

Instructor's Guide Quick Start

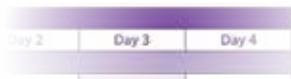
The BookShark™ Instructor's Guide (IG) is designed to make your educational experience as easy as possible. We have carefully organized the materials to help you and your children get the most out of the subjects covered. If you need help reading your schedule, see "How to Use the Schedule" in **Section Four**.

This IG includes a 36-week schedule, notes, assignments, readings, and other educational activities. For specific organizational tips, topics and skills addressed and other suggestions for the parent/teacher see **Section Three**. Here are some helpful features that you can expect from your IG.



Easy to use

Everything you need is located right after the schedule each week. If a note appears about a concept in a book, it's easy to find it right after the schedule based on the day the relevant reading is scheduled.



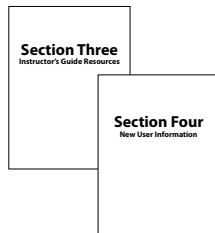
4-Day Schedule

Designed to save one day a week for music lessons, sports, field trips, co-ops, or other extra-curricular activities.

Notes

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

Note: What are the two kinds of poisonous lizards? The book only lists one – the Gila monster (*Hemodermis susperum*) native to the southwestern United States. The other kind is known as a beaded lizard (*Hemodermis horridum*) and is found in Mexico and Guatemala. [p. 35]

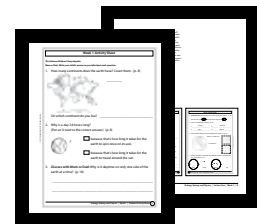


Instructor's Guide Resources and New User Information

Don't forget to familiarize yourself with some of the great helps in **Section Three** and **Section Four** so you'll know what's there and can turn to it when needed.

Activity Sheets and Answer Keys

Activity Sheets follow each week's notes and are customized for each lesson to emphasize important points in fun ways. They are designed with different skills and interests in mind. You may want to file them in a separate binder for your student's use. Corresponding Answer Keys have been included within your weekly Notes.



How to Use the Schedule

More notes with important information about specific books.

The **N** symbol provides you with a heads-up about difficult content. We tell you what to expect and often suggest how to talk about it with your kids.

4-Day Schedule:

This entire schedule is for a 4-Day program. Designed to save one day a week for music lessons, sports, field trips, co-ops and other activities.


©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC

Find the Activity Sheets for students directly after the Notes. Students should complete only the questions assigned.

We schedule optional assignments to be used if desired.

Find all the supplies needed for this week as well as the supplies needed for next week here.

Additional space for writing extra assignments, activities, or notes.



Science A

Week 1 Schedule

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

©2020 by BookShark, LLC. All rights reserved.


N Special Note to Mom or Dad

Biology, Botany, and Physics | Section Two | Week 1 | 1



Science D

Week 1 Schedule

Date:	Day 1	Day 2	Day 3	Day 4	Day 5
Did You Know? Science	pp. 6–9	pp. 10–13	pp. 14–17		
Activity Sheet Questions	#1–4 	#5–8	#9–16		
Optional: Do Together	List It!	Sort It!			
BookShark™ Science D Experiments Book				# 1 Do Insects Look the Same at Each Life Cycle Stage?	
Supplies	We provide: 1/4 cup clay, Green Leaf & Blue Water Templates, Butterful & Dragonfly Templates, ping pong ball, 1 pipe cleaner You provide: scissors, colored pencils or markers, ruler				
Shopping/Planning List	For next week: a spoon, 8 to 10 small cereal pieces, a drinking glass or cup, a timer, a pencil				
Other Notes					

©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC

Day 1

Did You Know? Science | pp. 6–9


For the first part of the year, your students will study biology. The term “biology” comes from two Greek words: bio- means ‘life’ and -ology means ‘study.’ So, biology is the study of life. But biology does not just study things that are alive now; it also studies anything that ever was alive, including dinosaurs and other extinct animals and plants. Many different fields of study fall under the umbrella of biology, like zoology, ecology, and botany, and cover specific subjects like reproduction, cell division, and heredity. Because so much of our incredible world is alive, biology also has many sub-sciences where other science disci-

plines mix with biology. For example, biochemistry is the study of what chemicals make up living things. Biophysics focuses on understanding and solving biological problems with physics. [pp. 6–7]

Activity Sheet Questions | #1–4

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

Your children do not have to do every question on the Activity Sheet. Feel free to adjust and/or omit activities to meet the needs of your children. We cover the same concepts repeatedly throughout the year (and years to come!)

 Special Note to Mom or Dad



Notes

Week 1

to enable students to learn “naturally” through repetition and practice over time.

Any question marked **Challenge** or **Critical Thinking** will be just that—a challenge for your children or a chance for them to think beyond the page. While we believe the material covered in the challenge questions is worthwhile for your children to know, it may not be specifically explained in their reading assignment. As always, if you think any question is too difficult for your children, please feel free to skip it.

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

Suggestion: Your Activity Sheets might work more easily in a small binder for your children to keep and use as assigned. If you have more than one child using this program, extra Activity Sheets can be purchased for each child (Item # 3SB1).

Optional: Do Together | List It!

We have provided a variety of activities in the Optional: Do Together section to interest and challenge your children. Feel free to let your children do those activities that they enjoy and simply talk through others.

The book states that there are approximately 8.7 million different living things on Earth! How many can your child name? Today, allow your child to compose (or dictate to you) a list of as many living things as he/she can think of. Feel free to set a 3-5 minute time limit on this activity. You will use this list tomorrow!

Day 2

Did You Know? Science | pp. 10–13

The tardigrade is a fascinating organism that is often called a “water bear,” although that term doesn’t do it justice. This resilient microorganism has been found in the deep ocean, ponds and lakes, and even hot springs! It can survive boiling water to frozen water and everything in between. It withstands radiation, incredible amounts of pressure found in the deepest ocean trenches, and even the vacuum of space! [p. 11]

Activity Sheet Questions | #5–8

Optional: Do Together | Sort It!

Today, your children learned that all animals can be

categorized into one of six groups. Review the list of living things that your child came up with yesterday and determine together which ones are animals. Circle all of the living things that are animals, eliminating plants and fungi. Then, work together to create a chart listing the six groups across the top (amphibians, fish, mammals, reptiles, birds, and invertebrates). Go through the list of the animals you and your children circled and categorize each one into its proper group. Can your children add any other animals?

Day 3

Did You Know? Science | pp. 14–17

While most bacteria do not make us sick, it is not fun when they do. Bacteria make people sick in several different ways. They can multiply and crowd out healthy tissue, release toxins that damage healthy tissue, and can cause the immune system to ramp up its defenses. Fever, aches, and/or rashes are possible signs that our immune system is fighting an infection and may not actually be symptoms of the infection itself. [pp. 14–15]

Activity Sheet Questions | #9–16

Day 4

BookShark™ Science D Experiments Book | # 1 Do Insects Look the Same at Each Life Cycle Stage? ■

Week 1 Activity Sheet

Did You Know? Science

1. Why do we study science? (p. 6)

Science helps us (answer questions)
and understand (how and why things work)



2. Draw a line to match the scientific areas of study to the topics each studies. (pp. 6-7)



Physics



Biology



Chemistry

living things

materials, and what things are made from

movement and forces, like gravity, light,
electricity, magnets, waves, and more



3. Someone who studies physics will learn about which of the following? (Draw an X to show your answer.) (p. 6)

- energy
- sound
- magnets
- atoms
- rocks
- light
- fossils

4. All things are made from: (p. 7)

- water
- atoms
- wood
- metal

5. What basic things do you need to survive? (pp. 10-11)

- (water)
- (food)
- (light)
- (air)
- (shelter)

Week 1 Activity Sheet

6. In what two ways does the sun help us survive? (p. 11)

(provides heat) _____
(provides light)



7. For each animal, write the name of the group to which it belongs on the line. (pp. 12-13)

mammal reptile amphibian bird fish invertebrate



duck
(bird)



spider
(invertebrate)



frog
(amphibian)



shark
(fish)



alligator
(reptile)



koala
(mammal)

No

Yes

No

Yes

No



8. Are all living things considered animals? (p. 13)

Explain: (Plants and fungi are living things, but they are not animals)

Week 1 Activity Sheet

9. Bacteria are made of one cell, and can be one of three different shapes. Label each shape below. (p. 14)



10. Check all that apply: Microorganisms are... (p. 14)



living things scientists can see with a microscope
bacteria
big viruses and some fungi

11. True or False: All bacteria are bad. (p. 14)

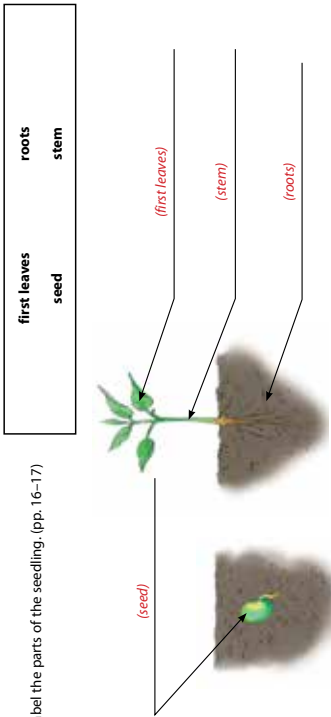
True

False

12. Why are new plants able to grow from seeds? (p. 16)

(Seeds are little packets that contain everything a plant needs to start growing in the right conditions.)

13. Label the parts of the seedling. (pp. 16–17)



Science D | Week 1 | Student Activity Sheet 5

Week 1 Activity Sheet

14. Draw lines to show how each plant feature helps the plant. (pp. 16–17)



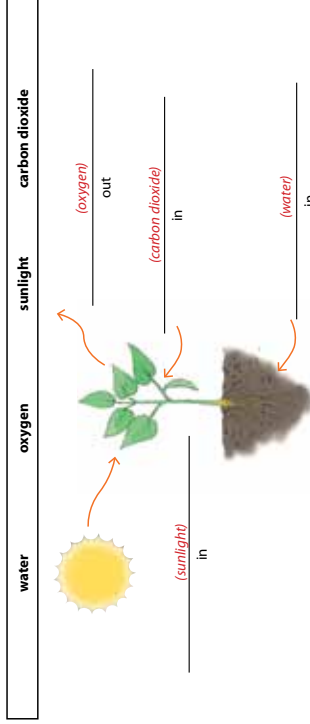
Help anchor the plant with water and nutrients from the soil.

Protects the seed until it's ready to start growing.

Contain chlorophyll that absorbs energy from the sun. The energy helps the plant make food.

Brings water from the ground to the rest of the plant.

15. Label the plant to show how photosynthesis occurs. (pp. 16–17)



Why is photosynthesis important? *(It's how the plant makes glucose which it uses for energy to grow.)*

4 Student Activity Sheet | Week 1 | Science D

Week 1 Activity Sheet



16. It is a sunny but windy summer day, and you're playing in your yard. The flowers are swaying back and forth near your house. Several days later, you notice new flowers growing in the back edge of your yard, where flowers have never grown before. How could this have happened? (p. 17)

(The wind might have carried the seeds to another place in the yard where they were able to start growing.)

©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC

This page intentionally left blank.

Week 1 Activity Sheet

Did You Know? Science

1. Why do we study science? (p. 6)

Science helps us _____
and understand _____



2. Draw a line to match the scientific areas of study to the topics each studies. (pp. 6–7)



Physics



Biology



Chemistry

•

• living things

•

• materials, and what things are made from

•

• movement and forces, like gravity, light,
electricity, magnets, waves, and more

3. Someone who studies physics will learn about which of the following? (Draw an X to show your answer.) (p. 6)

_____ energy

_____ cells

_____ sound

_____ magnets

_____ atoms

_____ rocks

_____ light

_____ fossils

4. All things are made from: (p. 7)

water

atoms

wood

metal

5. What basic things do you need to survive? (pp. 10–11)

Week 1 Activity Sheet

6. In what two ways does the sun help us survive? (p. 11)



7. For each animal, write the name of the group to which it belongs on the line. (pp. 12–13)

mammal	reptile	amphibian	bird	fish	invertebrate
--------	---------	-----------	------	------	--------------



duck



spider



frog



shark



alligator



koala

8. Are all living things considered animals? (p. 13)

Yes

No

Explain: _____



Week 1 Activity Sheet

9. Bacteria are made of one cell, and can be one of three different shapes. Label each shape below. (p. 14)



10. Check all that apply: Microorganisms are... (p. 14)

living things scientists can see with a microscope

big

bacteria

viruses and some fungi



11. True or False: All bacteria are bad. (p. 14)

True

False

12. Why are new plants able to grow from seeds? (p.16)

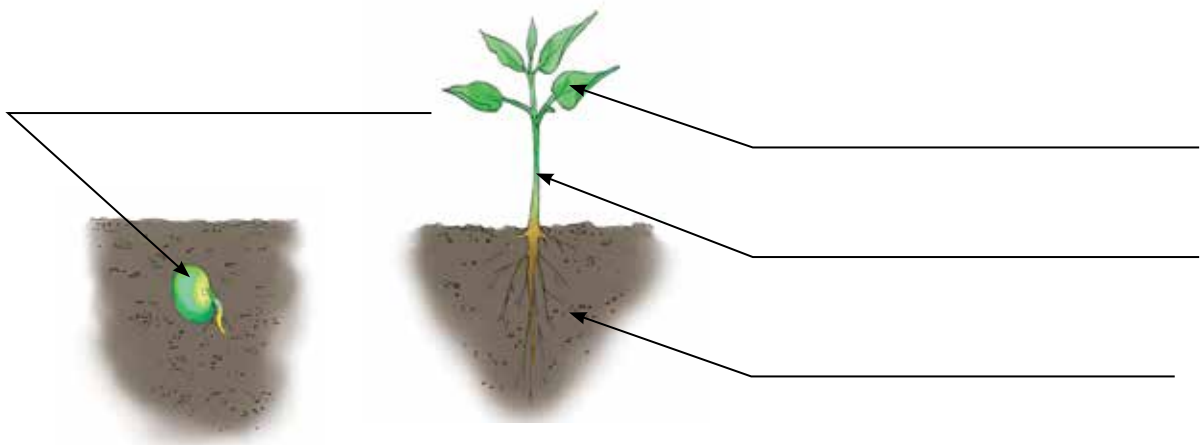
13. Label the parts of the seedling. (pp. 16–17)

first leaves

roots





seed

stem

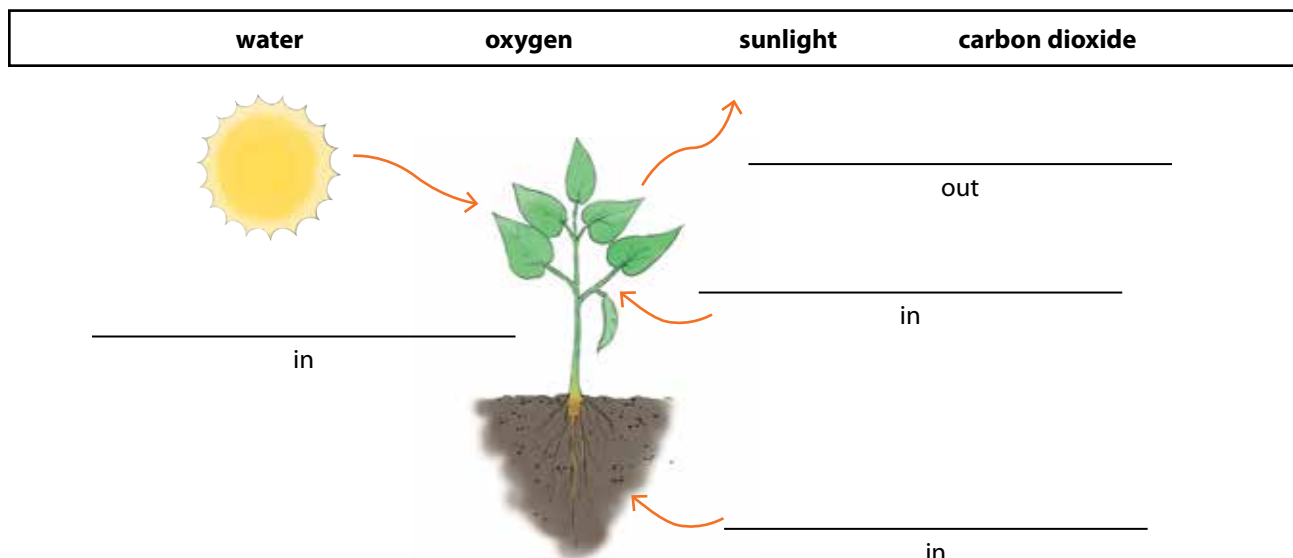


Week 1 Activity Sheet

14. Draw lines to show how each plant feature helps the plant. (pp. 16–17)

 leaves	•	•	Help anchor the plant. Supplies the plant with water and nutrients from the soil.
 roots	•	•	Protects the seed until it's ready to start growing.
 stem	•	•	Contain chlorophyll that absorbs energy from the sun. The energy helps the plant make food.
 seed coat	•	•	Brings water from the ground to the rest of the plant.

15. Label the plant to show how photosynthesis occurs. (pp. 16–17)



Why is photosynthesis important? _____

Week 1 Activity Sheet

16. It is a sunny but windy summer day, and you're playing in your yard. The flowers are swaying back and forth near your house. Several days later, you notice new flowers growing in the back edge of your yard, where flowers have never grown before. How could this have happened? (p. 17)



This page intentionally left blank.



Science D

Week 2 Schedule

©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC.

Date:	Day 1	Day 2	Day 3	Day 4	Day 5
Did You Know? Science	pp. 18–21	pp. 22–25	pp. 26–29		
Activity Sheet Questions	#1–5	#6–10	#11–13		
Optional: Do Together	Velcro Hunt				
BookShark™ Science D Experiments Book				#2 Which Beak Works Best?	
Supplies	We provide: 2 toothpicks, 10 marbles, 3 feet of yarn (cut into 10 3" pieces), tweezers You provide: a spoon, 8 to 10 small cereal pieces, a drinking glass or cup, a timer, a pencil				
Shopping/Planning List	For next week: 4 or more objects from nature (seashell, dead bug, leaf, small animal toy, etc.), Vaseline (or Aquaphor, or cooking oil), water, a bowl for mixing				
Other Notes					

Day 1

Did You Know? Science | pp. 18–21

Today, your children learned about some of nature's sticky things. Most of us are familiar with burrs, which are the plant seeds that cling to our socks and shoes after a walk outside. Do your children remember seeing these burrs? Were they sharp or did they have more of a fuzzy feeling? Several different plants produce burrs as seeds and they can feel quite differently.


Limpets cling to rocks found on ocean coastlines. Their foot muscle anchors them in rough seas, and keeps them from drying out in low tides. They eat plants (and some

animals) that grow on the rocks they attach themselves to, but wait to move around the rock until it's under water. When they finish feeding, they return to the same "home" spot on the rock that perfectly fits their body. [p. 18]

Activity Sheet Questions | #1–5

Optional: Do Together | Velcro Hunt

Your children learned today about a man-made material called Velcro that actually works a lot like, and was inspired by, burrs! The enlarged photo of Velcro on page 19 shows just how this useful material works. Encourage your children to brainstorm ways in which Velcro might be use-

 Special Note to Mom or Dad



Notes

Week 2

ful. Go on a hunt around the house for Velcro on everyday items. Maybe you have some clothing with Velcro. Other uses may include cord wraps, shoes, bags/totes, for attaching things to walls, umbrella tie straps, etc. If you have a magnifying glass, take a close look at the straps, hooks, and loops. In what ways can this Velcro-type structure be useful for seed dispersion? What sorts of animals might burrs stick to the best? Why?

Day 2

Did You Know? Science | pp. 22–25

Activity Sheet Questions | #6–10

Day 3

Did You Know? Science | pp. 26–29

Activity Sheet Questions | #11–13

Day 4

BookShark™ Science D Experiments Book | #2





Which Beak Works Best?

One marble is used in a later experiment. Save in a safe place to use later. ■



Week 2 Activity Sheet

Did You Know? Science

- Why are things in nature sticky? (p. 18)
(to help seeds travel; to attach to rocks—or stay in one place; to catch food)
- List four ways things in nature are able to stick. Use the example pictures to help you. (pp. 18–19)


	<i>(hooks)</i>		<i>(sticky hairs)</i>
burrs		sundew plant	
	<i>(suckers)</i>		<i>(sticky fluid)</i>
octopus		limpets	
- Limpets live on rocks along the seashore so they can eat plants and animals that grow on the rocks. They make a sticky fluid and have a strong muscular foot. How do these features help them live where they do? (p. 19)
(The fluid and strong foot helps them stay attached to the rock so they don't wash away in the waves.)

4. Organize the characteristics of insects and spiders into the appropriate column. (pp. 20-21)




3 body segments called arachnids	2 body segments	8 legs most adults have wings related to scorpions
 Insects <i>(3 body segments; 6 legs; most adults have wings)</i>	 Spiders <i>(2 body segments; 8 legs; called arachnids; related to scorpions)</i>	

Week 2 Activity Sheet

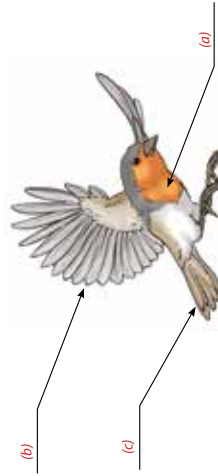
- Draw an X to show which ways spiders use silk. (p. 21)

<input checked="" type="checkbox"/> to make a case for eggs	<input type="checkbox"/> to make clothing	
<input checked="" type="checkbox"/> to make a web to catch and store food	<input type="checkbox"/> to fight off enemies	
- Which of the following statements are benefits of feathers? Circle all true statements. (p. 22)

<input type="checkbox"/> Keeps warm	<input type="checkbox"/> Allows flight	<input type="checkbox"/> Shows off	<input type="checkbox"/> Scares enemies
<input type="checkbox"/> Rescues friends	<input type="checkbox"/> Finds food	<input type="checkbox"/> Blends and hides	<input type="checkbox"/> Helps swim
- Draw a line to match each type of feather to its description. (pp. 22–23)

a. body feathers		are slightly different shapes and lengths; make the wing a good shape for flying
b. flight feathers		soft, fluffy; keep the bird warm
a. tail feathers		help the bird steer and balance, and slow down to land

Use the letters for each type of feather above to label the feathers on the bird.



Week 2 Activity Sheet

8. What characteristics do mammals have in common? (p. 25)
- | | | | |
|-------------------------------------|----------------------------------|-------------------------------------|---------------------------------------|
| <input checked="" type="checkbox"/> | have fur | <input checked="" type="checkbox"/> | are warm-blooded |
| <input type="checkbox"/> | are awake at night | <input type="checkbox"/> | have sharp teeth |
| <input checked="" type="checkbox"/> | females make milk to feed babies | <input type="checkbox"/> | have eyes on the front of their heads |

9. How does a cheetah's spotted fur and sharp teeth help it to survive? (pp. 24–25)

(Their sharp teeth help it to eat the meat of their prey and their spotted fur helps them hide while hunting.)



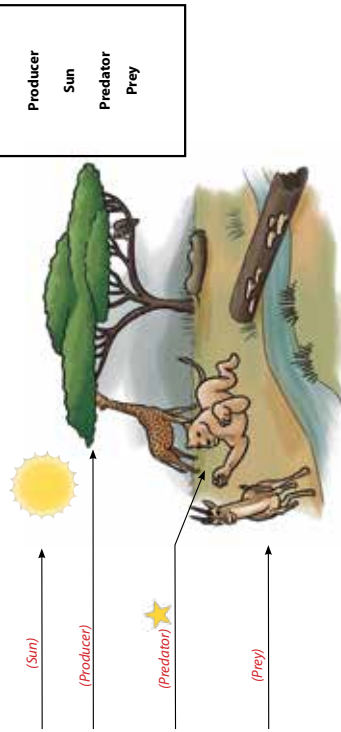
Why are they well-suited to live on grasslands? *(the sandy color and spotted pattern of their fur blends into the brown grass)*



10. What is "seasonal fur" and how does it help some animals? (p. 25)

(Fur that changes color with the seasons; it allows animals to be camouflaged throughout the year.)

11. Label the parts of the food chain. Place a star next to the top of the food chain. (p. 26)

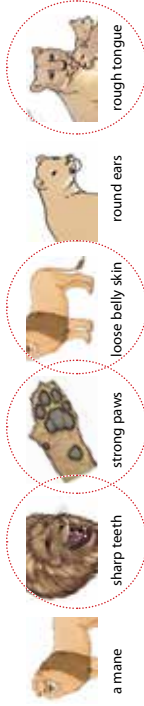


Science D | Week 2 | Student Activity Sheet 9

©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC

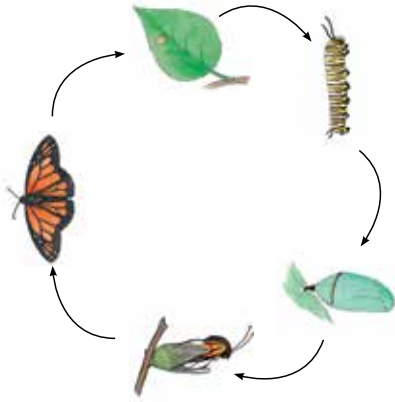
Week 2 Activity Sheet

12. What body features make lions good at hunting animals like zebras, antelope and buffalo? (p. 27)



13. Describe each stage in the life cycle of a butterfly to Mom or Dad. (Lines are provided for dictation.) (pp. 28–29)

(Possible: Butterflies lay eggs that stick on leaves. Caterpillars hatch from the eggs and eat the leaf the egg was stuck to and more leaves from the same plant. Caterpillars eat to grow bigger. When the caterpillar has finished growing, it attaches itself to a branch and wraps itself in a cocoon (or chrysalis). When the butterfly breaks free from the cocoon, its wings are soft and damp. They must stretch and dry out before the butterfly can fly away. A butterfly eats nectar and lays eggs.)



This process of transformation is called *(metamorphosis)*. Another animal whose body changes completely through this process is a: *(frog)*

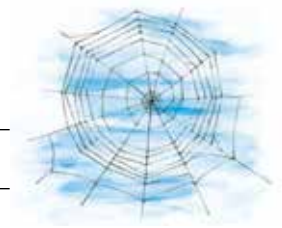
10 Student Activity Sheet | Week 2 | Science D

©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC

Week 2 Activity Sheet

Did You Know? Science

1. Why are things in nature sticky? (p. 18)



2. List four ways things in nature are able to stick. Use the example pictures to help you. (pp. 18-19)



burrs



sundew plant





octopus



limpets

3. Limpets live on rocks along the seashore so they can eat plants and animals that grow on the rocks. They make a sticky fluid and have a strong muscular foot. How do these features help them live where they do? (p. 19)

4. Organize the characteristics of insects and spiders into the appropriate column. (pp. 20-21)

	3 body segments called arachnids	2 body segments 6 legs	8 legs	most adults have wings related to scorpions
 Insects				
			Spiders 	

Week 2 Activity Sheet

5. Draw an X to show which ways spiders use silk. (p. 21)

- _____ to make a case for eggs
- _____ to make clothing
- _____ to make a web to catch and store food
- _____ to fight off enemies



6. Which of the following statements are benefits of feathers? Circle all true statements. (p. 22)

Keeps warm

Allows flight

Shows off

Scares enemies

Rescues friends

Finds food

Blends and hides

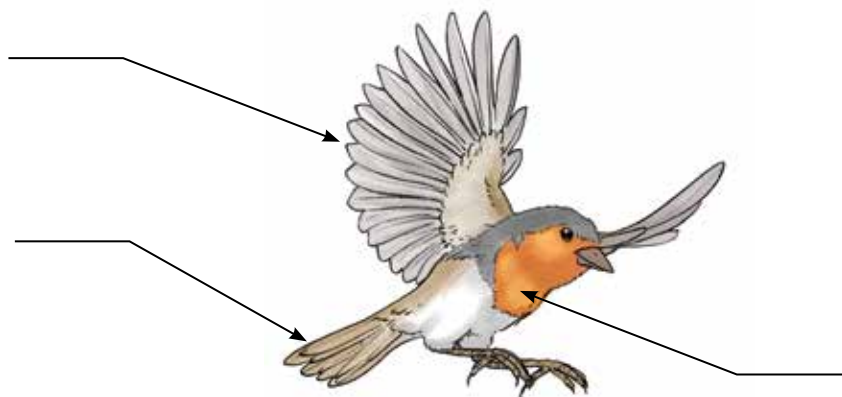
Helps swim



7. Draw a line to match each type of feather to its description. (pp. 22–23)

- a. body feathers •
 - are slightly different shapes and lengths; make the wing a good shape for flying
- b. flight feathers •
 - soft, fluffy; keep the bird warm
- a. tail feathers •
 - help the bird steer and balance, and slow down to land

Use the letters for each type of feather above to label the feathers on the bird.



Week 2 Activity Sheet

8. What characteristics do mammals have in common? (p. 25)

- | | |
|---|--|
| <input type="checkbox"/> have fur
<input type="checkbox"/> are awake at night
<input type="checkbox"/> females make milk to feed babies | <input type="checkbox"/> are warm-blooded
<input type="checkbox"/> have sharp teeth
<input type="checkbox"/> have eyes on the front of their heads |
|---|--|

9. How does a cheetah's spotted fur and sharp teeth help it to survive? (pp. 24–25)

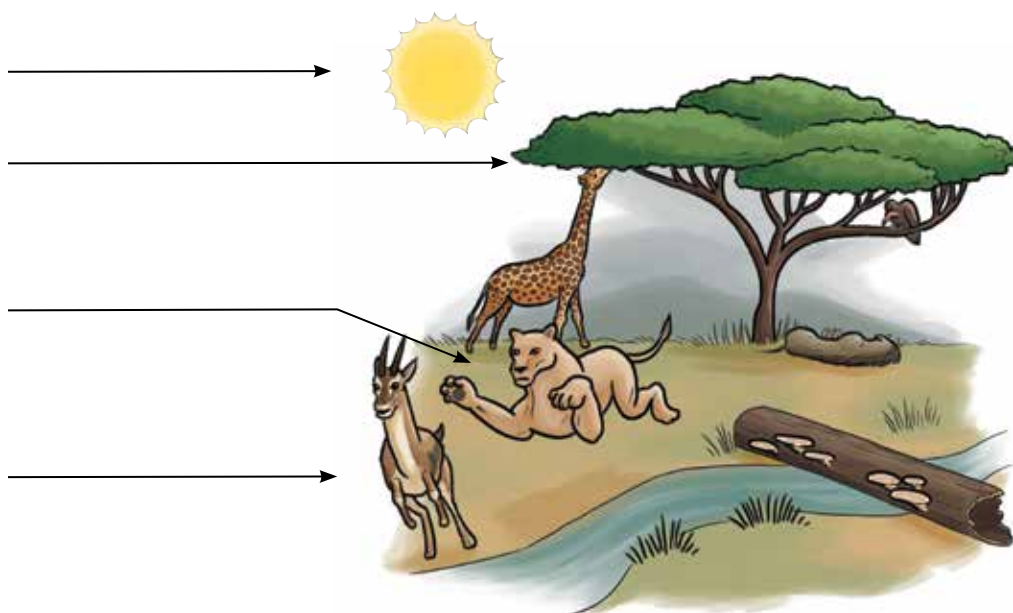


Why are they well-suited to live on grasslands? _____

10. What is "seasonal fur" and how does it help some animals? (p. 25)



11. Label the parts of the food chain. Place a star next to the top of the food chain. (p. 26)



- Producer**

Sun

Predator

Prey

©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC.

Week 2 Activity Sheet

12. What body features make lions good at hunting animals like zebras, antelope and buffalo? (p. 27)



a mane



sharp teeth



strong paws



loose belly skin

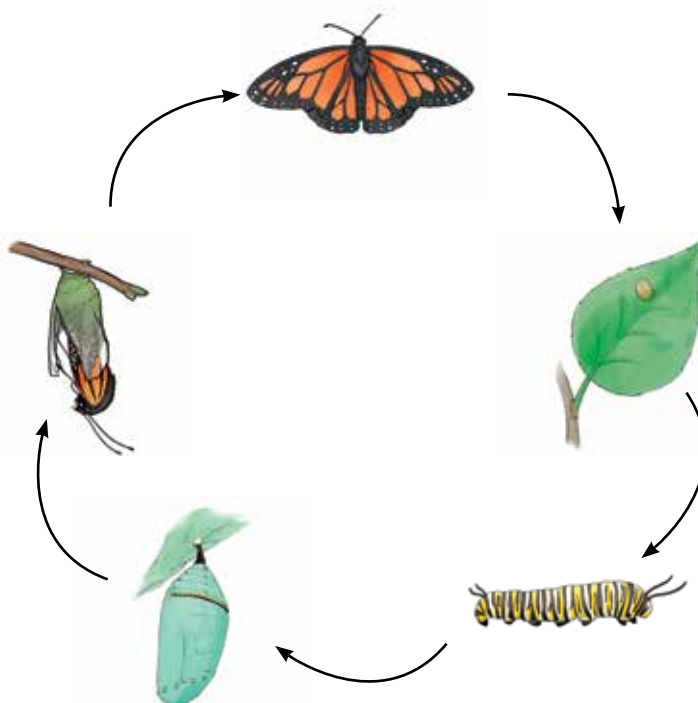


round ears



rough tongue

13. Describe each stage in the life cycle of a butterfly to Mom or Dad. (Lines are provided for dictation.) (pp. 28–29)




This process of transformation is called _____ . Another animal whose body changes completely through this process is a: _____ .



Science D

Week 3 Schedule

©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC.

Date:	Day 1	Day 2	Day 3	Day 4	Day 5
Did You Know? Science	pp. 30–33				
Fossils Tell of Long Ago		Whole Book			
Bringing Back the Wolves			pp. 4–7		
Activity Sheet Questions	#1–5	#6–9	#10–15		
Optional: Do Together	Flesh It Out				
BookShark™ Science D Experiments Book				#3 How is a Fossil Formed?	
Supplies	We provide: 1 cup plaster of Paris, 4 Styrofoam cups, 1/2 cup of clay You provide: 4 or more objects from nature (seashell, dead bug, leaf, small animal toy, etc.), Vaseline (or Aquaphor, or cooking oil), water, a bowl for mixing				
Shopping/Planning List	For next week: 3-6 different scented clear liquids/oils (for example: essential oils, vinegar, perfume, lemon extract, almond extract, vanilla extract, peppermint extract, etc.), 6 zip-top plastic bags, a pencil, a marker, a timer, a blindfold or sunglasses, 3 small bowls				
Other Notes					

Day 1

Did You Know? Science | pp. 30–33

Activity Sheet Questions | #1–5


Optional: Do Together | Flesh it Out

A fun activity to do after reading these pages about dinosaur fossils is to “flesh out” the fossil! Archaeologists often work with artists to recreate what the animal may have looked like when it was alive. Grab a sheet of printer paper (or tracing paper) and place it over the dinosaur

fossil picture in the book (you may have to turn your paper a bit to cover the fossil). Have your child use a pencil to outline where the flesh and muscle that surrounded the skeleton may have been. Then move the paper to a table and ask your child to add some details such as scaly skin, feathers, color, and texture. What kind of dinosaur do they think this may have been?

BookShark™ Science D Experiments Book

Note to Mom or Dad: This week’s experiment requires 4 or more objects from nature (seashells, a dead bug, leaf, small toy animal, etc.). Collect these items sometime this week, so they are available for the experiment.

 Special Note to Mom or Dad



Notes

Week 3

Day 2

Fossils Tell of Long Ago | Whole Book

Archaeologists are often finding new species of dinosaurs and other organisms. Just when we think the largest dinosaur or strangest sea creature has been identified, scientists unearth a massive sauropod which is a 6-foot-long ancient sea-worm! Do an internet search for “fossils” in the News section of your search engine and see what the latest findings are. Be sure to monitor your children whenever searching the internet.

Activity Sheet Questions | #6–9

Day 3

Bringing Back the Wolves | pp. 4–7

Do you and your students think that the government intervention in the 1800s was a good idea? Should governments remove predators from land so that people can

inhabit that land, or have the responsibility to increase the numbers of a certain species?

A modern-day example of government-sponsored bounty on predators comes from South Dakota. The state awards money to individuals who kill coyotes and other “nest predators.” The purpose of this bounty is to increase the population of pheasants and ducks in the area so that people have enough fowl to hunt. [p. 6]

Activity Sheet Questions | #10–15

Day 4

BookShark™ Science D Experiments Book | #3 How is a Fossil Formed? ■


©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC

Week 3 Activity Sheet

Did You Know? Science

1. Write letter(s) on the line to explain why each adaptation makes a polar bear well-suited for life in the arctic. Some lines will use more than one letter. (pp. 30–31)

<p>★ <u>(c, h)</u> hollow hairs and black skin</p> <p><u>(f)</u> clear eyelid</p> <p>★ <u>(b, e)</u> huge paws</p> <p>★ <u>(d, a)</u> fur</p> <p>★ <u>(a)</u> fat</p>	<p>a) up to 4 inches of this lies under the skin to help keep the polar bear warm in cold weather</p> <p>b) act like snowshoes to keep the polar bear on top of the snow</p> <p>c) sunlight can travel through the hair</p> <p>d) a thick, short layer traps air to keep the polar bear warm</p> <p>e) slightly webbed toes help the polar bear swim</p> <p>f) helps the polar bear see underwater or during a snowstorm</p> <p>g) longer pieces stick together to be waterproof when wet</p> <p>h) this absorbs sunlight to help keep the polar bear warm</p>
---	--




Draw a star next to each feature that helps a polar bear stay warm in the cold arctic.

2. Critical Thinking: Far inland, scientists discover fossilized sand-ripple marks like those found on a seashore. What could they determine about what the local environment was like in that area thousands of years ago? (p. 32)

(Sand-ripple marks are caused by water—the area probably had a large body of water in it in the past.)

3. How do paleontologists learn more about dinosaurs when they study coprolite? (p. 33)

(By studying dinosaur poop, they can learn what dinosaurs ate—and what other plants or animals lived nearby.)



Science D | Week 3 | Student Activity Sheet 11

©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC

Week 3 Activity Sheet

4. Match the pictures to the descriptions of how fossils form. (p. 33)



1.

The rock lifts and is worn away over time and paleontologists discover the fossils.



2.

An animal dies and is quickly buried by sand, ash or mud.



3.

Layers of earth, sand and mud pile up to squish the animal's body. Minerals replace the hard parts, like bones.

5. Circle the items that can be found as fossils. (pp. 32-33)

Mammal Bones

Animal Poop

Rusted Cars

Footprints

Plants

Shells

Chairs

Insects

Skateboards

Ripples in Sand

Dinosaur Bones

Horns



Fossils Tell of Long Ago

6. What could scientists learn about how ancient mammoth lived when they found a frozen mammoth in the arctic? (pp. 18-19)

(They learned that mammoths once lived in the area, that they ate grass—that grass once grew in the area, that it looked somewhat like an elephant, etc.)



©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC

Week 3 Activity Sheet

7. Circle the types of materials in which fossils are found. (pp. 8-27)

cakes
sandstone

peat, which hardens into coal
marble (polished limestone)

amber
stone

play-doh
frozen in the ground

8. Explain what we learn when we find fossils in each of the following places. (pp. 22-25)

If we find fossils of jungle plants and animals in an area that is now desert?

(The area must have had more rainfall in the past and was once a jungle)

If we find fossils of sea creatures where we now have mountains?

(The land must have once been underwater)

If we find fossils of tropical plants in cold lands?

(Temperatures here must have once been warmer)

9. What can we learn from fossils of strange creatures? (p. 25)

(We know what kinds of animals used to roam the earth that have all died out.)

Bringing Back the Wolves

10. A place where different living things interact with one another and their environment is called an: (p. 5)

habitat

forest

back yard

ecosystem

Week 3 Activity Sheet

11. How might an ecosystem change if all the rabbits went missing? (p. 5)

(Possible: grasses might grow taller; animals that eat rabbits would have less food and may start eating other animals, like squirrels, so there may be fewer squirrels, or the predators may be less healthy, etc.)



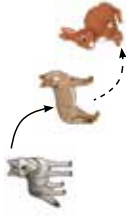
12. What are **apex predators**? Why did the U.S. government offer a bounty for hunters to hunt apex predators in the late 1800s? (p. 6)

(Apex or top predators aren't eaten by any other predator. The U.S. government wanted to encourage farming in the West so they paid hunters to hunt animals that would kill cattle and livestock.)



13. How do keystone species impact other species in an ecosystem? (p. 6)

(Keystone species can affect another species directly, such as eating it, or indirectly, like a chain reaction that happens through other species.)



14. Circle the correct answer. When a keystone species goes missing in an ecosystem, the chain reaction of change that takes place is called a _____ (p. 6)

Tragedy

Catastrophe

Trophic Cascade

Missing Link

15. Look at the chart on page 7 in your book. Trace a sequence of arrows that starts with "wolves" to show how many other species wolves affect. Record the animal names in the sequence you chose below. (You may not need all of the boxes.) (p. 7) *(Answers will vary, use the forward-pointing arrows on page 7 to check your student's work.)*



16

Student Activity Sheet | Week 3 | Science D

©2021 by BookShark, LLC. All rights reserved. Do not copy without written permission from BookShark, LLC

Week 3 Activity Sheet

Did You Know? Science

1. Write letter(s) on the line to explain why each adaptation makes a polar bear well-suited for life in the arctic. Some lines will use more than one letter. (pp. 30–31)

_____ hollow hairs and black skin

_____ clear eyelid

_____ huge paws

_____ fur

_____ fat



Draw a star next to each feature that helps a polar bear stay warm in the cold arctic.

- a) up to 4 inches of this lies under the skin to help keep the polar bear warm in cold weather
- b) act like snowshoes to keep the polar bear on top of the snow
- c) sunlight can travel through the hair
- d) a thick, short layer traps air to keep the polar bear warm
- e) slightly webbed toes help the polar bear swim
- f) helps the polar bear see underwater or during a snowstorm
- g) longer pieces stick together to be waterproof when wet
- h) this absorbs sunlight to help keep the polar bear warm

2. **Critical Thinking:** Far inland, scientists discover fossilized sand-ripple marks like those found on a seashore. What could they determine about what the local environment was like in that area thousands of years ago? (p. 32)

3. How do paleontologists learn more about dinosaurs when they study coprolite? (p. 33)



Week 3 Activity Sheet

4. Match the pictures to the descriptions of how fossils form. (p. 33)



- The rock lifts and is worn away over time and paleontologists discover the fossils.



- An animal dies and is quickly buried by sand, ash or mud.



- Layers of earth, sand and mud pile up to squish the animal's body. Minerals replace the hard parts, like bones.

5. Circle the items that can be found as fossils. (pp. 32–33)

- | | | | |
|---------------------|------------------------|-----------------------|-------------------|
| Mammal Bones | Animal Poop | Rusted Cars | Footprints |
| Plants | Shells | Chairs | Insects |
| Skateboards | Ripples in Sand | Dinosaur Bones | Horns |



Fossils Tell of Long Ago

6. What could scientists learn about how ancient mammoth lived when they found a frozen mammoth in the arctic? (pp. 18–19)



Week 3 Activity Sheet

7. Circle the types of materials in which fossils are found. (pp. 8–27)

cakes **peat, which hardens into coal** **amber** **play-doh**
sandstone **marble (polished limestone)** **stone** **frozen in the ground**

8. Explain what we learn when we find fossils in each of the following places. (pp. 22–25)

If we find fossils of jungle plants and animals in an area that is now desert?	→	
If we find fossils of sea creatures where we now have mountains?	→	
If we find fossils of tropical plants in cold lands?	→	

9. What can we learn from fossils of strange creatures? (p. 25)

Bringing Back the Wolves

10. A place where different living things interact with one another and their environment is called an: (p. 5)

habitat **forest** **back yard** **ecosystem**

Week 3 Activity Sheet

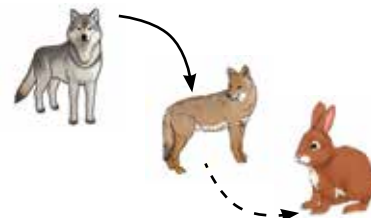
11. How might an ecosystem change if all the rabbits went missing? (p. 5)



12. What are **apex predators**? Why did the U.S. government offer a bounty for hunters to hunt apex predators in the late 1800s? (p. 6)



13. How do keystone species impact other species in an ecosystem? (p. 6)



14. Circle the correct answer. When a keystone species goes missing in an ecosystem, the chain reaction of change that takes place is called a _____ . (p. 6)

Tragedy

Catastrophe

Trophic Cascade

Missing Link

15. Look at the chart on page 7 in your book. Trace a sequence of arrows that starts with “wolves” to show how many other species wolves affect. Record the animal names in the sequence you chose below. (You may not need all of the boxes.) (p. 7)

