

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

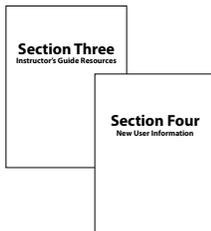
When relevant, you'll find notes about specific books to help you know why we've selected a particular resource and what we hope your children will learn from reading it. Keep an eye on these notes to also provide you with insights on more difficult concepts or content (look for "Note to Mom or Dad").

5-Day: *The Story About Ping* | Entire Book

To Discuss After You Read

Note: The Yangtze River is the third longest river in the world. The author talks about "the yellow waters of the Yangtze river." The river carries an enormous amount of silt.

From: *Reading Comprehension for Middle School: A Guide to Success*, 2011, by Linda Ward Beech, Scholastic Teaching Resources

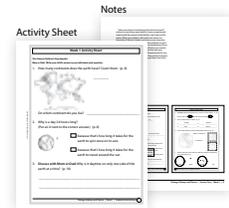


Instructor's Guide Resources and New User Information

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. We provide a blank cell on Day 5 to allow for your own activities and topics that you would like to teach your children.

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 1	WEEK 1					SCHEDULE
Date:	Day 1 ¹	Day 2 ²	Day 3 ³	Day 4 ⁴	Day 5 ⁵	
<i>Usborne World of Animals</i>	pp. 6–7	pp. 8–9	pp. 10–11			
Activity Sheet Questions	#1 N	#2–3	#4–5			
Optional: Do Together	Kids' Choice		The World Around You			
Discover & Do Level 1 DVD				Introduction to science with magnets Tracks #35–38		
Science Activities, Vol. 1				"What can a magnet do?" pp. 26–27		
Activity Sheet Questions				#6		
Supplies	N We provide: BSK—2 magnets, thumbtacks, paper clips, tape. You provide: Science Notebook (N): sheets of paper tied with yarn or a spiral bound notebook or an artist's sketchbook (use for all experiments); assorted items (examples: jewelry, keys, coins, bottle caps, mug, scissors, foil, etc.); thread; paper; paints or crayons; large box.					
Shopping/Planning List	For next week: ruler, scissors, thread.					
Other Notes						

Day 1

Usborne World of Animals | pp. 6–7

The book says, "Earth is the only known planet to support living things." Isn't that amazing? Scientists known as astrobiologists attempt to find signs of life in space. While other planets have been discovered that appear to have the necessary conditions to support life, they are much too far to travel to or communicate with.

As the book points out, a basilisk lizard can run on water. It can do so only because it doesn't weigh much (from 2 grams up to about 7 ounces) and because it moves quickly.

Activity Sheet Questions | #1

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

Suggestion: Your Student's Activity Sheets might work more easily in a small binder for your children to keep and use as assigned. If you have more than one child using this program, extra sets of the Activity Sheets may be purchased for each child (Item #BSB1).

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

N Special Note to Mom or Dad

Animals, Astronomy, and Physics | Section Two | Week 1 | 1

Date:	Day 1 ¹	Day 2 ²	Day 3 ³	Day 4 ⁴	Day 5 ⁵
Real Science-4-Kids: Biology Level I	1.1–1.2	1.3	1.4	1.5	
Activity Sheet Questions	#1–3 N	#4–6	#7–8	#9–10	
Discover & Do Level 3 DVD		Track #51			
Optional: Lyrical Life Science 1	Introduction N	chaps. 1, 6			
Optional: Do Together		Kingdom Poster Board		What's in a Name	
Other Notes					

Day 1

Real Science-4-Kids: Biology Level 1 | 1.1–1.2

The book credits Carolus Linneaus as being the founder of taxonomy, but a case can be made for Aristotle (ca. 384–322 BC) being the founder of taxonomy. The beginnings of taxonomy, then, resulted from the interests of an ancient philosopher trying to make organizational sense out of life. It may be better to say that Linneaus refined taxonomy, resulting in its modern scientific form, or that he is the founder of “modern” taxonomy. [p. 3]

Activity Sheet Questions | #1–3

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

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

Please don’t expect your children to write the answers until they gain considerable proficiency at handwriting. We have provided a variety of activities to interest and challenge your children. Feel free to let your children do those activities that they enjoy and simply talk through others.

We have provided space for you to fill in answers as your children respond verbally, or simply check off the items that you discuss.

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

Suggestion: Your Activity Sheets might work more easily in a small binder for your children to keep and use as assigned. If you have more than one child using this program, extra Activity Sheets can be purchased for each child (Item #DSB1).

N Special Note to Mom or Dad

Occasionally we assign a “cut-out” activity. Please find these separate sheets in **Section Three**.

Optional: *Lyrical Life Science 1* | Introduction

Note to Mom or Dad: The publisher of *Lyrical Life Science* has created 2 new songs for volume 1: one song about cell organelles and the other about protists. To accompany these songs, they have created new text and workbook pages. All of these new materials are now available for FREE on their website. You may also visit our IG links page for a link to their site .

Day 2

Real Science-4-Kids: Biology Level 1 | 1.3

Activity Sheet Questions | #4–6

Discover & Do Level 3 DVD | Track #51

Optional: *Lyrical Life Science 1* | Chapters 1, 6

Optional: Do Together | Kingdom Poster Board

For a fun time, help your children create a poster board about one of the five Kingdoms. You’ll need a piece of poster board, as well as pencils, pens, crayons, colored pencils, scissors, and glue.

Help your children choose one of the five Kingdoms that they would like to learn more about, and then help them find more information on the Internet. As they learn new and interesting facts, help them to make notes about this information. If they find interesting pictures, be sure to print some of them for your children to use on their poster board.

When they have learned a lot about their chosen Kingdom, help them to gather their pictures and facts. Which pictures and facts do they want to highlight on their poster board? Which things would other people most want to know about this Kingdom? Do they have pictures of sample species from within the Kingdom? When your children are finished with their poster board, find a place to hang it so that others can see their work.

Day 3

Real Science-4-Kids: Biology Level 1 | 1.4

Activity Sheet Questions | #7–8

Optional: *Lyrical Life Science 1* | Chapters 1, 6

Day 4

Real Science-4-Kids: Biology Level 1 | 1.5

Activity Sheet Questions | #9–10

Optional: *Lyrical Life Science 1* | Chapters 1, 6

Optional: Do Together | What’s in a Name

The process that scientists use today to name new species seems much more complicated. Ask your children: if they had to name all the animals, would they enjoy it? Why or why not?

Today, give them a chance to do just that. That’s right! Let them name some animals. Use an encyclopedia or the Internet to find some pictures of animals that your children may not recognize. Pick 5 or 10 animals and then show the pictures to your children. What would they name the animal? Why? When they’re done, share with them the real names of the animals. Did they come close on any of them?

If they enjoy this activity, feel free to repeat it with additional animals. Have fun! ■

Week 1 Activity Sheet

Real Science-4-Kids: Biology Level 1

1. Write the meanings of the two Greek words that make up the word *biology* below. (1.1)
Remember, it is okay for you to act as a scribe on these sheets until your child is proficient at writing.

biós: _____ (life) logos: _____ (description)

Write your own definition of *biology* here: _____ (Answers will vary.)

2. Circle the characteristics of living things. (1.1)



can smile



they reproduce



have skin



require food



some move freely in their environment



have legs



breathe air



eventually die

3. Why is taxonomy helpful to scientists? (1.2)

- because it better shows scientists each animal's particular color
- by organizing types of living things, scientists can better study their similarities and differences
- by organizing types of living things, scientists better know what to feed them at the zoo
- because organizing living things into groups helps scientists share the work of studying them

Write the name of the scientist who founded modern taxonomy here:

_____ (Carolus Linnaeus)

Week 1 Activity Sheet

4. Write the names of the five kingdoms scientists use below. (1.3)



P _____ (Plantae)



P _____ (Protista)



A _____ (Animalia)



M _____ (Monera)



F _____ (Fungi)

5. Which characteristic determines the kingdom in which an organism will be placed? Circle your answer. (1.3, p. 4)

- where it lives
- bone structure
- its coloring
- cell structure

6. Fill in the chart below with the missing information about the different kingdoms. (1.3, pp. 5–6)

Kingdom	Sample Creature	Interesting Fact
Animalia	_____ (Answers will vary.)	All animals have animal cells.
(Plantae)	Sycamore tree	All plants have _____ (plant) cells.
Fungi	_____ (Answers will vary.)	Members of this kingdom were once grouped with plants in the Plant Kingdom.
(Protista)	Euglenas, Amoebas	Some members in this group have plant-like features, and others have _____ (animal-like) features.
Monera	Common creature shapes include rods, spheres and spirals.	Most members are _____ (unicellular) which means they only have one cell.

7. Why aren't frogs and cats part of the same family? (1.4)

- because frogs live on both land and water and cats nurse their young
- because frogs live in the water and cats live on land.

Week 1 Activity Sheet

8. Match the characteristic descriptions to the animal pair that best define each. Write the letter on the line. (1.4)



Phylum: Mollusca

_____ (b)

Phylum: Chordata



Class: Aves

_____ (a)

Class: Reptilia



Order: Falconiformes

_____ (c)

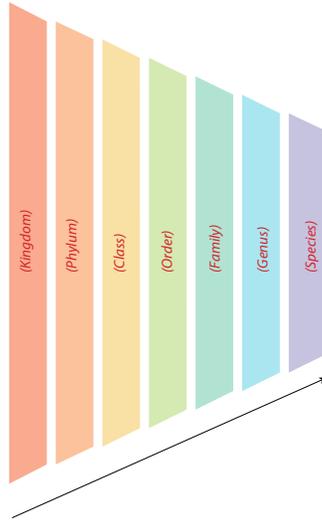
Order: Sphenisciformes



- a. has a horny beak / is cold blooded
- b. has a soft body / has a backbone
- c. sharply hooked beak / flightless; live near oceans

9. Use the words in the box to order the classification categories into the funnel below. (1.4–1.5)

- Species
 - Family
 - Kingdom
 - Class
 - Order
 - Phylum
 - Genus



10. Are you a Homo sapiens? (1.5)

Yes

No

Week 1 Activity Sheet

Real Science-4-Kids: Biology Level 1

1. Write the meanings of the two Greek words that make up the word *biology* below. (1.1)

Remember, it is okay for you to act as a scribe on these sheets until your child is proficient at writing.

bios: _____ **logos:** _____

Write your own definition of *biology* here: _____

2. Circle the characteristics of living things. (1.1)



can smile



they reproduce



have skin



require food



some move freely in their environment



have legs



breathe air



eventually die

3. Why is taxonomy helpful to scientists? (1.2)

- because it better shows scientists each animal's particular color
- by organizing types of living things, scientists can better study their similarities and differences
- by organizing types of living things, scientists better know what to feed them at the zoo
- because organizing living things into groups helps scientists share the work of studying them

Write the name of the scientist who founded modern taxonomy here:

Week 1 Activity Sheet

4. Write the names of the five kingdoms scientists use below. (1.3)



P _____ P _____ A _____ M _____ F _____

5. Which characteristic determines the kingdom in which an organism will be placed? Circle your answer. (1.3, p. 4)

where it lives bone structure its coloring cell structure

6. Fill in the chart below with the missing information about the different kingdoms. (1.3, pp. 5–6)

Kingdom	Sample Creature	Interesting Fact
Animalia	_____	All animals have animal cells.
_____	Sycamore tree	All plants have _____ cells.
Fungi	_____	Members of this kingdom were once grouped with plants in the Plant Kingdom.
_____	Euglenas, Amoebas	Some members in this group have plant-like features, and others have _____ features.
Monera	Common creature shapes include rods, spheres and spirals.	Most members are _____, which means they only have one cell.

7. Why aren't frogs and cats part of the same family? (1.4)

- because frogs live on both land and water and cats nurse their young
- because frogs live in the water and cats live on land.

Week 1 Activity Sheet

8. Match the characteristic descriptions to the animal pair that best define each. Write the letter on the line. (1.4)



Phylum: Mollusca _____



Phylum: Chordata _____



Class: Aves _____



Class: Reptilia _____

- a. has a horny beak / is cold blooded
- b. has a soft body / has a backbone
- c. sharply hooked beak / flightless; live near oceans



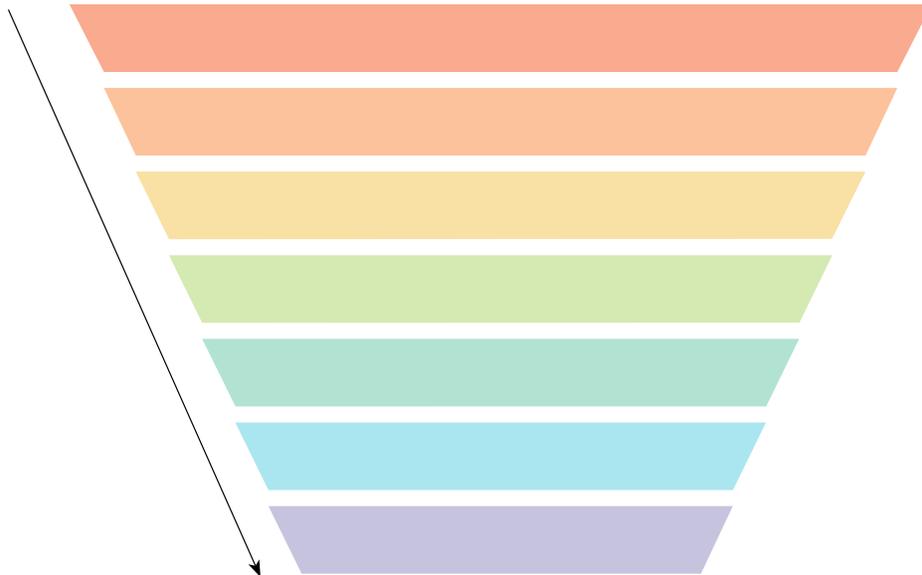
Order: Falconiformes _____



Order: Sphenisciformes _____

9. Use the words in the box to order the classification categories into the funnel below. (1.4–1.5)

- Species
 - Family
 - Kingdom
 - Class
 - Order
 - Phylum
 - Genus



10. Are you a Homo sapiens? (1.5)

Yes

No

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Date:	Day 1 ⁶	Day 2 ⁷	Day 3 ⁸	Day 4 ⁹	Day 5 ¹⁰
Real Science-4-Kids: Biology Level 1	1.6	2.1	2.2	2.3	
Activity Sheet Questions		#1–2	#3–6	#7–8	
Optional: Lyrical Life Science 1	chap. 2			chap. 11	
Optional: Do Together		3-D Cell Model		DNA	
Other Notes					

Day 1

Real Science-4-Kids: Biology Level 1 | 1.6

Optional: Lyrical Life Science 1 | Chapter 2

Day 2

Real Science-4-Kids: Biology Level 1 | 2.1

Activity Sheet Questions | #1–2

Optional: Lyrical Life Science 1 | Chapter 2

Optional: Do Together | 3-D Cell Model

Help your children make a three-dimensional cell model today. Here's what you'll need: a couple of sealable storage bags, some light-colored syrup (such as Karo™ syrup), and some various items to represent the parts of a cell (these items could include, but are not limited to, the following: gummi candies, cereal, balloons, fruit slices, peanuts, jelly beans, etc.).

Fill one of the sealable bags most of the way full with the syrup, and then put it inside of the second sealable bag for strength. Then add in the other items to represent the nucleus and other organelles. See the diagrams in your book for the types of organelles present in cells.

Let your children play with the cell they created. Do they see how it's flexible and can move around? Now have them imagine billions of such cells comprising their bodies!

Day 3

Real Science-4-Kids: Biology Level 1 | 2.2

Activity Sheet Questions | #3–6

Optional: Lyrical Life Science 1 | Chapter 2

Day 4

Real Science-4-Kids: Biology Level 1 | 2.3

Activity Sheet Questions | #7–8

Optional: Lyrical Life Science 1 | Chapter 11

Optional: Do Together | DNA

Your book mentions that one of the primary ingredients of cells is DNA. Help your children do some research about DNA. What does DNA stand for? Why do we have DNA in our bodies? Why is your children's particular DNA so special?

Find a website that discusses and shows the double-helix structure of DNA. Visit our IG links web page for a link to a fitting website . Make sure your children understand just the very basics of DNA. It is a complicated topic, but it's very interesting and it's never too early to introduce them to the building blocks of life! ■

Week 2 Activity Sheet

Real Science-4-Kids: Biology Level 1

1. Write the appropriate term in each blank. Then answer the question. (2.1)

- a) cells molecules and atoms make up cells.
- b) tissues cells make up tissues, which make up organs.

Which of these terms do scientists consider "the building blocks of life"? cells

2. Why is it important for organs in an organism to work together? (2.1)

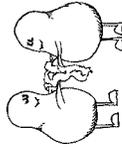
(Organs in an organism need to work together so that the living creature can eat, reproduce, move and survive.)

3. Which type of molecule does most of the work inside of a cell? (2.2)

sugars large molecules proteins nucleic acids

4. Name some of the tasks these "worker molecules" do inside of a cell. (2.2)

(proteins move other proteins and small molecules in and out of the cell; make proteins and nucleic acids like DNA, and make large molecules out of small ones)



5. What happens if proteins and other molecules inside a cell quit working? (2.2)

- the cell explodes the cell divides into new cells
- new proteins grow in their place the cell dies

6. What happens to cells when they die? (2.2)

(The parts of the cell break down into smaller molecules and are used again to make new molecules for a different cell.)



Week 2 Activity Sheet

7. Describe the differences between prokaryote and eukaryote cells. Use the questions a-c below to help you. (2.3)

Prokaryote Cells	Eukaryote Cells
Circle one: <u>have</u> / <u>don't have</u> a nucleus.	Circle one: <u>have</u> / <u>don't have</u> a nucleus.
<u>(bacteria)</u>	<u>(bigger; plants and animals)</u>

- a) Which of these cells is bigger and more complicated? Write the word "bigger" in the appropriate column.
- b) Which of these cells make up all bacteria? Write the word "bacteria" in the appropriate column.
- c) Which of these cells make up all other living things, like plants and animals? Write "plants and animals" in the appropriate column.



8. Challenge: Is your body made up of prokaryote or eukaryote cells? Explain. (2.3)

(since humans are not bacteria, we are made up of eukaryote cells; like all other nonbacterial living things)

Week 2 Activity Sheet

Real Science-4-Kids: Biology Level 1

1. Write the appropriate term in each blank. Then answer the question. (2.1)

a) **cells** **molecules** **atoms**
_____ and _____ make up _____.

b) **tissues** **cells** **organs**
_____ make up _____, which make up _____.

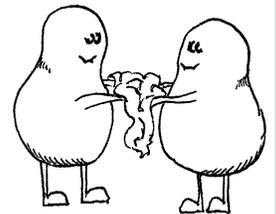
Which of these terms do scientists consider "the building blocks of life"? _____

2. Why is it important for organs in an organism to work together? (2.1)

3. Which type of molecule does most of the work inside of a cell? (2.2)

sugars **large molecules** **proteins** **nucleic acids**

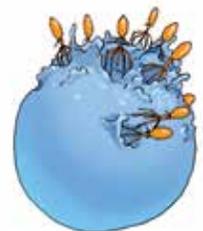
4. Name some of the tasks these "worker molecules" do inside of a cell. (2.2)



5. What happens if proteins and other molecules inside a cell quit working? (2.2)

- | | |
|---|--|
| <input type="checkbox"/> the cell explodes | <input type="checkbox"/> the cell divides into new cells |
| <input type="checkbox"/> new proteins grow in their place | <input type="checkbox"/> the cell dies |

6. What happens to cells when they die? (2.2)

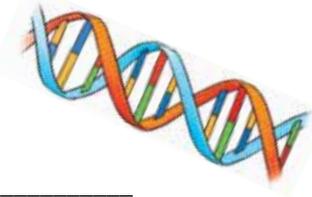


Week 2 Activity Sheet

7. Describe the differences between prokaryote and eukaryote cells. Use the questions a–c below to help you. (2.3)

Prokaryote Cells	Eukaryote Cells
Circle one: have / don't have a nucleus.	Circle one: have / don't have a nucleus.

- Which of these cells is bigger and more complicated? Write the word “bigger” in the appropriate column.
- Which of these cells make up all bacteria? Write the word “bacteria” in the appropriate column.
- Which of these cells make up all other living things, like plants and animals? Write “plants and animals” in the appropriate column.



8. **Challenge:** Is your body made up of prokaryote or eukaryote cells? Explain. (2.3)

Date:	Day 1 ¹¹	Day 2 ¹²	Day 3 ¹³	Day 4 ¹⁴	Day 5 ¹⁵
Real Science-4-Kids: Biology Level 1	2.4	2.6–2.7	2.8		
Usborne Mysteries and Marvels of Nature			pp. 14–15	pp. 26–27; pp. 38–39	
Activity Sheet Questions	#1–4	#5–8	#9–11	#12–17	
Optional: Lyrical Life Science 2	Introduction	chap. 2	chap. 13	chap. 3	
Optional: Do Together			Summary Picture	Let's Fight!	

Other Notes

Day 1

Real Science-4-Kids: Biology Level 1 | 2.4

Activity Sheet Questions | #1–4

Optional: Lyrical Life Science 2 | Introduction

Day 2

Real Science-4-Kids: Biology Level 1 | 2.6–2.7

Note: We'll read section "2.5 Plant Cells" when we study plants later in the year.

In Darwin's day animal cells were thought to be relatively simple blobs, but as science has advanced we've come to realize that even supposedly simple cells are truly complex marvels of functionality. [p. 17]

Activity Sheet Questions | #5–8

Optional: Lyrical Life Science 2 | Chapter 2

Day 3

Real Science-4-Kids: Biology Level 1 | 2.8

Usborne Mysteries and Marvels of Nature | pp. 14–15

Activity Sheet Questions | #9–11

Optional: Lyrical Life Science 2 | Chapter 13

Optional: Do Together | Summary Picture

Challenge your children to create a picture that summarizes all the main points of Chapter 2: Cells—The Building Blocks of Life. Have them review the summary (2.8), and then try to create a visual summary that incorporates all of the most important parts of the chapter.

They could create a separate picture for each of the points, or they could make one large picture that involves all the points and shows how they interact and relate to each other. Since children learn in a variety of ways, it's important to review information in various ways to ensure

that your children are learning in the most effective way possible. Have fun and be sure to showcase their final artwork on the refrigerator!

Day 4

Usborne Mysteries and Marvels of Nature | pp. 26–27; 38–39

Activity Sheet Questions | #12–17

Optional: Lyrical Life Science 2 | Chapter 3

Optional: Do Together | Let's Fight!

Most children find it fascinating to study the peculiar defense mechanisms that many animals possess. Who wouldn't be intrigued by the poisonous spurs of the duck-billed platypus? Or the vicious tusks of the Arctic walrus?

But what about us humans? Do we have any special defense mechanisms? We don't mean guns and knives either! Ask your children to brainstorm about what they might use to defend themselves in the wild.

After they've thought about it for a while, challenge them to either (1) write a short story, (2) draw a picture, or (3) give a brief oral report that highlights at least two human defense mechanisms. Some candidates: teeth, hands (fists), fingers (nails, claws!), feet (kicking), etc. ■

Week 3 Activity Sheet

Real Science-4-Kids: Biology Level 1

- Where do prokaryotic cells keep their DNA? (2.4)
(DNA in prokaryotic cells is located in the nucleoid region of the cell.)
The nucleoid is not separated from the rest of the cell by a membrane.
- Describe the difference between the cell wall and the plasma membrane. (2.4)
(The plasma membrane is thin, soft and greasy, and contains pores that control what enters and exits the cell. The cell wall is rigid and protects the cell's structure.)
- How do many prokaryotic cells move? (2.4)
(many prokaryotic cells have "whips" called flagella that are connected to a "motor" in the cell that twirls rapidly to propel the cell in many directions)
- Which part of a prokaryotic cell helps it stay in place? (2.4)

pili flagella cell wall ribosomes
- Match the following parts that are found in both plant and animal cells to the function each performs. (2.6)

(a) Proteins are made here. a. rough endoplasmic reticulum
(c) This part holds the cell's DNA. b. microtubules
(d) A small factory that makes energy molecules. c. nucleus
(b) Move things from place to place in the cell. d. mitochondria
- What is the main difference between plant and animal cells? (2.6)

Animal cells are found in animals, and plant cells are found in plants.
 Only plant cells have a nucleus.
 Only animal cells have a rough endoplasmic reticulum.
 Only plant cells have a cell wall; animal cells are surrounded only by the plasma membrane.



Biology: Taxonomy, and Human Anatomy | Week 3 | Student Activity Sheet 7

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Week 3 Activity Sheet

7. **Challenge:** Since animal cells do not have a cell wall, they are less rigid than plant cells. How do you think flexible cells benefit animals, and rigid cells benefit plants? (2.6)



(Possible: Since animal cells don't have a cell wall, they don't provide the same structure to that plant cells do, but that's okay! Animals have other systems that provide structure to their bodies, like skeletons and exoskeletons. And without a cell wall, animals can be more flexible, which means they can move around much more easily than plants. Since plant cells do have a cell wall, it helps to support the plant since they do not have a skeleton to do so otherwise.)

8. Write each term in the box next to the correct function each performs. (2.7)

cell wall	nucleolus	chloroplast
golgi apparatus	ribosomes	peroxisomes
		lysosomes

- (ribosomes)* make proteins.
- (chloroplast)* in plants uses light energy from the Sun to make energy molecules for the cell.
- Proteins are modified and shipped or stored in the *(golgi apparatus)*.
- Found in plants, the *(cell wall)* serves as the plant's skeleton and helps it hold its shape.
- (lysosomes)* digest big molecules for other uses in the cell.
- Pieces of ribosomes are made in the *(nucleolus)*.
- Cells get rid of dangerous substances in the *(peroxisomes)*.



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Week 3 Activity Sheet

Usborne Mysteries and Marvels of Nature



9. Mammals have *(hair)* on their bodies and feed their babies *(milk)*. (p. 14)

10. How does a Tamandua make sure it will have a meal another day? (p. 14)
(When it feeds on a nest of insects, it leaves part of the nest behind so the insects can rebuild it.)
The Tamandua can eat from the same nest another day.)

11. Match the animals below to the special tools each is equipped with to help it find food. (pp. 14-15)

vampire bat	_____	curved claw to dig out bugs
giraffe	_____	excellent hearing, vision and sense of smell
aye-aye	_____	long, sharp front teeth
tiger	_____	long tongue

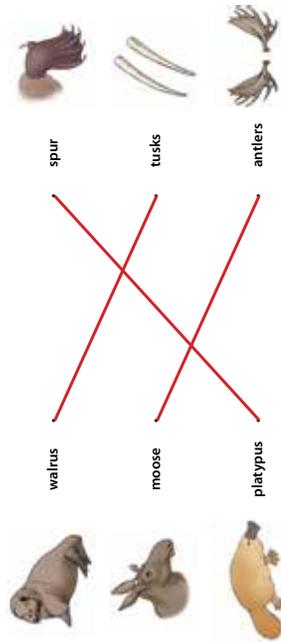
12. Kangaroos' legs are like ... (Check the box that is true.) (pp. 26-27)

<input checked="" type="checkbox"/> a spring	<input type="checkbox"/> an iron
the energy from one jump helps to power the next.	pushes everything into the ground
<input type="checkbox"/> gasoline	<input type="checkbox"/> electricity
can only run a little while before it runs out	with increased voltage can go faster

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Week 3 Activity Sheet

13. A sugar glider _____ from tree to tree. (Circle the correct answer.) (p. 27)
 A) flies B) hops C) climbs **D) parachutes**
14. A cheetah's flexible _____ helps it to run at high speeds. (Circle the correct answer.) (p. 27)
 A) legs **B) spine** C) tail D) head
15. How do many mammals impress their mates? (Circle the correct answer.) (p. 38)
A) by fighting with each other B) by their plumage C) by their smell
16. Match each animal below with the "weapon" it uses to win a mate or territory. (pp. 38–39)



17. Challenge: Circle the correct answer to complete the sentences. (p. 39)
- Antlers** or **Horns** are shed each year and regrown.
 (Hint: a bull moose has these!)
- Antlers or **Horns** are permanent.



Week 3 Activity Sheet

Real Science-4-Kids: Biology Level 1

1. Where do prokaryotic cells keep their DNA? (2.4)

2. Describe the difference between the cell wall and the plasma membrane. (2.4)

3. How do many prokaryotic cells move? (2.4)

4. Which part of a prokaryotic cell helps it stay in place? (2.4)

pili

flagella

cell wall

ribosomes

5. Match the following parts that are found in both plant and animal cells to the function each performs. (2.6)

_____ Proteins are made here.

_____ This part holds the cell's DNA.

_____ A small factory that makes energy molecules.

_____ Move things from place to place in the cell.

a. rough endoplasmic reticulum

b. microtubules

c. nucleus

d. mitochondria

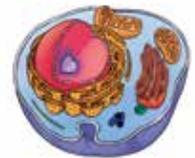
6. What is the main difference between plant and animal cells? (2.6)

Animal cells are found in animals, and plant cells are found in plants.

Only plant cells have a nucleus.

Only animal cells have an rough endoplasmic reticulum.

Only plant cells have a cell wall; animal cells are surrounded only by the plasma membrane.



Week 3 Activity Sheet

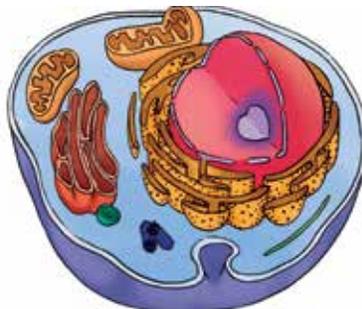
7. **Challenge:** Since animal cells do not have a cell wall, they are less rigid than plant cells. How do you think flexible cells benefit animals, and rigid cells benefit plants? (2.6)



8. Write each term in the box next to the correct function each performs. (2.7)

cell wall	nucleolus	chloroplast
golgi apparatus	ribosomes	peroxisomes
		lysosomes

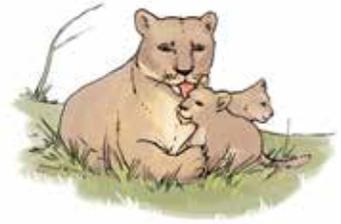
- a. _____ make proteins.
- b. _____ in plants uses light energy from the Sun to make energy molecules for the cell.
- c. Proteins are modified and shipped or stored in the _____.
- d. Found in plants, the _____ serves as the plant's skeleton and helps it hold its shape.
- e. _____ digest big molecules for other uses in the cell.
- f. Pieces of ribosomes are made in the _____.
- g. Cells get rid of dangerous substances in the _____.



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- | | | | |
|-------------|---|---|--|
| vampire bat | • | • | curved claw to dig out bugs |
| giraffe | • | • | excellent hearing, vision and sense of smell |
| aye-aye | • | • | long, sharp front teeth |
| tiger | • | • | long tongue |

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walrus •



• spur



moose •



• tusks



platypus •

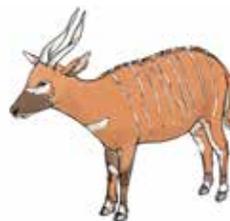


• antlers

17. **Challenge:** Circle the correct answer to complete the sentences. (p. 39)

Antlers or **Horns** are shed each year and regrown.
(Hint: a bull moose has these!)

Antlers or **Horns** are permanent.



Science 3—Weekly Subject List

Week	Subject
1	biology/taxonomy/kingdoms
2	taxonomy/cells
3	prokaryotic and animal cells/organelles/mammals
4	camouflage/defense/symbiosis/mammal nourishment, rest and temperature
5	mammal senses/hunting and prey/birds/bird territories/nests/woodpecker/animals and food
6	birds/eggs/chicken egg/incubator bird/nests
7	frog life cycle/reptiles and amphibians
8	reptiles and food/animal and reptile defense/gecko/reptile and amphibian communication
9	reptile and amphibian survival and senses/ocean feeding/underwater locomotion/ocean creature defense and survival
10	ocean creature symbiosis/shoals/dolphins/whales/ocean creature breeding/habitats/deep sea life
11	seas and oceans/underwater life/food webs/camouflage/coral reefs/symbiosis/poisonous animals
12	sharks/rays/whales/dolphins/deep sea life/migration/Arctic and Southern oceans/walrus/penguins/waves
13	currents/tides/coasts/seashore life/hurricanes/tsunamis/boats and ships/submarines/shipwrecks/ocean resources
14	ocean pollution/over fishing/undersea facts/insects/spiders/bombardier beetle
15	insect camouflage and mimicry/insect colonies/bees/metamorphosis/insect homes/unique insect features
16	butterfly life cycle/caterpillars/cocoons
17	Rachel Carson
18	Rachel Carson/human physiology/botany
19	plant life/animal-eating plants/plant movement/spores/plant defense/botany (radishes)
20	plants/parasites/plant communities/plant cells/botany (radishes)
21	plant parts/flowers/botany (radishes)
22	photosynthesis/leaves/botany (corn/beans)
23	plants/botany (corn/beans)
24	plant growth/seeds/botany (corn/beans)
25	plant growth and nutrition/life cycle of flowering plants/botany (corn/beans)
26	protists (protozoa)/microscope/botany (corn/beans)
27	protists (protozoa)/euglena/paramecia/amoeba/botany (corn/beans)
28	earth/ecosystems/food cycle/air cycle/water cycle
29	physics/movement/forces/friction/gravity
30	physics/movement/forces/pressure/light and dark/bouncing light
31	mirrors and pictures/bending light/eyesight/colored light
32	mixing colors (physics)/sound/hearing
33	musical sounds/sonar/ultrasound/solids, liquids, gases/atoms and molecules
34	solids, liquids, gases/heating and cooling/boiling and freezing/elements and compounds
35	fire/materials/electricity/conductors and insulators
36	types of electricity/magnets and electricity/producing electricity/electromagnetic spectrum