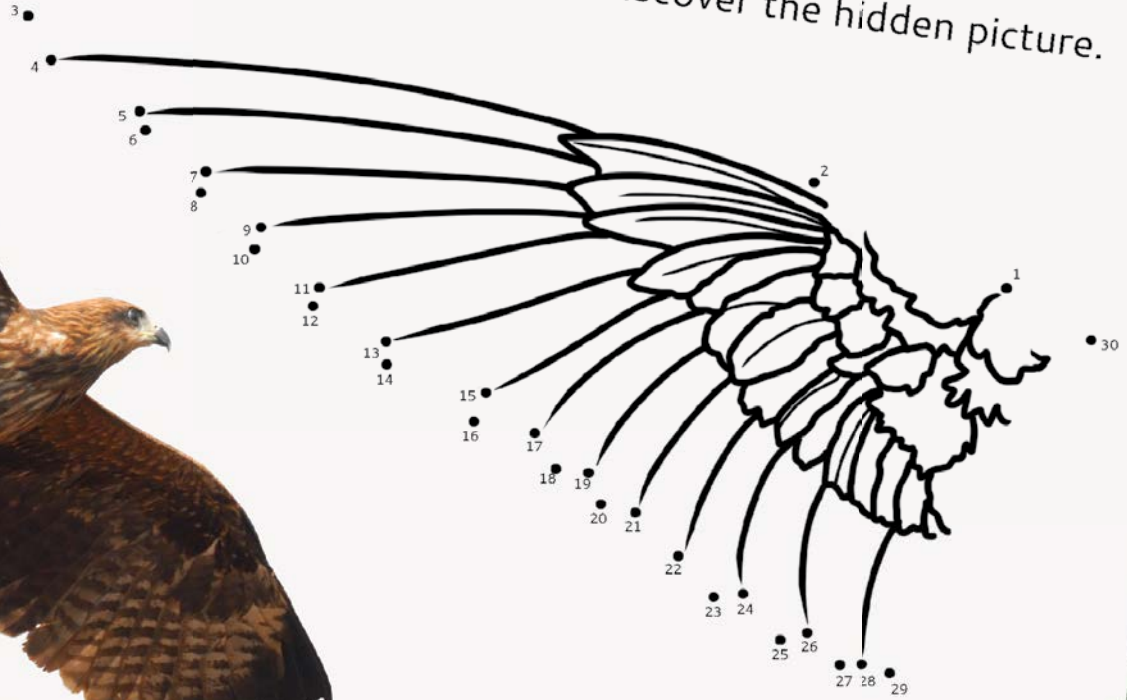
- ? What is something that helps a bird to fly?
- ? Why do the bird's feathers point toward the back?

name _____



Dot-to-Dot

Connect the dots to discover the hidden picture.



Looking at Feathers

Use a magnifying glass to look at a bird's feather. The pieces of the feather are held together by special barbs. A bird can "zip up" its feathers with its beak if they get pulled open. This is called preening. Birds spend some time every day fixing their feathers.



Lesson 10

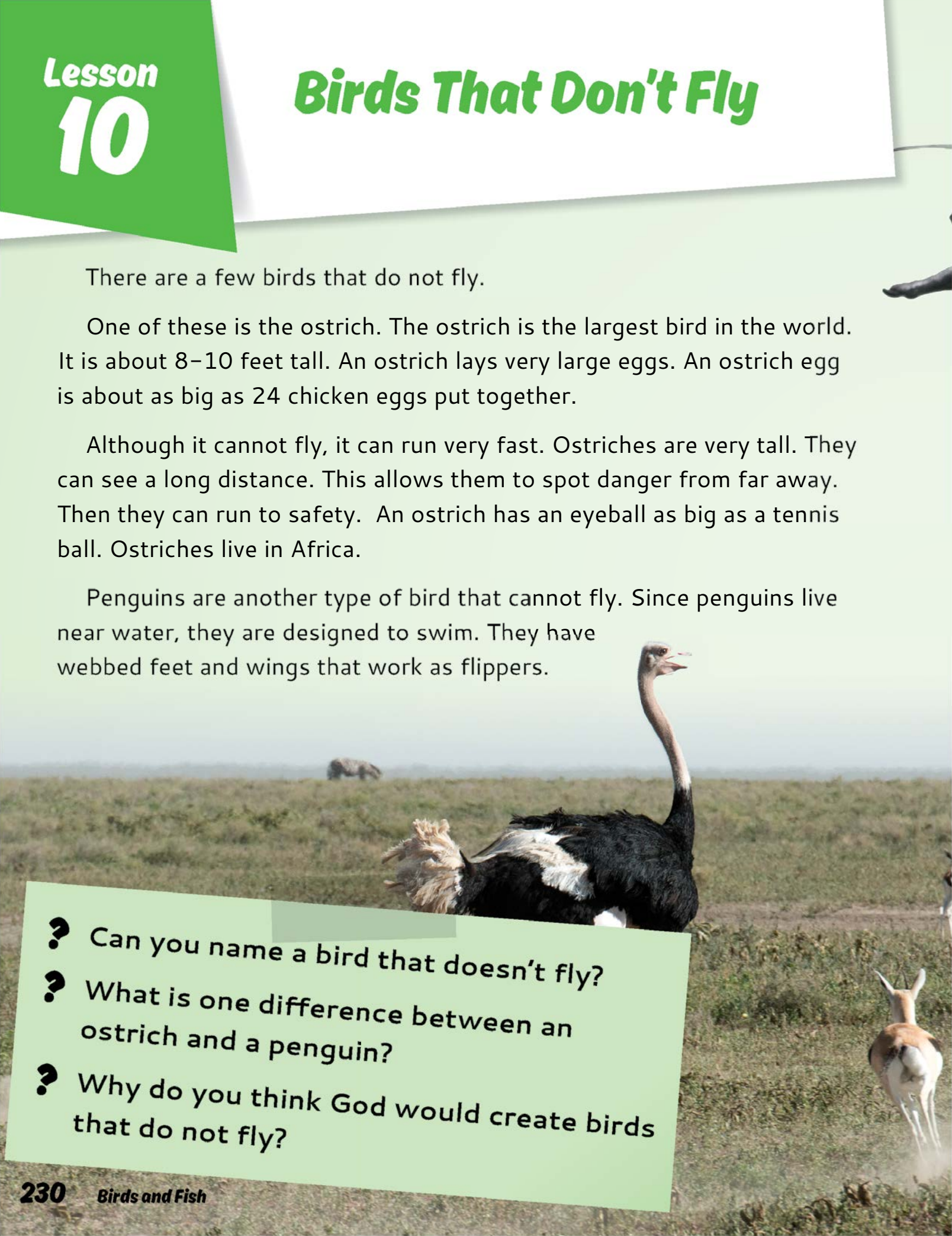
Birds That Don't Fly

There are a few birds that do not fly.

One of these is the ostrich. The ostrich is the largest bird in the world. It is about 8–10 feet tall. An ostrich lays very large eggs. An ostrich egg is about as big as 24 chicken eggs put together.

Although it cannot fly, it can run very fast. Ostriches are very tall. They can see a long distance. This allows them to spot danger from far away. Then they can run to safety. An ostrich has an eyeball as big as a tennis ball. Ostriches live in Africa.

Penguins are another type of bird that cannot fly. Since penguins live near water, they are designed to swim. They have webbed feet and wings that work as flippers.

- 
- ? Can you name a bird that doesn't fly?
 - ? What is one difference between an ostrich and a penguin?
 - ? Why do you think God would create birds that do not fly?



The largest penguin is the Emperor penguin. It can stand as tall as 4 feet, which is about the same size as a 6-year-old child. The little blue penguin is the smallest penguin.

Penguins can only be found in the southern part of the world.

Other birds that do not fly are the emu, the rhea, the cassowary, and the kiwi.



Flightless Bird Game

In this fun game, one person gets to be the leader. The leader calls out an action that a flightless bird can do. Everyone has to imitate that action. The person that the leader thinks is funniest gets to be the next leader. Here are some ideas to get you started:

- Walk like a penguin – remember that penguins have very short legs and take small steps.
- Swim like a penguin – penguins are very good swimmers.
- Run like an ostrich – ostriches have very long legs and can run very fast.
- Watch for danger – ostriches can stretch their long necks and turn their heads in all directions to look for danger.

Lesson 11

Fish



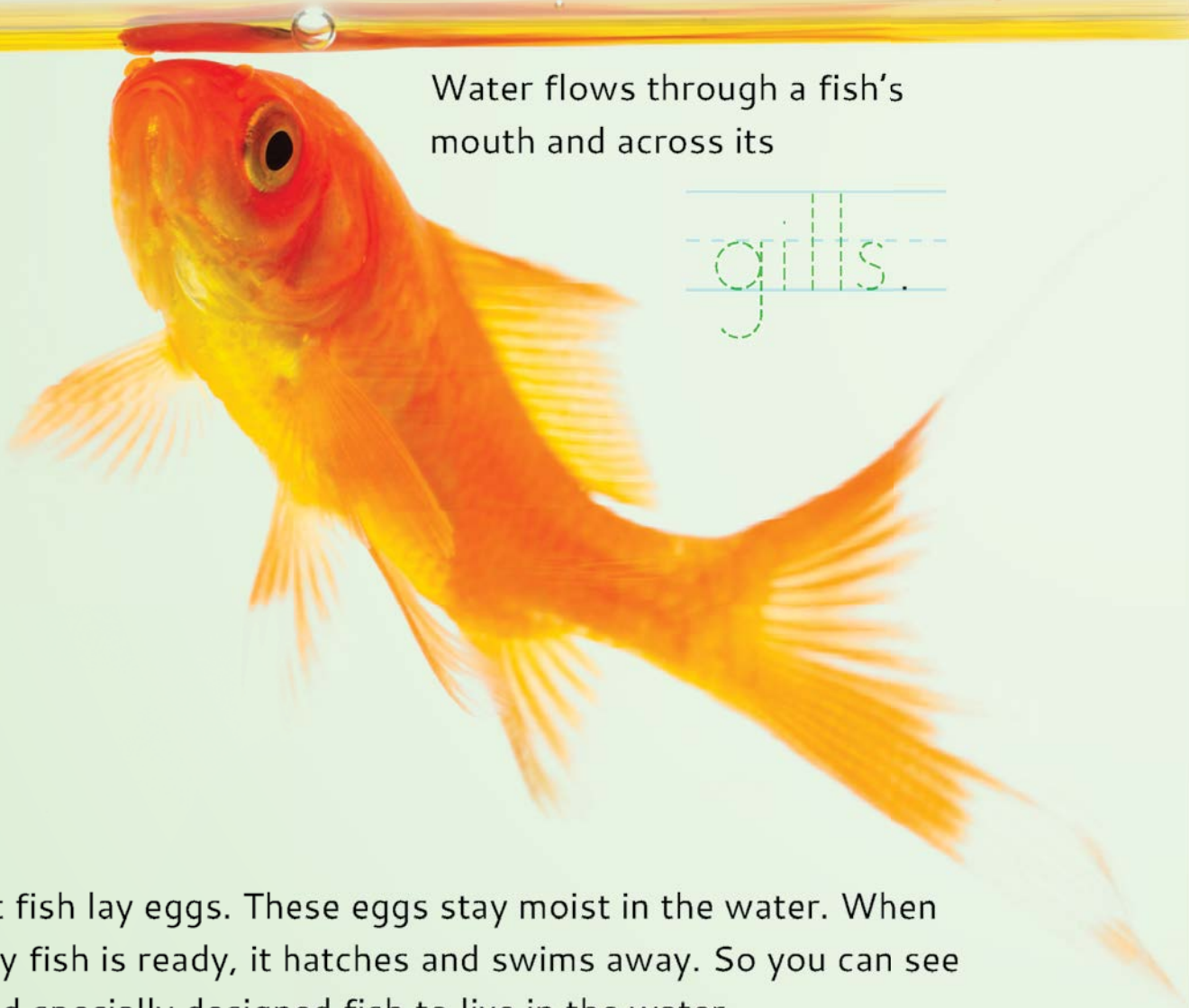
Fish live in the water. They have fins that help them swim.

Most fish have scales covering their bodies.

Fish do not breathe air. Instead, fish get oxygen from the water.

Water flows through a fish's mouth and across its

gills.



Most fish lay eggs. These eggs stay moist in the water. When the baby fish is ready, it hatches and swims away. So you can see that God specially designed fish to live in the water.

name



School of Fish Coloring Page

A group of fish is called a school.

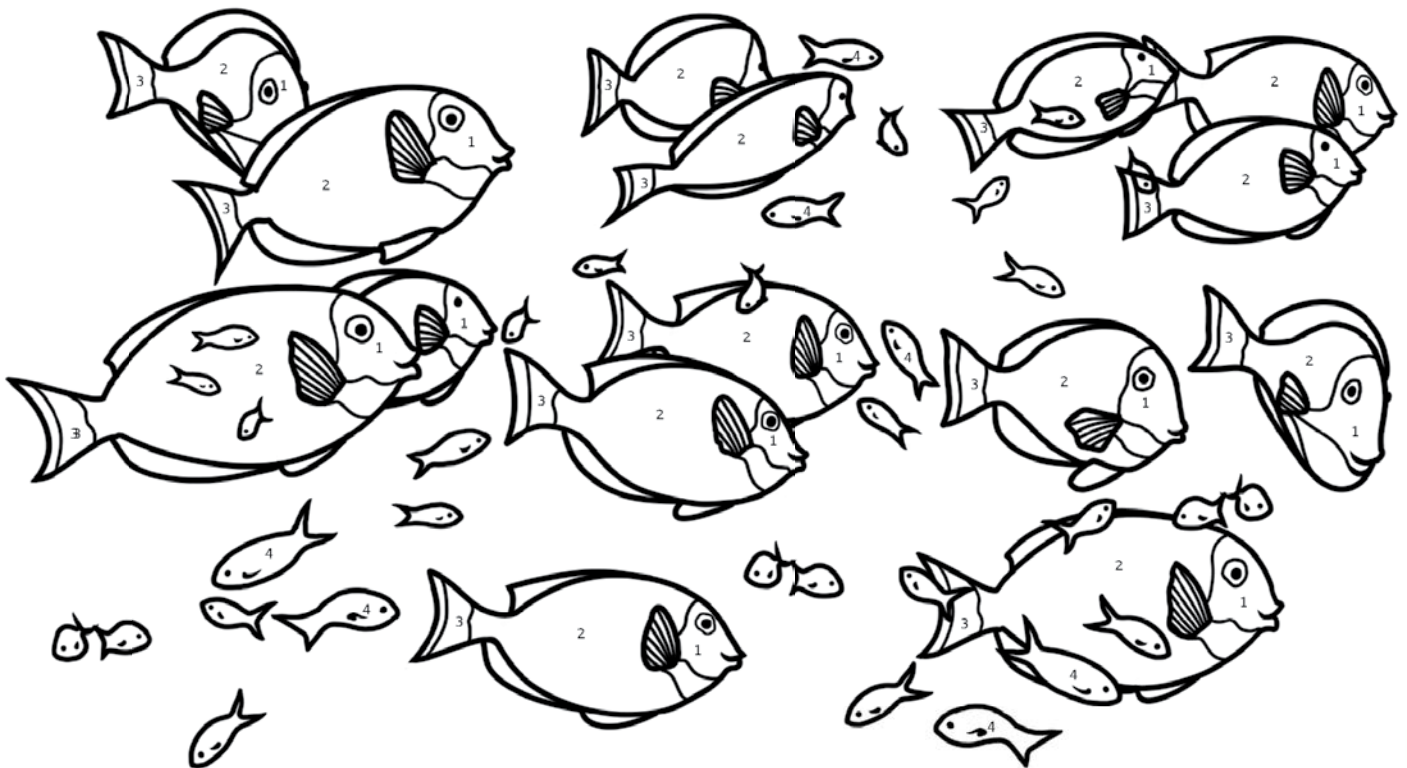
Color by number the picture of the school of fish

1 = Yellow

2 = Blue

3 = Black

4 = Orange

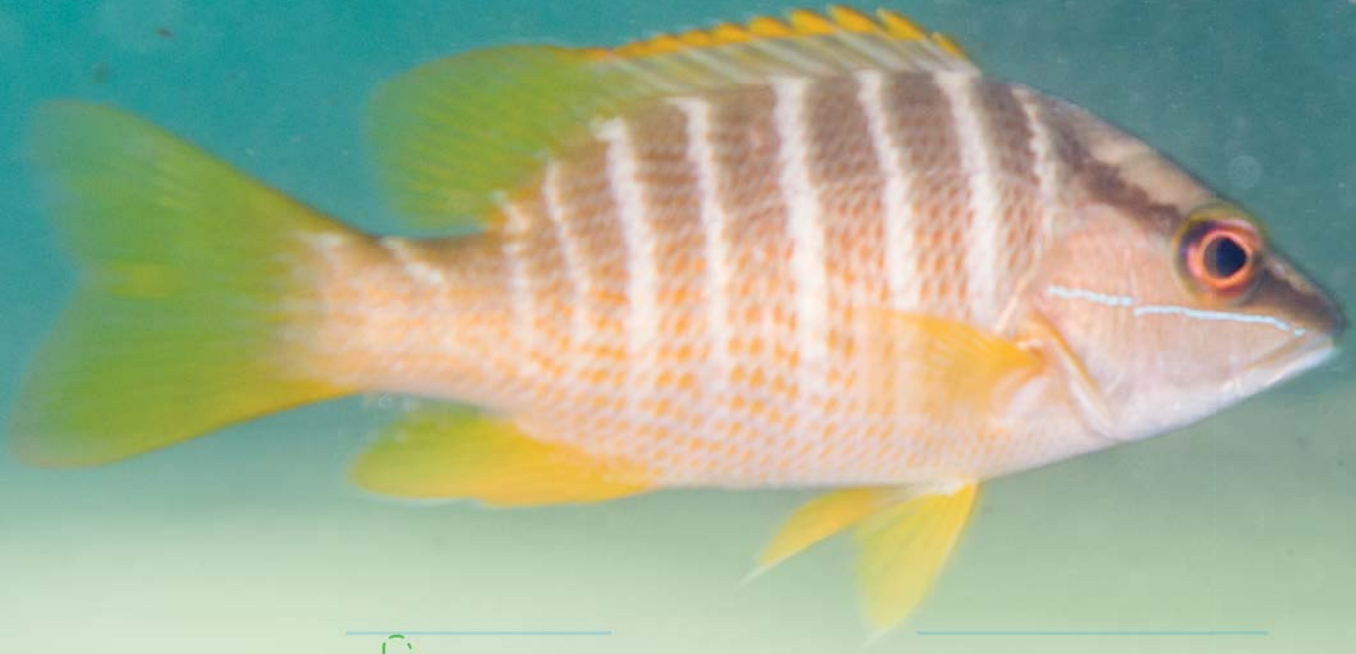


- ? What do fish use to breathe?
- ? How are fish different from birds?

Lesson 12

Fish Were Designed to Swim

Fish are good swimmers. Most fish have long narrow bodies. This helps them move smoothly through the water. Their bodies produce a slimy liquid. This makes them move even more easily through the water. Have you ever tried to pick up a fish? It is very slippery and hard to hold on to.



Fish also have fins that help them swim. The fins near the front of their bodies help them to angle up or down in the water. These fins can also work as brakes to slow the fish down.

The fins on the top of the fish help to keep the fish from tipping sideways. And the tail fin helps to push the fish forward through the water. The fish has strong muscles all along its body to help it swim. The fish was created by God to be a great swimmer.

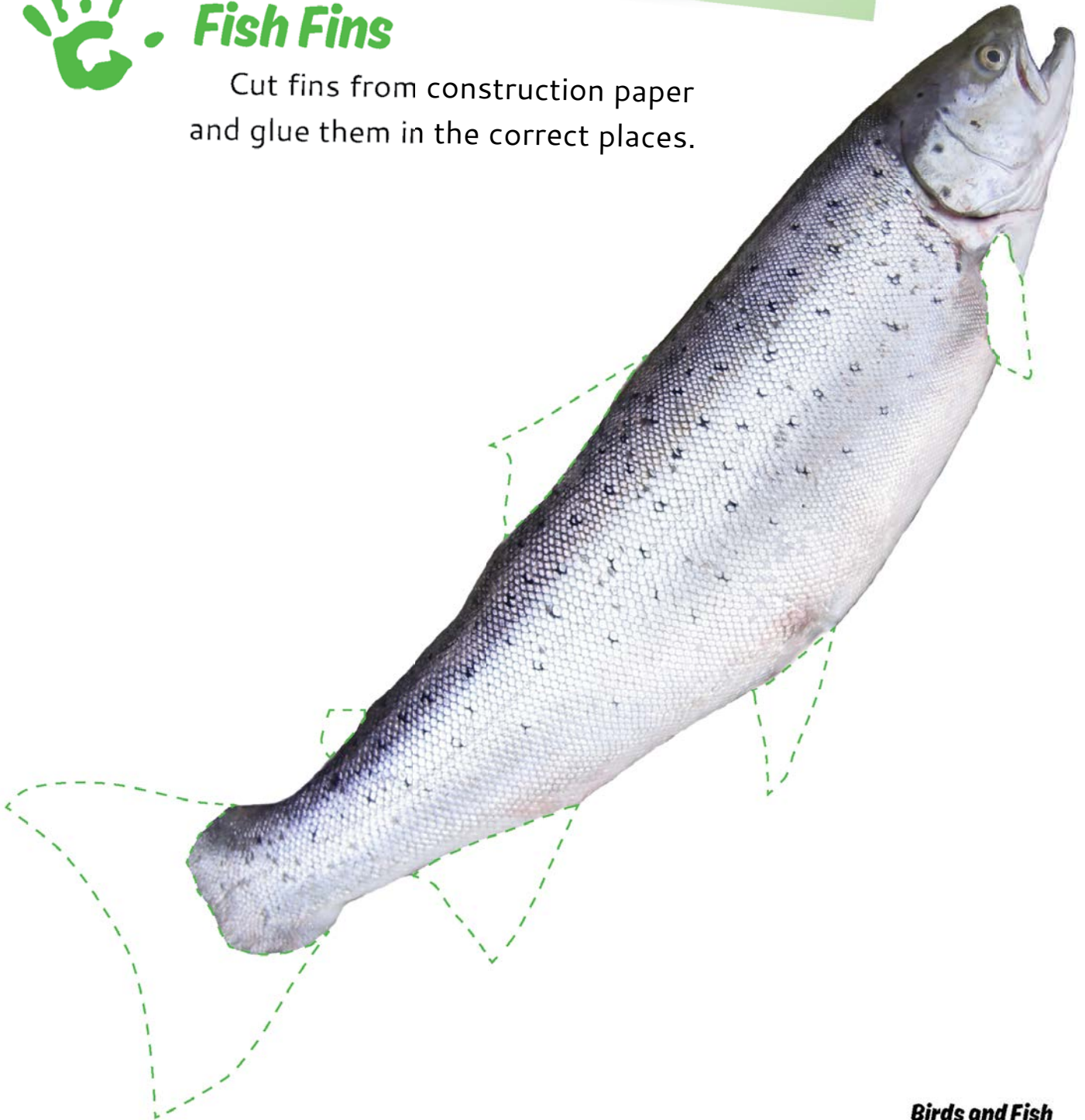
name

- ? What are three ways fish use their fins to move?
- ? What are some differences between a fish and a water mammal?



Fish Fins

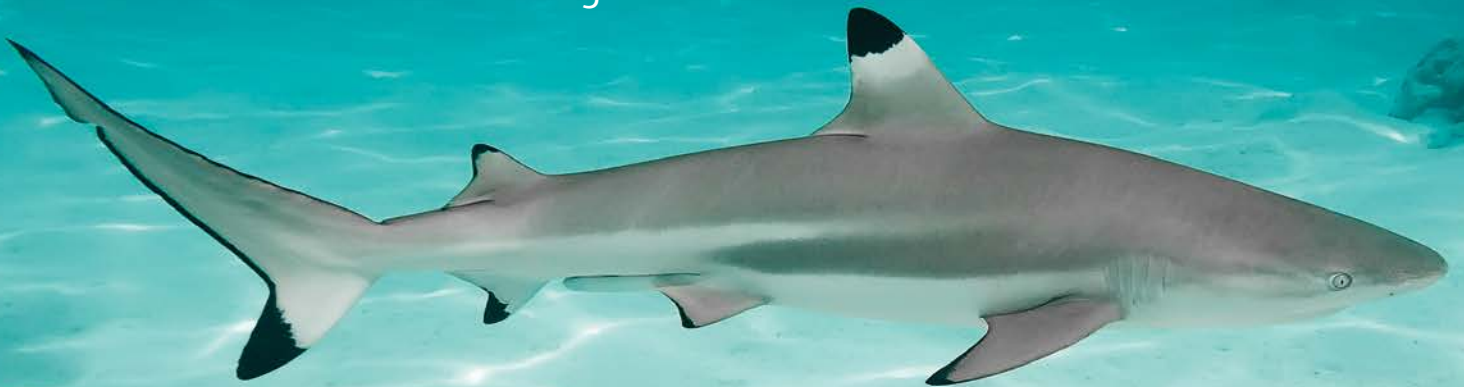
Cut fins from construction paper and glue them in the correct places.



Lesson 13

Sharks and Rays

Your nose and your ears are made out of cartilage. Can you feel them? They are bendable unlike the bones in your fingers or other parts of your body. Some fish like sharks and sting rays have skeletons made from this flexible material called cartilage instead of from bone.



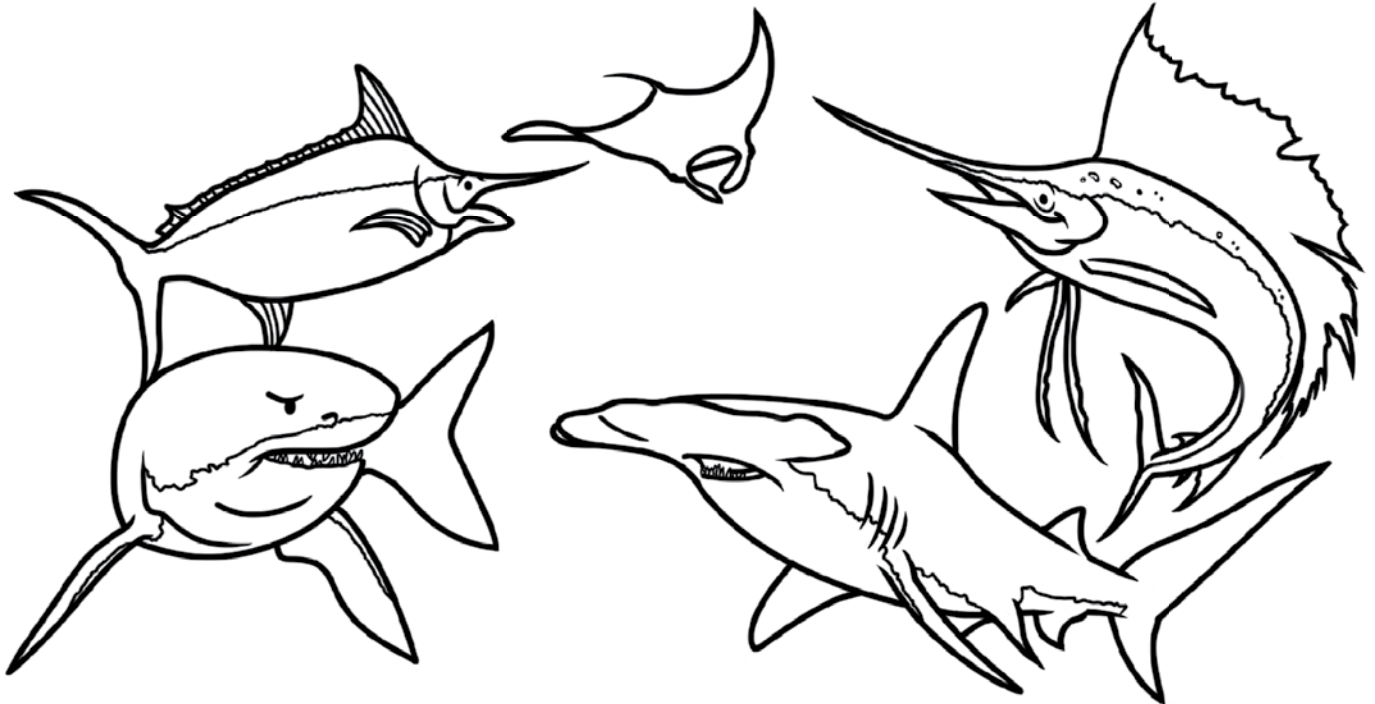
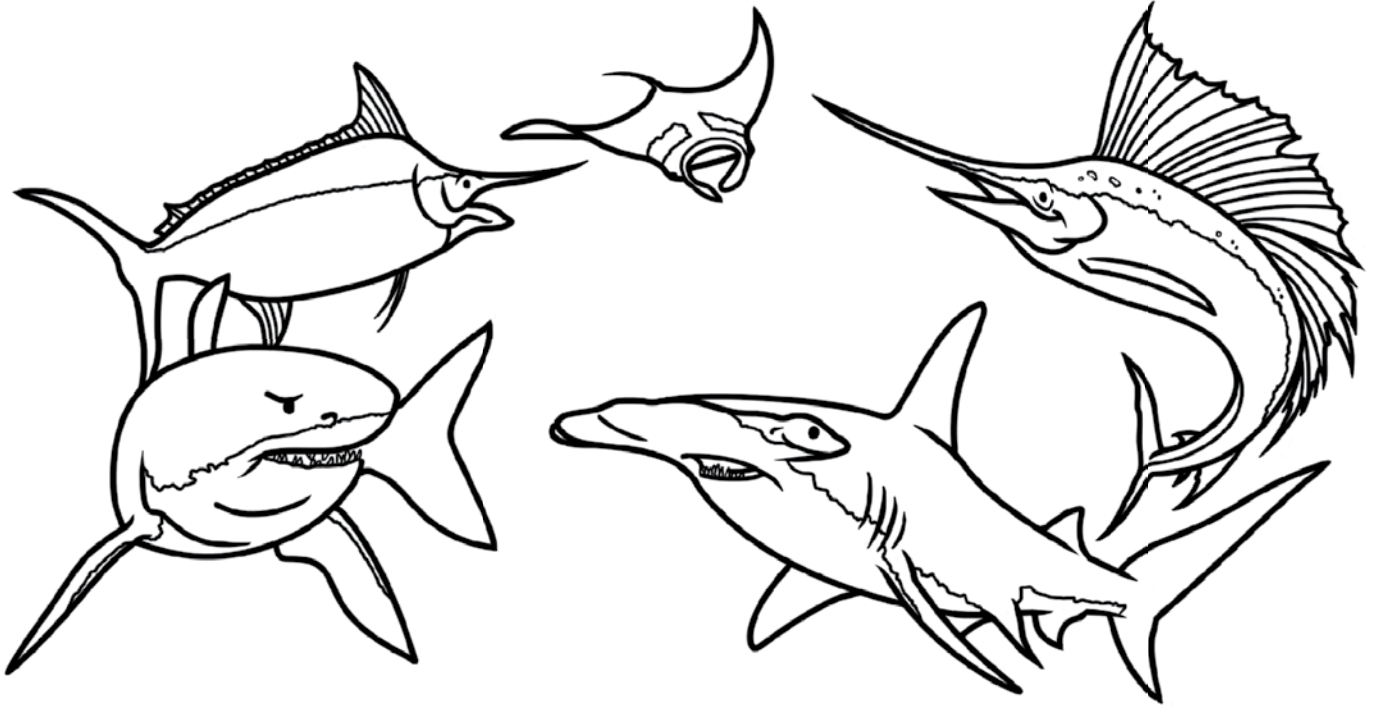
Most sharks are meat-eaters. They catch their food with their razor sharp teeth. Sharks are always growing new teeth. When one row of teeth wears out, a new row moves up to take its place.





Find the Differences

There are 7 differences between these pictures. Can you find them all?
Color the picture.



Many sharks give birth to babies instead of laying eggs. When these babies are born, they are ready to take care of themselves and do not stay with their mother.

Rays do not have the same shape as other fish. Instead, rays are wide and flat. They glide through the water using their fins like wings. Many rays are harmless to humans. But stingrays can give you a very painful, and sometimes deadly, sting with their tails.

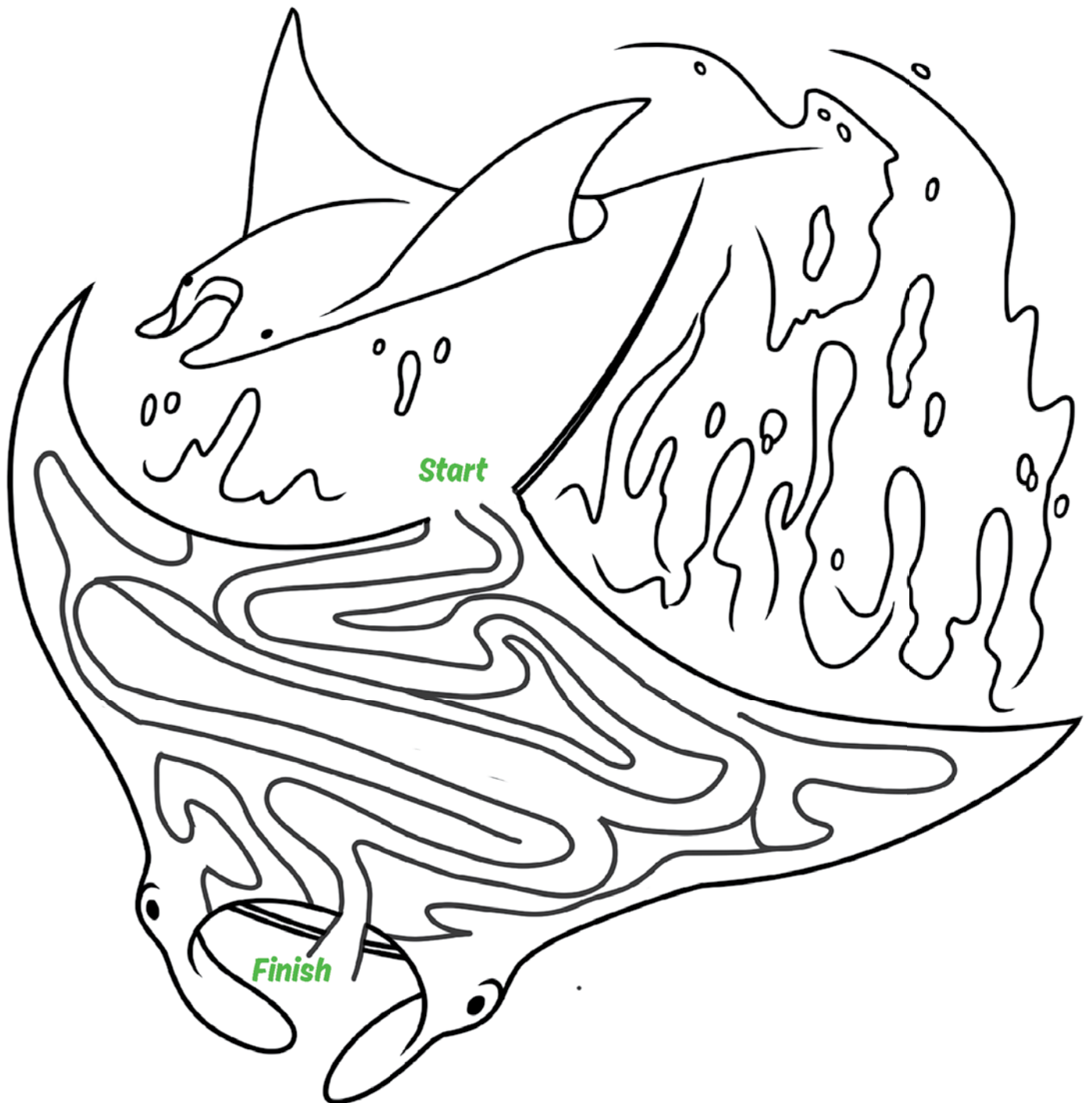
- ? On what day did God create fish? Check in Genesis 1:20–23 for the answer.
- ? How is a shark's skeleton different from other fish?
- ? What happens when a shark's teeth wear out?





Manta Maze

Find your way through the manta ray maze.
Color the picture.





Unit Vocabulary Review

Find the vocabulary words in the word search.

Remember to search both down and across.

BIRDS
FEATHERS
EGGS

FLYING
WING
SCALES

GILLS
FINS
SWIM

S A E D N A T K G W I N G I P
F D Z S U F Z N F L Y I N G M
B S W I M O Q R S R I Z G F I
F G G M H V O U C E E J D I L
O F W L H V E H A B J I B N L
P T O P U G B S L W C X F S V
A L H C T X Z M E Q A G E N B
V M E G G S A N S J A X A X K
R S B R O E P S W N W R T E R
T R E P H M V L J S Q L H X D
I S R L S B K L R C H J E N F
E J K B I R D S A Q O S R R K
B G O W C C D T F O L R S J G
B J X E W S G J G A W H X S V
T U K T G I L L S Y F Q V S F

UNIT
3

Amphibians and Reptiles



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Lessons 14-19

***Animals
for Beginners***

Lesson 14

Frogs and Toads

Have you ever heard of an amphibian? How about a frog? A frog is an

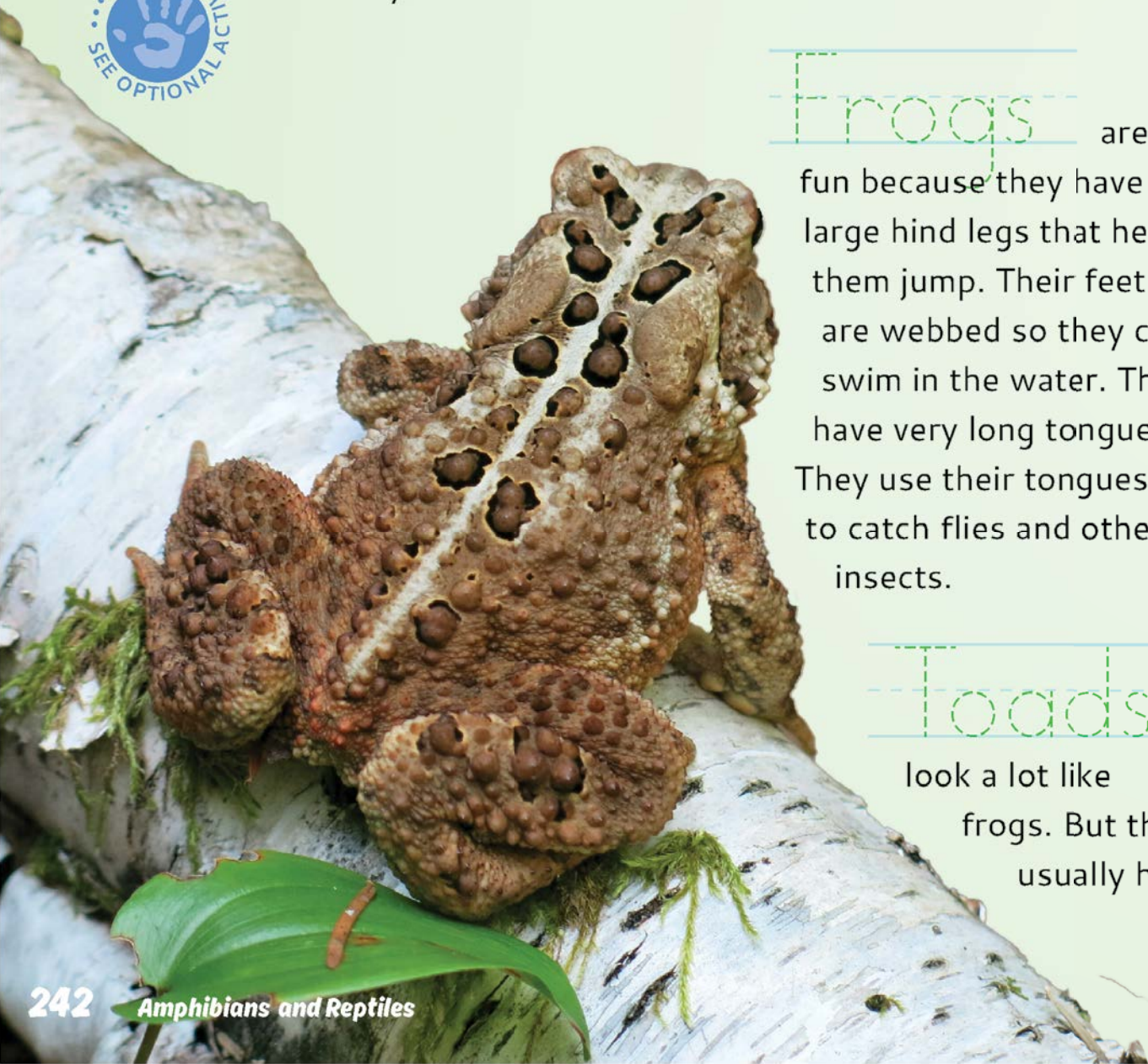
amphibian. **Amphibians** are animals that start out living in the water and breathing with gills. Then they change as they grow up. They develop lungs so they can breathe air, and many of them leave the water to live on land.



Frogs are fun because they have large hind legs that help them jump. Their feet are webbed so they can swim in the water. They have very long tongues. They use their tongues to catch flies and other insects.

Toads

look a lot like frogs. But they usually have



name



dry bumpy skin. Frogs have smooth wet skin. Toads also have fatter, shorter bodies compared to frogs. And toads do not have webbed feet.

Frogs and toads often chirp or croak. If you are near a pond, you might hear them singing after the sun goes down.

- ? Can you name another amphibian?
- ? How are frogs and toads different?
- ? How are they the same?

Smart and Safe

Always be sure to wash hands with soap and water after handling animals, especially frogs, toads, and turtles.



Lesson 15

A Frog's Life Cycle

Some baby animals look very much like their parents when they are born. But frogs do not look anything like their parents when they are born.

A frog starts out as an egg. What hatches out of the egg is a

tadpole. The tadpole looks like a tiny fish. The tadpole swims around in the water and eats and grows. It breathes water through its gills.

As the tadpole grows, its body begins to change. Legs grow. Its tail shrinks. The tadpole develops lungs.

When the frog is fully grown, it looks like its parents. It no longer gets oxygen from water with gills, but it now breathes air instead. It is now ready to leave the water and live on land.

The frog will someday return to

the water to lay eggs and start the over again.

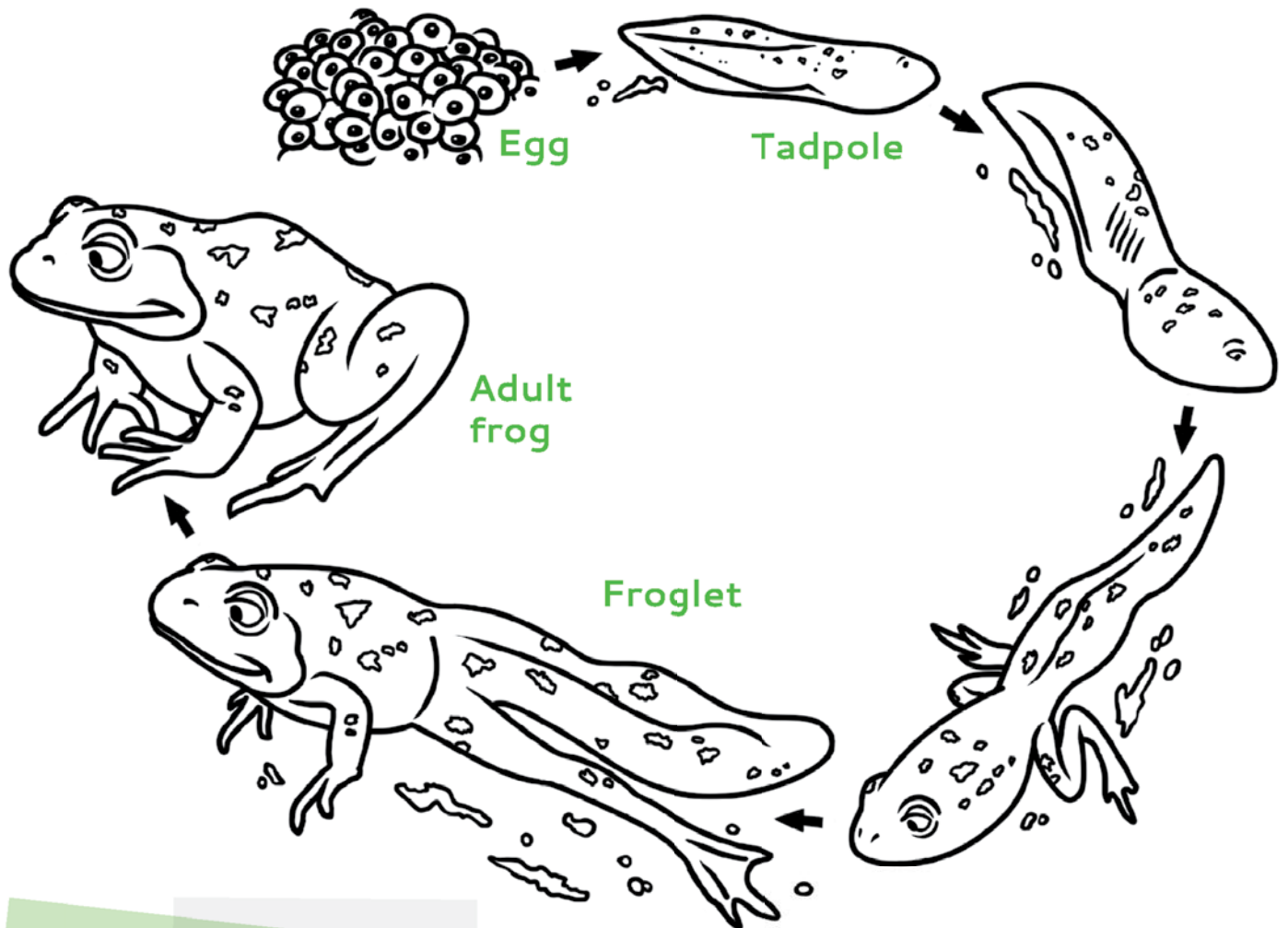


life cycle



Frog's Life Cycle

Color the worksheet that shows all the stages of a frog's life.



- ? What is a baby frog called?
- ? How does a tadpole change as it grows?

? Do you know what a reptile is?

Lizards, snakes, and turtles are all

reptiles.

Crocodiles and alligators are reptiles, too.

Dinosaurs are reptiles that used to live on earth but aren't alive today. We know about dinosaurs from their fossils.



Some people like reptiles. Other people don't like them at all.

name

Reptiles have lungs and breathe air. Most reptiles lay eggs. They also have scales on their skin. Most snakes have scales all over. Turtles only have scales on their legs, necks, and tails.



Draw your own dinosaur

Dinosaurs are reptiles, but there aren't any alive today. Make up a new kind of dinosaur and draw a picture of what it looks like below. Then give it a name!

- ? What are the three types of reptiles?
- ? What do fish and reptiles both have on their skin?

Lesson 17

Snakes



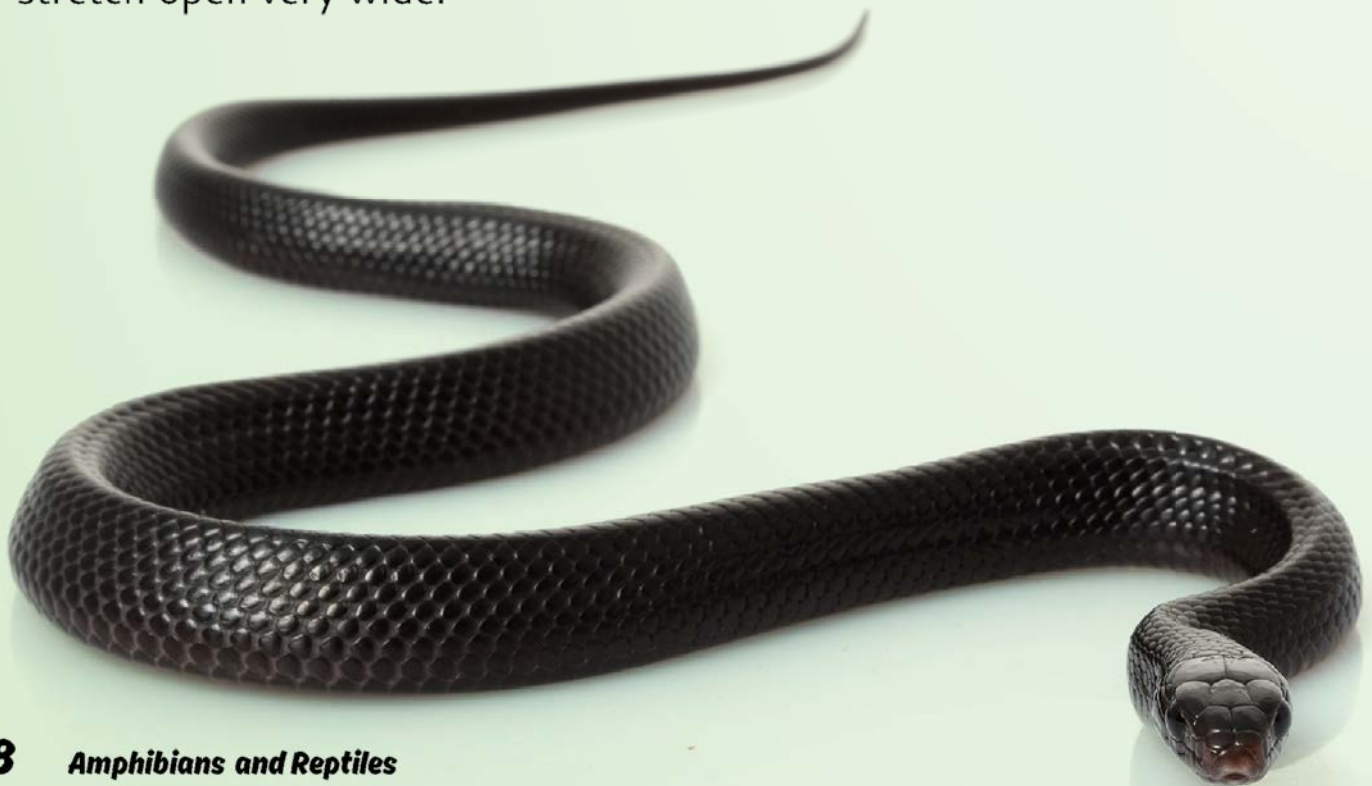
Snakes

are long round animals. They have eyes on the sides of their heads. Some snakes are big, and others are small. The longest snake recorded, a python, was 25 feet long. Some snakes can be as small as a worm.

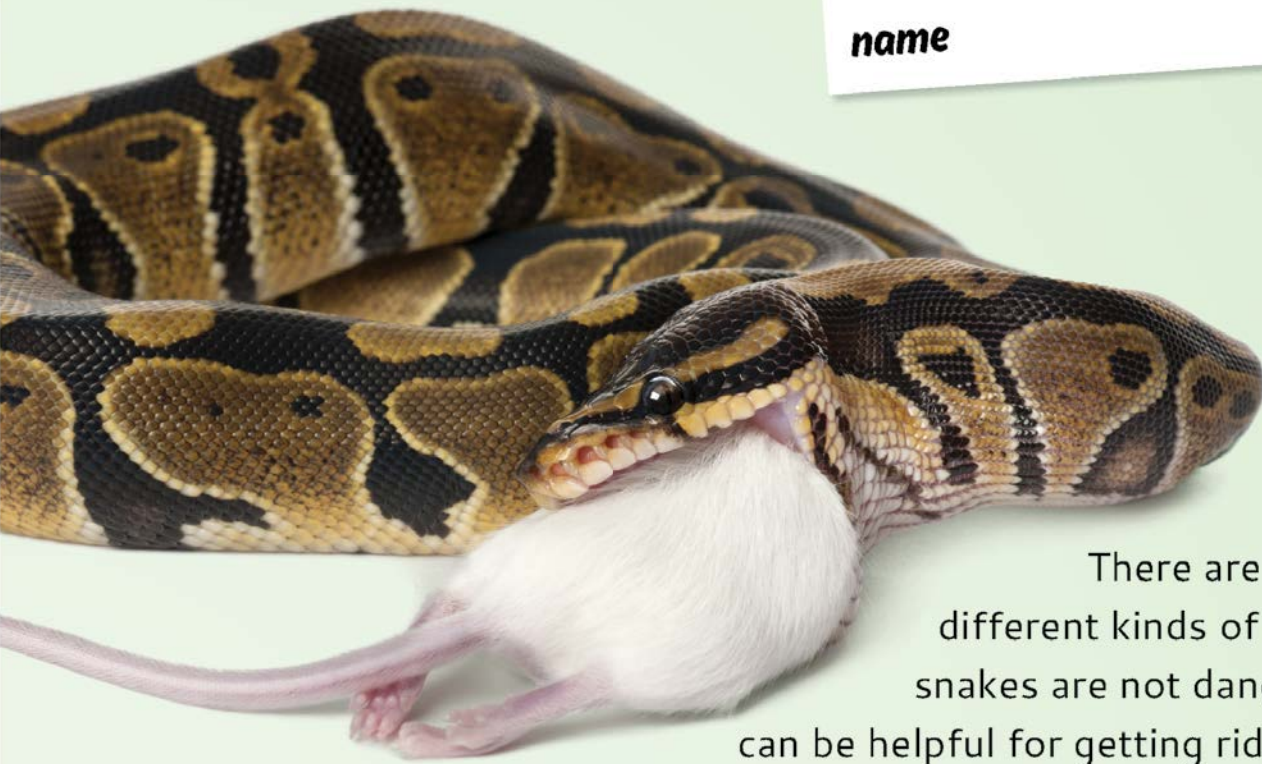
You probably eat three meals a day. And you might have snacks in between your meals. But snakes eat only one or two times a week.

Snakes eat lots of different things. They eat eggs, mice, and other small animals.

A snake can eat an animal that is bigger around than the snake's body. The snake can unhook its bottom jaw. This allows its mouth to stretch open very wide.



name

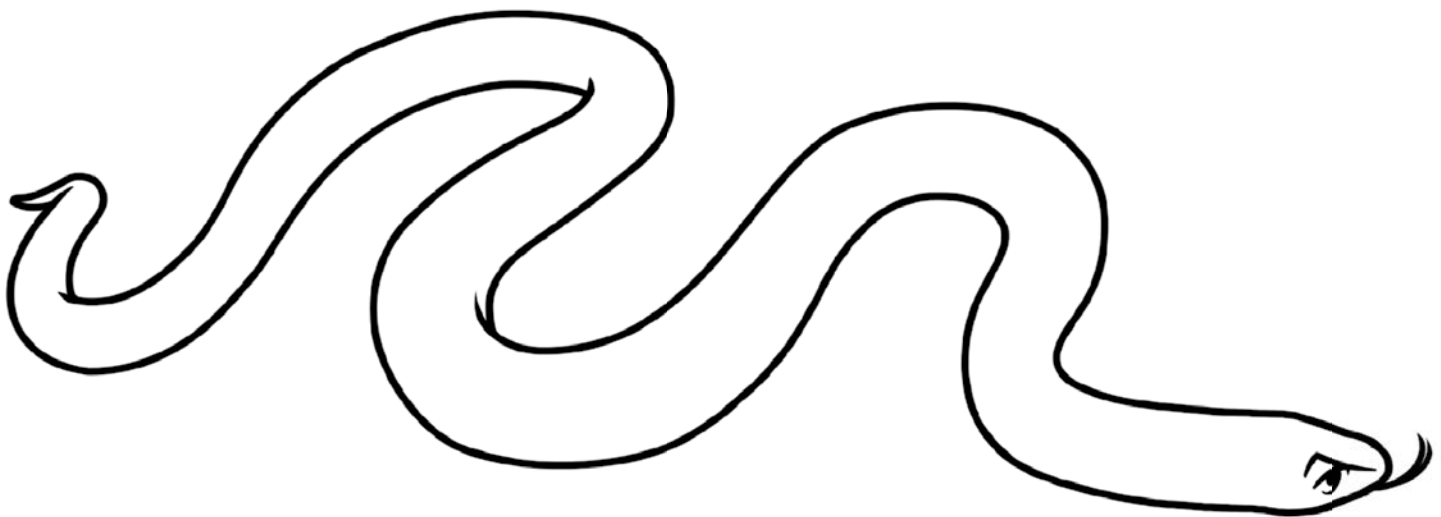


There are many different kinds of snakes. Most snakes are not dangerous. They can be helpful for getting rid of mice and rats. Some common snakes are bull snakes, rat snakes, and garter snakes.



Scaly Snake

Glue sequins on the snake to show that it has scales all over its body.



A few snakes are venomous and you should stay far away from them. These snakes can strike with

their fangs. They inject poison into their victims. Rattlesnakes, coral snakes, and cobras are some snakes that are poisonous to people.



- ? What do snakes eat? Would you like to eat like a snake?
- ? How do snakes eat an animal bigger than their body?
- ? What should you do if you see a snake?

Lizards

Lesson 18

Lizards have long thin bodies with legs that come out of the sides. Lizards have tails. Their feet have claws. A lizard's body is covered with scales. Lizards can be found in nearly every part of the world.

A few lizards eat plants, but most lizards eat insects.

People who live where there are many insects often keep pet lizards around to help eat the insects.

Lizards are very good at protecting themselves from their enemies.



Lizards called chameleons can change the color of their skin to match their surroundings. This makes the chameleon hard to see.

Some lizards are covered with spikes, which make them hard for their enemy to eat. So they are often left alone.

Sometimes, if an enemy grabs onto a lizard's tail, the tail will break off. This helps

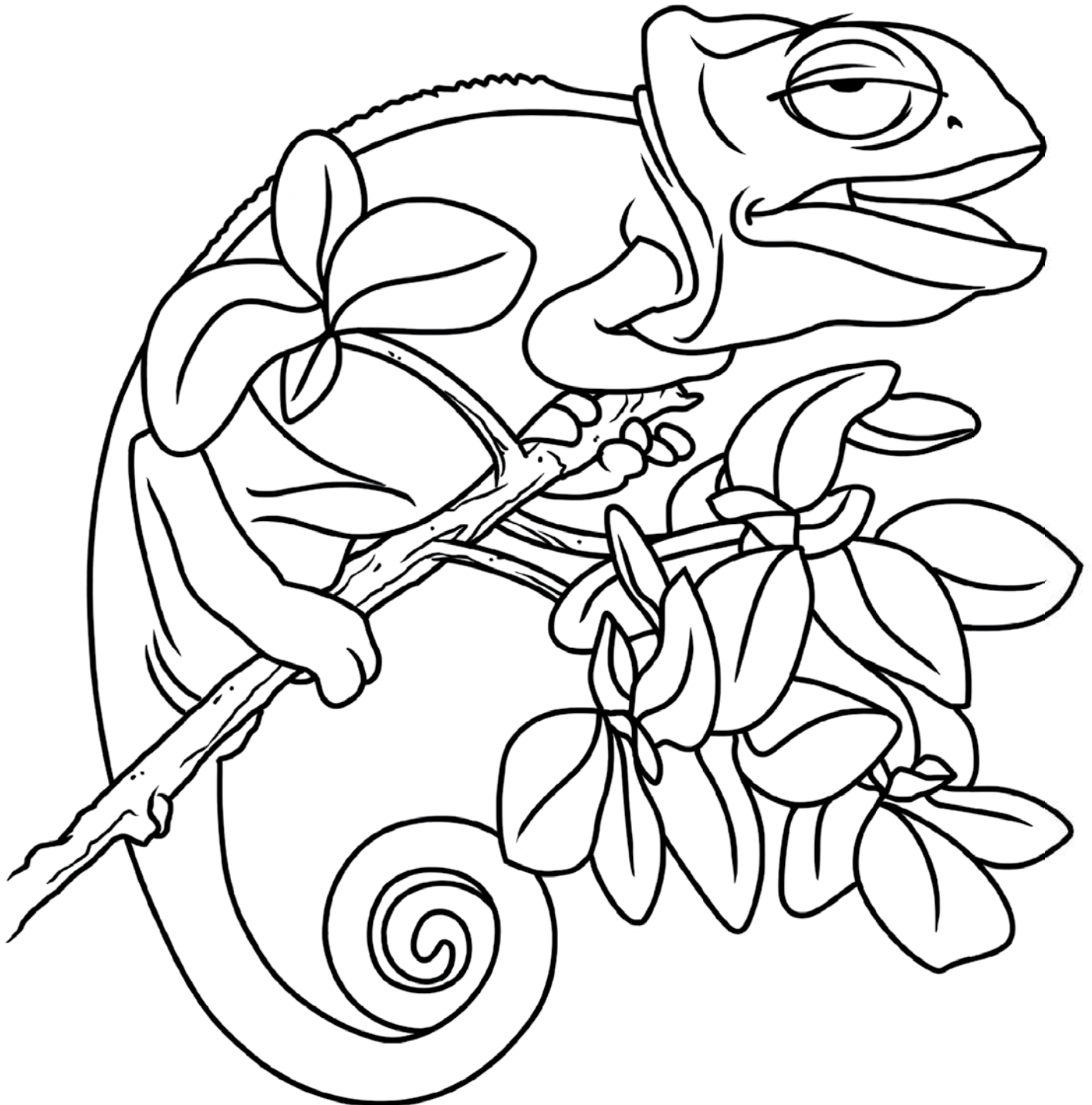
the lizard get away. The neat part is that the lizard's tail will grow back. God made lizards so they can protect themselves from danger.

- ? What are some ways that lizards protect themselves from their enemies?
- ? What do most lizards eat?



Chameleon Coloring Sheet

Color the chameleon on the coloring sheet. Make its body the same color as the plants around it so that it can hide from its enemies.



Lesson 19

Turtles and Crocodiles

Turtles are the only reptiles that have shells. Some turtles are able to pull their heads and legs inside their shells. This can protect them from their enemies.

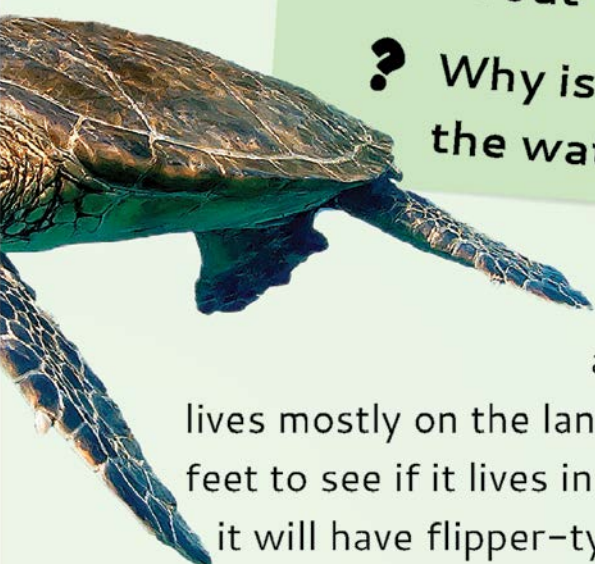


All

turtles

have scales on their legs, heads, and tails. Turtles live mostly in warm parts of the world, but a few live where the winters get cold.



- 
- ? Where do turtles usually live? What about tortoises?
 - ? Why is it hard to see a crocodile in the water?

If a turtle spends most of its life in the water and has flippers or fins, it's called a turtle. But if it lives mostly on the land, it is called a tortoise. You can look at a turtle's feet to see if it lives in the water or on the land. If it lives in the water, it will have flipper-type feet. If it lives on land, it will have claw-type feet.

The largest reptiles alive today are crocodiles and

alligators.

These animals usually live in the water in warm parts of the world. They can be very dangerous.

Crocodiles

can float with just their noses and eyes sticking up above the water. They look like a floating log. They will wait for an animal to come to the edge of the water, and then they attack.





Unit Vocabulary Review

Use the blank area to draw pictures of the amphibians and reptiles in the list.

**FROGS &
TOADS**

TADPOLE

SNAKES

LIZARDS

TURTLES

**ALLIGATORS &
CROCODILES**

Write
out these
vocabulary
words.

LIFE CYCLE

FANGS

REPTILES

AMPHIBIANS

Arthropods

UNIT
4



GOD'S
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Lessons 20-26

Animals
for Beginners

Lesson 20

Animals Without Backbones



You probably already knew about many of the animals we have studied so far. All these animals are

vertebrates.

They have backbones. But there are many other animals out there. Most of these animals are small and do not have a backbone. They are called invertebrates.



name

Spiders, worms, and flies are

invertebrates.

You are likely to find them around your house or in your yard. You might have eaten some other animals without backbones. Have you ever eaten shrimp, clams, or crabs? These are animals, too. God made many small interesting animals.



- ? Name three animals with backbones.
- ? Name three animals without backbones.



Scripture Trace

And God made everything that
creeps on the ground according to
its kind. And God saw that it was
good.

Genesis 1:25

Arthropods

Arthropods

are a group of invertebrates. Arthropod means “jointed feet.” They have jointed legs—legs with bendable joints in the middle.

They have segmented bodies—bodies with more than one section.

They do not have bones inside their bodies, but instead they have an outer shell called an exoskeleton.

Spiders, insects, shrimp, crabs, and millipedes are all arthropods. More than 80% of all known animals in the world are arthropods.

- ? What does the word “arthropod” mean?
- ? What do arthropods have instead of bones?

name



What Is an Arthropod?

Look at the pictures of an ant, a spider, a scorpion, a crab, and a grasshopper. All of these animals are arthropods. Circle the jointed legs on each animal. Count the legs (pincers are not legs).





Do you like insects? It is easy to like ladybugs and butterflies. But it is not easy to like mosquitoes. Whether you like them or not, insects are important.

An insect has three body parts—the head, thorax, and abdomen. An insect has one pair of antennae on its head.



An insect has six legs. These legs are all connected to the middle section of its body. And most insects have one or two pairs of wings. The wings are also connected to the middle section of its body.

Grasshoppers and crickets are insects. Butterflies and moths are insects with beautiful

wings. Flies, mosquitoes, and beetles are insects as well.





name



Flies and mosquitoes may be considered pests, but we need to remember that God created the insects for many purposes. Bees are useful insects. They help flowers make seeds. Bees also make honey. Birds and other animals eat insects for food. So, you see, insects are very important.



- ? How many body parts does an insect have? How many legs do they have?
- ? Do you have a favorite insect?
- ? What are some things God created insects to do?



Scripture Trace

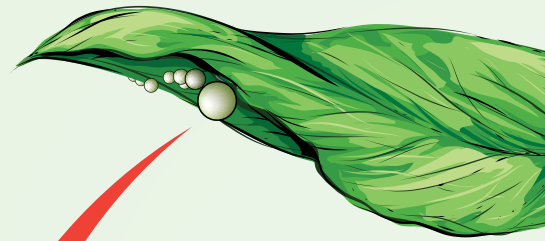
Go to the ant, O sluggard;
consider her ways, and be wise.

Proverbs 6:6

Insect Life Cycle



What do baby insects look like? Some baby insects hatch from their eggs and look very much like their parents. Baby grasshoppers look like small grasshoppers. As the



grasshoppers

grow,

they develop wings and soon become adults.

But most insects do not look like their parents when they hatch from their eggs. Most baby insects must go through a big change to become an adult.



A caterpillar

is a

baby butterfly or moth. But it looks much more like a worm. A butterfly caterpillar eats and grows. Then one day, it connects to a leaf or twig, turns hard, and forms a chrysalis. Moth caterpillars spin cocoons of silk around themselves.



name

While it is in the chrysalis or cocoon, the insect's body changes completely. It no longer looks like a worm. It grows three body parts. It grows six legs and wings.

When the change is complete, the

butterfly

or moth comes out of its shell. It now looks like an adult.

We don't know why God designed insects to experience such a big change in their bodies.

But it is amazing to watch it happen.

- ? How can you tell the difference between a baby grasshopper and an adult?
- ? What is a baby butterfly called?
- ? What is the shell called that a moth caterpillar spins around itself?

Spiders

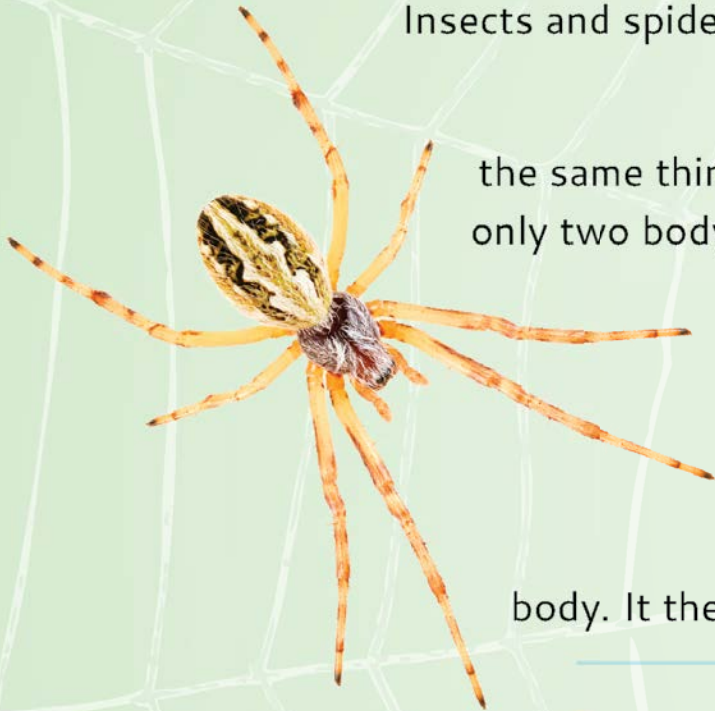


Insects and spiders look a lot alike. But they are not

the same thing. A spider has only two body parts. And a spider has eight legs. Spiders do not have any wings or antennae.

Almost all spiders can spin webs. The spider shoots out thread from the back of its body. It then weaves these threads into

a web. Most of the threads in the spider's web are sticky. The spider uses the web to catch insects to eat. A few of the threads are not sticky. The spider uses those threads to move around without getting stuck.

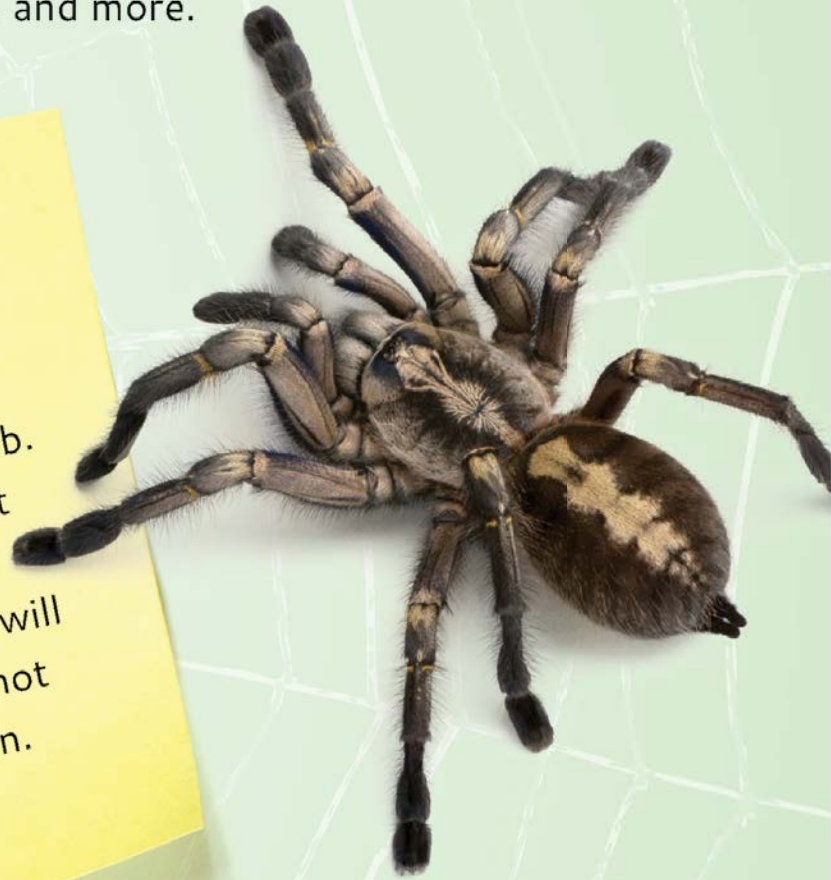


name

Even though spiders are scary to some people, they are very useful. Spiders eat pests such as mosquitoes, aphids, and cockroaches. A spider can eat over 2,000 insects in one year! Spider silk is very strong and elastic, and scientists are studying how it can be used for making better bullet-proof clothing, ropes, nets, seat belts, parachutes, surgical thread, and more.

Spider Webs

If you have the opportunity, closely observe a real spider's web. Use a magnifying glass to look at the individual strands. Sprinkle powdered sugar on the web. It will stick to the sticky strands but not to the ones the spider walks on.



- ? How many body parts does a spider have?
- ? How do most spiders catch their food?
- ? How did God make spiders useful?

Crabs and Crayfish

Crabs, lobsters, crayfish, and shrimp are all animals that live in the water. They have crusty shell-like bodies. Many of them have

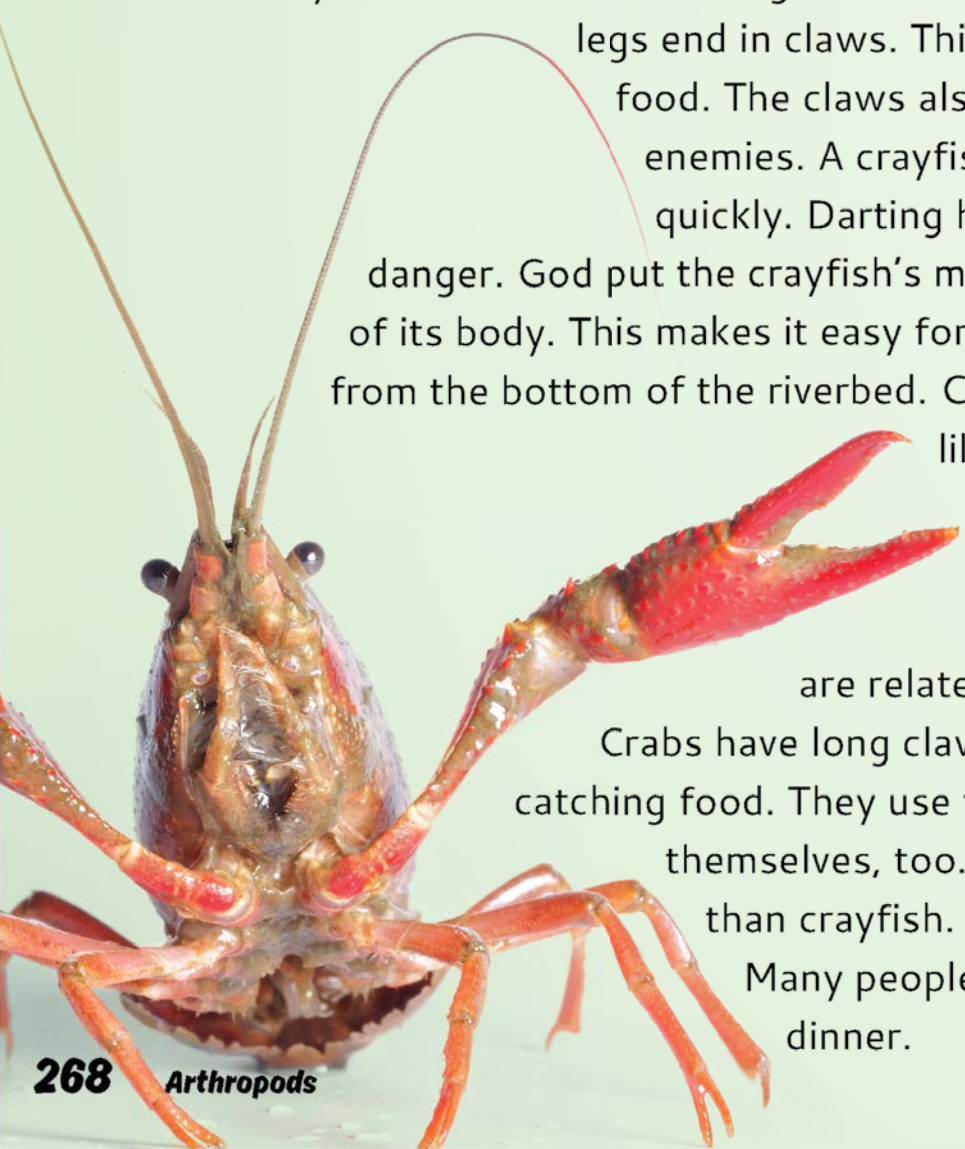
claws

on their front legs. Most of these animals live in the ocean. But crayfish live in rivers and streams.

You may have seen a crayfish (also known as crawdads or crawfish) near where you live. These interesting animals have ten legs. The front legs end in claws. This helps them catch their food. The claws also help them fight off enemies. A crayfish can dart backward very quickly. Darting helps them get away from danger. God put the crayfish's mouth on the underside of its body. This makes it easy for the crayfish to eat food from the bottom of the riverbed. Crayfish look very much like small lobsters.

Crabs

are related to crayfish and lobsters. Crabs have long claws on their front legs for catching food. They use these claws to protect themselves, too. But crabs are more round than crayfish. They live in the ocean. Many people like to eat crab legs for dinner.

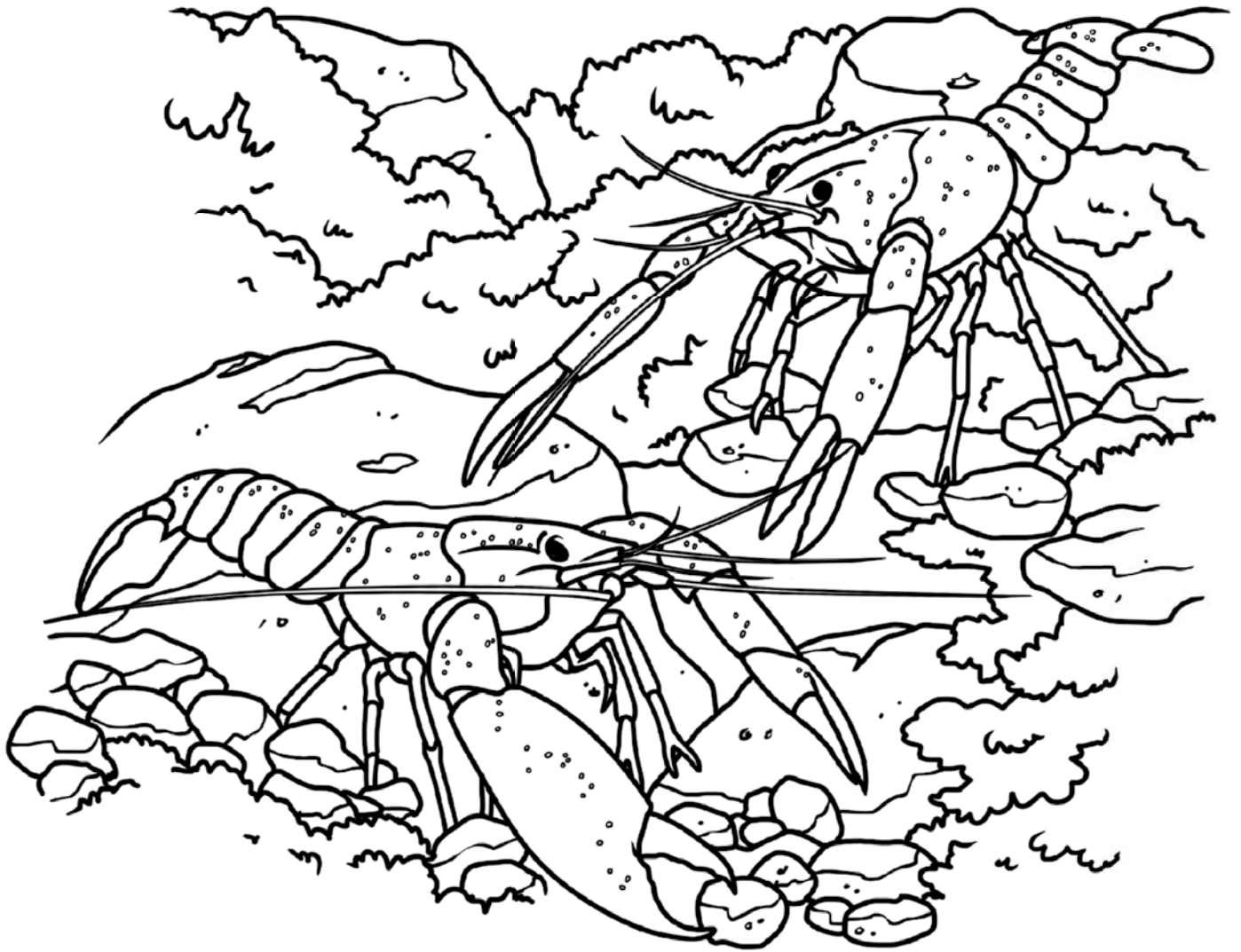


name



Crayfish Coloring Sheet

Color the crayfish picture. Look at its legs.
Notice its claws.



- ? Have you ever eaten shrimp? What about crab?
- ? Why did God put the mouth of a crayfish on the underside of its body?

Lesson 26

Animals with Many Legs



pill bug



centipede

The pill bug (also called sow bug or roly-poly) can roll perfectly into a ball. This protects it from its enemies. It has seven overlapping plates with 7 pairs of legs. Scientist classify pill bugs in the same group as crabs and crayfish.

A centipede is another animal that has many legs. Centipedes have flattened bodies. Their bodies have about 20 parts. Each part has one pair of legs. So centipedes have about 40 legs. The front legs have poisonous claws. So be sure not to touch a centipede. It may sting you.

The animal that has the most legs is the

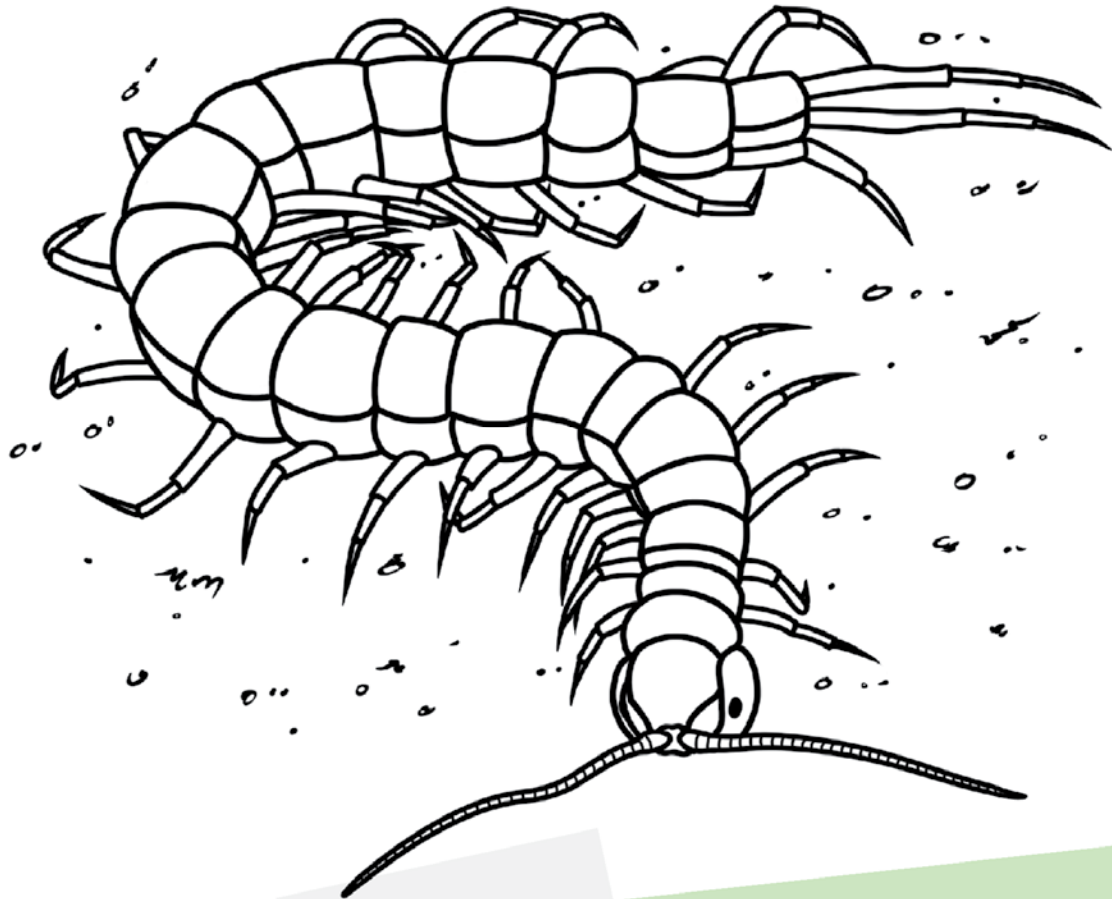
millipede. Millipedes are not poisonous. So it is safe to touch them. They are very round and have two pairs of legs on each body part. A millipede can have as many as 100 body parts. So it can have as many as 400 legs! Millipedes and centipedes both like to live in dark moist places. Be careful when you dig in the dirt or move big rocks. You might find something you don't expect.

name



Centipede Coloring Sheet

Color the centipede.



- ? What does a pill bug do to protect itself?
- ? What are some differences between a centipede and a millipede?



millipede



Unit Vocabulary Review

Find the vocabulary words in the word search.

Search down and across.

PILL BUG

LEGS

MILLIPEDE

CLAWS

CRABS

SPIDER

WEB

INVERTEBRATES

BUTTERFLY

GRASSHOPPER

INSECT

CENTIPEDE

CATERPILLAR

WINGS

ARTHROPODS

VERTEBRATES

A X Z K L X Q M F Q W E B W J
C C E N T I P E D E A Y C I C
T F G Y M L E G S Y Y T A N R
N Q A R T H R O P O D S T G A
Z I K R K K M O Q N G B E S B
C N P Y Z O E M A F T H R N S
F S Z Y G R A S S H O P P E R
S E I S S B K T I N I J I A F
O C Q M I L L I P E D E L T U
A T S D W B U J J Y C F L L Z
B U T T E R F L Y L O K A M Z
P I L L B U G B G F F Z R A E
E I I N V E R T E B R A T E S
V E R T E B R A T E S X F P O
S N C L A W S P I D E R O Q K

UNIT
5

Other Invertebrates



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Lessons 27-31

Animals
for Beginners

Did you know that a seashell is the home of an animal? Clams

and oysters live in shells. Their shells have two parts. These parts open and close to catch food. Sometimes you might find a pearl inside an oyster.

A snail lives in a shell, too. Its shell has only one part. The snail carries its shell on its back. A snail is an example of a



snail

mollusk. Mollusks are soft-bodied animals with no backbone. Most mollusks make their own shells.

Shell Collection

Collect several sea shells. If you do not live near the ocean, you can get sea shells from a craft store. Examine each shell. How are they the same? How are they different? What kind of animal might have lived in each shell? If you have a flat shell, you can make a tracing by placing a piece of paper over the shell and then rubbing a pencil lightly across the shell until the shape of the shell comes through the paper.

name

Each type of mollusk produces a different kind of shell, so you can tell what kind of animal lived in the shell just by its shape and color.



red scallop

Some mollusks don't have a shell. These include the octopus and the squid.



octopus

- ? Can you name a mollusk that has a two-part shell?
- ? Can you name a mollusk that has a one-part shell?
- ? Can you name a mollusk without a shell?

Lesson 28

Jellyfish and Coral



jellyfish

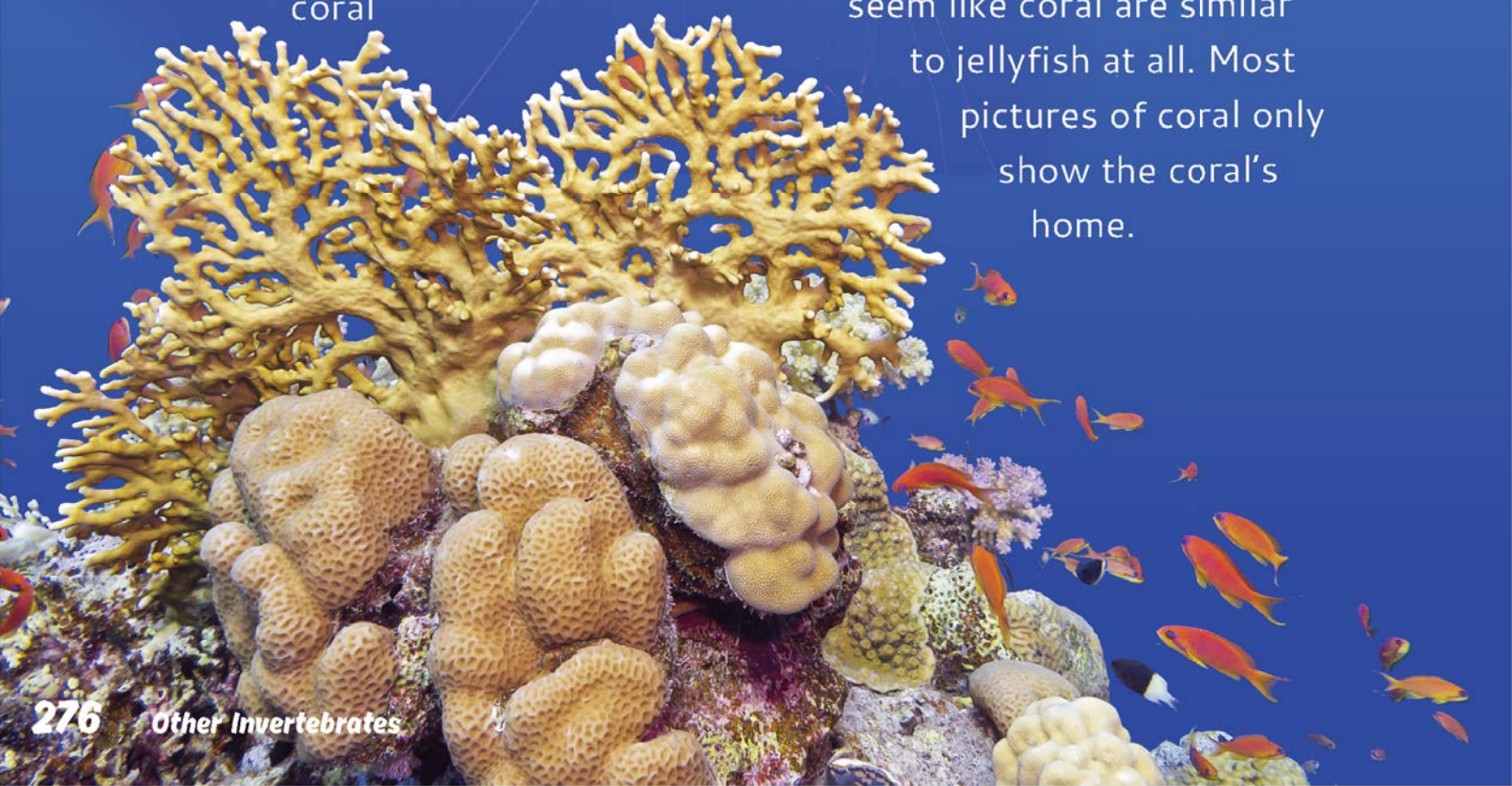
A jellyfish is not a fish. It has a bell-shaped body with long tentacles. Jellyfish eat fish by stinging them with their tentacles. Most animals avoid jellyfish, but there are a few fish that are protected from the jellyfish's sting. A clownfish is safe around jellyfish.

An animal that is similar to a jellyfish

is a coral. It may not

coral

seem like coral are similar to jellyfish at all. Most pictures of coral only show the coral's home.



A coral is a tiny creature with long tentacles. Even though it is very small, it looks like a tiny jellyfish. Each coral builds a case around itself for protection. The coral comes out of its case to eat. It pulls itself into its case when there is danger. Thousands of tiny coral live closely together. Their shells combine to form beautiful coral reefs.



coral

The sea anemone is similar to coral and jellyfish. An anemone has a hollow body with long stinging tentacles.



sea anemone

It is much larger than a coral but can be smaller than a jellyfish. All of these creatures are beautiful and designed by God to live in the ocean.

- ? What protection does God provide for a jellyfish?
- ? What protection does God provide for a coral?
- ? What animal is similar to coral and jellyfish?

Most starfish have five legs, but some have more than ten. The starfish has a mouth on the bottom of its body. It is covered with spiky skin. And it has

tube feet

that can grip onto rocks. It lives on the floor of the ocean. Starfish eat clams and oysters.

Starfish

are also called sea stars. They have an amazing ability. They can grow back a leg if it is cut off. In fact, if the starfish is cut in half, it can grow an entire body.



Starfish Model

Make salt dough by combining 1 cup flour, 1 cup salt, and $\frac{1}{2}$ cup water. Use this dough to form a 5-legged starfish. Try to make the model thicker in the middle and thinner at the ends of the legs. Gently press mini-chocolate chips into the starfish to represent its spikes. Allow the starfish to dry before you try to pick it up.



starfish



- ? How many legs does a starfish have?
- ? What happens if you cut off the leg of a starfish?
- ? Can you recall another animal that grows back part of its body?

Lesson 30

Sponges



What does a sponge look like? It is soft and has a lot of holes in it. A

sponge is

good for washing things because it can hold a lot of water. Most sponges we use at home are made from a type of soft plastic. They are not alive. But some sponges are actually animals.

Like a kitchen sponge, an animal sponge is full of holes. It lives on the bottom of the ocean. Water flows through the holes in its body. The sponge traps its food as the water flows through. A sponge is a very strange looking animal.

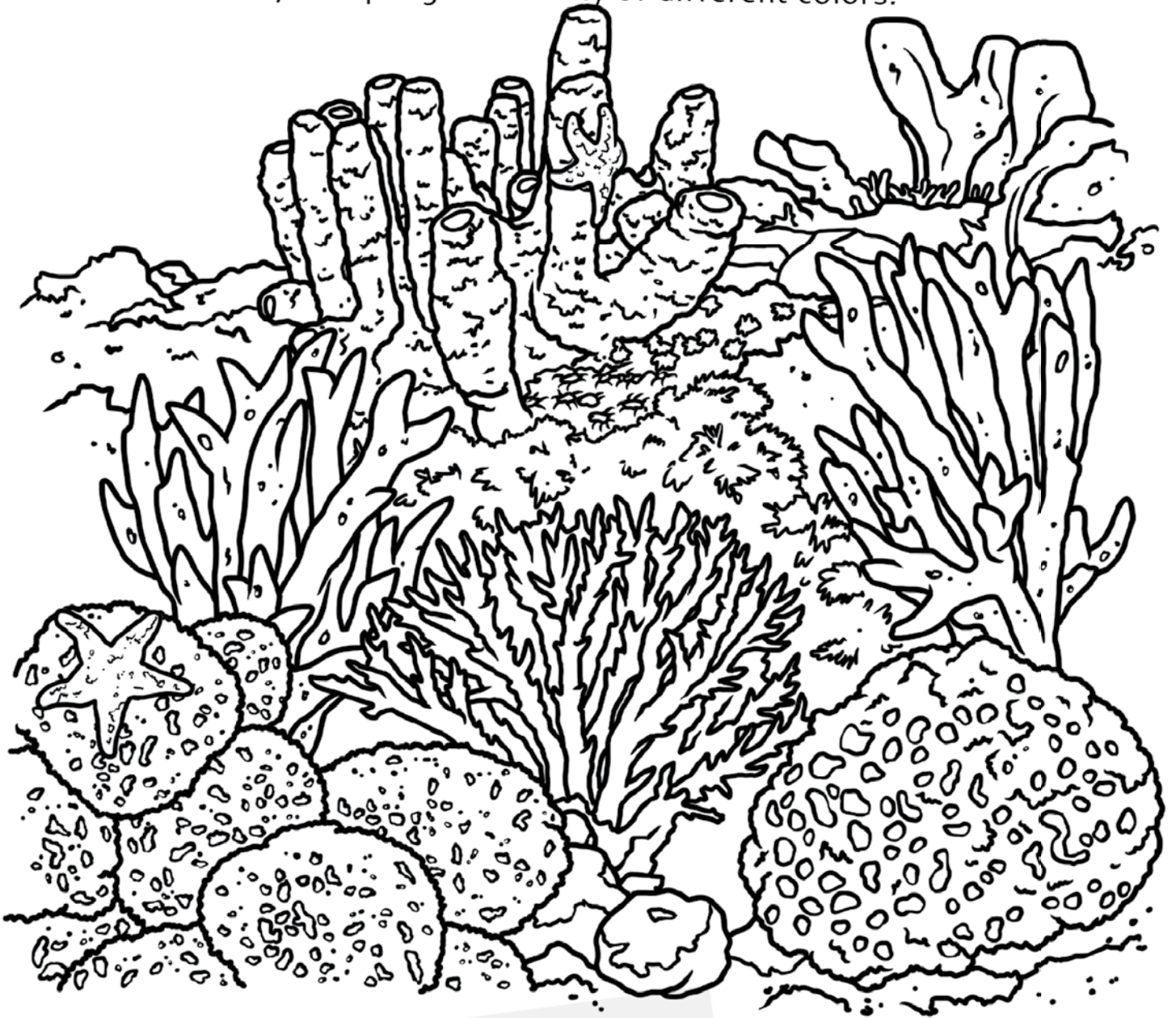
Sponges have something in common with starfish. If you cut a sponge in half, it will grow into two new sponges.

sponge



Sponge Coloring Sheet

Live sponges come in a variety of colors, shapes, and sizes. Color your sponges a variety of different colors.



- ? How does a sponge get its food?
- ? What do sponges and starfish have in common?



When people go fishing, they often use worms as bait. Many people think that worms are only good for catching fish. But earthworms are good for other things, too. Earthworms are small animals that live in the ground. They are long and thin and round and don't have legs. And they do an important job. They eat dead plants, and they help break up hard soil. This helps the soil to be better, and it helps new plants to grow. So earthworms are important because they help plants to grow better.

There are other types of worms, too. Some live in the sea. Some are very tiny and live inside other animals or people. These are called parasites.



earthworm

Build a Worm Habitat

In a jar, layer dirt and sand in an alternating pattern. Place a few worms in the jar. You can either dig in your yard or go to the bait shop to get worms. Poke a few holes in the lid of your jar. Place a piece of black construction paper around the jar and tape it. Remember not to tape it too tight so you can remove it to observe your worms. Give the worms some time to dig. Then, you can remove the paper and see the tunnels!

You can keep the worms in the jar for a few days. Spray the soil with water to keep the soil damp, but not too much or you might drown them—just enough to keep them from drying out. Since worms break down things, you can place small bits of carrots, leaves, and banana peels in the jar.



- ? Have you ever used a worm for fishing?
- ? What are some important jobs God gave earthworms?



Unit Vocabulary Review

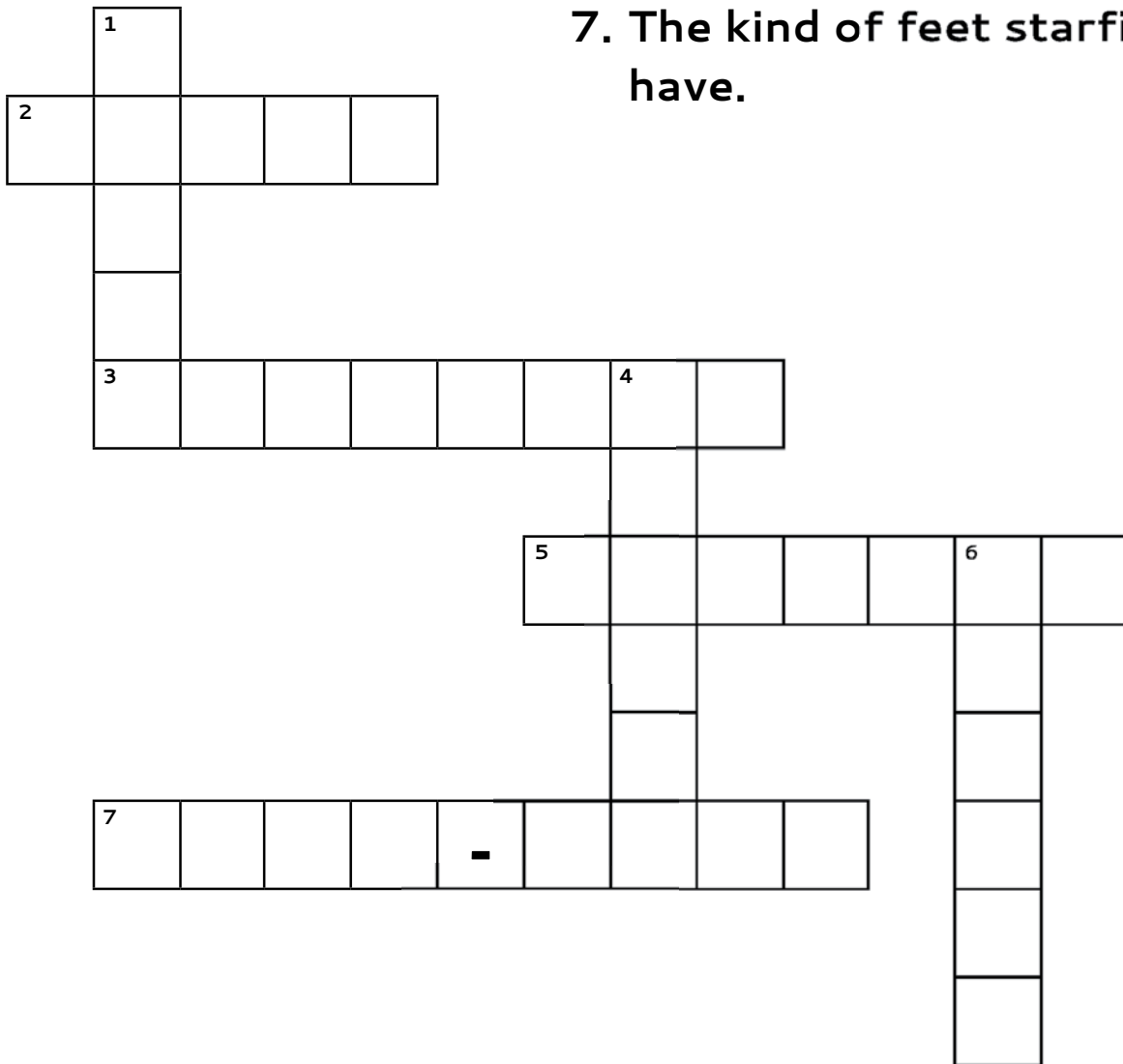
Complete the crossword puzzle by using the clues.

DOWN

1. Some people use these as fish bait.
4. This animal is full of holes.
6. Oysters live in these.

ACROSS

2. Living creatures that can form large reefs.
3. Another name for a sea star.
5. Soft-bodied animal with no backbone.
7. The kind of feet starfish have.



UNIT
6

Simple Organisms

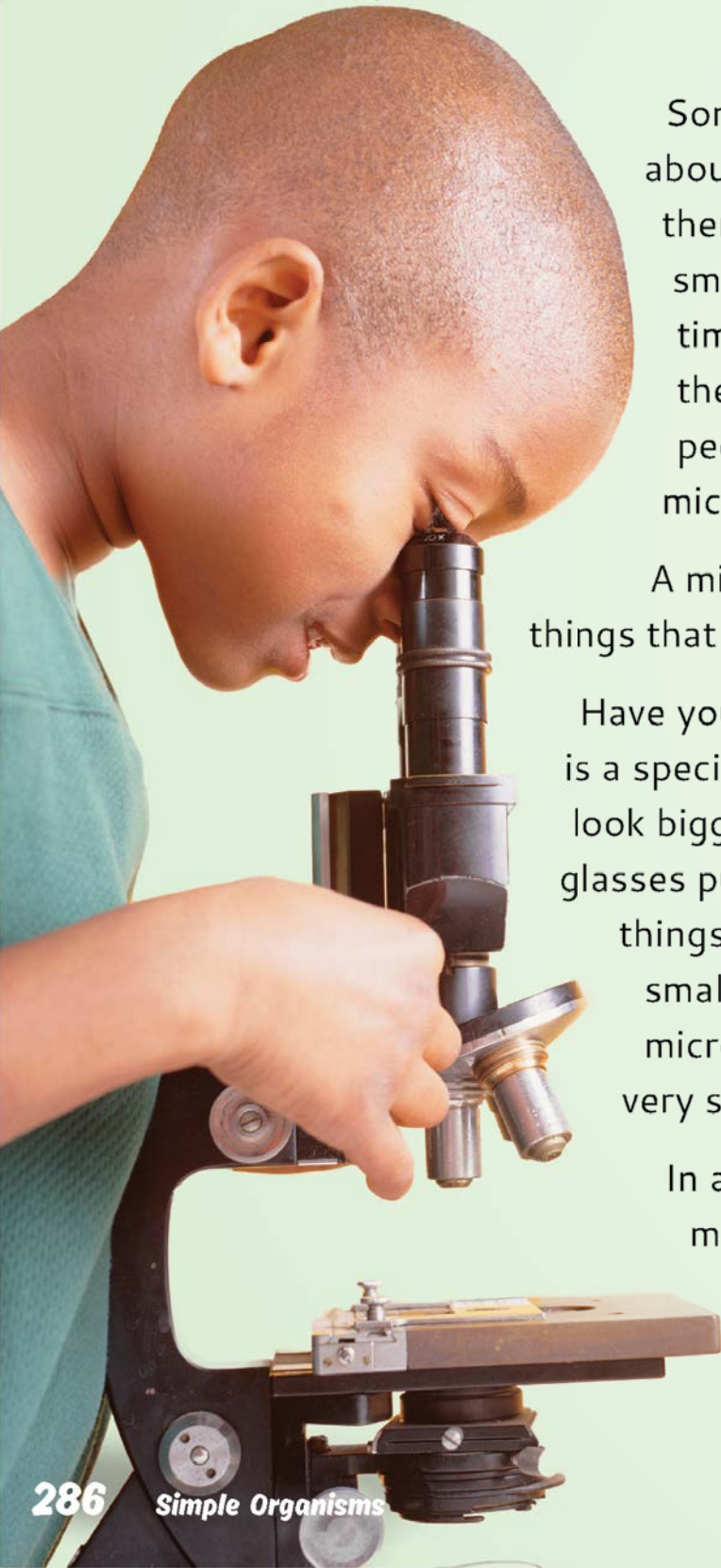


GOD'S
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Lessons 32-35

**Animals
for Beginners**

Very Tiny Animals



Some of the animals you have learned about are big. Others are small. But there are some animals that are so small you cannot see them. For a long time, people did not even know that these animals existed. But eventually, people made a special machine called a microscope.

A microscope helps us see very small things that we can't see with our eyes alone.

Have you ever used a magnifying glass? It is a special type of glass that makes things look bigger. A microscope has two of these glasses put together to make very tiny things look much bigger. Some of the smallest animals can only be seen with a microscope. But even these animals are very special. God made them, too.

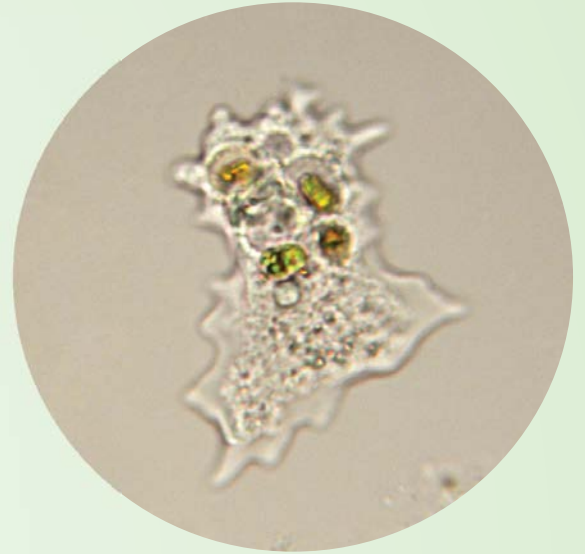
In a drop of pond water, there are many animals you can't see with your eyes alone. But when we look under a microscope, we can see them. These simple life forms are

name

called protists. They have the basic parts of an animal cell including a cell membrane, nucleus, and cytoplasm. The cell membrane acts like skin. The nucleus acts like the brain.

Using a magnifying glass

Use a magnifying glass to look at tiny things around your house. See how the glass makes them look bigger?



protist

- ? How can we see very small animals?
- ? What do we call simple life forms that we can only see with a microscope?
- ? How would you like to be that small?



Scripture Trace

For by him all things were created,
in heaven and on earth, visible and
invisible. Colossians 1:16a

The smallest living creatures are bacteria. Often bacteria are called germs. Germs can make you sick. Some germs can give you diseases such as strep throat or the flu. However, not all germs are bad. Some bacteria can be very helpful. Some bacteria eat dead plants and animals. You have some bacteria in your stomach that help you to digest your food.

Some foods, such as yogurt, have good bacteria in them.



bacteria

- ? How are bacteria helpful?
- ? How are they harmful?
- ? What should you do if you feel a sneeze or a cough coming on?
- ? Who made bacteria?

Stopping Germs

You can help stop germs from making you or other people sick by learning how to wash your hands well. You should always wash your hands after sneezing or coughing into them. Wash your hands after you blow your nose. And always wash your hands after you use the bathroom. Use soap and warm water. Rub your hands together under the water to help get rid of the germs. Also, if you feel a sneeze or a cough coming on, cover your mouth with your hand, then wash your hands. Or you can turn your head and cough or sneeze into your arm. This will help stop

germs from spreading and keep you and other people healthy.



Lesson 34

Animal Review



Let's review what we have learned about the animal kingdom. Animals that have backbones are called vertebrates. There are five kinds of vertebrates. Mammals have fur or hair and feed milk to their babies. Birds have feathers and most were designed to be good fliers. Fish live in the water and breathe with gills. Reptiles have dry skin with scales. And amphibians are animals that live in the water as babies and breathe with gills but change into adults that live on land and breathe with lungs.

We have also learned about many invertebrates. These are animals that do not have backbones. Insects have three body parts and six legs. Spiders have two body parts and eight legs. Insects and spiders are arthropods. Jellyfish, coral, snails, and oysters are invertebrates, too. We learned that some animals are so small you can only see them with a microscope.

All of these animals are interesting. And God created them all. Each animal has a special purpose in God's world.

- ? What are some things that all animals have in common?
- ? What is the difference between vertebrates and invertebrates?

Animals in the Bible

Lesson 35

The Bible has a lot to say about animals. It tells us that God created all of the animals on days 5 and 6 of creation. You can read about this in Genesis chapter 1. The Bible also tells us that God told Noah to build an ark. God sent at least two of every kind of land animal to live on the ark during the great flood. You can read about this in Genesis 6–8.

Prayer of Thanksgiving

Say a prayer thanking God for all the amazing animals that he created.

Lions are mentioned many times in the Bible. We know that the prophet Daniel was tossed into a den of hungry lions. But God closed their mouths, and they did not kill Daniel (Daniel 6). Serpents, donkeys, birds, and many other animals are mentioned throughout the Bible. Over 130 different animals are mentioned in the Bible. Aren't you glad that God made so many different animals for us to learn about?

- ❓ How would you feel if you were Daniel in the lion's den?
- ❓ What is your favorite animal that God created?



Unit Vocabulary Review

Match the vocabulary word to its picture.



PROTISTS

BACTERIA

MAMMAL

BIRD

FISH

REPTILE

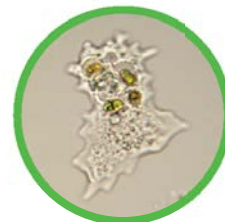
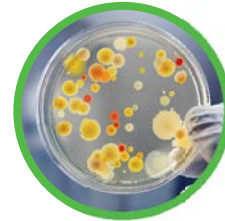
AMPHIBIAN

INSECT

SPIDER

SNAIL

JELLYFISH



Optional Activities



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Plants for Beginners Optional Activities

Lesson 4—Plant and Animal Cells—Day 6



MAKE A CELL MODEL

You can make models of animal and plant cells by doing the following:

Mix yellow gelatin according to the box directions and place in the refrigerator for about 1 hour or until it is slightly thickened. Fill a zipper bag about $\frac{3}{4}$ full with the thickened gelatin. The bag represents the cell membrane and the gelatin is the cytoplasm. Insert a red grape for the nucleus. You now have a basic animal cell. Squish the gelatin around to see how the cell moves. To make a plant cell, add several green grapes inside the cell. These are the parts that help the plant turn sunlight into food.

Lesson 6—Grasses—Day 11



LOOK AT THE GRASS

Go outside in your yard and see what lives in and near your grass. Look closely at the plants in your yard for insects and other small creatures. Then sit still for a while and watch for birds. Birds often eat some of the animals that live in your grass.



ANIMALS IN THE GRASS

Cut one piece of green construction paper in half the long way. Glue one of these halves on top of a second full-size piece of green construction paper along the bottom edge. When the glue is dry, cut the top piece of paper into narrow strips to form grass. Add pictures of things you are likely to find hiding in the grass. You could include earthworms, lady bugs, and grasshoppers. You could also include larger animals that eat grass like rabbits and mice. Birds eat the insects in the grass, so you can draw a bird near the grass.

Lesson 13—Stems—Day 23



WHAT GOES UP?

You can see a celery stem move water. Add a few drops of food coloring to a glass of water. Cut off the bottom $\frac{1}{2}$ -inch of a stalk of celery. Place the cut end of the celery into the glass of colored water. After an hour or two, you should be able to see the colored water moving up the stalk of celery. After several hours, you should even be able to see the coloring in the leaves of the celery.

Lesson 14—Stems—Day 24



EATING PLANTS

People eat many different parts of plants. We eat roots, stems, leaves, fruit, and seeds. Make your favorite salad using as many different parts of a plant as you can find in your kitchen. Here are some ideas to help you get started.

- Lettuce and spinach are leaves
- Carrots and radishes are roots
- Celery is a stem
- Tomatoes and cucumbers are considered the fruit of their plants
- Sunflower seeds make a crunchy topping for your salad



BARK RUBBINGS

With paper and a crayon, go out and get rubbings from trees of various different barks. Try your hand at duplicating God's design by drawing the bark yourself.

Lesson 17—Leaf Arrangement—Day 29



LEAF RUBBINGS

Making your own leaf rubbing is a great fall craft project.

Collect fall leaves of all shapes and sizes. On a piece of plain white paper, position leaves vein side up in a pattern that you find pleasing. Lay another sheet of plain white paper over the top of the leaves. Select the crayons that you would like to use to create your rubbing and peel off the paper wrappers. Turn a crayon on its side and gently rub over the top sheet of paper. The leaf images will magically appear on the paper! Experiment with different crayon colors and leaf arrangements. Remember, these leaves made oxygen for you to breathe!

Lesson 19—Changing Colors—Day 32



FALL MOBILE

Cut various shapes of leaves from orange, yellow, red, and brown construction paper. Punch a hole in each leaf. Tie a piece of string to each leaf and attach the leaves to a clothes hanger to create a beautiful fall mobile.

Human Body for Beginners Optional Activities

Lesson 2—The Human Body—Day 62



BODY SONG

Sing the song “Head, Shoulders, Knees, and Toes.” Practice pointing to each body part. Sing a little faster each time. See how fast you can sing and still touch each part of your body. If you are not familiar with this song, you can listen to it on the internet.

Lesson 4—Your Skeleton—Day 67



MAKE A “PASTA SKELETON”

Using a few different types of dried pasta and a piece of construction paper, you can make your own skeleton out of pasta. Students can use “Sandy Skeleton” as a guide. Make sure you lay out the dried pasta on the construction paper before gluing to make sure the arrangement is proper. Glue the pasta using white glue and allow it to dry. Spaghetti makes good fingers, and a wagon-wheel type pasta makes a good skull. Macaroni noodles can be used for the ribs. If you want to branch out from pasta and use beans as well, Lima

beans make good hips. Be creative and have fun!

Lesson 6—Types of Bones—Day 69



SIMON SAYS

Play “Simon Says,” taking turns calling out the names of the bones you have learned about.

Lesson 7—Joints—Day 71



DRY BONES SONG

Sing together the old spiritual song “Dry Bones.” This song is based on Ezekiel 37. Ezekiel prayed, and God put the bones together. God then breathed life into the bodies. It is a fun way to learn about the bones of the body. If you are not familiar with the tune for this song, you can watch a video on the internet.

Ezekiel cried, “Dem dry bones!”

Ezekiel cried, “Dem dry bones!”

Ezekiel cried, “Dem dry bones!”

“Oh, hear the word of the Lord.”

The toe bone connected to the heel bone,

The heel bone connected to the foot bone,

The foot bone connected to the leg bone,

The leg bone connected to the knee bone,

Human Body for Beginners Optional Activities

*The knee bone connected to the thigh bone,
The thigh bone connected to the back bone,
The back bone connected to the neck bone,
The neck bone connected to the head bone,
Oh, hear the word of the Lord!*

*Dem bones, dem bones gonna walk aroun'
Dem bones, dem bones, gonna walk aroun'
Dem bones, dem bones, gonna walk aroun'
Oh, hear the word of the Lord!*

*The head bone connected to the neck bone,
The neck bone connected to the back bone,
The back bone connected to the thigh bone,
The thigh bone connected to the knee bone,
The knee bone connected to the leg bone,
The leg bone connected to the foot bone,
The foot bone connected to the heel bone,
The heel bone connected to the toe bone,
Oh, hear the word of the Lord!*

Lesson 10—Hands and Feet—Day 74



HANDS AND FEET PRINTS

Make prints of your hands and feet. Press each hand or foot in some paint. Next, press it on a piece of paper. You can see the special shape of each

hand and foot. You might even be able to see the ridges from the friction skin.

Lesson 12—The Brain—Day 78



BRAIN MODEL

Look at the picture of the brain. Use modeling clay to make your own model of a brain.

Lesson 16—The Eye—Day 83



I SPY GAME

Play the game I Spy. The spy begins with one person saying, "I spy with my little eye something that is..." and then naming a color or shape of something that is visible in the room. Everyone else takes turns asking questions that can only be answered by "Yes" or "No." Whoever guesses the right object gets to be the next spy.

Human Body for Beginners Optional Activities

Lesson 17—The Ear—Day 86



MAKING A TELEPHONE

Make a telephone so you can talk to someone from across the room. Get two paper cups and a string. Punch a small hole in the bottom of each cup. Push the string through the bottom into the cup. Tie a large knot so the string will stay in the cup. Repeat for the other cup. Give one cup to each person. Spread out from each other until the string is tight. One person can talk into a cup while the other person listens with the other cup. The sound will move from one cup, down the string, and into the other cup where the listener's ear will be able to hear the sounds.

Lesson 18—Taste and Smell—Day 87



TASTE AND SMELL

Peel and slice a potato and an apple into small, bite-sized pieces so that they appear and feel similar. Put a piece of apple and a piece of potato on a small plate. Have kids hold their noses while trying the different foods. After they have tried both foods, have them guess which was which. They will probably have a hard time determining the difference

between them. Try other sliced fruits and vegetables, but use a blindfold so the appearance of the fruit does not give it away.

The nose and mouth work together to taste the foods that are eaten. The taste buds on the tongue are able to decipher sour, sweet, salty, and bitter, but the sense of smell does the rest of the work.

Lesson 19—The Digestive System—Day 89



WHERE DOES MY FOOD GO?

Make a giant version of your digestive system. You can use things you have around your house. Then you can pretend to be the food and take a trip through your own digestive system. A couch can be the mouth. Lie on the couch and have someone gently hit you with pillows. The pillows are the teeth that chew up the food.

Slide off the couch onto the floor. The floor can be the stomach. Roll around in the stomach for a few minutes. Pretend that you are being broken up into tiny pieces.

Make a tunnel using a sleeping bag or blankets. This is the small intestine. Crawl through the small intestine.

From here you have two options. You can go into the blood, or you can go into the large intestine. If you go into the blood, you then go to the rest of the body. Run around the house taking energy to all the rooms.

The unusable part of the food must go through the large intestine. For the large intestine, set up a series of kitchen chairs to form a larger tunnel. Crawl through the large intestine. You are then out of the body.

Lesson 28—The Lungs—Day 103



HOW BIG ARE MY LUNGS?

The insides of your lungs are not empty like a balloon. But you can use a balloon to see how much air is inside your lungs. Take a deep breath and blow as much air as you can into an empty balloon. Tie the balloon closed. If you have trouble blowing up the balloon, ask your mom or dad to blow it up for you and release the air a few times. This will stretch the balloon out and make it easier to blow air into it.

Let everyone in your family blow one breath into a balloon. Compare the

sizes of the balloons to see who has the biggest lungs.

Animals for Beginners Optional Activities

Lesson 3—What Is a Mammal?—Day 122



PLAY-DOUGH MAMMAL

Create your own fur mammal with play-dough. Have child verbally share his or her new creation.

Lesson 5—Monkeys and Apes—Day 124



MONKEY SILLY SONG

Go to YouTube and watch the “Veggie Tales: Monkey Silly Song” to learn that monkeys have tails and apes do not. ([youtube.com/watch?v=i4EDEKYERto](https://www.youtube.com/watch?v=i4EDEKYERto)).

Lesson 6—Water Mammals—Day 126



EATING LIKE A WHALE

Some whales have teeth like you do. But other whales have small bristles across their mouths. They do not bite their food. They use these bristles to trap tiny animals. You can pretend you are a whale and eat like they do. Have your mom chop up a carrot or some nuts. Put the food into a glass of water. The bristles on your toothbrush are similar to the bristles in a whale’s mouth. Hold your

toothbrush over an empty cup. Pour the water and food mixture over your toothbrush. Some of the food will get trapped in the bristles. Put the toothbrush in your mouth and use your tongue to remove the food. Now you are eating like a whale.

Lesson 8—Birds—Day 131



BEAK COMPARISONS

Find pictures of bird’s beaks in magazines or on the Internet and make a display showing the wide variety of bird beaks.

Lesson 11—Fish—Day 136



FISH SCHOOL

A group of fish is called a *school*. Create an underwater picture of a school of fish. Use a piece of blue construction paper. Draw seaweed, rocks, and sand along the bottom. Then glue several goldfish crackers on your paper to make your fish school. It might be fun to eat a few of the fish, too.

Lesson 13—Sharks and Rays—Day 138



STING RAY MODEL

Use modeling clay to make a model of a sting ray. Make sure it has a flat body with eyes on top and a long tail.

Lesson 14—Frogs and Toads—Day 141



LEAP FROG

Play a game of leap frog with your friends. Everyone crouches down on the ground forming a line of “rocks.” The last person in line becomes the frog and leaps over each person by gently placing their hands on the person’s back and jumping over them. When the frog gets to the front of the line he/she crouches down to become a rock, and the person at the back of the line becomes the new frog.

Lesson 17—Snakes—Day 146



MOVE LIKE A SNAKE

Pretend you are snake. Lie on the floor and see if you can move without using your hands or feet. Hold your arms close to your sides and move in different ways. Some snakes can move their bodies from side to side. Others scrunch up their bodies and then push forward to move. Can you move like a snake?

Lesson 20—Animals Without Backbones—Day 152



ANIMAL REPEAT GAME

Let’s play a memory game. The first person names an animal. The next person has to repeat that animal and name a second animal. The next person repeats the first two animals and adds another to the list. Continue taking turns saying the whole list of animals until someone cannot remember all of the animals on the list.

Animals for Beginners Optional Activities

Lesson 22—Insects—Day

154



INSECT MODEL

Make a model of an ant.

1. Connect 3 foam balls together with toothpicks to form the body of the ant.
2. Cut pipe cleaners into eight equal-length pieces. Push three pieces into each side of the middle ball and bend them downward to form six legs.
3. Push the remaining pieces of pipe cleaner in the top of the head to form antennae.
4. You can use a marker to draw a face on your insect.



PLAY "COOTIE"

Playing the game "Cootie" from Milton Bradley is a fun way to review the parts of an insect.

Lesson 23—Insect Life Cycle—Day 156



BUTTERFLY BREAKOUT

You can remember the stages of an insect's life cycle by pretending to be a butterfly. Curl up on the floor

in a ball. This is the egg stage. Slowly unwind and crawl around on the floor. You are now a caterpillar. Pretend to eat and grow for a few minutes. Then hold onto two scarves and wrap yourself in a blanket. The blanket is your cocoon. Think about the changes that the butterfly experiences while it is in the cocoon. After a few minutes, break out of your cocoon. Hold the scarves in your hands. Use the scarves as wings. You are now an adult butterfly.

Lesson 24—Spiders—Day

157



SPIDER SNACKS

Make a yummy spider snack. Use a round cracker as the body. Spread peanut butter on the cracker, then add a second cracker as the head. Add eight pretzel sticks for legs. Finally, add raisins for eyes. Now you have a delicious spider that you can eat.

Lesson 28—Jellyfish and Coral—Day 163



MAKE A CORAL COLONY

You can make your own coral colony by doing the following: Cut the top off of an empty egg carton.

Animals for Beginners Optional Activities

Turn the bottom of the carton over. The cups in the egg carton will be the homes for your coral. Now make a coral for each shell by cutting small pieces of pipe cleaner and sticking one piece into each of the cups. You can decorate your colony by painting or coloring the cups.

Lesson 30—Sponges—Day 166



SPONGE PAINTING

Help your child cut sponges into different shapes. Then he/she can dip each shape into some paint and gently press it on a piece of paper to create a lovely sponge painting.

Lesson 31—Worms—Day 167



WORMY SNACK

Mix instant chocolate pudding according to the package directions. Place about an inch of crushed chocolate cookie crumbs in the bottom of four plastic cups. Put a gummy worm in each cup with one end hanging over the rim. Divide the pudding between the cups. Add

another layer of cookie crumbs. Now you have four yummy mud pies with worms for dessert.



BUILD A WORM HABITAT

Materials:

- Worms
- Sand
- Jar with a lid
- Tape
- Black Construction Paper
- Dirt
- Hammer
- Nail

Lesson 34—Animal Review—Day 172



OLD MACDONALD

Sing “Old MacDonald Had a Farm.” List as many animals as you can from what you have learned in this book. Many of the animals do not make any specific noises. So make up your own sound for animals such as fish or crabs.



Answer Key



GOD'S
DESIGN®

Plants
for Beginners

Unit 1—Introduction to Life Science

Lesson 1—Is It Alive?

IS IT ALIVE? SCAVENGER HUNT



ANSWER KEY

How can you tell if something is a living thing? *Living things are born, grow, and eventually die.*

Is a cat alive? Is a couch alive? *A cat is alive. A couch is not alive.*

Is God alive? *God is alive, even though he*

does not fit this definition. God is eternal and immutable, so he was not born, he does not grow, and he will not die. But he is alive!

Lesson 2—Plant or Animal

ON WHAT DAY WERE THEY CREATED?

Day 3

Day 5

Day 6



ANSWER KEY

What do plants need in order to make their food? *Sunlight. They also need water and carbon dioxide for photosynthesis to occur.*

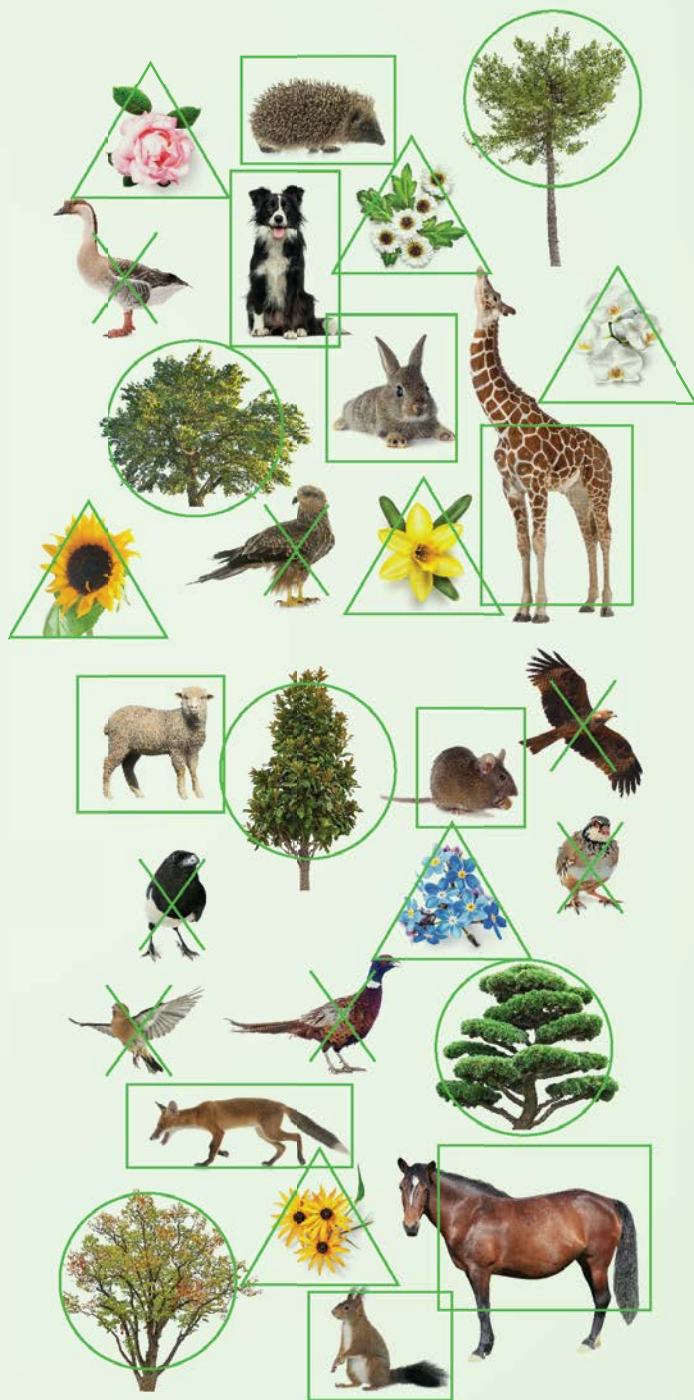
Can plants move like people? *No, a plant cannot walk around.*

Name one important difference between plants and animals. *Plants make their own food, animals eat other things for food. Plants cannot move around as animals can.*

Lesson 3—Classifying Plants and Animals



WHAT AM I?



ANSWER KEY

How are dogs and cats alike? *Dogs and cats have fur, four legs, etc.*

How are dogs and birds different? *Birds have beaks and feathers, can fly, etc.*

Who was the first human to classify, or name, the animals? *Adam.*

Lesson 4—Plant and Animal Cells

ANSWER KEY

What shape are most animal cells? *Round.*

What shape are most plant cells? *Square or rectangular.*

Can you name the parts of an animal cell? What about a plant cell? *Nucleus, membrane, cytoplasm. Plant cells also have a rigid cell wall and chloroplasts.*

What is the special machine called that helps us see tiny things? *Microscope.*

Unit Vocabulary Review

P L A N T S I L X G O P Z I

L I V I N G T H I N G S E U

A K I L A N I M A L S Q U J

N Y O R M I C R O S C O P E

T P D O A M I N S L S L I W

S E H P L S A N T O K E H Y

C L A S S I F I C A T I O N

E J Y L F E R K P C E L L Q

Copy the four orange letters in the found words to reveal a secret word. *Life.*

Which word means putting things in groups by things they have in common? *Classify.*

What is the word for something that has leaves? *Plant.*

Unit 2—Flowering Plants and Seeds

Lesson 5—Parts of Plants

ANSWER KEY

Can you name the four parts of a plant? *Flowers, leaves, stems, and roots.*

Tell me about your favorite plant. *Answers will vary.*

Why is that your favorite? *Answers will vary.*

FLOWERING PLANT COLORING SHEET

Flower

Leaves

Stem

Roots



Lesson 6—Grasses



WHAT LIVES IN THE GRASS?



ANSWER KEY

Name two animals that eat grass. *Antelope, deer, cows, and horses were mentioned in the lesson.*

Do you remember what type of grass wheat is called? *Cereal grass.*

What types of cereal do you have in your house? What grains were they made from? *Answers will vary.*

Lesson 7—Trees



TREE PRODUCTS



ANSWER KEY

What is the difference between a tree and a shrub or bush? *Shrubs or bushes have more than one stem. They are not as strong or as tall as trees.*

Can you name a deciduous tree? An evergreen? *Oak, maple, and cherry trees are examples of deciduous trees. Fir, pine, and spruce are evergreen trees.*

What protects a tree's trunk? *Bark.*

Lesson 8—Seeds

ANSWER KEY

Can you think of a seed that we eat? *Some seeds we eat include corn, peas, beans, sunflower seeds, pecans, walnuts, and peanuts.*

Plants for Beginners

If we planted carrot seeds, what would grow? *Carrots.*

Lesson 9—Inside a Seed

ANSWER KEY

What are three things a seed needs in order to grow? *Air, water, and warmth.*

Who created seeds? *God!*

What important job do seeds have? *They grow into new plants.*

Lesson 10—Seeds—Where Are They?

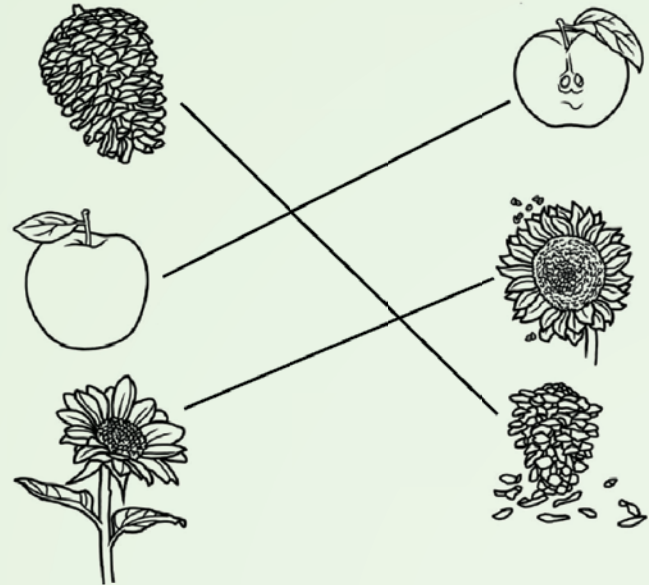
ANSWER KEY

Where can you find a plant's seeds? *Inside fruit, vegetables, or flowers.*

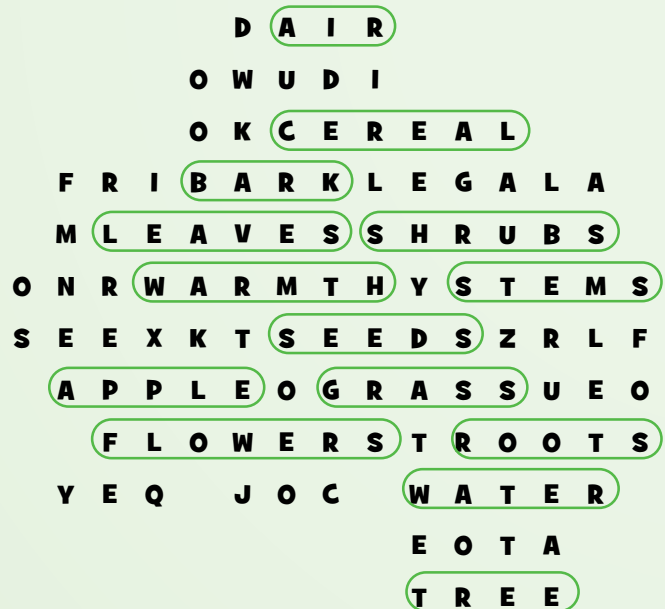
Seeds are normally small. Why do you think God made them like that? *Seeds are small so that they can easily be moved to new locations to start new plants without overcrowding. Also, small seeds are easier for animals to eat.*



MATCHING SEEDS



Unit Vocabulary Review



What is this puzzle shaped like? *A tree.*

Unit 3—Roots and Stems

Lesson 11—Roots

ANSWER KEY

What are the two jobs of roots? *They hold the plant in place. They take water and food out of the soil and send them up to the stem.*

What two kinds of roots do plants have? *Tap roots and fibrous roots.*

What roots do you eat? *Carrots, radishes, turnips, and beets are mentioned in the lesson.*

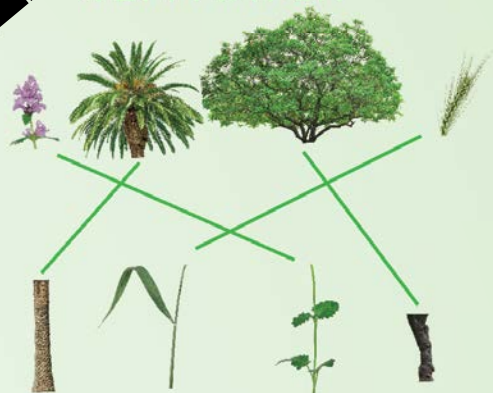
Lesson 12—Special Roots

ANSWER KEY

What do the roots on a tulip bulb look like? *Little hairs coming out of the bottom of the bulb.*

What type of roots do plants in really wet areas usually have? Why did God make them like that? *Prop roots. God designed these plants to have prop roots to keep the plant from falling over in wet, muddy soil.*

Lesson 13—Stems



ANSWER KEY

What is the main job of the stem? *The stem connects the roots with the leaves and flowers.*

Does a tree have a stem? *Yes, it is called the trunk.*

Lesson 14—Stem Structure

ANSWER KEY

What part of the plant are branches? *Branches are part of the stem.*

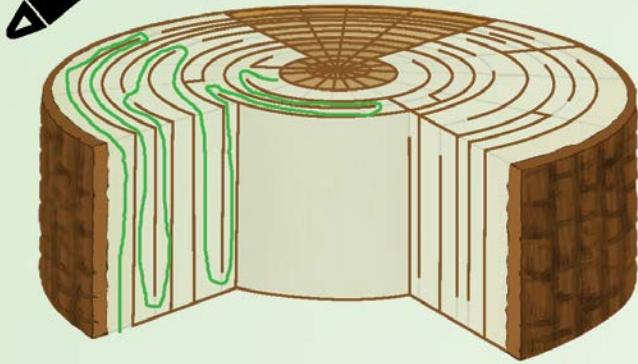
Name two things that grow from the stem. *Leaves and flowers.*

How are branches, leaves, and flowers all connected? *They are all connected by the stem.*

Plants for Beginners

Lesson 15—Stem Growth

TREE RING MAZE



COUNT THE RINGS

Count the rings of this tree from the center to the outside. How many did you count? *There are about 32 rings.*

ANSWER KEY

When are most cells made inside a tree? *In warm weather.*

What are growth rings? *Each ring represents one cycle of new cell growth, usually one year.*

Unit Vocabulary Review

GROWTH RINGS

BRANCHES

BULB

PROP ROOTS

STEM

TRUNK



TAPROOT



FIBROUS ROOT

Unit 4—Leaves

Lesson 16—Photosynthesis

ANSWER KEY

What do animals and people put into the air that helps plants live? *Carbon dioxide.*

What do plants put into the air that helps animals and people live? *Oxygen.*

Lesson 17—Leaf Arrangement

ANSWER KEY

What is the main job of the leaves? *To catch sunlight and make food.*

Why are leaves placed in different ways? *God created plants differently. Usually, the arrangement is to optimize exposure to the sun.*

What are two different ways leaves can be arranged on a stem? *Opposite and alternate arrangement.*

Lesson 18—Leaves Have Veins

ANSWER KEY

How does food and water move around in the leaves? *Through the veins.*

What are the two ways veins are arranged in the leaves? *Narrow leaves have veins that go from the top to the bottom of the leaf. Broad leaves have big veins down the middle of the leaf with smaller veins branching off.*

Lesson 19—Changing Colors

ANSWER KEY

Have you ever seen leaves on a tree change colors? Which is your favorite fall color? *Answers will vary.*

How do deciduous trees know when to change colors? *The amount of sunlight is less as winter approaches.*

Why do evergreen trees keep their needles all year round? *The needles are not harmed by the freezing temperatures of*

winter.

Lesson 20—Leaf Identification

ANSWER KEY

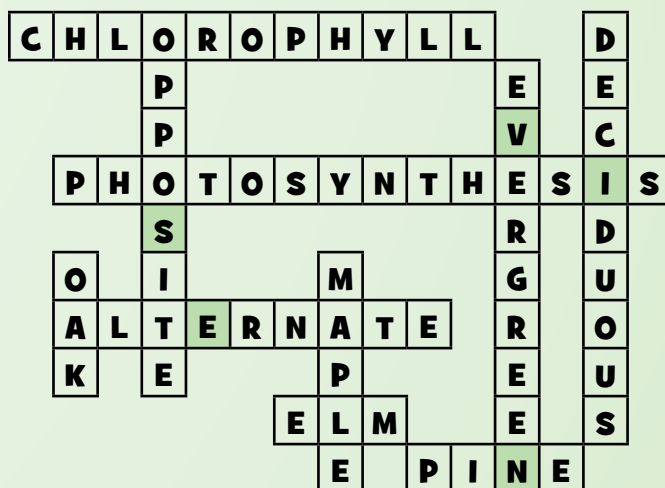
Why would you want to learn to identify leaves? *To know the different kinds of trees God made. To identify and avoid poisonous plants.*

Name different ways to identify a tree. *By its fruit, flowers, bark, leaves, shape, etc.*

What is your favorite tree? *Answers will vary.*

Unit Vocabulary Review

Unscramble the five letters in the green boxes to reveal a secret word. *Veins.*



Unit 5—Flowers and Fruits

Lesson 21—Flowers

FLOWER MAZE



ANSWER KEY

What is your favorite flower? *Answers will vary.*

What is the main job of flowers? *To make seeds.*

Why is that important? *This is how most plants reproduce; seeds grow into new plants.*

Lesson 22—Pollination

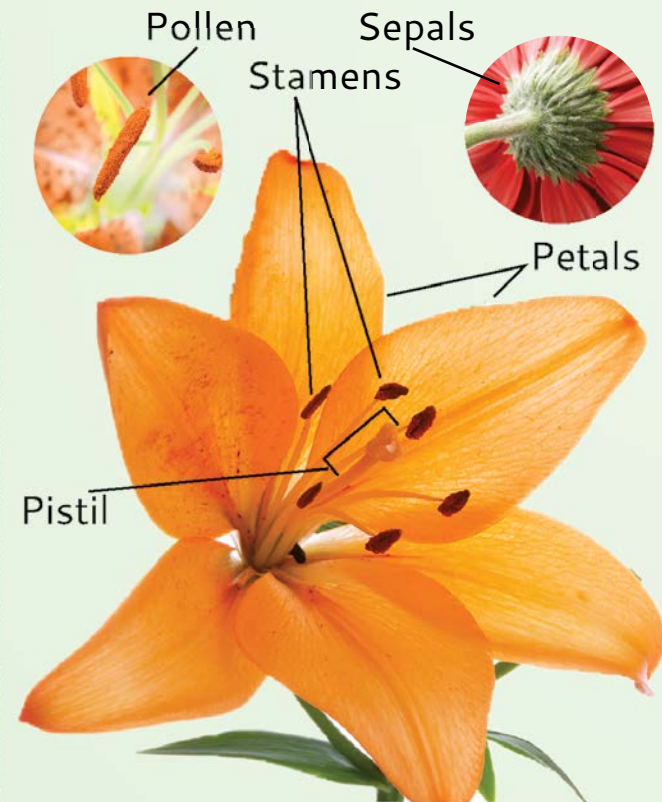
ANSWER KEY

What is nectar? *A sweet liquid that flowers produce.*

How does pollen get from one flower to another? *Bees, wasps, moths, and other insects carry pollen on their bodies from one flower to another.*

Lesson 23—Looking at a Real Flower

FLOWER PARTS ANSWER KEY



Can you remember the four main parts of a flower? *The sepals protect the growing bud. The petals attract insects. The stamens produce pollen. The pistil receives*

the pollen and makes the seeds.

How is the flower you looked at similar to the pictures in this lesson? How is it different? *Answers will vary.*

Were you able to find all of the parts of the flower? *Answers will vary.*

Lesson 24—Fruits

ANSWER KEY

Name four kinds of fruit. *Bananas, oranges, apples, peppers, cucumbers, pineapples, etc.*

Are you surprised that some vegetables are the fruit of their plants? *Answers will vary.*

Lesson 25—Plant Life Cycle

ANSWER KEY

Correct order: seed, roots and stem, leaves, flowers, fruit

PLANT LIFE CYCLE

Why do bees and other insects move from flower to flower? *They are collecting nectar, and in the process, they move pollen from one flower to another.*

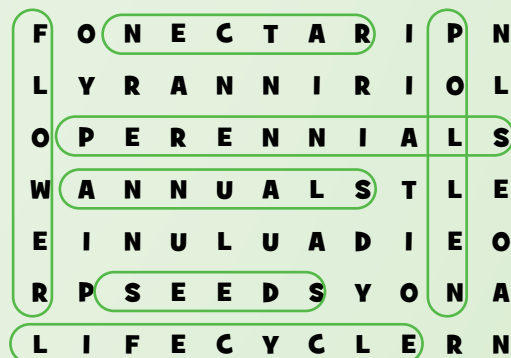
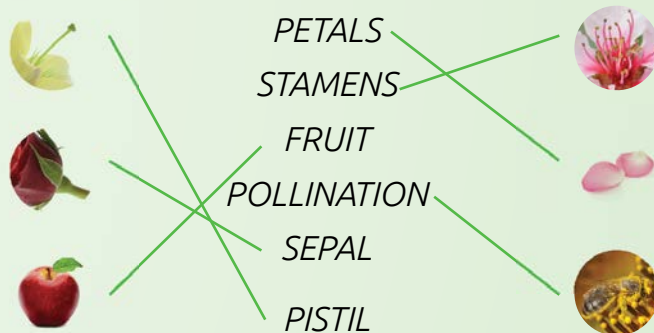
Can you name an annual plant? *Annuals include marigolds, zinnias, pansies, geraniums, begonias, fuchsias, and*

sunflowers.

What about a perennial? *Perennials include irises, lilies, peonies, daffodils, chrysanthemums, and daisies.*

Can you describe a plant's life cycle? *A seed is planted in the ground. The seed grows roots and a stem. Leaves grow on the stem. The leaves perform photosynthesis to produce food for the plant, and it grows. The plant produces flowers. Flowers attract bees and other insects. The bees move pollen from one flower to another. When a flower gets pollen, it makes seeds. The seeds are often protected by fruit. The seed falls to the ground, and the life cycle starts all over.*

Unit Vocabulary Review



Unit 6—Unusual Plants

Lesson 26—Meat-eating Plants

ANSWER KEY

What are three kinds of meat-eating plants? *Venus flytrap, sundew, and pitcher plant were mentioned in the lesson.*

Why do some plants need to eat insects? *Meat-eating plants usually grow in areas that do not have good soil. They need more food than they can get from the ground.*

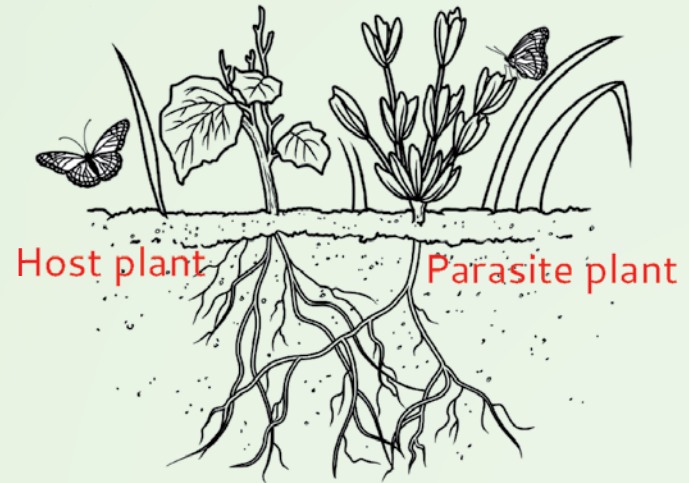
Lesson 27—Passenger and Parasite Plants

ANSWER KEY

How do most plants get water and food? *Most plants use their roots to get water and food from the ground.*

How does a parasite plant get water and food? *They steal water and food from other plants.*

What is the difference between a parasite and a passenger plant? *Passenger plants live on the sides of trees. They do not harm the trees as parasite plants do.*



Lesson 28—Plants Have Special Abilities

ANSWER KEY

What are three abilities that God has given to plants to help them survive? *Roots grow down, stems grow up, roots grow toward water, leaves turn toward light.*

Will a plant grow upside down? *No. God designed plants to be able to tell which way is up and which way is down.*

Have you ever seen a plant move? *Answers will vary.*

Lesson 29—Surviving in Harsh Climates

ANSWER KEY

Can you name a way God has made plants to survive harsh conditions? *Plants in windy areas grow low to the ground so the wind does not hurt them. In colder areas, plants grow close together to keep warm. The cactus has needle-like leaves instead of wide flat leaves to conserve water.*

Where could you find a cactus? *In a desert—a hot, dry area.*

How did God design them to survive in deserts? *They have needle-like leaves instead of wide flat leaves to conserve water. Its stem expands to store lots of water.*

Lesson 30—New Plants Without Seeds

ANSWER KEY

How are new plants usually started? *Most new plants grow from seeds.*

What are some other ways to start a new plant? *From runners, bulbs, and cuttings.*

Have you ever worked in a garden? What did you grow in your garden? *Answers will vary.*

Lesson 31—Ferns

ANSWER KEY

How are spores different from seeds? *Seeds come from flowers and spores fall from leaves.*

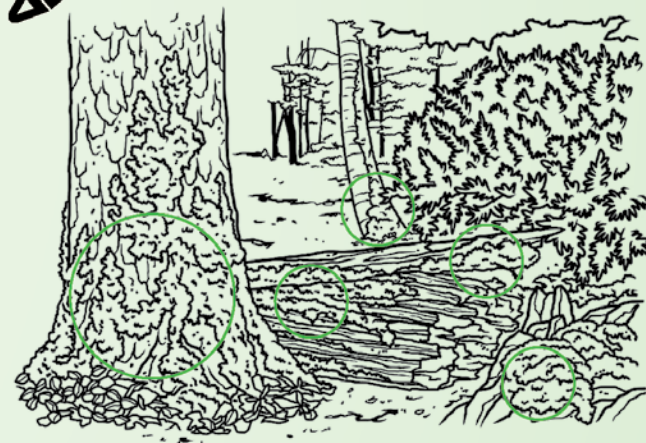
Where do ferns grow? *In places that get lots of rain.*

How do ferns reproduce? *Ferns produce spores, which fall to the ground and grow into new ferns.*

Lesson 32—Mosses



FIND THE MOSS



ANSWER KEY

Where might you find moss growing? *Moss grows in wet areas, such as under logs or in the shade.*

How do mosses reproduce? *Like ferns, moss plants make spores that grow into new plants.*

Have you touched moss? What does it feel like? *Answers will vary.*

Plants for Beginners

Lesson 33—Algae

ANSWER KEY

How are algae different from plants? *Algae do not have leaves, roots, stems, flowers, or seeds.*

Why are algae important? *Algae are very important because many water animals eat algae. Most other sea creatures eat the animals that eat the algae. Without algae the ocean animals would have nothing to eat.*

Have you ever eaten seaweed? Did you like it? *Answers will vary.*

Lesson 34—Mushrooms

ANSWER KEY

Are mushrooms plants? Why or why not? *No. Mushrooms do not have leaves, roots, stems, flowers, or seeds. And they do not have chlorophyll for photosynthesis.*

Do you like to eat mushrooms? *Answers will vary.*

Are all mushrooms safe to eat? *No. Many are poisonous.*

Unit Vocabulary Review

1. A meat-eating plant has a **_trap_** to capture insects.
2. A plant that steals water and food from another plant is a **_parasite_**.

3. God gave plants the **_ability_** to sense up and down.
4. A **_cactus_** is a plant specially designed to survive where there is very little water.
5. Strawberry plants reproduce using **_runners_**.
6. The leaves of a fern are called **_fronds_**.
7. **_Moss_** is a very tiny plant you might find in a shady, wet area.
8. **_Algae_** produce oxygen in the ocean.

Answer Key



GOD'S
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Human Body

for Beginners

Unit 1—Body Overview

Lesson 1—The Creation of Life

ANSWER KEY

What did God use to make man? *Dust, dirt.*

In whose image did God create man? *God's image.*

Lesson 2—The Human Body

ANSWER KEY

What parts of your body help you to move? *Bones and muscles.*

Who created all the special parts of the human body? *God!*

Lesson 3—Cells

ANSWER KEY

What is the smallest part of your body? *Cells.*

What do you need to use in order to see your cells? *Microscope.*



Unit Vocabulary Review

W	J	W	C	H	W	S	I	M	Y	H	G	C	C	A
S	K	I	N	T	S	H	X	B	X	P	H	H	L	C
A	C	U	B	J	Q	H	H	I	U	J	N	E	H	C
H	X	N	O	S	E	G	Y	Q	R	D	M	B	P	C
S	N	Y	D	C	O	S	W	V	Z	E	F	J	Q	B
C	V	M	Y	I	P	Z	D	C	G	T	E	Y	G	M
E	R	Q	M	C	D	D	M	P	J	R	Z	C	N	K
L	Q	P	G	V	U	D	Z	I	G	Y	N	X	A	M
L	G	U	P	G	R	Y	Z	P	N	X	L	K	D	G
S	E	Y	E	S	E	W	I	M	T	L	B	T	A	Y
M	L	E	N	K	Y	K	K	M	A	P	E	Q	M	D
Y	X	S	P	J	J	W	P	X	N	U	Z	P	J	J
P	T	U	T	I	Z	U	F	M	V	Q	E	C	Q	H
Y	T	G	V	P	W	H	W	Y	Y	J	V	R	N	A
O	B	D	A	I	N	C	Y	Y	T	W	E	T	D	J

Unit 2—Bones and Muscles

Lesson 4—Your Skeleton

Lesson 5—Name Those Bones

ANSWER KEY

What is the bone that protects your brain called? *Skull.*

What bones did God give you to protect your heart and your lungs? *Ribs.*

Lesson 6—Types of Bones

ANSWER KEY

Can you find a long bone in your body? What does it do? *Arm and leg bones are long bones. Long bones give you strength.*

Can you find a short bone in your body? What does it do? *Hand and foot bones are short bones. Short bones help you move.*

Lesson 7—Joints

ANSWER KEY

What is a joint? *The place where two bones come together.*

How does your knee move? *Only one direction with a hinge joint.*

How about your neck? *Rotates all around with a pivot joint.*

Lesson 8—Muscles

ANSWER KEY

What is the job of your muscles? *They are connected to your bones and make them move.*

Can you think of a time when you use your muscles? When? *Answers will vary.*

What muscles are you using now? *Answers will vary.*

Lesson 9—Using Your Muscles

ANSWER KEY

Why should you exercise every day? *To help your muscles become stronger.*

What muscle in your body moves blood instead of bones? *Your heart.*

Lesson 10—Hands and Feet

Unit Vocabulary Review



Unit 3—Nerves and Senses

Lesson 11—The Nervous System

ANSWER KEY

What is the name of the system that acts like a highway in your body?

Nervous system.

How do messages get from your brain to other parts of your body? *Down the spinal cord to nerves.*

Lesson 12—The Brain

ANSWER KEY

Name some things that you do that use your brain. *Your brain controls everything you do. It tells your muscles to move. It is where you think all of your thoughts. You use your brain to learn and remember. Your brain lets you see, hear, smell, and feel things, too.*

How many parts of the brain are there? *Three—cerebrum, cerebellum, brain stem.*

Lesson 13—Learning and Thinking

ANSWER KEY

Can you exercise your brain? *Yes. The more you do things like reading and practicing your math facts, the easier they become.*

What is one way you have exercised your brain today? *Answers will vary.*

Lesson 14—Reflexes and Nerves

ANSWER KEY

What is in your skin that helps you feel things? *Nerves.*

What did God design your body with that helps you move quickly? *Reflexes.*

Can you remember a time when your reflexes protected you? *Answers will vary.*

Lesson 15—The Five Senses

ANSWER KEY

Which part of your body helps you taste things? *Tongue.*

What helps you smell things? *Nose.*

Lesson 16—The Eye

ANSWER KEY

What happens to your pupil in a dark room? *It gets very large.*

What do your eyelids, eyelashes, and eyebrows do? *They protect the eyes from dirt and other things that might get into them.*

Lesson 17—The Ear

ANSWER KEY

Is there more to your ear than what you see on the outside? *Yes, there is the eardrum, three small bones, and the auditory nerve.*

How do people who cannot hear learn to speak? *They learn to speak sign language.*










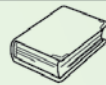

Lesson 18—Taste and Smell

ANSWER KEY

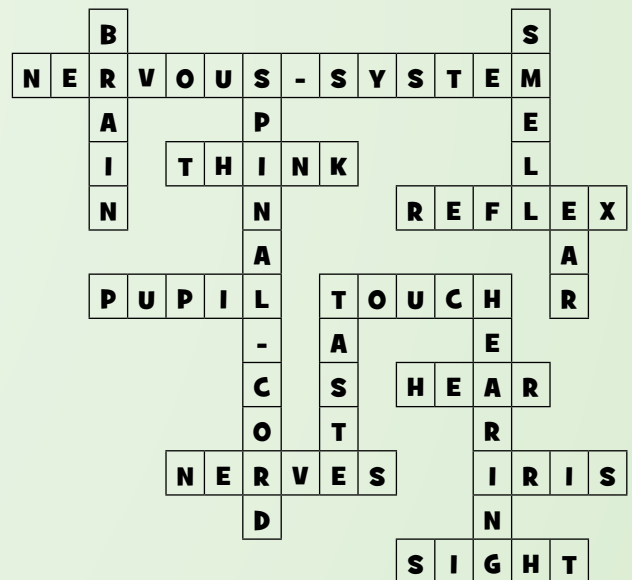
What are the different flavors your tongue can taste? *Sweet, salty, sour, and bitter.*

Have you ever injured your tongue? What did it feel like? *Answers will vary.*

Match the Senses

					
	✓	✓			
			✓	✓	✓
	✓			✓	✓
	✓				✓
			✓	✓	✓

Unit Vocabulary Review



Unit 4—Digestion

Lesson 19—The Digestive System

ANSWER KEY

Can you name at least three parts of the digestive system? *Mouth, stomach, small intestine, large intestine.*

What is your favorite food to eat?
Answers will vary.

Lesson 20—Teeth

ANSWER KEY

How are the teeth in the front of your mouth different from the teeth in the back? *The front teeth are sharp and more pointed, the ones in the back are rounder, flatter, and bumpy.*

Why are teeth important? *They help you eat your food.*

Lesson 21—Caring For Your Teeth

ANSWER KEY

Why should you brush and floss every day? *It helps to get rid of bits of food that are stuck on your teeth. This will help to keep you from getting tiny holes (cavities) in your teeth.*

How do dentists help us? *They can clean our teeth and fix holes in our teeth.*

Lesson 22—Eating the Right Foods

ANSWER KEY

Why should you not eat treats all day? *They don't give our body what it needs to grow and be healthy.*

What are some healthy foods that you like to eat? *Answers will vary.*

Lesson 23—Vitamins and Minerals

ANSWER KEY

What are two things you learned that you get from your food? *You get vitamins and minerals. Vitamins mentioned in the lesson include vitamins A, B, and C. Minerals mentioned include iron, calcium, and potassium.*

What kind of names do vitamins normally have? *Letter names.*

Unit Vocabulary Review

- ★ Digestive system – *how your body gets energy from food*
- ✕ Stomach – *where your teeth are*
- ★ Small intestine – *tube that moves food into your blood*

- ☆ Large intestine – *tube that gets rid of unused food parts*
- ✗ Teeth – *what you have at the end of your fingers*
- ☆ Brush – *what you should do to your teeth every day*
- ☆ Floss – *string for cleaning between your teeth*
- ☆ Fruits and Vegetables – *foods such as bananas and broccoli*
- ✗ Snacks – *what you should eat as much of as possible*
- ☆ Vitamins – *important parts of food that have letter names*
- ☆ Minerals – *important parts of food that have metal names*

Unit 5—Heart and Lungs

Lesson 24—The Circulatory System

ANSWER KEY

Name two things your blood helps to move around. *Food, oxygen, carbon dioxide.*

What organ pumps your blood?
Heart.

Lesson 25—The Heart

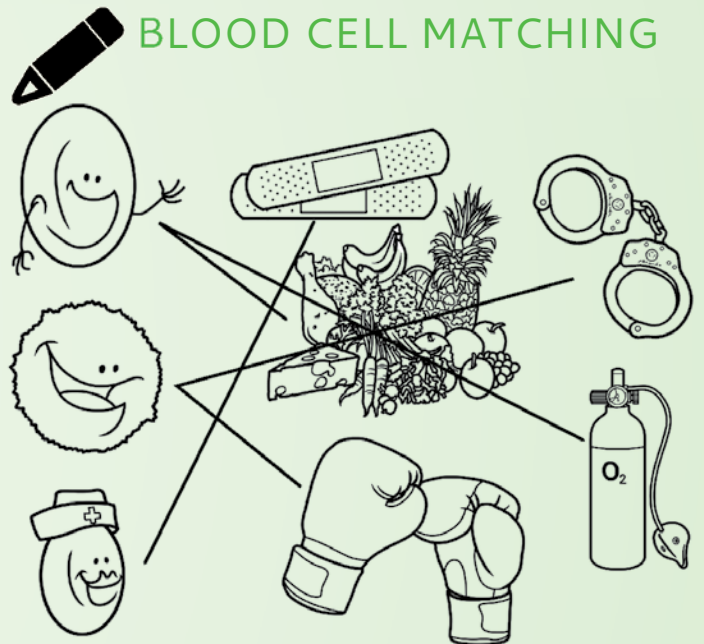
ANSWER KEY

There are how many parts to the heart? *Four—two atria and two ventricles.*

What can you do to make your heart stronger? *Exercise.*

Lesson 26—Blood

BLOOD CELL MATCHING



ANSWER KEY

What do red blood cells do? *They carry oxygen and food to the body and carry carbon dioxide away.*

What do white blood cells do? *They help protect you from germs.*

Lesson 27—The Respiratory System

ANSWER KEY

What do you take in when you breathe in? *Oxygen.*

What leaves your body when you breathe out? *Carbon dioxide.*

How long can you hold your breath?
Answers will vary.

Lesson 28—The Lungs



HOW BIG ARE MY LUNGS?

The insides of your lungs are not empty like a balloon. But you can use a balloon to see how much air is inside your lungs. Take a deep breath and blow as much air as you can into an empty balloon. Tie the balloon closed. If you have trouble blowing up the balloon, ask your mom or dad to blow it up for you and release the air a few times. This will stretch the balloon out and make it easier to blow air into it.

Let everyone in your family blow one breath into a balloon. Compare the sizes of the balloons to see who has the biggest lungs.

ANSWER KEY

Do the inside of your lungs look more like balloons or trees? *Trees.*

What is one way you can keep your lungs healthy? *Exercise. Don't smoke.*



Unit Vocabulary Review

BREATHE

LUNGS

RESPIRATORY

RED BLOOD CELLS

WHITE BLOOD CELLS

PLASMA

HEART

CIRCULATORY

ARTERIES

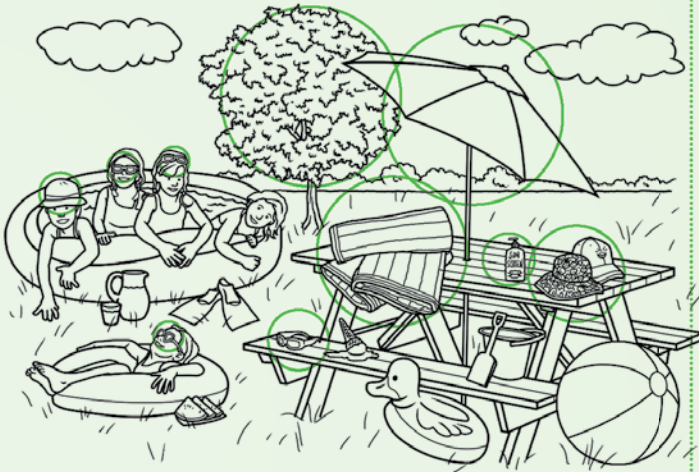
VEINS

Unit 6—Skin and Immunity

Lesson 29—The Skin



PROTECTION FROM THE SUN



ANSWER KEY

What are two things your skin protects the inside of your body from? *Dirt, germs, drying out, the sun, overheating, losing blood.*

How does your skin help control your temperature? *It produces sweat to help you cool off.*

Lesson 30—What Is Inside My Skin?

ANSWER KEY

What can the nerves in your skin feel?

Pain, pressure, hot, cold.

Why do you have sweat glands? *To help you cool off when you get hot.*

Why do you have fat cells? *To keep you warm.*

Lesson 31—Skin Color

ANSWER KEY

What gives people their skin color? *Melanin.*

Are there really any “white” or “black” people? *No, we are all shades of brown.*

Who are all people made in the image of? *God!*

Lesson 32—Staying Well

ANSWER KEY

What defenses does your body have to fight off germs? *Skin, tears, saliva, white blood cells.*

What happens inside your body when you are sick that helps you to get well? *It makes many more white blood cells to destroy the germs.*

Lesson 33—DNA

ANSWER KEY

What tells your body what color your

Human Body for Beginners

eyes and hair will be? *The information stored in your DNA.*

Where does the information for your parents' DNA come from? *From your grandparents.*

Lesson 34—Final Project

Lesson 35—God Made Me Special

For a fun trip through the human body, watch "The Magic School Bus Inside Ralphie." dailymotion.com/video/x3h1fyg

Answer Key



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Unit 1—Mammals

Lesson 1—World of Animals

ANSWER KEY

What are some of your favorite animals? *Answers will vary.*

What animals would you like to learn about? *Answers will vary.*

Lesson 2—Learning about Animals

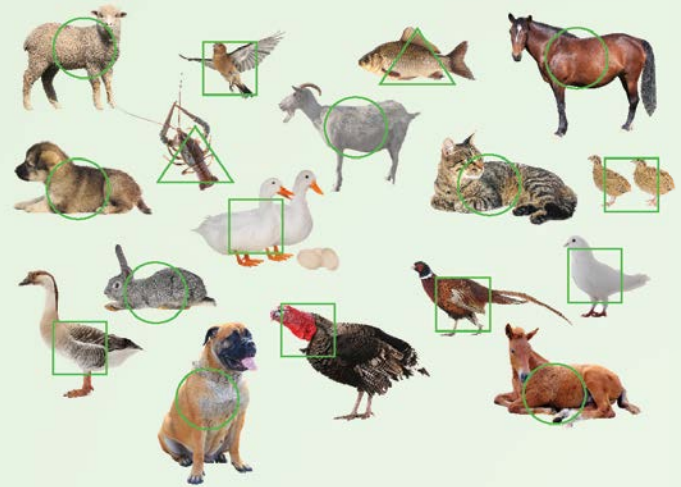
ANSWER KEY

What are some things that animals have in common? *Some possible answers are as follows: they all eat, grow, move, have babies. God made them all!*

How are animals different from one another? *Some possible answers are as follows: they are different colors and sizes, they eat different foods, they live in different areas, some have hair while others have scales or feathers.*



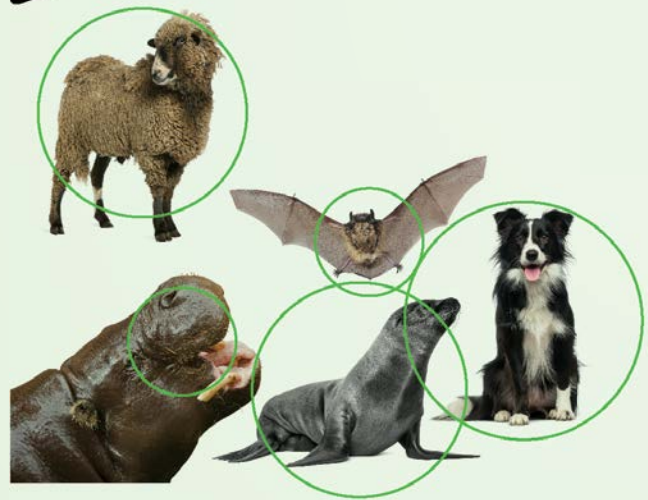
SAME AND DIFFERENT



Lesson 3—What Is a Mammal?



MAMMALS HAVE FUR



ANSWER KEY

What other animals can you think of that have fur or hair? *Answers will vary.*

What do mammals feed to their babies? *Milk.*

Lesson 4—Land Mammals

ANSWER KEY

Can you name a really large mammal?
Possible answers include giraffe, elephant, bear, rhinoceros, buffalo, horse, cow.

Can you name a really small mammal?
Possible answers include mouse, hamster, rat, gerbil, bat, chinchilla, shrew, mole.

Lesson 5—Monkeys and Apes

ANSWER KEY

What do all monkeys have that apes do not? *A tail.*

What do monkeys typically eat? *Fruits, flowers, and insects.*

Lesson 6—Water Mammals

ANSWER KEY

Have you ever seen a dolphin? What about a manatee or a whale? *Answers will vary.*

How are whales different from fish? *Whales have hair, breathe air with lungs, have a blow hole, give birth to live babies, feed milk to their babies. Fish have scales, breathe water through gills, lay eggs.*

Lesson 7—Marsupials



COUNT THE MARSUPIALS

How many marsupials did you find? *13*

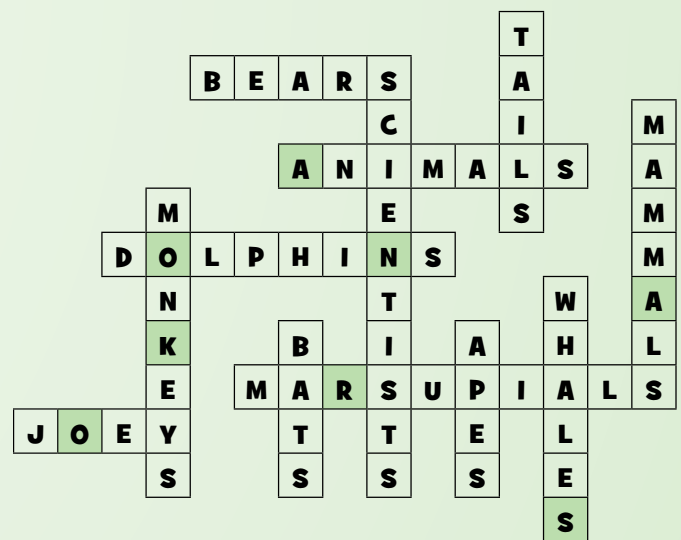
ANSWER KEY

What is special about a marsupial? *It has a pouch where the baby develops.*

Can you name three marsupials? *Kangaroo, koala, Tasmanian devil, and opossum are mentioned in the lesson. Other marsupials include wallabies, wombats, and gliders.*



Unit Vocabulary Review



Special animal: *Kangaroo*

Unit 2—Birds and Fish

Lesson 8—Birds

ANSWER KEY

How are birds different from other animals? *They have feathers. Most birds fly (but not all).*

How are a duck's feet designed to help it swim in the water? *They have webbed feet that push them through the water.*

BIRD MATCH



Lesson 9—Flight

ANSWER KEY

What is something that helps a bird to fly? *Wings, feathers, strong breast muscles, light bones, tail.*

Why do the bird's feathers point toward the back? *This makes the air flow smoothly over the feathers as the bird is flying.*

Lesson 10—Birds That Don't Fly

ANSWER KEY

Can you name a bird that doesn't fly? *Ostrich, penguin, emu, rhea, cassowary, and kiwi were mentioned in the lesson.*

What is one difference between an ostrich and a penguin? *Possible answers include the following: An ostrich runs on land while a penguin swims in the ocean. An ostrich is large, a penguin is small. An ostrich lives in Africa, a penguin lives in the southern hemisphere.*

Why do you think God would create birds that do not fly? *Answers will vary. God is a creative God. He created animals to fill every part of his creation.*

Lesson 11—Fish

ANSWER KEY

What do fish use to breathe? *Gills.*

How are fish different from birds? *Possible answers include the following: Fish have scales, birds have feathers. Fish live in the water, birds live on land. Fish breathe with gills, birds breathe with lungs.*

Lesson 12—Fish Were Designed to Swim

ANSWER KEY

What are two ways fish use their fins to move? *The fins near the front of their bodies help them to angle up or down in the water. The fins on the top of the fish help to keep the fish from tipping sideways. And the tail fin helps to push the fish forward through the water.*

What are some differences between a fish and a water mammal? *Fish breathe with gills, have scales, and lay eggs. Water mammals breathe with lungs, have hair, and give birth to live babies.*

Lesson 13—Sharks and Rays

FIND THE 7 DIFFERENCES



ANSWER KEY

On what day did God create fish? *God created swimming creatures on day five.*

How is a shark's skeleton different from other fish? *It is made out of cartilage.*

What happens when a shark's teeth wear out? *When one row of teeth wears out, a new row moves up to take its place.*



Unit Vocabulary Review

S	A	E	D	N	A	T	K	G	W	I	N	G	I	P
F	D	Z	S	U	F	Z	N	F	L	Y	I	N	G	M
B	S	W	I	M	O	Q	R	S	R	I	Z	G	F	I
F	G	G	M	H	V	O	U	C	E	E	J	D	I	L
O	F	W	L	H	V	E	H	A	B	J	I	B	N	L
P	T	O	P	U	G	B	S	L	W	C	X	F	S	V
A	L	H	C	T	X	Z	M	E	Q	A	G	E	N	B
V	M	E	G	G	S	A	N	S	J	A	X	A	X	K
R	S	B	R	O	E	P	S	W	N	W	R	T	E	R
T	R	E	P	H	M	V	L	J	S	Q	L	H	X	D
I	S	R	L	S	B	K	L	R	C	H	J	E	N	F
E	J	K	B	I	R	D	S	A	Q	O	S	R	R	K
B	G	O	W	C	C	D	T	F	O	L	R	S	J	G
B	J	X	E	W	S	G	J	G	A	W	H	X	S	V
T	U	K	T	G	I	L	L	S	Y	F	Q	V	S	F

Unit 3—Amphibians and Reptiles

Lesson 14—Frogs and Toads

ANSWER KEY

Can you name another amphibian?

Salamanders are amphibians.

How are frogs and toads different?

Toads have dry bumpy skin. Frogs have smooth wet skin. Toads also have fatter, shorter bodies compared to frogs. And toads do not have webbed feet.

How are they the same? *They are both amphibians. They start out living in the water and breathing with gills. Then as they grow up, they develop lungs so they can breathe air. They both chirp or croak.*

Lesson 15—A Frog's Life Cycle

ANSWER KEY

What is a baby frog called? *Tadpole.*

How does a tadpole change as it grows? *Its body begins to change. Legs begin to grow. Its tail begins to shrink. The tadpole begins to develop lungs. When the frog is fully grown, it looks like its parents. It no longer gets oxygen from water with gills, but it now breathes air instead. It is now ready to leave the water and live on land.*

Lesson 16—Reptiles

ANSWER KEY

Do you know what a reptile is?

Answers will vary.

Can you name three types of reptiles?

Lizards, snakes, turtles, crocodiles, alligators, and dinosaurs were mentioned in the lesson.

What do fish and reptiles both have on their skin? *Scales.*

Lesson 17—Snakes

ANSWER KEY

What do snakes eat? Would you like to eat like a snake? *Eggs, mice, and other small animals. Answers will vary.*

How do snakes eat an animal bigger than their body? *The snake can unhook its bottom jaw. This allows its mouth to stretch open very wide.*

What should you do if you see a snake? *Answers will vary. Be careful. Identify if it is poisonous or not. Do not disturb it.*

Lesson 18—Lizards

ANSWER KEY

What are some ways that lizards protect themselves from their enemies? *Chameleons can change the color of their skin to match their*

surroundings. Some lizards are covered with spikes, which make them hard for their enemy to eat. Sometimes, if an enemy grabs onto a lizard's tail, the tail will break off.

What do most lizards eat? *A few lizards eat plants, but most lizards eat insects.*

Lesson 19—Turtles and Crocodiles

ANSWER KEY

Where do turtles usually live? What about tortoises? *Turtles live their lives in the water, tortoises live on land.*

Why is it hard to see a crocodile in the water? *They float with just their noses and eyes sticking up above the water.*

Unit 4—Arthropods

Lesson 20—Animals Without Backbones

ANSWER KEY

Name three animals with backbones.
Answers will vary.

Name three animals without backbones.
Answers will vary, but spiders, worms, flies, shrimp, clams, and crabs were mentioned in the lesson.

Lesson 21—Arthropods

ANSWER KEY

What does the word "arthropod" mean? *Jointed feet.*

What do arthropods have instead of bones? *They have an exoskeleton or outer shell.*



WHAT IS AN ARTHROPOD?



Lesson 22—Insects

ANSWER KEY

How many body parts does an insect have? *Three.*

How many legs do they have? *Six.*

Do you have a favorite insect? *Answers will vary.*

Animals for Beginners

What are some things God created insects to do? *Bees help flowers make seeds. Bees also make honey. Birds and other animals eat insects for food.*

Lesson 23—Insect Life Cycle

ANSWER KEY

How can you tell the difference between a baby grasshopper and an adult? *A baby grasshopper looks like a small grasshopper without wings.*

What is a baby butterfly called?
Caterpillar.

What is the shell called that a moth caterpillar spins around itself? *A cocoon.*

Lesson 24—Spiders

ANSWER KEY

How many body parts does a spider have? *Two.*

How do most spiders catch their food? *They spin webs with sticky strands.*

How did God make spiders useful? *Spiders eat small pests such as mosquitoes, aphids, and cockroaches. Spider silk is very strong and elastic and could be used for bullet-proof clothing, ropes, nets, seat belts, parachutes, surgical thread, and more.*

Lesson 25—Crabs and Crayfish

ANSWER KEY

Have you ever eaten shrimp? What about crab? *Answers will vary.*

Why did God put the mouth of a crayfish on the underside of its body? *So it can eat food from the bottom of the riverbed.*

Lesson 26—Animals with Many Legs

ANSWER KEY

What does a pill bug do to protect itself? *It rolls into a ball.*

What is the difference between a centipede and a millipede? *Centipedes have flattened bodies; millipedes have rounded bodies. Centipedes have 20 body segments; millipedes have as many as 100 body parts. Centipedes are poisonous; millipedes are not.*



Unit Vocabulary Review

A	X	Z	K	L	X	Q	M	F	Q	W	E	B	W	J
C	C	E	N	T	I	P	E	D	E	A	Y	C	I	C
T	F	G	Y	M	L	E	G	S	Y	Y	T	A	N	R
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S	N	C	L	A	W	S	P	I	D	E	R	O	Q	K

Unit 5—Other Invertebrates

Lesson 27—Mollusks

ANSWER KEY

Can you name a mollusk that has a two-part shell? *Clams and oysters were mentioned in the lesson. Also, mussels and scallops.*

Can you name a mollusk that has a one-part shell? *Snails were mentioned in the lesson. Also, sea slugs, conchs, and abalones.*

Can you name a mollusk without a shell? *Octopus and squid were mentioned in the lesson. Also, nautilus and cuttlefish.*

Lesson 28—Jellyfish and Coral

ANSWER KEY

What protection does God provide for a jellyfish? *They have tentacles that can sting.*

What protection does God provide for a coral? *A coral builds a hard case around itself for protection.*

What animal is similar to coral and jellyfish? *Sea anemone.*

Lesson 29—Starfish

ANSWER KEY

How many legs does a starfish have? *Most starfish have five legs, but some have more than ten.*

What happens if you cut off the leg of a starfish? *It will regrow.*

Can you recall another animal that grows back part of its body? *Lizards regrow their tails, and spiders can regrow legs.*

Animals for Beginners

Lesson 30—Sponges

ANSWER KEY

How does a sponge get its food?
*Water flows through the holes in its body.
The sponge traps its food as the water flows through.*

What do sponges and starfish have in common?
Like a starfish, if you cut a sponge in half, it will grow into two new sponges.

Lesson 31—Worms

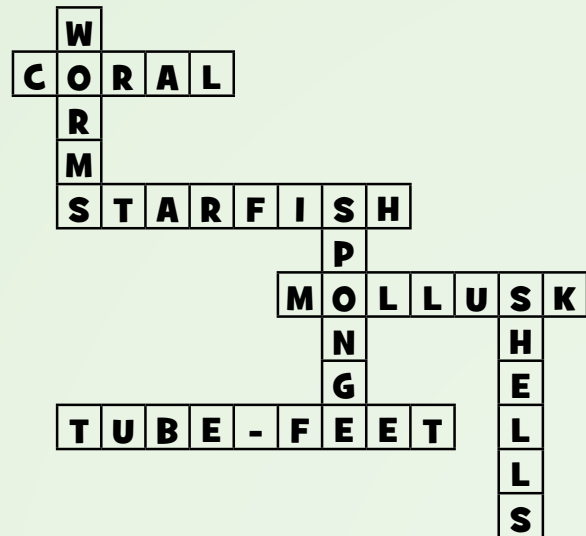
ANSWER KEY

Have you ever used a worm for fishing?
Answers will vary.

What are some important jobs God gave earthworms?
They eat dead plants, and they help break up hard soil. This helps the soil to be better, and it helps new plants to grow.



Unit Vocabulary Review



Unit 6—Simple Organisms

Lesson 32—Very Tiny Animals

ANSWER KEY

How can we see very small animals?
By using a microscope.

What do we call simple life forms that we can only see with a microscope?
Protists.

How would you like to be that small?
Answers will vary

Lesson 33—Bacteria

ANSWER KEY

How are bacteria helpful? *Some bacteria eat dead plants and animals. You have some bacteria in your stomach that help you to digest your food.*

How are they harmful? *Germs can make you sick. Some germs can give you diseases such as strep throat or the flu.*

What should you do if you feel a sneeze or a cough coming on? *Cover your mouth with your hand, then wash your hands.*

Who made bacteria? *God.*

Lesson 34—Animal Review

ANSWER KEY

What are some things that all animals have in common? *Answers will vary but could include the following: they all eat, have babies, grow, move, sleep, are alive, and God made them all.*

What is the difference between vertebrates and invertebrates? *Vertebrates have a backbone, invertebrates do not.*

Lesson 35—Animals in the Bible

ANSWER KEY

How would you feel if you were Daniel in the lion's den? *Answers will vary.*

What is your favorite animal that God created? *Answers will vary.*

Unit Vocabulary Review

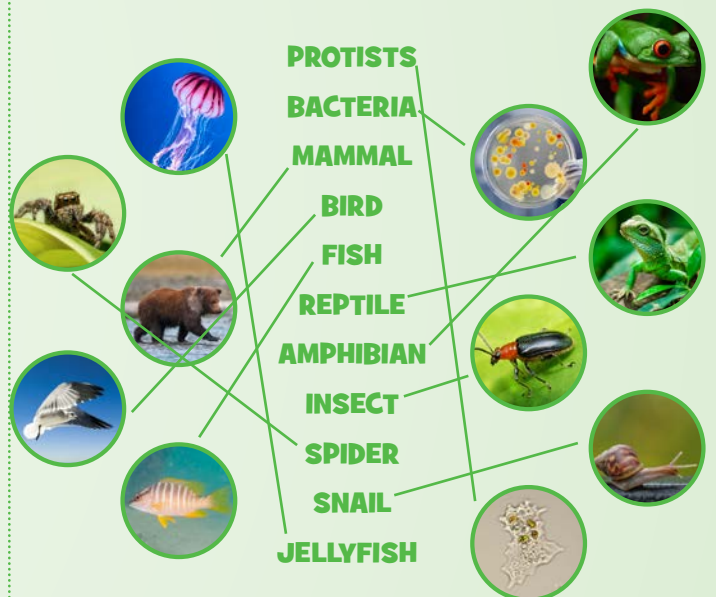


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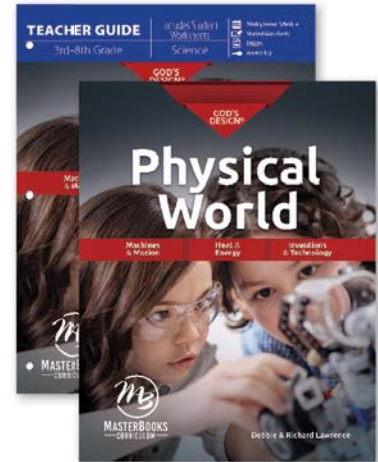
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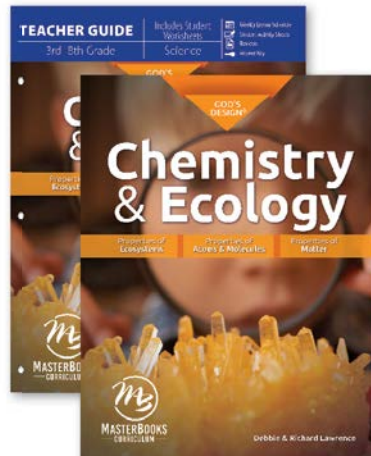
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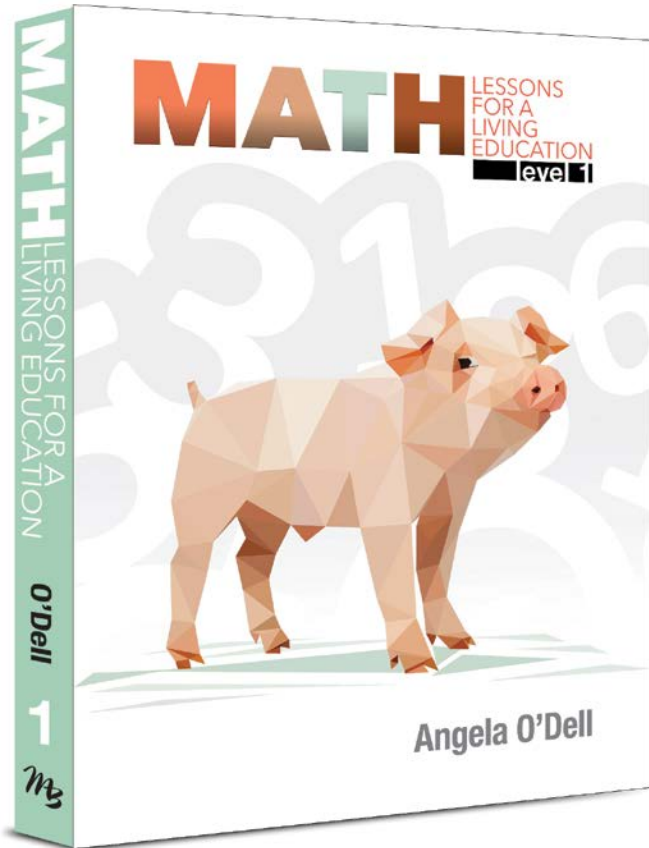
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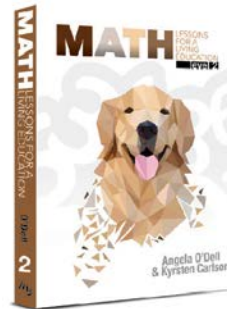
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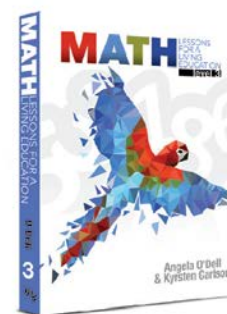
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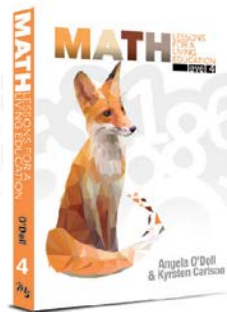
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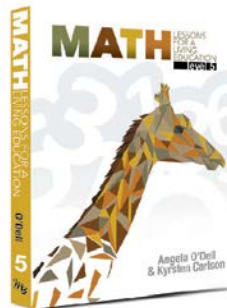
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