Quick Start Guide

Science Instructor's Guide: Levels K–6

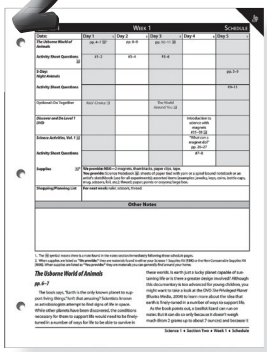
1 Get to Know Your Instructor's Guide

Your Instructor's Guide (IG) gives you the structure and flexibility to teach your children with confidence.

In your Science IG, you'll find detailed Notes that explain how to conduct experiments and discuss the concepts they address. The supply lists on the Schedule pages help you plan ahead for experiments. We also include a handy chart that shows which subjects you'll study and when, so you can plan field trips or other extracurricular opportunities.

Before you dive into your new Sonlight materials, familiarize yourself with your IG. Remember that you are in control of your homeschool; the wealth of information in your IG is here to help you. Only you can decide the right pace for your family. Your IG is a tool to make your life easier as you shape your children's education.

2 Plan Your Schedule

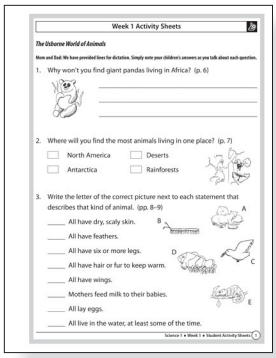


The weekly schedules help you plan. You can follow them closely, reorganize them, or merely use them as a springboard for your own plans. Please know you DO NOT have to do everything scheduled in your IG. Find a rhythm that works for you.

Find activity ideas and thought-provoking Notes for scheduled assignments directly behind your Schedule pages. Use these Notes to spark discussions with your children.

3 Organize Your Activity Sheets

In addition to the hands-on experiments scheduled throughout your program, your children can use the included Activity Sheets to interact with the science concepts they're learning. Find a complete answer key for these Activity Sheets after each week's schedule. Some parents choose to place the Activity Sheets in a separate binder so children may work on them independently when assigned. If you think you might reuse your Science IG in a few years with a younger child, we recommend you purchase an extra set of Activity Sheets when you buy the IG. That way, you'll still have matching Activity Sheets even after we update the IG you're using.



4 Start Your Science Journey

Ready? Set? Go! Your Science IG lets you to teach well from the very first day. As you progress, adapt the curriculum to meet your needs. Need to go faster or slower? Need to use more/less than what we offer? Sonlight puts you in control of your homeschool journey and enables you to customize your children's educational experience. Our goal is to make your job easier, help you overcome obstacles, and protect your family's interests. Please contact us if we can help. Visit us at www.sonlight.com/help or call (303) 730-6292.

Subjects in Science Levels K–6

Sonlight's unique and innovative science program will capture your children's imagination and encourage them to discover the wonders of God's world. Intriguing, full-color books and stories will bring science to life. Over the years, Sonlight children will focus on several primary fields of study:

- **Biology/Nature:** Children explore God's living world through biology, botany, animals and anatomy.
- **Technology:** Children develop an understanding of machines, inventions and modern technology.
- **Physical Sciences:** Children conduct experiments and discover truths as they study chemistry and physics.
- **Earth and Space:** Children chart new territory in oceanography, meteorology, archaeology and astronomy.
- **Health and Medicine:** Children delve into the world of anatomy, physiology, nutrition and medicine.

Science 2—Weekly Subject List

5-Day

Week	Subject
1	chimpanzees/apes/giraffes/bears/tigers/rhinos
2	elephants/camels/kangaroos/bats/sloths/anteaters
3	eating and digestion/teeth/tongue/beavers
4	blood/circulation/germs/lions
5	breathe/breathing/vocal cords/speech/zebras/bush babies
6	ears/hearing/touch/foxes/pandas
7	eyes/sight/nose/nutrition/wildebeests
8	brain/childbirth/wild dogs
9	bones/muscles/body systems/leopards
10	skin/fingerprints/blood vessels/nerves/red deer
11	birds/ostriches/penguins/hippos
12	grebes/drakes/pelicans/cormorants/storks/herons/flamingos/monkeys
13	swans/geese/ducks/birds of prey/pheasants/chickens
14	waders/cranes/gulls/terns/auks/pigeons/cuckoos/parrots/Earth/geology
15	owls/swifts/hummingbirds/kingfishers/hornbills/woodpeckers/toucans/Earth/regions
16	perching birds/bird facts/weather/space
17	seasons/sun/shadows/motion picture technology
18	clouds/evaporation/airplanes
19	rain/clouds and rain/snow/hail/cars
20	dew/frost/wind/bicycles
21	lightning/tornadoes/hurricanes/wind/cameras
22	light/waves/icebergs/fog/deserts/volcanoes/trains
23	light/waves/icebergs/fog/deserts/volcanoes/trains
24	weather power/weather facts/communication
25	solar system/batteries/electricity/lights
26	space machines/airplanes/hovercraft/electrical current/time and clocks
27	jets/helicopters/boats/railroads/circuits/printing
28	race cars/submarines/tanks/missiles/switches/baths
29	fighter planes/fighting machines at sea/rescue machines/circuits/money
30	construction/mining/buzzers/weapons
31	oil drilling/farm and dairy machines/electrical current/castles
32	home machines/motors/magnets/boats and ships
33	Marie Curie/radium/batteries/meters
34	geology/inside the earth/electricity/writing
35	dinosaurs/marine reptiles/flying reptiles/humans and dinosaurs/fossils/wheels
36	dinosaurs/dinosaurs and the Bible/dragon myths/biblical flood/inventions game

Science 2—Weekly Subject List

4-Day

Week	Subject
1	chimpanzees/apes/giraffes/bears/tigers
2	elephants/camels/kangaroos/bats
3	eating and digestion/teeth/tongue
4	blood/circulation/germs
5	breathe/breathing/vocal cords/speech
6	ears/hearing/touch
7	eyes/sight/nose/nutrition
8	brain/childbirth
9	bones/muscles/body systems
10	skin/fingerprints/blood vessels/nerves
11	birds/ostriches/penguins
12	grebes/drakes/pelicans/cormorants/storks/herons/flamingos
13	wans/geese/ducks/birds of prey/pheasants/chickens
14	waders/cranes/gulls/terns/auks/pigeons/cuckoos/parrots
15	owls/swifts/hummingbirds/kingfishers/hornbills/woodpeckers/toucans
16	perching birds/bird facts/weather
17	seasons/sun/shadows
18	clouds/evaporation
19	rain/clouds and rain/snow/hail
20	dew/frost/wind
21	lightning/tornadoes/hurricanes/wind
22	light/waves/icebergs/fog/deserts/volcanoes
23	weather forecasting/barometer/climate change
24	weather power/weather facts
25	solar system/batteries
26	space machines/airplanes/hovercraft/electrical current
27	jets/helicopters/boats/railroads/circuits
28	race cars/submarines/tanks/missiles/switches
29	fighter planes/fighting machines at sea/rescue machines/circuit
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35	dinosaurs/marine reptiles/flying reptiles/humans and dinosaurs/fossils
36	dinosaurs/dinosaurs and the Bible/dragon myths/biblical flood

SCIENCE 2	WEEK 1				SCHEDULE
Date:	**Day 1** 1	**Day 2** 2	**Day 3** 3	**Day 4** 4	**Day 5** 5
The Usborne Book of Knowledge	pp. 52–53 N[1]	pp. 54–55 N	pp. 56–57	pp. 58–59	
Activity Sheet Questions N	#1–2	#3–4	#5–6	#7–8	
5-Day: *The Usborne Book of Knowledge*					pp. 60-61
Activity Sheet Questions					#9–10
Optional: Do Together	Monkey Bars N		Mocha Bear N		
Other Notes					

1. The N symbol means there is a note immediately following the schedule.

The Usborne Book of Knowledge

p. 52

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

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

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

p. 54

While the book is correct in noting that giraffes appear awkward when they need to take a drink, it fails to point out that the mechanisms involved in this process are pretty amazing. Why doesn't the blood rush to a giraffe's

head and cause a hemorrhage when it takes a drink? Because special valves in the giraffe's head regulate the pressure. There are other interesting things at work inside a giraffe taking a drink, too, such as the need for a powerful heart and special tissue near the brain. To find out more about how incredible it is when a giraffe takes a drink, see the article, "Do drinking giraffes have headaches?" which can be found on our IG links web page. 💻 And remember, giraffes should never drink and drive.

Activity Sheet Questions

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

You do not have to do every question on the Activity Sheets. Feel free to adjust and/or omit activities to meet the needs of your children. We cover the same concepts repeatedly throughout the year (and years to come!) to enable students to learn "naturally" through repetition and practice over time.

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 responds 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 # 2TS1).

Occasionally we assign a "cut-out" activity. These are separate sheets you will find in the Appendices of this guide. If you like, color the sheets first, then cut them out and attach them to the worksheet.

Optional: Do Together

Day 1: Monkey Bars

No, not the place that monkeys go to socialize … We're talking about the monkey bars at the playground. Do you have a playground with monkey bars nearby? If so, take your children for some play time. Help them swing on the monkey bars. Explain that monkey bars got their name because you have to swing from rung to rung just like a monkey (or an ape or a chimpanzee) swings from branch to branch in the jungle. If you can't get to a playground with monkey bars, you can help them swing like a monkey from the branches of a tree at home. As you enjoy your time playing together, talk about what they've learned so far about apes and chimpanzees. Would they ever want one as a pet? Why or why not? Have fun engaging in a little monkey business.

Day 3: Mocha Bear

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

Week 1 Activity Sheets

Usborne Book of Knowledge

Note to Mom and Dad: Please use your discretion regarding these assignments. If your student finds writing tedious, feel free to write his answers as he dictates. Encourage more student involvement as the year progresses.

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

(monkey)

(ape)

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

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

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

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

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

heavy hooves: *(defend themselves from predators)*

long tongue: *(help strip leaves from trees)*

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

Asia	**Europe**	**South America**
Africa	**North America**	**Australia**
Hawaii	**Antarctica**	**The Arctic**

Week 1 Activity Sheets

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

1) *(Possible: fishing, dig honey out of trees, pounce on seals as they sleep,*

2) *pull seals from the water when they come up for air, forage for berries,*

3) *eat ants, etc.)*

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

leopard

tiger

cat

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

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

5-Day

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

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

1) *(to keep cool)*

2) *(to get rid of insects)*

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Week 1 Activity Sheets

Usborne Book of Knowledge

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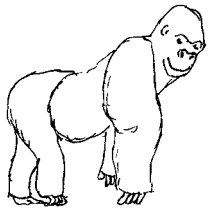

_____ _____

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

_____

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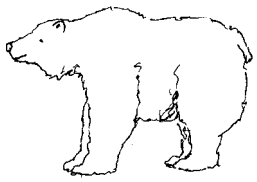
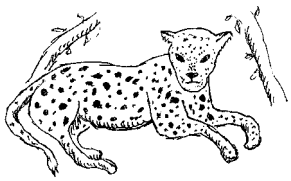


1) _____

2) _____

3) _____

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



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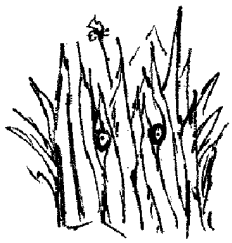

_____

_____

5-Day

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

(p. 60) _____

_____

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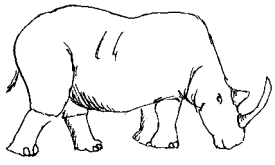


1) _____

2) _____

SCIENCE 2	WEEK 2				SCHEDULE
Date:	**Day 1** 6	**Day 2** 7	**Day 3** 8	**Day 4** 9	**Day 5** 10
The Usborne Book of Knowledge	pp. 64–65	pp. 78–79 N	pp. 80–81	pp. 82–83 N	
Activity Sheet Questions	#1–3	#4–6	#7–9	#10–12	
5-Day: ***The Usborne Book of Knowledge***					pp. 62–63 N
Activity Sheet Questions					#13–14
Optional: Do Together	Heffalumps N		Pouch Pals N		
Shopping/Planning List	**For next week:** apple, milk, kiwi, box of gelatin, two large bowls, box of pudding (if you want to do the alternate experiment).				

Other Notes

The Usborne Book of Knowledge

p. 78

Did you know that "camel" is mentioned more than 50 times in the Bible? Jesus once told his disciples, "it is easier for a camel to go through the eye of a needle than for a rich man to enter the kingdom of God" (Matthew 19:24). What do your children think this means? It certainly brings a funny and memorable picture to mind.

pp. 82–83

Like other flying creatures, bats present some problems for macroevolutionists. For instance, flight is a very complicated process. To suppose that flight came about all on its own, without any intelligent design, is something of a stretch. Another problem is the fact that bat wings have "long, bony fingers" in them. This means that if macroevolution is true, it must have taken a very long time for different forms of bats to gradually get longer and longer

fingers, not to mention the evolution of the "stretchy skin" that makes up the wings.

But how could a bat survive while it must have had to hobble on the ground with long fingers, still unable to fly? Darwin's theory sets forth the idea of the survival of the fittest, meaning that only the strongest and supposedly best animals will survive. But it's hard to imagine a transitionary form of a bat being able to survive if it has long fingers and wings that are not fully formed. What do you and your children think? Did God create and design bats?

The book describes *echolocation* or *biosonar* as "high pitched squeaks."

Did you know that the saliva of a vampire bat actually contains a mild anesthetic? This means that when it bites an animal and feeds, it probably doesn't hurt too much.

5-Day

p. 62

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

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

Optional: Do Together

Day 1: Heffalumps

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

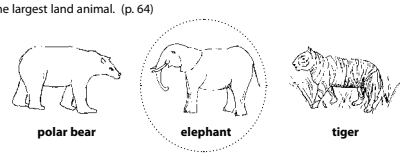
Day 3: Pouch Pals

Marsupials are interesting creatures. If your children are like most, they're probably fascinated by the fact that kangaroos and other marsupials have pouches. Today, turn your children into marsupials by giving them their very own pouches. Put a small backpack or fanny pack on your children, but swing it around so that it sits in front of their stomach. Have them place a couple of their favorite stuffed animals into their pouch and walk around with them for a while. As you review what you learned about kangaroos today, ask them if they wish they had a real pouch. Why or why not? What kinds of things could they carry in their pouch if they had one? Their books? Snacks? A change of clothes? As a final challenge, ask them to jump around like kangaroos. How easy is it to jump around with a full pouch? Hopefully they'll have a new appreciation for the uniqueness of marsupials. ■

Week 2 Activity Sheets

Usborne Book of Knowledge

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



polar bear **elephant** **tiger**

2. Which elephant is bigger? (p. 65) **Indian** **African**

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

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

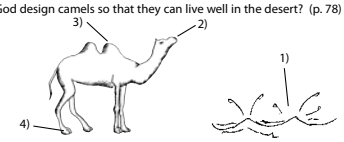
Trunk: *(eating—pick berries, etc.; drinking; as a snorkel; lift and move heavy objects; dig holes; rub eyes)*

4. The Bactrian camel has **one** or **two** hump(s). (p. 78)

5. The Arabian camel has **one** or **two** hump(s) and is also called the *(dromedary)*. (pp. 78-79)

Week 2 Activity Sheets

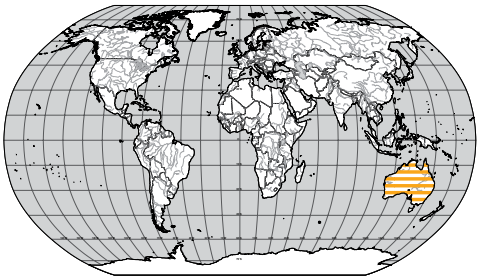
6. How did God design camels so that they can live well in the desert? (p. 78)



He created them so that …

1) *(camels can go without water for many days)*
2) *(camels can shut their nostrils to keep out sand)*
3) *(camels have humps that help protect them from the sun and store fat for times of less food)*
4) *(camels have soft, fleshy pads on the bottoms of their feet to keep them from sinking into the sand)*

7. Color the continent where kangaroos live. (p. 80)

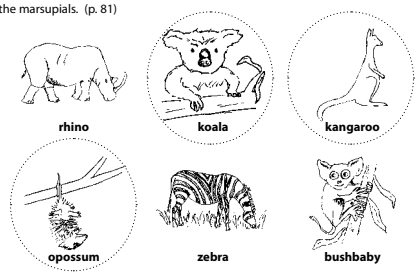


Week 2 Activity Sheets

8. _____ are animals with pouches to carry their babies. (p. 81)

mammoths **marsupials** **monkeys** **moose**

9. Circle the marsupials. (p. 81)



rhino **koala** **kangaroo**

opossum **zebra** **bushbaby**

10. Lots of furry animals fly, including bats. (p. 82) **True** **False**

If false, make the sentence true. *(bats are the only furry animals that fly)*

11. How does a bat find its prey? (p. 82)

(bats make high-pitched squeaks; the echoes tell it where the prey is)

Week 2 Activity Sheets

12. What kinds of things do bats eat? (pp. 82-83)

- ☒ fruit
- ☒ insects
- ☒ fish
- ☐ mountain lions
- ☒ blood
- ☒ nectar

5-Day

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

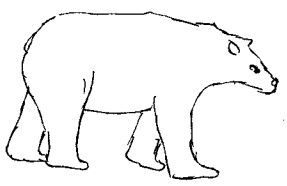
anteater **chimp** **sloth**

14. Why does the giant anteater walk on its knuckles? (p. 63)

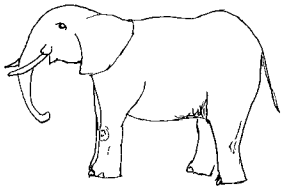
(to protect their long sharp claws)

Usborne Book of Knowledge

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



polar bear



elephant

tiger

2. Which elephant is bigger? (p. 65) **Indian** **African**

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

   Ears: _____

   _____

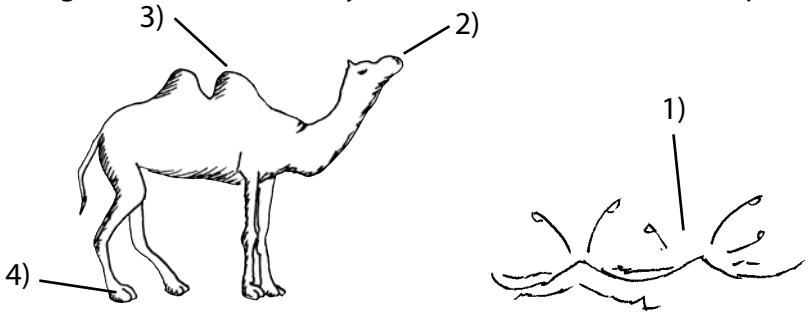
   Trunk: _____

   _____

4. The Bactrian camel has **one** or **two** hump(s). (p. 78)

5. The Arabian camel has **one** or **two** hump(s) and is also called the _____. (pp. 78-79)

6. How did God design camels so that they can live well in the desert? (p. 78)



He created them so that …

1) _____

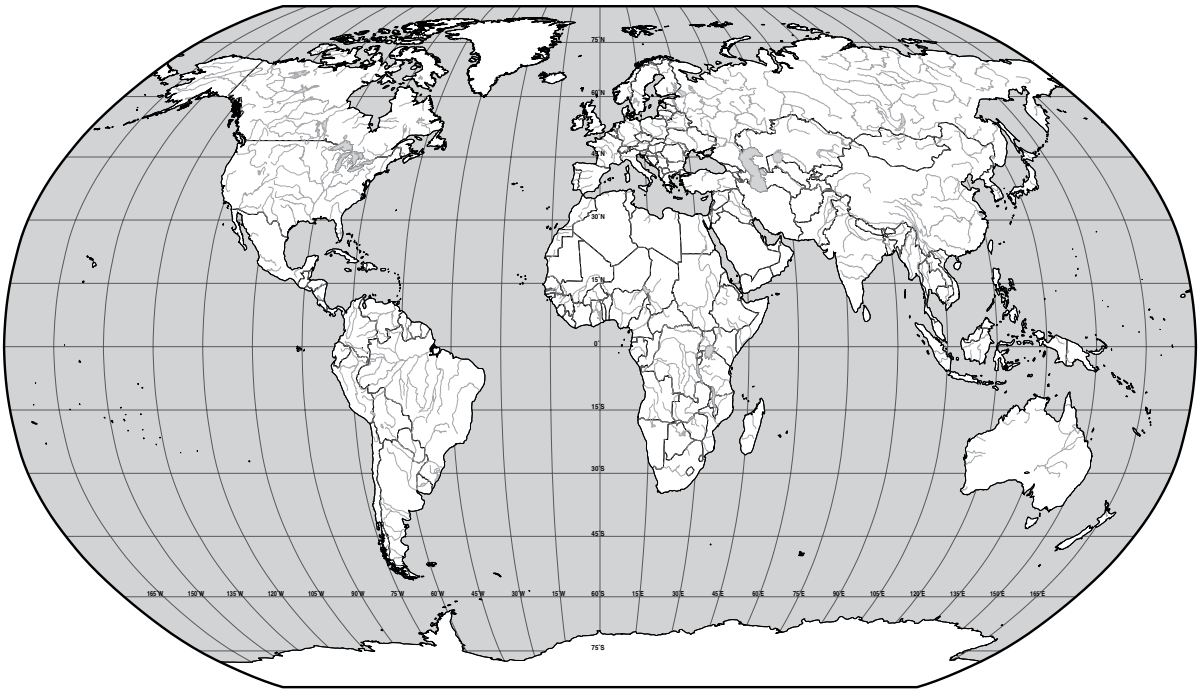
2) _____

3) _____

4) _____

_____

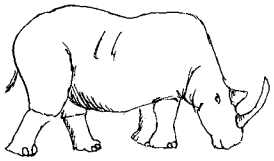
7. Color the continent where kangaroos live. (p. 80)



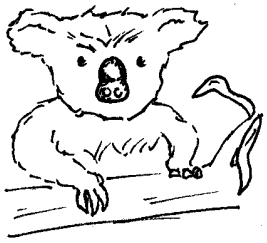
8. _____ are animals with pouches to carry their babies. (p. 81)

mammoths **marsupials** **monkeys** **moose**

9. Circle the marsupials. (p. 81)

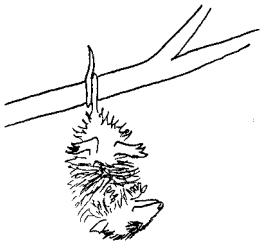


rhino



koala

kangaroo



opossum

zebra

bushbaby

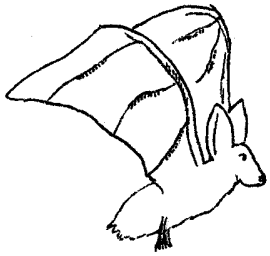
10. Lots of furry animals fly, including bats. (p. 82) **True** **False**

If false, make the sentence true. _____

11. How does a bat find its prey? (p. 82)

_____

_____



12. What kinds of things do bats eat? (pp. 82-83)

- ☐ fruit
- ☐ insects
- ☐ fish
- ☐ mountain lions
- ☐ blood
- ☐ nectar

5-Day

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

anteater **chimp** **sloth**

14. Why does the giant anteater walk on its knuckles? (p. 63)

_____

Science 2 — Week 3 — Schedule

Date:	Day 1 11	Day 2 12	Day 3 13	Day 4 14	Day 5 15
The Usborne Book of Knowledge	p. 98 N	pp. 100–101 N	pp. 102–103 N		
Activity Sheet Questions	#1–2	#3–4	#5–8		
5-Day: ***The Usborne Book of Knowledge***					pp. 66–67 N
Activity Sheet Questions					#11–13
***Discover & Do* Level 2 DVD** N				#47-48	
Optional: Do Together		Bring Lunch to Life N	Good Taste N		
Science Activities, Vol. 3				"Feeding Your Body" pp. 40–41 N	
Activity Sheet Questions				#9–10	
Supplies N	**We provide: NSK**—mirror. **You provide:** apple, milk, kiwi, box of gelatin, two large bowls, box of pudding (if you want to do the alternate experiment).				
Shopping/Planning List	**For next week:** tennis ball, watch with second hand, pencil**.**				

Other Notes

The Usborne Book of Knowledge

p. 98

The last paragraph on this page, beginning with the phrase "No scientist has ever been able to," is an important one. It demonstrates human limits. Although we are intelligent beings, we are not nearly as intelligent as God the Creator. Also, when compared to machines, human beings are far more valuable, creative, and amazing. We are "fearfully and wonderfully made" (Psalm 139:14).

pp. 100–101

Do these pages look a little cluttered to you? Maybe a bit confusing to follow? The pages in this entire section on the human body all follow pretty much the same structure, so it's a good idea to familiarize yourself with it now so that it will be easier for you and your children to understand these pages.

Begin by looking at the main heading, which on these two pages is "An Eating Machine" on page 101. Then read the bold text under this title. This will help you and your children understand what the main topic on the pages is all about. Now you'll have to figure out what makes sense to study next. These pages all seem to go from a progression that is left to right. As a result, you can start on the top left and follow the text to the right.

It's fine if you don't follow all the text in the text bubbles exactly in a particular order, so long as your children get an idea of the concepts. Note, too, that sometimes you'll see little boxes of text and images, such as the bottom of page 100, "Where Your Eating Machine is." These are sidebars that provide additional information about the topic being studied.

Allow your children to enjoy and study these pages and don't fuss too much about the "right" order.

p. 103

The food pipe is technically known as the *esophagus* (oesophagus in British English) or the gullet. The windpipe is also known as the *trachea*.

5-Day

pp. 66–67

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

Discover & Do Level 2 DVD

We produced this fun and educational video so you and your children could watch "Professor Justin" perform each of the assigned experiments from *The Usborne Book of Science Activities, Vol. 3*. We recommend you gather your supplies, watch the DVD to see what to do, and then try each of these simple experiments yourself.

Or, if you prefer, you can do the experiment(s) on your own and then watch the DVD to see how it turned out on screen. You may want to mix and match to find out what works best. We hope this video makes your science experiments more enjoyable and more educational.

Note to Mom or Dad: Please navigate your *Discover & Do DVD* by using the DVD menu on your screen.

Optional: Do Together

Day 2: Bring Lunch to Life

There's nothing quite like bringing your children's studies to life before their very eyes. Since eating is something they do every day, several times per day (we hope!), you have the perfect opportunity to reinforce today's lesson about how the body processes the food we eat. As you sit down for lunch (or dinner or a snack), talk about what they learned today. Then, as they eat, help them think about each of the aspects you discussed: the chopping and grinding action of the teeth, the muscles in the throat, the digestive juices in the stomach, etc. Can they feel the food digesting? No, not really, but you can help them imagine what's going on!

Day 3: Good Taste

Today, your children learned that different spots on the tongue have different types of taste buds for various types of tastes. Let them test their tongues today by tasting different types of foods. Find something sweet (like sugar), something sour (like lemon juice), something salty (like salt), and something bitter (like orange peel). As your children taste each of these items, have them use different parts of their tongues. Can they tell that their sweet tasters are on the tips of their tongues? Have fun and don't let them have too many sweets!

Science Activities, Vol. 3

Science Notebook

Scientists keep diaries and journals. In these journals they record their theories, the procedures of their experiments, and their observations as their experiments progress. Their hope is that the results they observe will lead to new discoveries. Skills of observation and data collection are therefore fundamental to scientific research. These are important skills and habits for all children to learn.

Help your children learn this discipline by working with them to record their experiments and observations in their own personal Science Notebooks.

You can either make your own notebook by tying together sheets of paper with yarn or use a spiral-bound notebook. I prefer to use the bound ruled notebooks that college students use because they are durable and stack so nicely on our bookshelves. Don't worry about making it too complicated. Just provide a vehicle for recording drawings, questions, and observations. Make a special heading for each new experiment or field trip.

Perhaps someday when your children are grown and working as medical doctors keeping logs on their patients, or researchers keeping records of their experiments, you can smile to yourself and remember how you helped get them started.

Breaking Down, p. 41

Alternate Experiment: Make some pudding using a spoon; eat some out of the bowl. Don't eat it all. Saliva has moved from your mouth into the bowl of pudding. Leave the remaining pudding in the refrigerator overnight. The next day you will notice some of the pudding has broken down due to the enzymes in your saliva. The broken down pudding looks very watery compared to the pudding your spoon did not touch.

Supplies

When supplies are listed as "**We provide:**," they are materials found in either your course-specific (**2SK**) Supplies Kit or the Non-Consumable (**NSK**) Supplies Kit. When supplies are listed as "**You provide:**," they are materials you can generally find around your home.

Shipping Restrictions

Due to strict import regulations, it is illegal to ship biological matter to certain countries (including New Zealand and Australia). If you requested your science supplies shipped to a country with such restrictions, we have removed that kit from your order and reduced your charge accordingly. ■

Usborne Book of Knowledge

1. What is one thing a machine can do better than you? (p. 98)

Kind of machine: *(Possible: a) cars b) computer c) crane)*

What it can do better: *(a) can move faster b) make calculations more quickly c) lift heavier loads)*

2. How did God create you to be more amazing than any machine? (p. 98)

(Possible: our bodies can do many different jobs at the same time; we can have new ideas and make jokes, change our minds and have babies)

3. Describe how your body digests food. Put the statements in order next to the correct picture. Please find Cut-Out #1. (pp. 100-101)

Saliva and teeth break up the food.

In the stomach, food is mixed with stomach juice and becomes like soup.

Food goes from the intestine into the blood where it is carried all around.

We get rid of the food we can't use in the bathroom.

4. Use the words in the box to finish the sentence. (pp. 100-101)

digestive juices	pieces	food

Your body uses *(digestive juices)* to break down *(food)* into smaller *(pieces)* it can use.

5. Circle the two main types of teeth you have. (pg. 102)

choppers **squashers** **grinders** **mashers**

6. What four tastes do the taste buds sense? (p. 103)

1) *(sweet)* 2) *(sour)*

3) *(salty)* 4) *(bitter)*

7. What is the main function of saliva (spit)? Use the words in the box to finish the sentence. (p. 103)

teeth	saliva	slide	mouth

(Saliva) (or spit) helps food *(slide)* around your *(mouth)* and between your *(teeth)*.

8. Why does brushing your teeth help you avoid cavities? (pp. 102-103)

(because when you brush the liquid from chewed food off of your teeth, it can't make tiny holes where bacteria can grow to cause cavities.)

Science Activities, Vol. 3

9. a. Are all of your teeth the same shape? (p. 40) **Yes** **No**

b. Which of your teeth bite? (p. 40) **Front** **Back**

c. Which of your teeth chew? (p. 40) **Front** **Back**

10. Use the words in the box to complete the statement.

food	saliva	stomach

In your body, enzymes are in your *(saliva)* and in your *(stomach)*.

They help your body break down *(food)*. (p. 41)

Usborne Book of Knowledge

5-Day

11. What do all rodents have? Circle the correct answer. (p. 66)

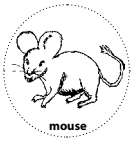
flat tails **big ears**

two big, sharp front teeth **webbed feet**

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

giraffe

walrus



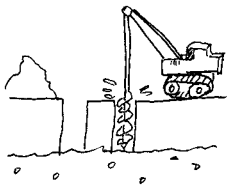
mouse

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

1) *(Possible answers: beaver, squirrel,*

2) *(rat, mouse, rabbits)*

Usborne Book of Knowledge



1. What is one thing a machine can do better than you? (p. 98)

   Kind of machine: _____

   What it can do better: _____

2. How did God create you to be more amazing than any machine? (p. 98)

   _____

   _____

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4. Use the words in the box to finish the sentence. (pp. 100-101)

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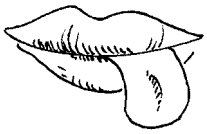
Your body uses _____ to break down

_____ into smaller _____ it can use.

5. Circle the two main types of teeth you have. (pg. 102)

choppers **squashers** **grinders** **mashers**



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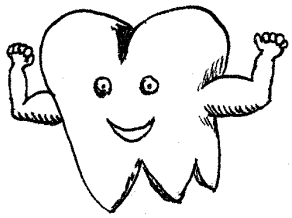
your _____ and between your _____.

8. Why does brushing your teeth help you avoid cavities? (pp. 102-103)

_____

_____

_____

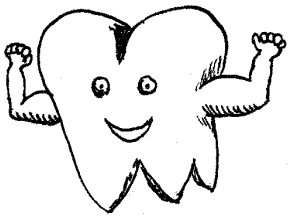


Science Activities, Vol. 3

9. a. Are all of your teeth the same shape? (p. 40) **Yes** **No**

   b. Which of your teeth bite? (p. 40) **Front** **Back**

   c. Which of your teeth chew? (p. 40) **Front** **Back**



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Usborne Book of Knowledge

5-Day

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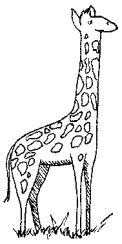
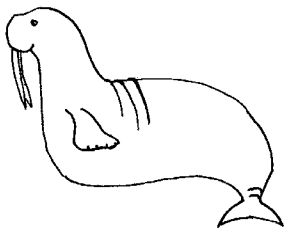
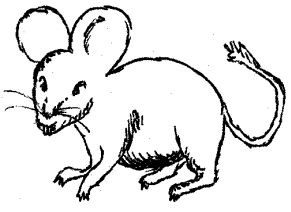


giraffe



walrus



mouse

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

1) _____

2) _____

Cut-Out Sheets

Cut-Out #1

In the stomach, food is mixed with stomach juice and becomes like soup.

Saliva and teeth break up the food.

We get rid of the food we can't use in the bathroom.

Food goes from the intestine into the blood where it is carried all around.