Quick Start Guide

Science Instructor's Guide: Levels K–6

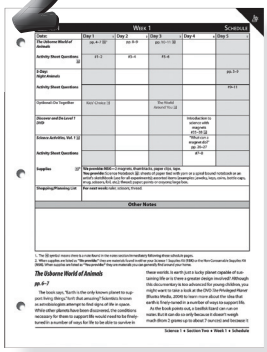
1 Get to Know Your Instructor's Guide

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

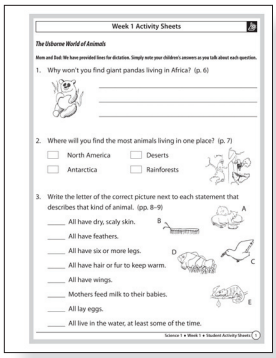


The weekly schedules help you plan. You can follow them closely, reorganize them, or merely use them as a springboard for your own plans. Please know you DO NOT have to do everything scheduled in your IG. Find a rhythm that works for you.

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 5—Weekly Subject List

5-Day

Week	Subject
1	body/body systems/cells/brain parts/hemispheres
2	digestive system/neurons/nervous system/brain development
3	digestion/intestines/waste/kidneys/intelligence/eyesight
4	respiratory system/memory
5	heart/circulatory system/homeostasis/consciousness
6	skeletal system/mental illness/drugs/hypnosis
7	muscular system/animal brains/computer brains
8	muscular system/involuntary muscles/reflexes/hair and nails/brain (history)
9	skin/genes/DNA
10	brain/genes/DNA/cells/nervous system/intelligence
11	eyes/genes/DNA/cells/chromosomes
12	hearing/balance/chromosomes
13	balance/sensation/micronutrients and macronutrients/genetic code
14	taste/smell/teeth/nose/carbohydrates/baby development/vocal cords/airways
15	brain/thinking/health/sickness/fats/genes/proteins
16	diseases/immune system/protein/heart/passing on genes/genetic traits
17	drugs/treatments/operations/alternative medicine/vitamins/minerals/nutrients/genetic mutations/evolution
18	conception/reproduction/birth/puberty/adolescence/genetics/Darwin/Mendel
19	boy's book or girl's book genes/DNA/growing up/puberty/reproduction/microscopes
20	boy's book or girl's book/fruits and vegetables/gene science/genome/bioethics
21	boy's book or girl's book/hormones/food pyramid/human genome
22	aging/facts and figures/food labels/body weight/calories/human genome
23	survival skills/taste/genetic engineering/genetically modified foods
24	survival skills/ice and food/genetic medicine/genetic diagnosis
25	survival skills/food sweeteners/cloning
26	survival skills/sodium in the body/genetics of aging
27	survival skills/food dyes/DNA testing
28	survival skills/acids and bases/bioethics
29	survival skills/leavening/eugenics
30	history of medicine/enzymes/commercial genetics
31	history of medicine/gluten/genetic engineering/future of genetics
32	history of medicine/chemistry/geology/fossils
33	history of medicine/milk/geology/fossils
34	history of medicine/dairy products/geology/fossils
35	history of medicine/spoilage/geology/fossils/age of fossils
36	history of medicine/food preservation/geology/fossils

Science 5—Weekly Subject List

4-Day

Week	Subject
1	body/body systems/cells
2	digestive system
3	digestion/intestines/waste/kidneys
4	respiratory system
5	heart/circulatory system
6	skeletal system
7	muscular system
8	muscular system/involuntary muscles/reflexes/hair and nails
9	skin
10	brain/nervous system/intelligence
11	eyes
12	hearing/balance
13	balance/sensation/micronutrients and macronutrients
14	taste/smell/teeth/nose/carbohydrates
15	brain/thinking/health/sickness/fats
16	diseases/immune system/protein/heart
17	drugs/treatments/operations/alternative medicine/vitamins/minerals/nutrients
18	conception/reproduction/birth/puberty/adolescence
19	boy's book or girl's book genes/DNA/growing up/puberty/reproduction
20	boy's book or girl's book/fruits and vegetables
21	boy's book or girl's book/hormones/food pyramid
22	aging/facts and figures/food labels/body weight/calories
23	survival skills/taste
24	survival skills/ice and food
25	survival skills/food sweeteners
26	survival skills/sodium in the body
27	survival skills/food dyes
28	survival skills/acids and bases
29	survival skills/leavening
30	history of medicine/enzymes
31	history of medicine/gluten
32	history of medicine/chemistry
33	history of medicine/milk
34	history of medicine/dairy products
35	history of medicine/spoilage
36	history of medicine/food preservation

SCIENCE 5	WEEK 1				SCHEDULE
Date:	**Day 1** 1	**Day 2** 2	**Day 3** 3	**Day 4** 4	**Day 5** 5
The Usborne Complete Book of the Human Body [N][1]	pp. 6–9 [N]	pp. 10–11	pp. 12–13 [N]		
Activity Sheet Questions [N][1]	#1–3	#4–9	#10–15		
Blood and Guts				pp. 71–74 [N]	
Activity Sheet Questions				#16–19	
5-Day: ***Understanding Your Brain***					pp. 2–5
Activity Sheet Questions					#20–25
Optional: ***The Human Body*** **Activity Book** [N][1]		pp. 1–2	p. 73		
Optional: Do Together	Listen to Your Children [N]			Testing Temperature [N]	
Optional: ***Lyrical Life Science, Vol. 3 — The Human Body***	chap. 1 [N][1]				
Other Notes					

1. The [N] symbol means there is a note found either at the bottom of the schedule page or in the notes section immediately following these schedule pages.

The Usborne Complete Book of the Human Body

p. 1

You may wish to view Human Anatomy Online located on our IG links page.

p. 7

"Amazingly complicated" are the words the book uses to describe the human body. And they're right! Psalm 139:13–14 reads, "For you created my inmost being; you knit me together in my mother's womb. I praise you because I am fearfully and wonderfully made; your works are wonderful, I know that full well" (NIV). This is a fitting passage to review in preparation for the study of the human body. Did all these "hundreds of different" parts and "millions of microscopic units called cells" come together through chance, an undirected natural process, or through God's design?

pp. 12–13

Cells are a lot more complicated than people used to think. So how did the first cells come about? Different people have come to different conclusions. Some think that the first cells came about as a random result of vari-

ous chemicals in the earth's atmosphere coming together in just the right way, while others see the complexity of cells and come to the conclusion that they must have been specially designed. In looking at the illustration of a cell on page 13, what do you and your children think is the explanation for the origins of the first cells?

Activity Sheets

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.

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 # 5TS1).

Blood and Guts

p. 71

Cells, even so-called simple cells, are a lot more complicated that most people think they are. They are like tiny factories with many parts doing exactly what they need to do to keep things going. Some microbiologists are convinced that design is at work at the cellular level rather then being the result of an undirected process. They point, for instance, to what is termed *irreducible complexity* or *specified complexity* as evidence of design in cells. You and your children will learn more about this concept in the DVD *Unlocking the Mystery of Life*.

Optional: *The Human Body* Activity Book

Note to Mom or Dad: Some of the vocabulary used in this book is very advanced. Please do not be concerned if your children do not know some of the words presented. We have provided this book as a supplement to your study, and your ADVANCED student may want to research the parts of the body terminology not covered in our Instructor's Guide, but listed in this book.

Here are some helpful hints to assist you and your children in labeling the diagrams in *The Human Body* Activity Book:

1. *The Human Body* Activity Book is a helpful resource to visually reinforce some of the facts your children are learning in our other scheduled science books and from other sources. You can find additional information in dictionaries, encyclopedias, or on the Internet to enhance the meaning of the exercises and to match the parts correctly.
2. The answer key for each diagram provided for you in the back of *The Human Body* Activity Book can serve as a helpful guide.
3. One of the benefits of the program is that it is designed for you to be involved with your children. We suggest that you let your children complete the portions they can alone, then work through the answer key with them.
4. We have found this book a very helpful source of clear and simple illustrations. Feel free to use this book as you see fit.

Note to Mom or Dad: *The Human Body* is a book full of Activity Sheets that relate to this year's topic of study. However, we have not assigned all of the pages. Please feel free to do any remaining pages as you see fit.

CAUTION! *The Human Body* is a "Reproducible Activities" booklet (the pages are meant to be photocopied prior to use), rather than a traditional workbook. So, if you aren't careful, cutting up one activity page may result in the destruction of the next activity on the reverse side of the page! To avoid making this mistake, simply plan to review *The Human Body* assignments each week in advance, and make photocopies of any cut-out activity pages prior to the lesson.

Optional: Do Together

Day 1: Listen to Your Children

Each week throughout Science 5, we will provide ideas for fun activities to do with your children. In general, we will try to make the activities actually "active": performing additional research on a particular topic, watching a video, playing a game, getting outside, or some other type of "hands-on" activity that seeks to apply what your children have been learning in a meaningful way.

Take our ideas for what they are — mere suggestions — and don't feel enslaved to them. If your children don't

want to do a particular activity or have a different, better idea, by all means ditch ours and go with theirs!

Put this attitude into practice today by actively listening to your children. As they embark on their study of the amazing human body, what interests them? What do they want to learn more about? What do they *not* have an interest in? Do they have any ideas for fun activities they could do that have to do with learning more about the human body?

Make a list of their thoughts and ideas. Then let them pick one to do today. In this way, you will let them know that their opinion is important. Children who feel they have an important, active role in determining what they learn about will be more engaged in their studies. Have fun and treasure these times together.

Day 4: Testing Temperature

As noted in *Blood and Guts*, the "normal" human temperature is 98.6 degrees Fahrenheit. Talk with your children about their "normal" temperature. Do they normally measure 98.6 degrees Fahrenheit? Or a bit above or below that level?

Test to see what effect a cold shower or vigorous exercise might have on their temperature. To start, take their temperature at rest. Then have them take a cold shower or bath. Take their temperature again. Did it decrease? When they're dressed, have them engage in some vigorous exercise, such as running a mile or doing 100 sit-ups, push-ups, or jumping jacks. Take their temperature one last time. Did it increase?

Be sure to discuss with your children how their body temperature is a good indicator of what is going on inside their cells. Reinforce how important it is that they tell you if they ever feel "too hot" or like they're running a fever.

Optional: Lyrical Life Science, Vol. 3 — The Human Body

Chap. 1

If you have chosen to add this optional book to your curriculum, here is a suggested way to fit it into your daily schedule.

On Day 1, listen to the song, reading the lyrics as you listen.

Depending on whether you're doing the 5- or 4-Day schedule, you'll be doing either two or three days of reading the text and listening to the song once each day.

On the last day of the week assign as many of the questions in the *Lyrical Life Science* workbook as you feel would be comfortable and most beneficial for your children. ■

Week 1 Activity Sheets

The Usborne Complete Book of the Human Body

1. Use the words in the box to complete the following. (p. 7)

genes	cells	body parts

Inside our _(body parts)_ are millions of tiny _(cells)_ that have _(genes)_ inside of them that tell the cells the things they need to do to make our bodies work and keep us alive.

2. Write each term in one of the boxes below to organize each body part into the appropriate category. (p. 8)

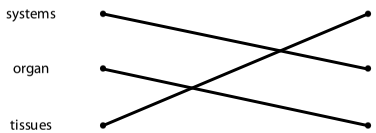
brain	lungs	bone	stomach juices	fat	sweat	muscle	blood	tears

Body Fluids	Organs	Body Tissues
(stomach juices)	*(brain)*	*(fat)*
(blood)	*(lungs)*	*(bone)*
(sweat)		*(muscle)*
(tears)		

3. Shade the glass to show how much of your body is made up of water. (p. 8)

(70%)

4. Draw a line to match the terms to the correct definitions. (pp. 8–10)



A group of cells of the same type; includes fat, bone and muscle

A group of organs or body parts whose jobs are closely related.

Different types of tissues grouped together to perform a particular task for the rest of the body.

Week 1 Activity Sheets

5. Name two jobs the spinal column performs (p. 9)

1) *(forms the central part of the skeleton)*

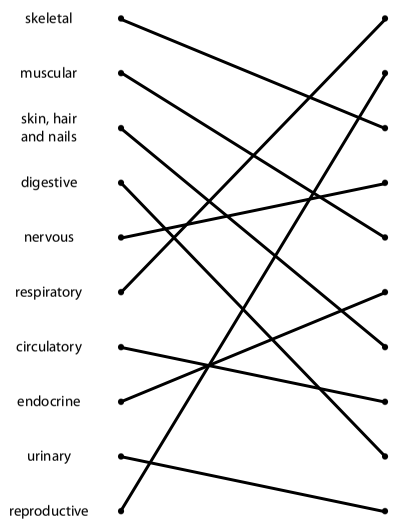
2) *(protects the spinal cord)*

6. Your biggest organ is your… **heart** **brain** **skin** **lungs** (p. 9)

7. Think of one body part that belongs to more than one body system and explain how it serves both systems. (p. 10)

(Possible: throat is part of the digestive system while you eat, and part of the respiratory system while you breathe; at the most basic level, your leg is part of both the skeletal system—gives your leg its structure, and the muscular system—helps you walk)

8. Match each body system to the main task(s) each performs. (pp. 10–11)



extracts oxygen out of the air and passes it to the rest of your body; gets rid of waste gases

the male and female body systems that each play a part in making babies

gives your body its shape; joints link its pieces together

sends messages and instructions from your brain to the rest of your body

hold you up and make you move

makes hormones that control how your body grows and changes

protects you from dirt and danger; helps control your temperature

pumps blood that carries food, oxygen and other chemicals to all of your cells

changes food into energy

filters waste water and chemicals out of your blood to pass out of your body

Week 1 Activity Sheets

9. Which body system is your immune system connected to? (p. 11)

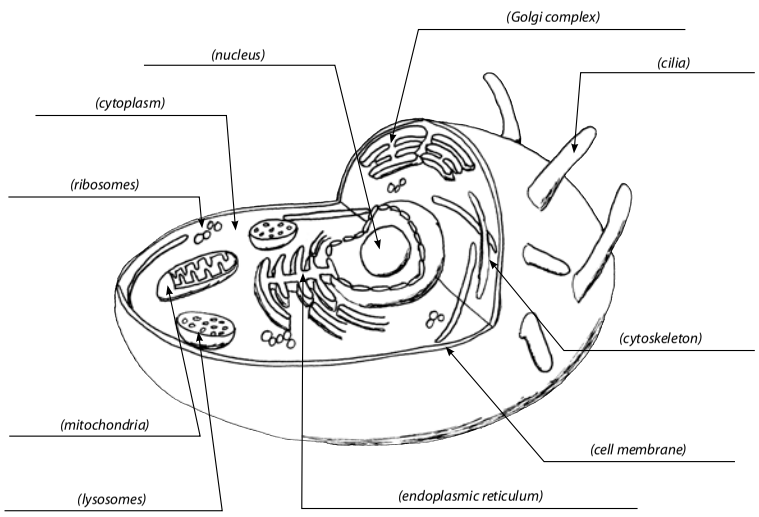
- ☐ respiratory
- ☒ circulatory
- ☐ muscular
- ☐ endocrine

10. How do cells make the different proteins they need to do various jobs around your body? (p. 12)

(Cells combine amino acids in different ways to create the proteins they need)

11. Label the following on the diagram. Use the book pictures as a guide. (p. 13)

cell membrane	mitochondria	ribosomes	nucleus	cytoplasm
lysosomes	Golgi complex	cytoskeleton	cilia	endoplasmic reticulum



Week 1 Activity Sheets

12. Compare your body's make-up to the composition of a basic cell. Write each term in the appropriate column next to the statement that best describes each. (pp. 12–13)

organs	organelles	brain
cell membrane	nucleus	skin

Cell	Description	Human Body
(cell membrane)	provides protection from the "outside world"	*(skin)*
(nucleus)	control center	*(brain)*
(organelles)	parts inside that help it to work	*(organs)*

13. Write the letter on the line to match each cell part to its role or function. (p. 13)

- *(c)* membrane
- *(d)* mitochondria
- *(e)* ribosome
- *(a)* nucleus
- *(f)* cytoplasm
- *(b)* endoplasmic reticulum
- *(h)* Golgi complex
- *(g)* lysosome

a. controls and directs all cell activities; contains instructions for making new cells
b. transports proteins made by the ribosomes to other parts of the cell
c. holds the cell together & controls the way substances such as food and water pass into and out of the cell
d. food and oxygen react together here to produce energy for life
e. proteins are created here
f. a jelly-like substance that contains strands of protein and provides the backbone of the cell
g. produce chemicals which destroy harmful foreign substances
h. a storage area that keeps proteins until needed

14. Order the steps below to show how a cell divides. (p. 13)

- *(2)* The nucleus makes a copy of its DNA
- *(4)* Finally, the two new cells separate.
- *(1)* The cell grows to twice its original size.
- *(3)* The larger, double-cell begins to split in two down the middle.

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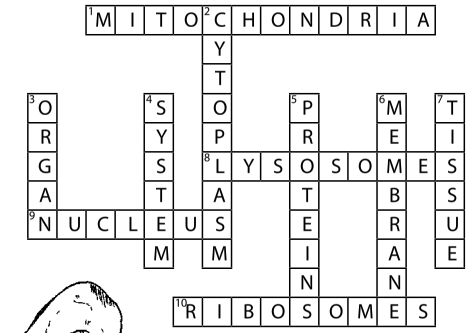
15. Solve the puzzle. (pp. 8–13)



tissue
mitochondria
proteins
organ
membrane
cytoplasm
system
lysosomes
ribosomes
nucleus

Across

1) cell's "power stations" where food and oxygen are turned into energy
8) contain chemicals that destroy harmful foreign substances that enter a cell
9) cell's "government headquarters", controls and directs cells activities
10) cell's "factories" that manufacture new proteins

Down

2) jelly-like substance inside a cell that is made mostly of water and has strands of protein running through it
3) group of different types of tissues; a body part that has a particular job to do
4) group of organs and tissues whose jobs are closely related
5) made of amino acids which can be combined in different ways to make different kinds of these
6) fine layer that holds the cell together and separates it from other cells
7) group of cells of mainly the same type, the different types include body, fat, and muscle

Blood and Guts

16. How are cells and the various members of a community similar? (p. 71)

(Cells specialize in one task or another and work together to perform all of the jobs necessary to stay alive)

17. Why are our bodies warm? (p. 72) *(Because our cells are constantly taking in chemical fuel and burning it to make energy, which produces heat)*

18. Why do we stay warm in a cold pond when a frog will be the same temperature as the water? (p. 74)

(Because we are warm-blooded and frogs are cold-blooded—we keep our bodies at an even temperature by carefully controlling how quickly our cells burn energy)

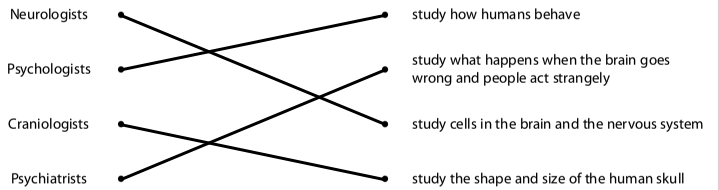
19. Why do you feel sweaty when your fever breaks? (p. 74)

(Because your body is done healing and fighting off the infections, so sweating is its normal method for cooling itself off)

Understanding Your Brain

5-Day

20. Match each job title to the correct description of what they study. (p. 3)



21. Without looking at your book, list three things your brain helps you do. Can you think of any other tasks that your book did not include in its list? (pp. 2–3)

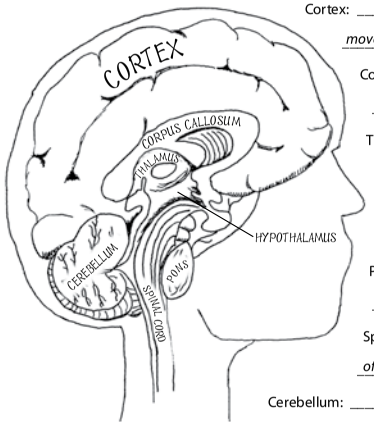
(Possible: controls your senses—hearing, taste, smell, etc.; helps you move; helps you think about math problems; keeps your organs working; helps you form words and communicate; controls feelings and emotions; helps you dream; tells your body how and when to move, etc.)

22. The top of your brain is divided into two parts, called… (p. 4)

cerebral hemispheres **cerebral cortexes** **cerebellums** **corpus callosum**

Week 1 Activity Sheets

23. Briefly describe the functions each part of the brain controls. (p. 4)



Cortex: *(Possible: planning, complex movement, speech, simple movement, touch, hearing, seeing)*

Corpus Callosum: *(joins the left and right domes of the cerebrum)*

Thalamus: *(receives information from your senses and sends it to the right part of the brain)*

Hypothalamus: *(controls heart rate, temperature, sleep and sexual development)*

Pons: *(monitors information sent to your brain and decides where and if it should be processed)*

Spinal Cord: *(carries messages between brain and rest of body)*

Cerebellum: *(helps control movement)*

24. Draw a check mark in the appropriate column to classify each task as controlled by either the left cerebral hemisphere or the right cerebral hemisphere. (p. 5)

Left Brain	Task	Right Brain
✓	math homework	
	working a jigsaw puzzle	✓
	rearranging the furniture	✓
✓	making a peanut butter and jelly sandwich	
	sculpting a clay statue	✓

25. Why do you eventually stop smelling something that has a strong odor after you've been in the room with it for a while? (p. 5) *(Because the pons eventually stops sending messages to your brain about the smelly substance)*

Week 1 Activity Sheets

The Usborne Complete Book of the Human Body

1. Use the words in the box to complete the following. (p. 7)

genes	cells	body parts

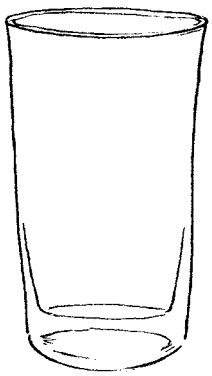
Inside our _____ are millions of tiny _____ that have _____ inside of them that tell the cells the things they need to do to make our bodies work and keep us alive.

2. Write each term in one of the boxes below to organize each body part into the appropriate category. (p. 8)

brain	lungs	bone	stomach juices	fat	sweat	muscle	blood	tears

Body Fluids	Organs	Body Tissues

3. Shade the glass to show how much of your body is made up of water. (p. 8)



4. Draw a line to match the terms to the correct definitions. (pp. 8–10)

systems •	• A group of cells of the same type; includes fat, bone and muscle
organ •	• A group of organs or body parts whose jobs are closely related.
tissues •	• Different types of tissues grouped together to perform a particular task for the rest of the body.

Week 1 Activity Sheets

5. Name two jobs the spinal column performs (p. 9)

1) _____

2) _____

6. Your biggest organ is your… **heart** **brain** **skin** **lungs** (p. 9)

7. Think of one body part that belongs to more than one body system and explain how it serves both systems. (p. 10)

_____

_____

_____

8. Match each body system to the main task(s) each performs. (pp. 10–11)

skeletal	•	•	extracts oxygen out of the air and passes it to the rest of your body; gets rid of waste gases
muscular	•	•	the male and female body systems that each play a part in making babies
skin, hair and nails	•	•	gives your body its shape; joints link its pieces together
digestive	•	•	sends messages and instructions from your brain to the rest of your body
nervous	•	•	hold you up and make you move
respiratory	•	•	makes hormones that control how your body grows and changes
circulatory	•	•	protects you from dirt and danger; helps control your temperature
endocrine	•	•	pumps blood that carries food, oxygen and other chemicals to all of your cells
urinary	•	•	changes food into energy
reproductive	•	•	filters waste water and chemicals out of your blood to pass out of your body

9. Which body system is your immune system connected to? (p. 11)

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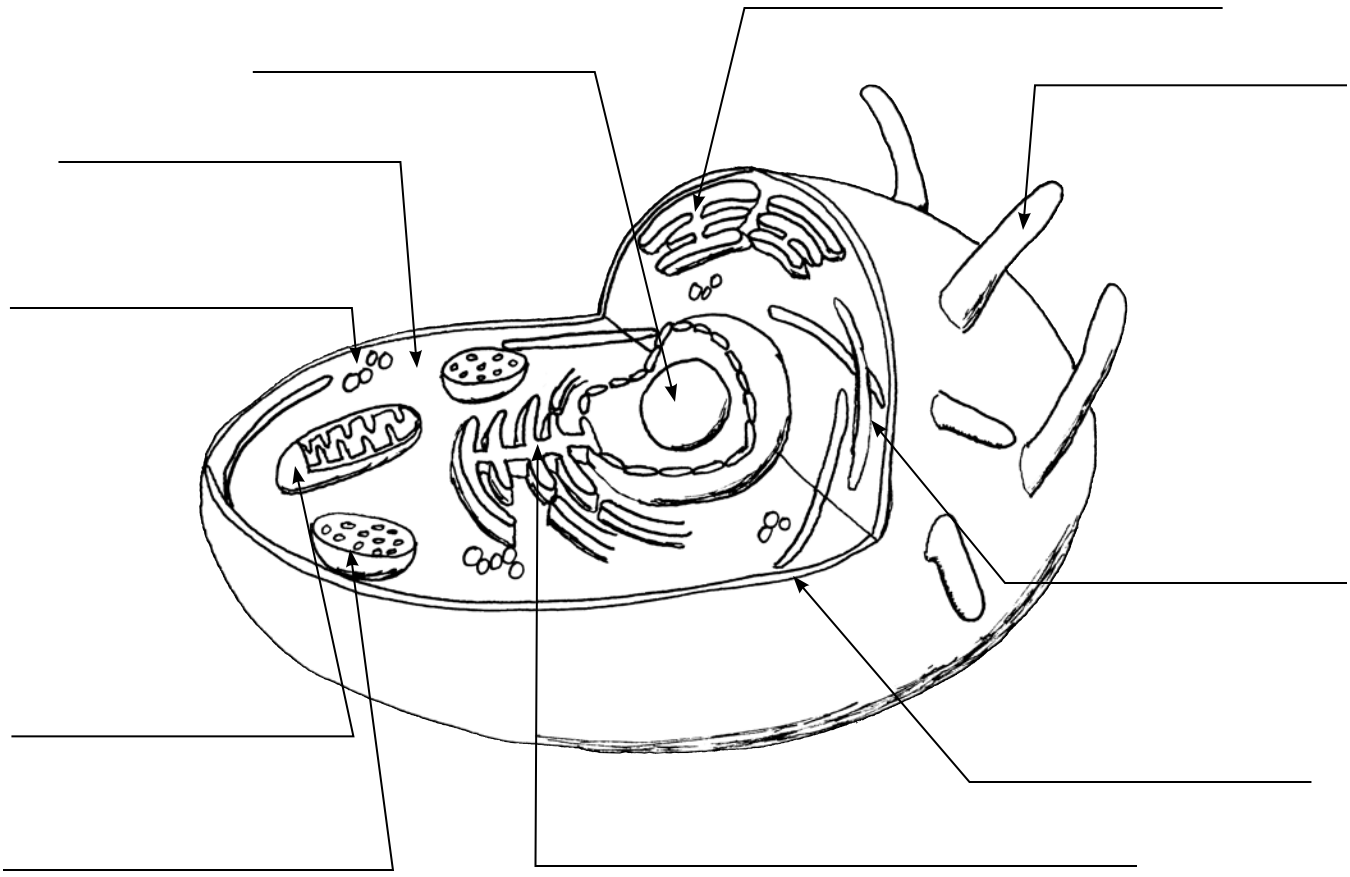
lysosomes	Golgi complex	cytoskeleton	cilia	endoplasmic reticulum



12. Compare your body's make-up to the composition of a basic cell. Write each term in the appropriate column next to the statement that best describes each. (pp. 12–13)

organs	organelles	brain
cell membrane	nucleus	skin

Cell	Description	Human Body
	provides protection from the "outside world"	
	control center	
	parts inside that help it to work	

13. Write the letter on the line to match each cell part to its role or function. (p. 13)

_____ membrane

_____ mitochondria

_____ ribosome

_____ nucleus

_____ cytoplasm

_____ endoplasmic reticulum

_____ Golgi complex

_____ lysosome

a. controls and directs all cell activities; contains instructions for making new cells

b. transports proteins made by the ribosomes to other parts of the cell

c. holds the cell together & controls the way substances such as food and water pass into and out of the cell

d. food and oxygen react together here to produce energy for life

e. proteins are created here

f. a jelly-like substance that contains strands of protein and provides the backbone of the cell

g. produce chemicals which destroy harmful foreign substances

h. a storage area that keeps proteins until needed

14. Order the steps below to show how a cell divides. (p. 13)

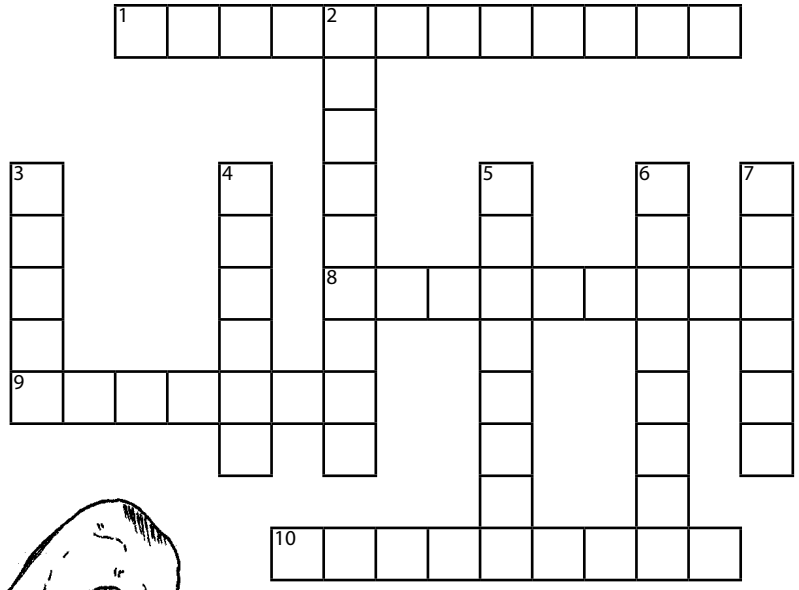
_____ The nucleus makes a copy of its DNA

_____ Finally, the two new cells separate.

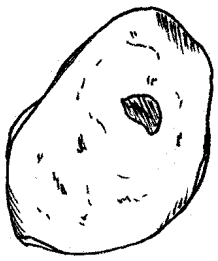
_____ The cell grows to twice its original size.

_____ The larger, double-cell begins to split in two down the middle.

15. Solve the puzzle. (pp. 8–13)



tissue
mitochondria
proteins
organ
membrane
cytoplasm
system
lysosomes
ribosomes
nucleus



Across

1) cell's "power stations" where food and oxygen are turned into energy

8) contain chemicals that destroy harmful foreign substances that enter a cell

9) cell's "government headquarters", controls and directs cells activities

10) cell's "factories" that manufacture new proteins

Down

2) jelly-like substance inside a cell that is made mostly of water and has strands of protein running through it

3) group of different types of tissues; a body part that has a particular job to do

4) group of organs and tissues whose jobs are closely related

5) made of amino acids which can be combined in different ways to make different kinds of these

6) fine layer that holds the cell together and separates it from other cells

7) group of cells of mainly the same type, the different types include body, fat, and muscle

Blood and Guts

16. How are cells and the various members of a community similar? (p. 71)

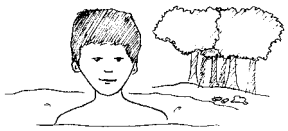
_____

_____

17. Why are our bodies warm? (p. 72) _____

_____

18. Why do we stay warm in a cold pond when a frog will be the same temperature as the water? (p. 74) _____



_____

_____

19. Why do you feel sweaty when your fever breaks? (p. 74)

_____

_____

Understanding Your Brain

5-Day

20. Match each job title to the correct description of what they study. (p. 3)

Neurologists	•	•	study how humans behave
Psychologists	•	•	study what happens when the brain goes wrong and people act strangely
Craniologists	•	•	study cells in the brain and the nervous system
Psychiatrists	•	•	study the shape and size of the human skull

21. Without looking at your book, list three things your brain helps you do. Can you think of any other tasks that your book did not include in its list? (pp. 2–3)

_____

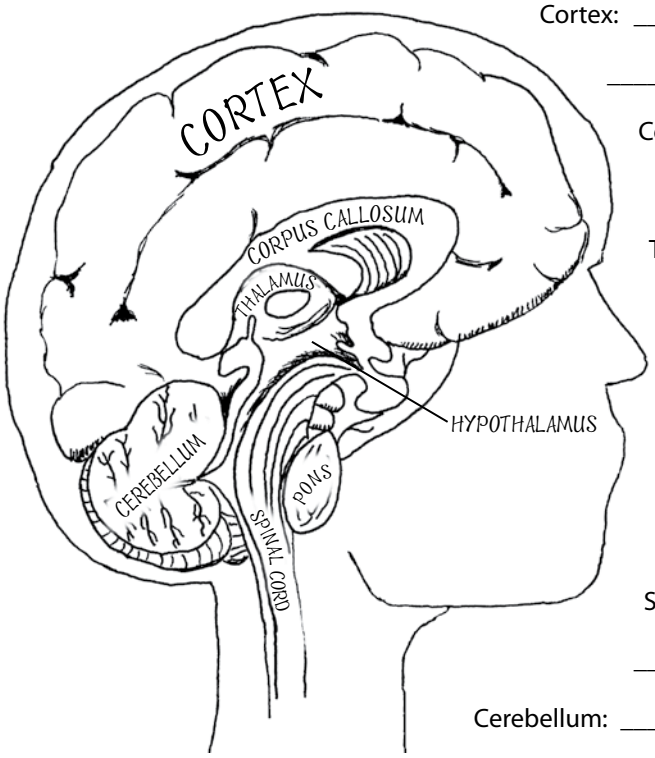
_____

_____

22. The top of your brain is divided into two parts, called… (p. 4)

cerebral hemispheres **cerebral cortexes** **cerebellums** **corpus callosum**

23. Briefly describe the functions each part of the brain controls. (p. 4)



Cortex: _____

_____

Corpus Callosum: _____

_____

Thalamus: _____

_____

Hypothalamus: _____

_____

Pons: _____

_____

Spinal Cord: _____

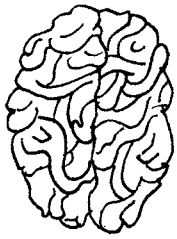
_____

Cerebellum: _____

_____

24. Draw a check mark in the appropriate column to classify each task as controlled by either the left cerebral hemisphere or the right cerebral hemisphere. (p. 5)

Left Brain	Task	Right Brain
	math homework	
	working a jigsaw puzzle	
	rearranging the furniture	
	making a peanut butter and jelly sandwich	
	sculpting a clay statue	



25. Why do you eventually stop smelling something that has a strong odor after you've been in the room with it for a while? (p. 5) _____

_____

SCIENCE 5	WEEK 2				SCHEDULE
Date:	**Day 1** 6	**Day 2** 7	**Day 3** 8	**Day 4** 9	**Day 5** 10
The Usborne Complete Book of the Human Body	pp. 65–67	pp. 68–69			
Activity Sheet Questions	#1–3	#4–6			
Blood and Guts			pp. 75–78	pp. 79–82	
Activity Sheet Questions			#7–10	#11–16	
5-Day: ***Understanding Your Brain***					pp. 6–9
Activity Sheet Questions					#17–24
Optional: ***The Human Body*** **Activity Book**	pp. 33, 35	pp. 36–37			
Optional: Do Together		Food Journal N	Amylase in Action N		
Optional: ***Lyrical Life Science, Vol. 3 — The Human Body***	chap. 7				
Other Notes					

Optional: Do Together

Day 2: Food Journal

Have your children ever given much thought to exactly how much of what types of food and drink they use to power their amazing human bodies? Today, encourage them to keep track of everything they ingest. Ask them to keep a detailed food journal by recording everything that they eat or drink today, including details of the exact types and amounts of the foods and drinks they choose.

In addition to the nitty-gritty details of the foods and drinks they partake of, ask them also to record how they feel throughout the day. Are they tired? Energetic? Sleepy? Alert? Does how they feel change throughout the day?

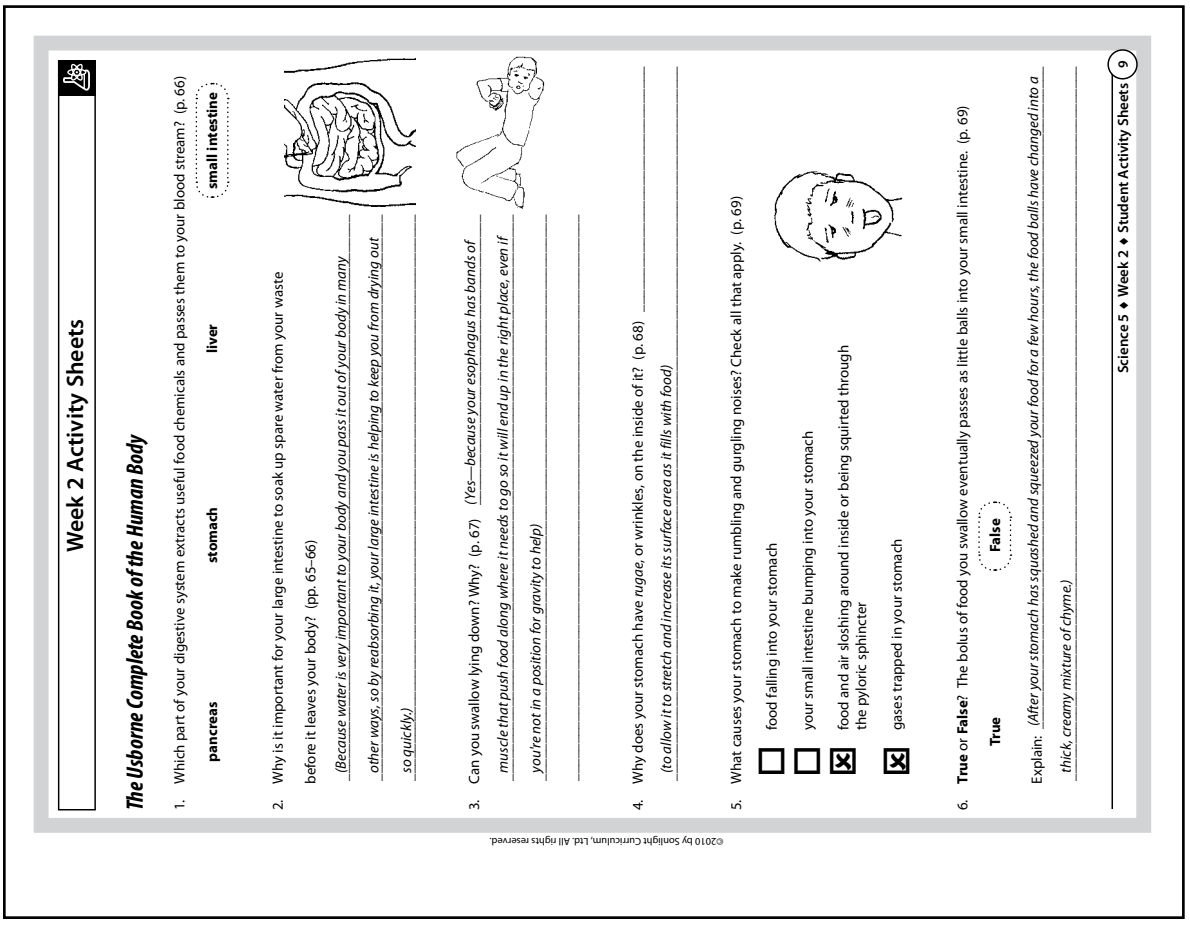
When the day is done, ask them to look back over their journal entries for the day. Does anything surprise them? Can they believe they ate that much of X? Did they realize that they only drank Y glasses of water? Do they see any correlations between how they felt at certain points in the day and what they had been eating or drinking?

Use this time to reinforce what your children have learned this week about food and their digestive systems. Do you see anything in their daily eating/drinking routine that needs some attention? Do they need to eat less junk food? Drink more water? Use this exercise as a way to discuss changes you'd like to see. You can even continue their journaling from time to time to look for improvements.

Day 3: Amylase in Action

Grab some soda crackers and put your children to work testing the action of Amylase, the starch-into-sugar enzyme present in our mouths. As described in Blood and Guts, have your children chew a soda cracker completely, but ask them to hold it in their mouths for five minutes rather than swallowing immediately.

When the five minutes have elapsed, ask your children what they feel in their mouths. What do they taste? Do the soda cracker remains have the same starchy taste as when they began chewing? Why not? What can they tell about the effect the Amylase has had on the starchy soda cracker? ■



Week 2 Activity Sheets

The Usborne Complete Book of the Human Body

1. Which part of your digestive system extracts useful food chemicals and passes them to your blood stream? (p. 66)
   pancreas **stomach** **liver** **small intestine**
2. Why is it important for your large intestine to soak up spare water from your waste before it leaves your body? (pp. 65–66)
   (Because water is very important to your body and you pass it out of your body in many other ways, so by reabsorbing it, your large intestine is helping to keep you from drying out so quickly.)
3. Can you swallow lying down? Why? (p. 67) *(Yes—because your esophagus has bands of muscle that push food along where it needs to go so it will end up in the right place, even if you're not in a position for gravity to help)*
4. Why does your stomach have *rugae*, or wrinkles, on the inside of it? (p. 68)
   (to allow it to stretch and increase its surface area as it fills with food)
5. What causes your stomach to make rumbling and gurgling noises? Check all that apply. (p. 69)
   - ☐ food falling into your stomach
   - ☐ your small intestine bumping into your stomach
   - ☒ food and air sloshing around inside or being squirted through the pyloric sphincter
   - ☒ gases trapped in your stomach
6. **True** or **False**? The bolus of food you swallow eventually passes as little balls into your small intestine. (p. 69)
   True **False**
   Explain: *(After your stomach has squashed and squeezed your food for a few hours, the food balls have changed into a thick, creamy mixture of chyme.)*

Science 5 ♦ Week 2 ♦ Student Activity Sheets 9

Blood and Guts

7. Why doesn't your stomach acid eat holes in your stomach? (p. 76)

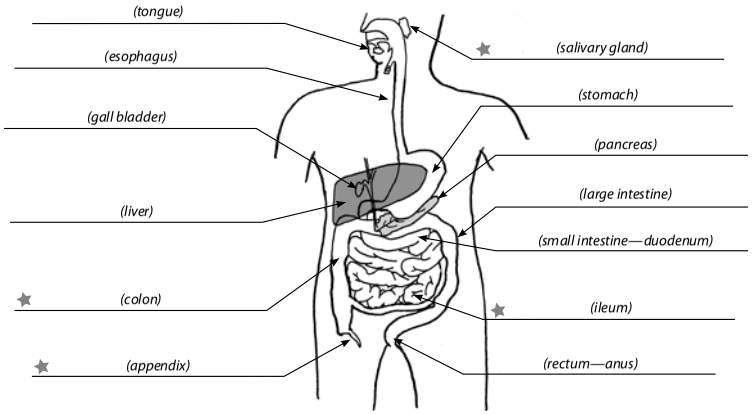
(Because there is a mucus lining in your stomach that protects it from its own acid)

8. Draw a line to match the terms to the correct definitions. (p. 76)

peristalsis	action of the intestine walls hugging and pushing food along like the way you squeeze a tube of toothpaste
enzyme	tiny finger-like things that stick out from the wall of the intestine to absorb valuable chemicals from the food that passes by
villi	a chemical in saliva that breaks down starches in food

9. **Part A:** Label only the items listed in the box on the picture of the digestive system below. They should be familiar to you. Answer lines with stars ★ should be left blank for now. (p. 77)

esophagus	liver	small intestine	pancreas	stomach
gall bladder	rectum (anus)	large intestine	tongue	



Part B—Challenge! Research the functions of the remaining items below. Then, label them on the diagram.

★ colon: *(part of the large intestine that removes water and mineral salts from partially-digested food)*

★ salivary gland: *(produces saliva, which moistens and softens food in the mouth, and helps break down starchy foods; this is the first step in digestion)*

★ appendix: *(located in the first part of the large intestine; has no known function)*

★ ileum: *(lower part of the small intestine; absorbs nutrients from food that has been digested by the stomach and duodenum)*

10. Name two jobs enzymes perform in the digestion process. (p. 78)

1) *(food breakdown)*

2) *(control the release of energy in the body)*

Use the words in the box to complete the following. (pp. 79–81)

fats	proteins	feces	carbohydrates	sphincter

11. *(Carbohydrates)* are "fuel foods" because they provide energy for your body and are found in foods such as bread, pasta and cereal.

12. *(Fats)* are used for energy production and found in foods such as butter or cream.

13. *(Proteins)* are used in body repair and growth and found in foods such as steak and eggs.

14. *(Feces)* is the proper name for the body's solid waste.

15. The kind of muscle that surrounds your lips and helps you "pucker up"! *(sphincter)*

16. Is bacteria good or bad? Explain. (p. 81)

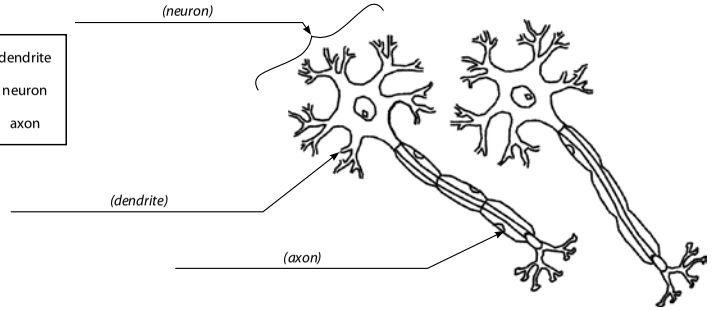
(It's both—some bacteria can make you sick, but the bacteria that lives inside of you helps finish off the remains of food in your intestines, secrete helpful vitamins and digest small amounts of cellulose to create calories for daily nutrition)

Understanding Your Brain

5-Day

17. Use the words in the box to label the diagram below. (p. 6)

dendrite
neuron
axon



18. How do neurons carry messages? (p. 6) *(tiny pulses of electricity are fired one after another down the length of each axon until it reaches the next neuron's dendrites)*

19. Do neurons touch each other? (p. 7) **Yes** **No**

if not, how does a message get from one neuron to the next? *(when a message reaches the end of an axon, special chemicals are released that spread across the gap and tell the dendrites on the next neuron to fire an electric pulse)*

20. **Challenge!** Why do you think babies do things like drop their toys on the floor and pull off their socks? (p. 8)

(Possible: it's how they learn about the world around them—sometimes something may fall out of their hands accidentally, but sometimes they may drop a toy to see what happens next, or to hear what it sounds like.)

21. Have you ever picked up a toy for a baby 10 or 15 times in a row? What do you think the baby might have learned in that situation? (pp. 8–9)

(It's possible that the baby learned "If I drop this, she'll keep picking it up... this is a fun game!")

22. If an object goes out of sight, what does a young baby think happened to it? (p. 9)

(a study once showed that a baby thinks that the object no longer exists because the baby won't try to interact with it anymore; however, a later test showed that the baby still thinks the object is there, but believes she no longer has any control over it—knowing an object still exists, even though it can't be seen is called "object permanence")

23. How does your brain grow? (p. 9)

- ☐ it creates new cells all the time
- ☒ it increases the number of connections between neurons
- ☐ it adds more and more neurons as you age
- ☐ it grows from the inside out

24. Consider the example of the 4-year-old who watches someone pour water from one of two identical glasses into one tall and skinny glass. Which glass did the 4-year-old think held more? (p. 9)

the shorter, round glass **the tall, skinny glass** **they both held the same amount**

Do you think about the world the same way you did when you were younger? *(No)*

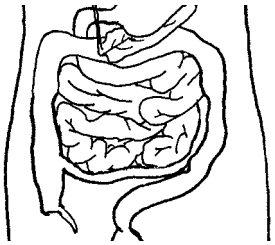
Do you think this is a good thing? Why? *(Answers will vary . Possible: Yes! As we grow, we can learn from previous experiences and apply them to new situations we're learning about, which is all part of growing up.)*

The Usborne Complete Book of the Human Body

1. Which part of your digestive system extracts useful food chemicals and passes them to your blood stream? (p. 66)

   pancreas **stomach** **liver** **small intestine**

2. Why is it important for your large intestine to soak up spare water from your waste before it leaves your body? (pp. 65–66)

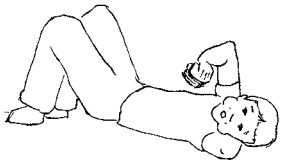


   _____

   _____

   _____

3. Can you swallow lying down? Why? (p. 67) _____



   _____

   _____

   _____

4. Why does your stomach have *rugae*, or wrinkles, on the inside of it? (p. 68) _____

   _____

5. What causes your stomach to make rumbling and gurgling noises? Check all that apply. (p. 69)

   ☐ food falling into your stomach

   ☐ your small intestine bumping into your stomach

   ☐ food and air sloshing around inside or being squirted through the pyloric sphincter

   ☐ gases trapped in your stomach

6. **True** or **False**? The bolus of food you swallow eventually passes as little balls into your small intestine. (p. 69)

   True **False**

   Explain: _____

   _____

Blood and Guts

7. Why doesn't your stomach acid eat holes in your stomach? (p. 76)

_____

_____

8. Draw a line to match the terms to the correct definitions. (p. 76)

peristalsis	• action of the intestine walls hugging and pushing food along like the way you squeeze a tube of toothpaste
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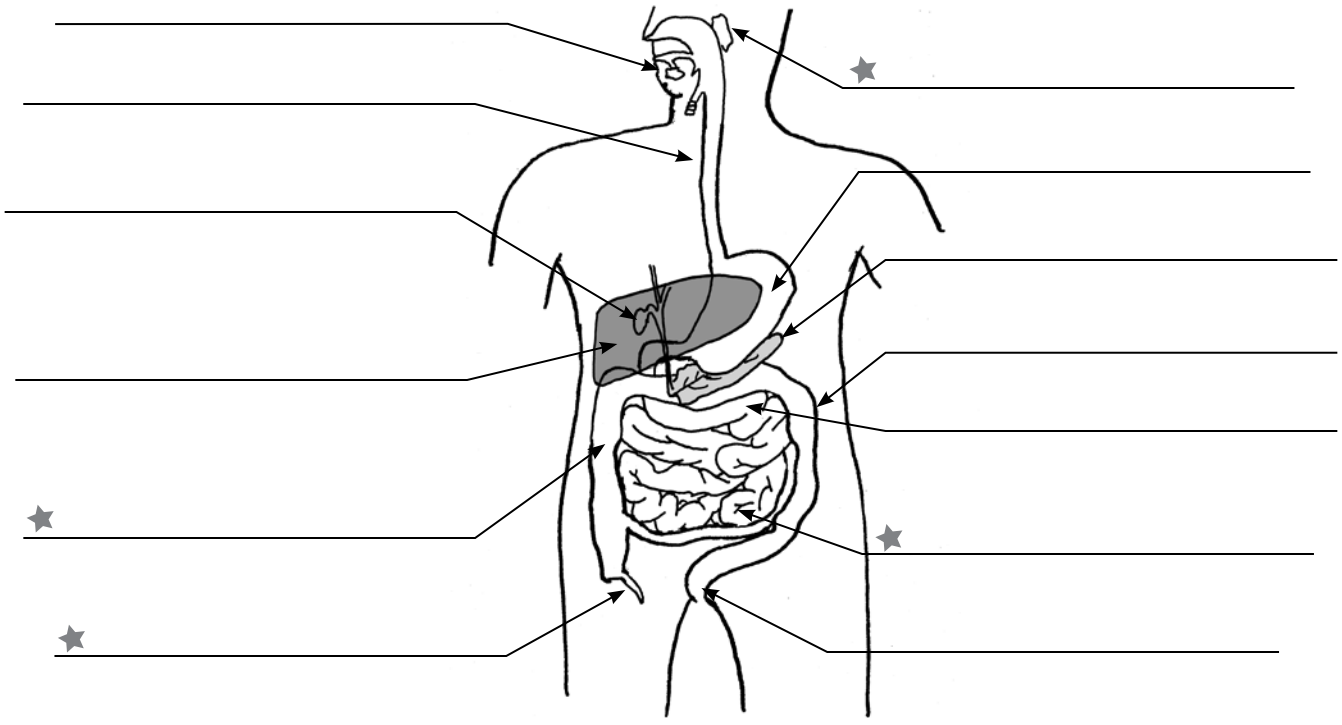
villi	• a chemical in saliva that breaks down starches in food

9. **Part A:** Label only the items listed in the box on the picture of the digestive system below. They should be familiar to you. Answer lines with stars ★ should be left blank for now. (p. 77)

esophagus	liver	small intestine	pancreas	stomach
gall bladder	rectum (anus)	large intestine	tongue	



Part B—Challenge! Research the functions of the remaining items below. Then, label them on the diagram.

★ colon: _____

_____

★ salivary gland: _____

_____

★ appendix: _____

_____

★ ileum: _____

_____

10. Name two jobs enzymes perform in the digestion process. (p. 78)

    1) _____

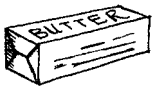
    2) _____

Use the words in the box to complete the following. (pp. 79–81)

fats	proteins	feces	carbohydrates	sphincter

11. _____ are "fuel foods" because they provide energy for your body and are found in foods such as bread, pasta and cereal.

12. _____ are used for energy production and found in foods such as butter or cream.



13. _____ are used in body repair and growth and found in foods such as steak and eggs.

14. _____ is the proper name for the body's solid waste.

15. The kind of muscle that surrounds your lips and helps you "pucker up"! _____

16. Is bacteria good or bad? Explain. (p. 81)

_____

_____

_____

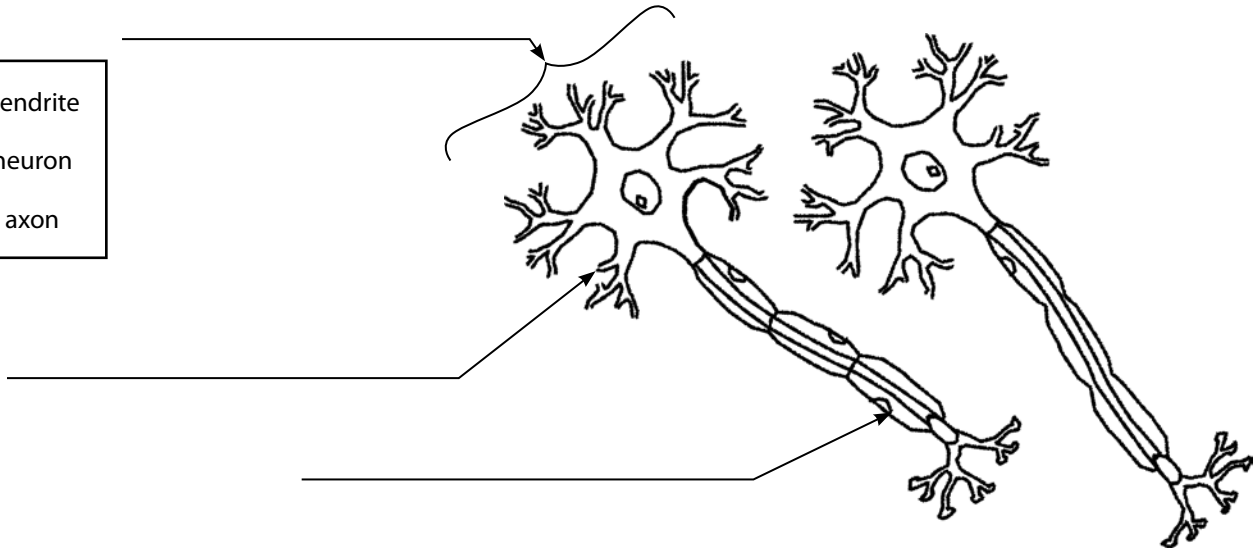
_____

Understanding Your Brain

5-Day

17. Use the words in the box to label the diagram below. (p. 6)

dendrite
neuron
axon



18. How do neurons carry messages? (p. 6) _____

_____

_____

19. Do neurons touch each other? (p. 7) **Yes** **No**

if not, how does a message get from one neuron to the next? _____

_____

_____

_____

20. **Challenge!** Why do you think babies do things like drop their toys on the floor and pull off their socks? (p. 8)

_____

_____

21. Have you ever picked up a toy for a baby 10 or 15 times in a row? What do you think the baby might have learned in that situation? (pp. 8–9) _____

_____

22. If an object goes out of sight, what does a young baby think happened to it? (p. 9)

_____

_____

_____

_____

23. How does your brain grow? (p. 9)

- ☐ it creates new cells all the time
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- ☐ it adds more and more neurons as you age
- ☐ it grows from the inside out

24. Consider the example of the 4-year-old who watches someone pour water from one of two identical glasses into one tall and skinny glass. Which glass did the 4-year-old think held more? (p. 9)

the shorter, round glass **the tall, skinny glass** **they both held the same amount**

Do you think about the world the same way you did when you were younger? _____

Do you think this is a good thing? Why? _____

_____

_____

SCIENCE 5	WEEK 3				SCHEDULE
Date:	**Day 1** 11	**Day 2** 12	**Day 3** 13	**Day 4** 14	**Day 5** 15
The Usborne Complete Book of the Human Body	pp. 70–71	pp. 72–73			
Activity Sheet Questions	#1–4	#5–19			
Blood and Guts			pp. 83–86 N		
Activity Sheet Questions			#20–22		
Food and Nutrition for Every Kid N				chap. 11	
Activity Sheet Questions				#23–25	
5-Day: ***Understanding Your Brain***					pp. 10–13
Activity Sheet Questions					#26–34
Optional: ***The Human Body*** **Activity Book**	pp. 34, 38, 40	pp. 41–42			
Optional: Do Together		Fighting Fat N		Peristalsis N	
Optional: ***Lyrical Life Science, Vol. 3 — The Human Body***	chap. 8				
Other Notes					

Blood and Guts

p. 83

Note that kidneys are referred to as "some of the most complicated pieces of equipment you have." Complexity does not in itself indicate design, but it certainly is suggestive of it.

Food and Nutrition for Every Kid

This book provides 25 hands-on activities to help your children learn more about food. Feel free to do your experiment any time during the week, depending on what works best for your schedule.

Some weeks the workload is heavier than others, so if you are falling behind, feel free to skip an activity. The goal of these activities is to help your children really learn about nutrition through active learning.

Most of the activities require a little preparation, so make sure you review the procedures before the date you plan to do it. We believe this book is a valuable resource, but we don't want these extra activities to wear you out.

Be assured that this is a book you can choose to use when you want to, and put aside when you get too busy.

Also note that pages 199 through 220 consists of a helpful glossary in case you and your children need to look up some terms.

Optional: Do Together

Day 2: Fighting Fat

Reinforce what your children have learned thus far about how your body processes food and stores excess food as fat. Use this time to discuss how important it is to monitor our food intake closely so that we do not end up with an unhealthy amount of excess food that will be stored as fat. Discuss with your children what other steps can be taken to reduce the amount of unhealthy fat in our bodies.

In addition to monitoring our food intake, we can regulate the amount of energy our bodies use by engaging in regular exercise. Ask your children to pick an exercise they enjoy and do that exercise with them today. If you can, incorporate a time of daily exercise into your children's normal routine.

Day 4: Peristalsis

Peristalsis describes a series of muscular contractions that moves food through your digestive system. To help your children understand peristalsis better, do a simple experiment with them today.

Grab a short section of tubing or garden hose, along with a marble or other round object only slightly smaller than the tubing/hose. Ask your children to push the marble into the hose and then move it to the other end. Note: Make sure the marble will not simply roll easily through the tube.

How did your children move the marble through the hose? If they imitated peristalsis, then they probably pushed the marble through slowly, one squeeze of the tube at a time. Explain to them that this is how their body's digestive system, including the esophagus, intestines, etc., moves food through the various stages of the digestive process … one small muscle contraction at a time. ■

Week 3 Activity Sheets

The Usborne Complete Book of the Human Body

1. How is your liver like a big processing plant for food chemicals? List at least three of the jobs your liver performs. (p. 70)
   1) *(sorts food chemicals collected by the small intestine and sends them to different parts of the body)*
   2) *(filters out garbage)*
   3) *(makes bile to help your intestines digest fat)*
   4) *(converts food chemicals into body substances)*

2. Why do you need intestines? What do they do for your body? (p. 70) *(You need intestines to break down food into tiny molecules of chemicals so they can be passed into your bloodstream and used by your cells)*

3. Why does your body make fat? (p. 71) *(to store extra food energy, because your cells only use as much food energy as they need)*

4. What functions does fat serve in your body? (p. 71) *(fat keeps you warm and provides a cushion around your bones)*

5. Classify each of the foods listed in the box as either a **protein**, **carbohydrate** or **fat**. Hint: some words may fit in more than one column! (p. 71)

butter	cheese	garlic bread	chicken	oil
nuts	macaroni	steak	beans	muffin

Proteins	**Carbohydrates**	**Fats** (are found in…)
(cheese)	*(garlic bread)*	*(steak)*
(chicken)	*(macaroni)*	*(butter)*
(steak)	*(muffin)*	*(nuts)*
(beans)		*(oil)*

Week 3 Activity Sheets

6. Draw a line to match each term to the correct definition. (pp. 71–72)

protein	a tough, leftover waste in your large intestine that helps to sweep the digestive system clean.
carbohydrates	simple sugars and starches used for energy
fats	made from amino acids; used to repair the body and build cells
fiber	stored food energy that can help keep you warm; may be implicated in heart disease
water	contained in food and stored in the liver; insufficient amounts can lead to illness; small amounts are used in chemical reactions within the body
vitamins and minerals	lost through perspiration, urine and as you breathe out

7. Your colon is your **small** **large** intestine. (p. 72)

8. Why is it important to wash your hands after going to the bathroom? (p. 72) *(Because up to a third of each lump of solid waste you pass is made up of bacteria; E. coil bacteria is harmless in your large intestines but can make you sick if it ends up in your food.)*

9. Which body fluid do your kidneys clean? (p. 73)

saliva **mucus** **water** **blood**

10. Where do kidneys send the waste materials they removed to pass out of your body? (p. 73) *(to your bladder)*

11. How does the body get rid of waste material and excess water? Order the steps below. (p. 73)

(3) The ring of muscle that usually keeps the bladder closed relaxes and the bladder contracts, forcing urine out of the bladder.

(2) Urine passes down through each ureter into the bladder.

(4) Urine flows into the urethra and out of the body.

(1) As blood passes through the kidneys, unwanted substances are separated out.

Week 3 Activity Sheets

Fill in the blank with the correct word from the box. Then order the sentences to describe how food travels through your body. Note: we have labeled the third step for you. (pp. 66–72)

liver	teeth	villus/villi	esophagus
stomach	pancreas	saliva	mouth
small intestine	rectum	large intestine	

12. ___(4)___ The _____(small intestine)_____ is about 4 meters long; here, enzymes break down food into very small pieces.

13. ___(7)___ Water is removed from the food that can't be digested in the first part of the _____(large intestine)_____ (or colon) before passing out of the body.

14. ___(5)___ _____(Villus/villi)_____ are found in the walls of the intestine; they stick out like fingers; food crosses through these and goes into the bloodstream.

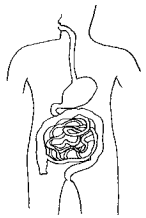
15. ___(2)___ The _____(stomach)_____ is a stretchy bag that mashes food into a sloppy soup by soaking it in acid.

16. ___(1)___ In the _____(mouth)_____, _____(teeth)_____ slice and grind food while _____(saliva)_____ helps to moisten and soften it into mush before it passes into a tube called the _____(esophagus)_____, which moves the food to the stomach.

17. ___3___ The _____(pancreas)_____ produces a digestive juice containing many different enzymes that can break down many types of food, including fat, in the first part of the small intestine.

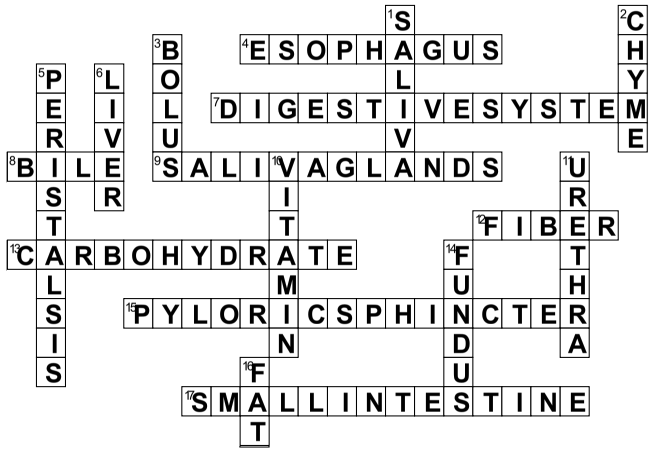
18. ___(8)___ The _____(rectum)_____ is a tube through which solid waste leaves your body.

19. ___(6)___ Blood carries nutrients to your _____(liver)_____ to be stored, changed into useful body substances, or released to be used in the body. Bile is produced here.



Week 3 Activity Sheets

20. **Extra Challenge:** Solve the puzzle. (pp. 66–72)



saliva
small intestine
fundus
liver
bile
digestive system
peristalsis
chyme
pyloric sphincter
esophagus
bolus
saliva glands
fat
vitamin
fiber
carbohydrate
urethra

Across

4. tube that connects your mouth to your stomach
7. long passage winding from the mouth to the anus (rectum) by way of all the digestive organs
8. greenish liquid produced by the liver that helps your body digest fats by breaking them into tiny drops so enzymes can break them down
9. release saliva into your mouth
12. consists mainly of cellulose; helps muscles of your intestines work efficiently by sweeping your digestive system clean as it moves along
13. made of sugars, gives you most of your energy
15. hole through which food leaves your stomach
17. where food is mixed with bile to be broken down so that it can pass into the blood stream through finger-shaped villi

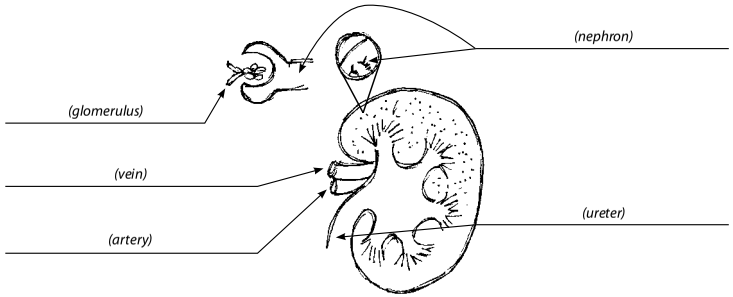
Down

1. spit; moistens food so it slides down your throat more easily
2. thick, creamy mixture of food produced by the stomach
3. ball of chewed food
5. muscle action that moves food through your digestive tract
6. makes bile
10. used in certain bodily functions; small amounts of these are stored in your liver
11. tube that carries urine from the bladder out of the body
14. top end of the stomach
16. a storage system for extra food; provides insulation

Blood and Guts

21. Use the words in the box to label the various parts of the kidney. (p. 83)

glomerulus	nephron	vein	artery	ureter



22. Fill in each blank with the letter of the correct definition. (pp. 83–85)

___(d)___ bladder
___(c)___ glomerulus
___(f)___ kidney
___(a)___ nephron
___(b)___ sphincter
___(e)___ ureter

a. microscopic filtering unit of the kidney; it sorts the useful and good materials from the useless and bad materials in our blood
b. band of muscle that holds the bladder shut
c. tight knot of capillaries in the nephron
d. muscular bag that holds urine
e. tubes that connect the kidneys to the bladder
f. filters unwanted substances out of the blood

23. Where are your kidneys? Circle the area on the picture and briefly describe the spot on the lines below. (p. 85)

(they are tucked under your bottom ribs, covered by layers of fat and in line with your elbows)

Week 3 Activity Sheets

Food and Nutrition for Every Kid

24. Define. (pp. 79–80, 86)

mechanical digestion: *(physical breaking apart of food into smaller pieces)*

chemical digestion: *(breaking apart long chains of food molecules into usable parts)*

alimentary canal: *(the tube food moves through in the digestive system)*

bolus: *(the ball of food that moves through the system)*

emulsifier: *(substance that prevents emolsion)*

25. What does your small intestine use to break down fat? (p. 82) *(Your small intestine uses bile created in the liver to break down fat.)*

26. What part does your pancreas play in digestion? (p. 82) *(The pancreas creates juices that are able to digest remaining large molecules of carbohydrates, fats and proteins left behind by other digestive juices)*

Understanding Your Brain

5-Day

27. **True** or **False**? People with bigger heads have bigger brains. (p. 10) **True** **False**

28. Why do some people think IQ tests are unfair: (p. 10) *(They believe that kids who are used to taking tests like that usually get higher scores, which skews the results)*

29. Is your intelligence at least partially determined by your genes? (p. 11) **Yes** **No**

Describe how scientists proved this. *(If intelligence is genetic, identical twins should have similar IQs, even if brought up separately. Scientists tested twins who were brought up separately and proved this to be true.)*

Week 3 Activity Sheets

30. For fun: Try to answer the sample IQ tests questions in your book in the spacer provided. (pp. 10–11)

1) Number of triangles: _____
2) Missing number: _____
3) Draw the shape here:
4) Missing Number: _____

(See page 32 in the book for answers.)

5) _____
6) _____
7) Draw the shape here:
8) Draw the shape here:
9) Number of boots: _____

31. Why can we see things in three dimensions? (p. 12) *(because we have two eyes, and each of them gives us a slightly different view of an object, which gives the object depth)*

32. Which part of the eye converts an image into electrical pulses to travel to your brain? (p. 12)

- ☐ the retina
- ☒ rods and cones
- ☐ the optic nerve
- ☐ the lens

33. Look at the picture of the street scene in your book. Describe which key element your brain uses to know that each of the below statements is true and why. We have completed the first one for you. (p. 12)

a. There is the outside corner of a building in the bottom, left hand corner of the picture.
Arrows: Our brains interpret arrow-shaped lines as inside or outside corners.

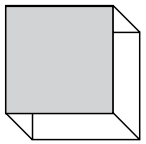
b. The blue car is closer than the red car. *(Size: Our brains interpret two objects that are similar but are differently sized as different distances apart. Since the blue car is bigger, it is closer.)*

c. There are two rows of trees, one tree in front of the other, lining both sides of the street. *(Overlapping: if one object partially blocks another, you see the overlapping object as closer.)*

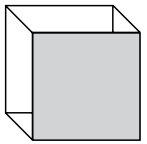
d. The street stretches away from us into the distance. *(Lines: Our brains understand that parallel lines seem to get closer together as they get further away)*

Week 3 Activity Sheets

34. Shade the two cubes below according to the directions given. (p. 13)



Shade the part that is the front panel when the cube appears to pop out from the page to the left.



Shade the part that is the front panel when the cube appears to pop out from the page to the right.

35. Do we notice our blind spot very often? **Yes** **No**

Why or why not? *(because we only notice it if an image falls on the exact spot in our eye where the optic nerve leaves the eye; most of the time, our brain just fills the gap)*

The Usborne Complete Book of the Human Body

1. How is your liver like a big processing plant for food chemicals? List at least three of the jobs your liver performs. (p. 70)

   1) _____

   2) _____

   3) _____

   4) _____

2. Why do you need intestines? What do they do for your body? (p. 70) _____

   _____

   _____

3. Why does your body make fat? (p. 71) _____

   _____

4. What functions does fat serve in your body? (p. 71) _____

   _____

5. Classify each of the foods listed in the box as either a **protein**, **carbohydrate** or **fat**. Hint: some words may fit in more than one column! (p. 71)

butter	cheese	garlic bread	chicken	oil
nuts	macaroni	steak	beans	muffin

Proteins	**Carbohydrates**	**Fats** (are found in…)

6. Draw a line to match each term to the correct definition. (pp. 71–72)

protein	•	•	a tough, leftover waste in your large intestine that helps to sweep the digestive system clean.
carbohydrates	•	•	simple sugars and starches used for energy
fats	•	•	made from amino acids; used to repair the body and build cells
fiber	•	•	stored food energy that can help keep you warm; may be implicated in heart disease
water	•	•	contained in food and stored in the liver; insufficient amounts can lead to illness; small amounts are used in chemical reactions within the body
vitamins and minerals	•	•	lost through perspiration, urine and as you breathe out

7. Your colon is your **small** **large** intestine. (p. 72)

8. Why is it important to wash your hands after going to the bathroom? (p. 72)

_____

_____

_____

9. Which body fluid do your kidneys clean? (p. 73)

saliva **mucus** **water** **blood**

10. Where do kidneys send the waste materials they removed to pass out of your body? (p. 73)

_____

11. How does the body get rid of waste material and excess water? Order the steps below. (p. 73)

_____ The ring of muscle that usually keeps the bladder closed relaxes and the bladder contracts, forcing urine out of the bladder.

_____ Urine passes down through each ureter into the bladder.

_____ Urine flows into the urethra and out of the body.

_____ As blood passes through the kidneys, unwanted substances are separated out.

Week 3 Activity Sheets

Fill in the blank with the correct word from the box. Then order the sentences to describe how food travels through your body. Note: we have labeled the third step for you. (pp. 66–72)

liver	teeth	villus/villi	esophagus
stomach	pancreas	saliva	mouth
small intestine	rectum	large intestine	

12. _____ The _____ is about 4 meters long; here, enzymes break down food into very small pieces.

13. _____ Water is removed from the food that can't be digested in the first part of the _____ _____ (or colon) before passing out of the body.

14. _____ _____ are found in the walls of the intestine; they stick out like fingers; food crosses through these and goes into the bloodstream.

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16. _____ In the _____, _____ slice and grind food while _____ helps to moisten and soften it into mush before it passes into a tube called the _____, which moves the food to the stomach.

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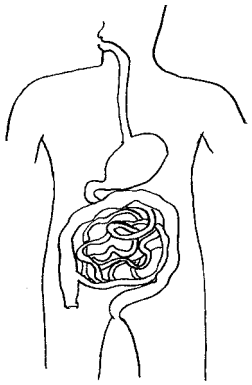

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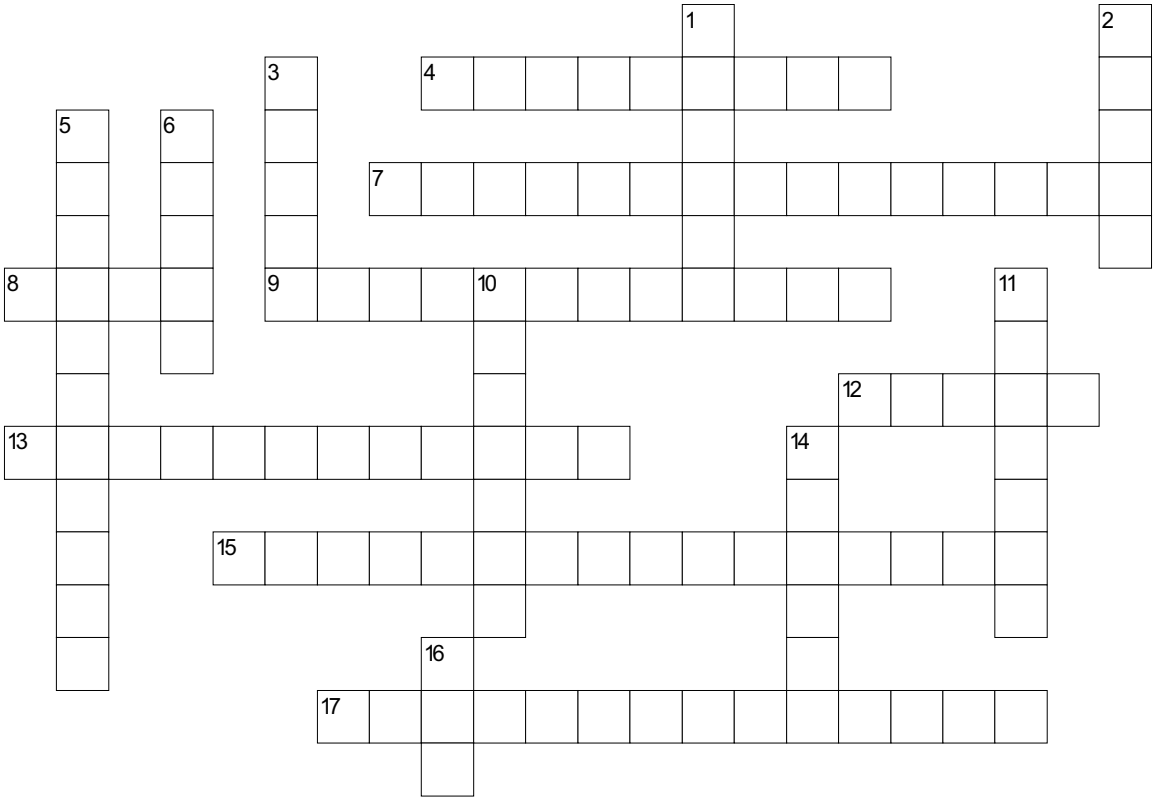

saliva
small intestine
fundus
liver
bile
digestive system
peristalsis
chyme
pyloric sphincter
esophagus
bolus
saliva glands
fat
vitamin
fiber
carbohydrate
urethra

Across

4. tube that connects your mouth to your stomach
7. long passage winding from the mouth to the anus (rectum) by way of all the digestive organs
8. greenish liquid produced by the liver that helps your body digest fats by breaking them into tiny drops so enzymes can break them down
9. release saliva into your mouth
12. consists mainly of cellulose; helps muscles of your intestines work efficiently by sweeping your digestive system clean as it moves along
13. made of sugars, gives you most of your energy
15. hole through which food leaves your stomach
17. where food is mixed with bile to be broken down so that it can pass into the blood stream through finger-shaped villi

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1. spit; moistens food so it slides down your throat more easily
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Blood and Guts

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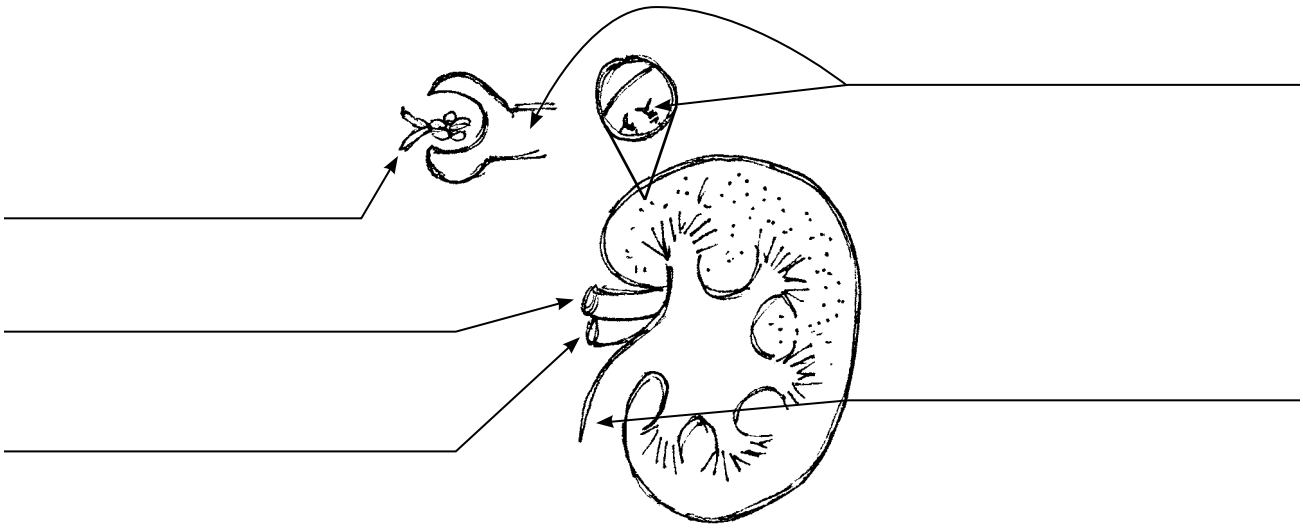

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_____ kidney

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_____

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Food and Nutrition for Every Kid

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_____

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_____

Understanding Your Brain

5-Day

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_____

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_____

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4) Missing Number: _____

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6) _____

7) Draw the shape here:

8) Draw the shape here:

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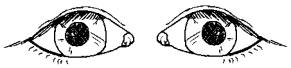
31. Why can we see things in three dimensions? (p. 12) _____

_____



_____

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d. The street stretches away from us into the distance. _____

_____

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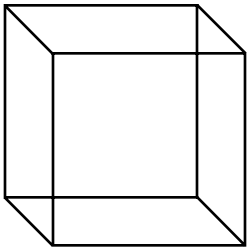

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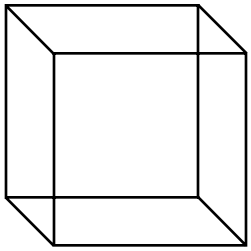

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35. Do we notice our blind spot very often? **Yes** **No**

Why or why not? _____

_____