



SCIENCE F		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	pp. 6–9	pp. 10–11	pp. 12–13				
Activity Sheet Questions	#1–3	#4–6	#7–9				
Blood and Guts				pp. 71–74			
Activity Sheet Questions				#10–12			
5-Day: Understanding Your Brain					pp. 2–5		
5-Day: Activity Sheet Questions					#13–15		
5-Day: The Human Body Activity Book		pp. 1–2 N	p. 73				
Optional: Do Together	Listen to Your Children			Testing Temperature			
Optional: Lyrical Life Science, Vol. 3—The Human Body	chap. 1						
Other Notes							

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Day 1

The Usborne Complete Book of the Human Body | pp. 6–9

You may wish to view Human Anatomy Online located on our IG links page. 📖 [p. 1]

“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? [p. 7]

Activity Sheet Questions | #1-3

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 # FSG1).

Optional: Do Together | Listen to Your Children

Each week throughout Science F, 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.

Optional: *Lyrical Life Science, Volume 3—The Human Body* | Chapter 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.

Day 2

The Usborne Complete Book of the Human Body | pp. 10–11

Activity Sheet Questions | #4–6

5-Day: *The Human Body Activity Book* | pp. 1–2

Note: You will use this book if you are following the 5-Day schedule, however we schedule the book on days other than Day 5.

Note: 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.

- The answer key for each diagram provided for you in the back of *The Human Body Activity Book* can serve as a helpful guide.
- 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.
- 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: *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.

Note to Mom or Dad: 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.

Day 3

The Usborne Complete Book of the Human Body | 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 various 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 Sheet Questions | #7–9

5-Day: *The Human Body Activity Book* | p. 73

Day 4

Blood and Guts | pp. 71–74

Cells, even so-called simple cells, are a lot more complicated than 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 than 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*. [p. 71]

Activity Sheet Questions | #10–12

Optional: Do Together | 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.

Day 5

5-Day: *Understanding Your Brain* | pp. 2–5

5-Day: Activity Sheet Questions | #13–15 ■

Week 1 Activity Sheets

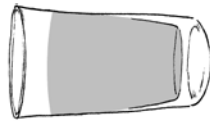
The Usborne Complete Book of the Human Body

- 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.

- 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					Body Tissues				
(stomach juices)					(fat)				
(blood)					(bone)				
(sweat)					(muscle)				
(tears)									

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



(70%)

- 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. |

Health, Medicine, and Human Anatomy | Week 1 | Student Activity Sheets 1

Week 1 Activity Sheets

- 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



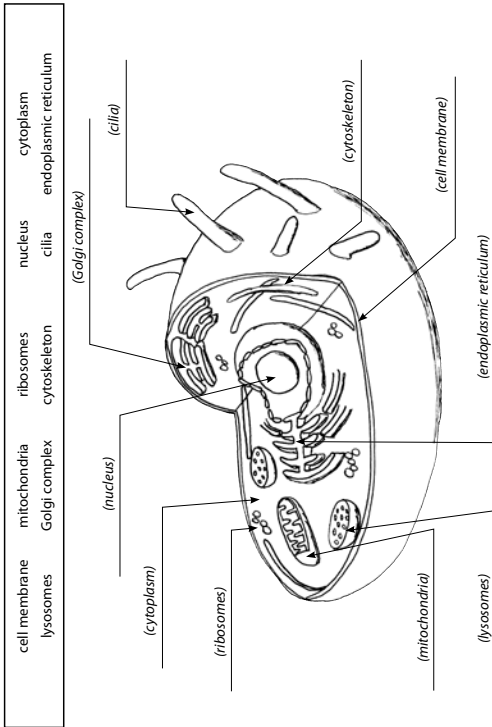
- Think of one body part that belongs to more than one body system and explain how it serves both systems. (p. 10)
- (Possible: throat is part of the digestive system while you eat, and part of the respiratory system while you breathe; at the most basic level, your leg is part of both the skeletal system—gives your leg its structure, and the muscular system—helps you walk)

- 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)

Student Activity Sheets | Week 1 | Health, Medicine, and Human Anatomy

Week 1 Activity Sheets

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



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

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

Week 1 Activity Sheets

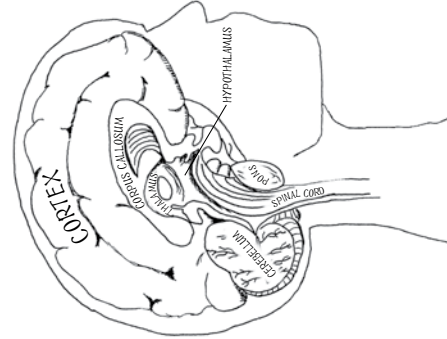
Blood and Guts

10. 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)
11. 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)*
12. 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)

5-Day: Understanding Your Brain

13. 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)*



Week 1 Activity Sheets



14. 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	✓



15. 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 pans eventually stops sending messages to your brain about the smelly substance)*

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Week 1 Activity Sheets

5. 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 |

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

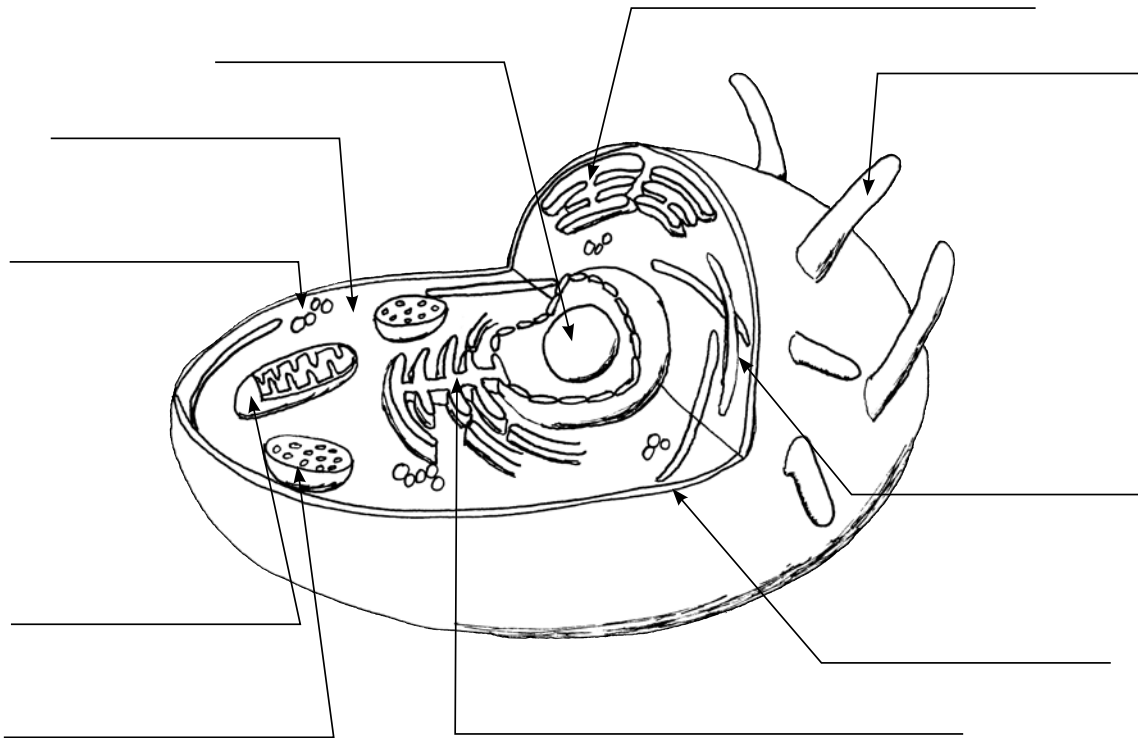


7. How do cells make the different proteins they need to do various jobs around your body? (p. 12)



8. 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



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

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



Blood and Guts

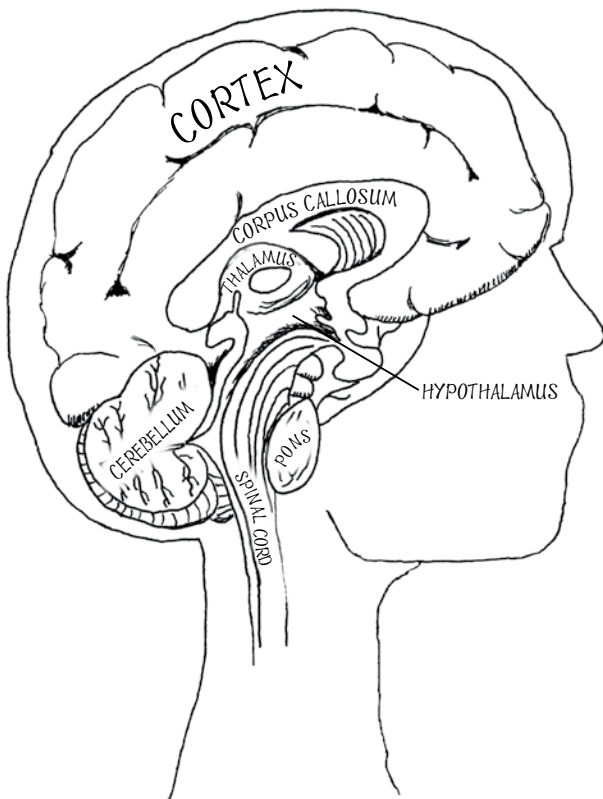
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11. Why are our bodies warm? (p. 72)

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

5-Day: Understanding Your Brain

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



Cortex: _____

Corpus Callosum: _____

Thalamus: _____

Hypothalamus: _____

Pons: _____

Spinal Cord: _____

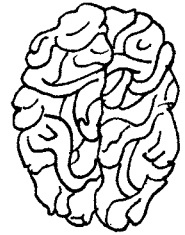
Cerebellum: _____

Week 1 Activity Sheets



14. 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	



15. 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 F **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			#7–8	#9–14	
5-Day: Understanding Your Brain					pp. 6–9
5-Day: Activity Sheet Questions					#15–19
5-Day: The Human Body Activity Book	pp. 33, 35	pp. 36–37			
Optional: Do Together	Food Journal Prep	Food Journal	Amylase in Action		
Optional: Lyrical Life Science, Vol. 3—The Human Body	chap. 7				

Other Notes

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Day 1

The Usborne Complete Book of the Human Body | pp. 65–67

Activity Sheet Questions | #1–3

5-Day: The Human Body Activity Book | pp. 33, 35

Optional: Do Together | Food Journal Prep

Note to Mom or Dad: Tomorrow you and your children will keep a food journal. Read through the activity and make sure you will be ready to begin.

Optional: Lyrical Life Science, Volume 3—The Human Body | Chapter 7 (all week)

Day 2

The Usborne Complete Book of the Human Body | pp. 68–69

Activity Sheet Questions | #4–6

5-Day: The Human Body Activity Book | pp. 36–37

Optional: Do Together | 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 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

Blood and Guts | pp. 75–78

Activity Sheet Questions | #7–8

Optional: Do Together | 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?

Day 4

Blood and Guts | pp. 79–82

Activity Sheet Questions | #9–14

Day 5

5-Day: Understanding Your Brain | pp. 6–9

5-Day: Activity Sheet Questions | #15–19 ■

Week 2 Activity Sheets

The Usborne Complete Book of the Human Body

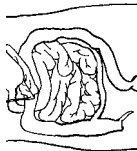
1. Which part of your digestive system extracts useful food chemicals and passes them to your blood stream? (p. 66)

small intestine

pancreas **stomach** **liver**

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 dying 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 ruge, 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.)*

Week 2 Activity Sheets

Blood and Guts

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

- peristalsis _____
- enzyme _____
- villi _____

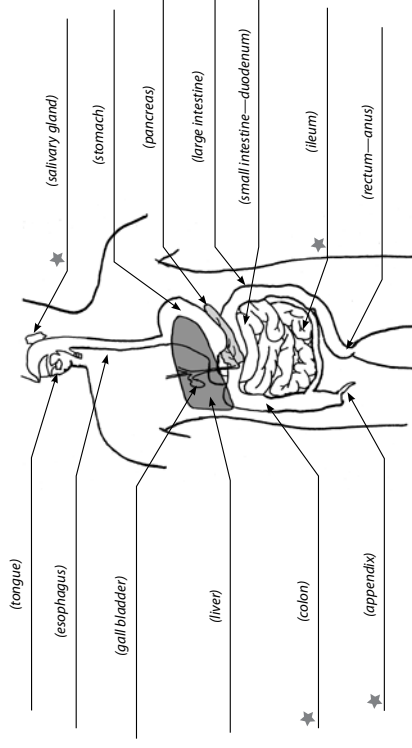
action of the intestine walls hugging and pushing food along like the way you squeeze a tube of toothpaste

tiny finger-like things that stick out from the wall of the intestine to absorb valuable chemicals from the food that passes by

a chemical in saliva that breaks down starches in food

8. **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
- gall bladder
- liver
- small intestine
- rectum (anus)
- large intestine
- pancreas
- stomach
- tongue



Week 2 Activity Sheets

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)*

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

fats	proteins	feces	carbohydrates	sphincter
------	----------	-------	---------------	-----------

9. _____ are "fuel foods" because they provide energy for your body and are found in foods such as bread, pasta and cereal.
(Carbohydrates)
10. _____ are used for energy production and found in foods such as butter or cream.
(Fats)
11. _____ are used in body repair and growth and found in foods such as steak and eggs.
(Proteins)
12. _____ is the proper name for the body's solid waste.
(Feces)
13. The kind of muscle that surrounds your lips and helps you "pucker up!" _____
(sphincter)
14. 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)

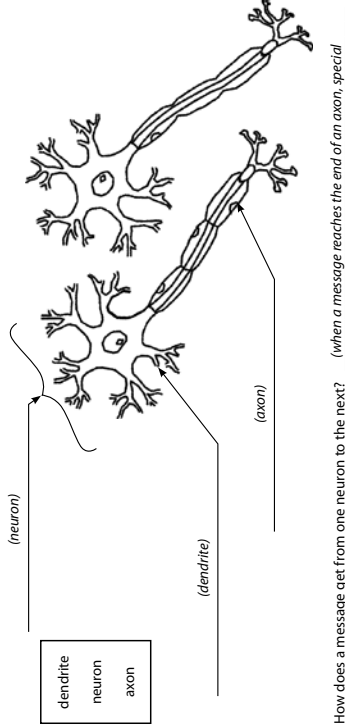
Health, Medicine, and Human Anatomy | Week 2 | Student Activity Sheets 9

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Week 2 Activity Sheets

5-Day: Understanding Your Brain

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



16. 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)

17. 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")



18. 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



Student Activity Sheets | Week 2 | Health, Medicine, and Human Anatomy

Week 2 Activity Sheets



19. Consider the example of the 4-year-old who watches someone pour water from two identical glasses, one into a tall and skinny glass the other a shorter round 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.)

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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)

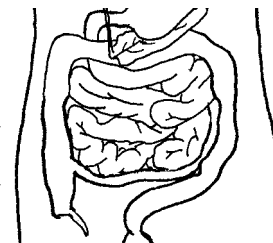
pancreas

stomach

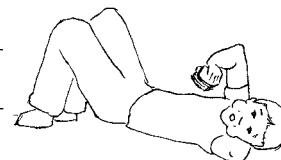
liver

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) _____



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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: _____



Week 2 Activity Sheets

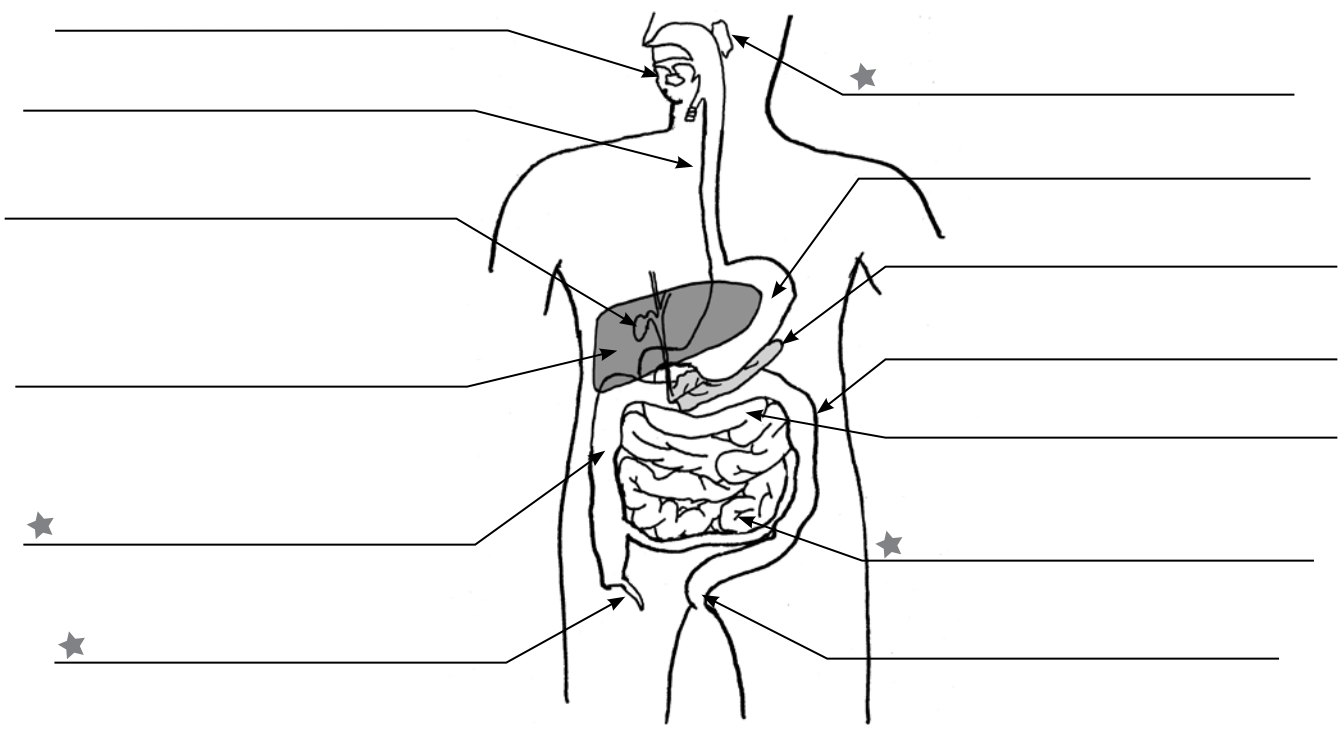
Blood and Guts

7. 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 |

8. **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	



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Week 2 Activity Sheets



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

★ colon: _____

★ salivary gland: _____

★ appendix: _____

★ ileum: _____

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

fats	proteins	feces	carbohydrates	sphincter
------	----------	-------	---------------	-----------

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

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



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



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

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

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



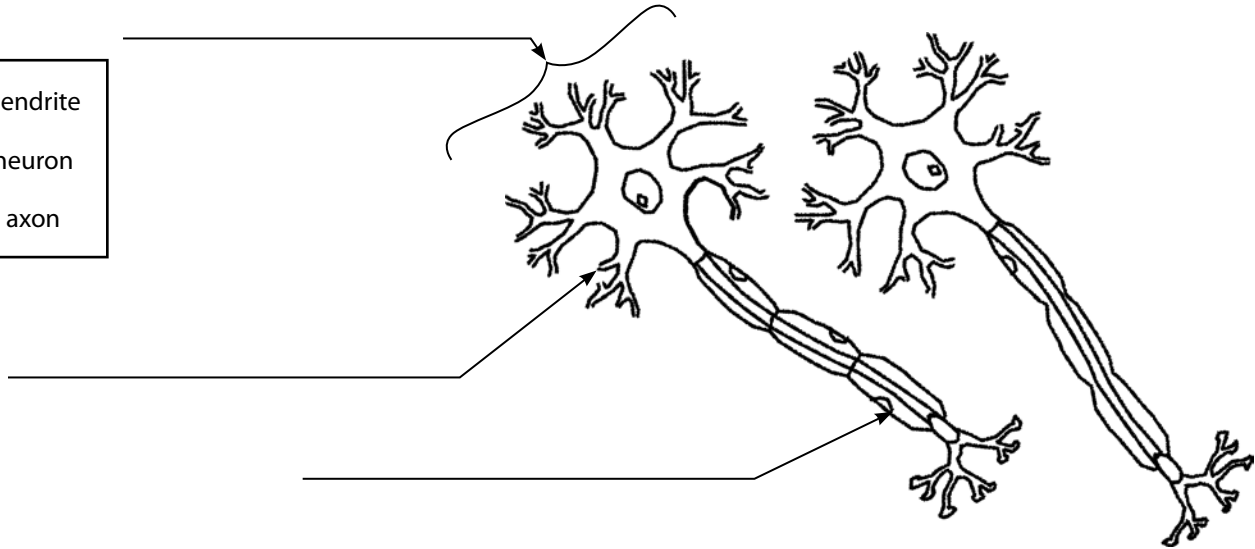


Week 2 Activity Sheets

5-Day: Understanding Your Brain

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

dendrite
neuron
axon



16. How does a message get from one neuron to the next? _____



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



18. 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





19. Consider the example of the 4-year-old who watches someone pour water from two identical glasses, one into a tall and skinny glass the other a shorter round 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 F		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	#5–8					
Blood and Guts			pp. 83–86				
Activity Sheet Questions			#9–10				
Food and Nutrition for Every Kid				chap. 11			
Activity Sheet Questions				#11–13			
5-Day: Understanding Your Brain					pp. 10–13		
5-Day: Activity Sheet Questions					#14–19		
5-Day: The Human Body Activity Book	pp. 34, 38, 40	pp. 41–42					
Optional: Do Together		Fighting Fat		Peristalsis			
Optional: Lyrical Life Science, Vol. 3—The Human Body	chap. 8						
Other Notes							

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Day 1

The Usborne Complete Book of the Human Body | pp. 70–71

Activity Sheet Questions | #1–4

5-Day: The Human Body Activity Book | pp. 34, 38, 40

Optional: Lyrical Life Science, Volume 3—The Human Body | Chapter 8 (all week)

Day 2

The Usborne Complete Book of the Human Body | pp. 72–73

Activity Sheet Questions | #5–8

5-Day: The Human Body Activity Book | pp. 41–42

Optional: Do Together | 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 3

Blood and Guts | pp. 83–86

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. [p. 83]

Activity Sheet Questions | #9–10

Day 4

Food and Nutrition for Every Kid | Chapter 11

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.

Activity Sheet Questions | #11–13

Optional: Do Together | 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.

Day 5

5-Day: Understanding Your Brain | pp. 10–13

5-Day: Activity Sheet Questions | #14–19 ■

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) _____
- 2) _____
- 3) _____
- 4) _____

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

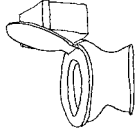
protein	_____	a tough, leftover waste in your large intestine that helps to sweep the digestive system clean.
carbohydrates	_____	simple sugars and starches used for energy
fats	_____	made from amino acids; used to repair the body and build cells
fiber	_____	stored food energy that can help keep you 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



Week 3 Activity Sheets

6. 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. coli bacteria is harmless in your large intestines but can make you sick if it ends up in your food.)



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

- saliva mucus water blood

8. 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 | esophagus |
| stomach | pancreas | mouth |
| small intestine | rectum | large intestine |
| villus/villi | saliva | |

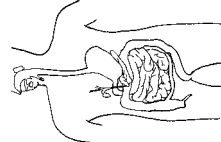
a) (4) The _____ (small intestine) _____ is about 4 meters long; here, enzymes break down food into very small pieces.

b) (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.

c) (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.

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

e) (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.

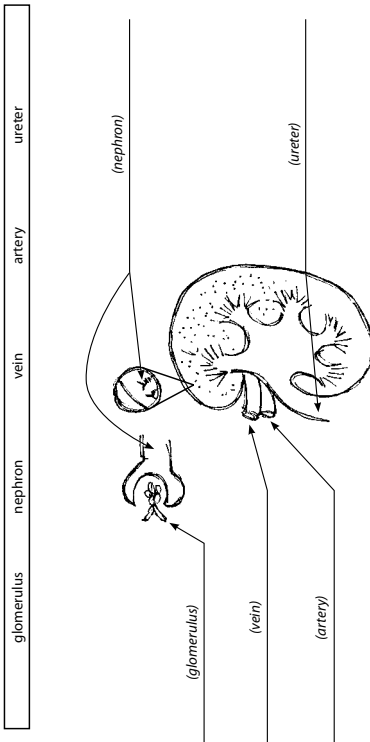


Week 3 Activity Sheets

- f. **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.
- g. **(8)** The (rectum) is a tube through which solid waste leaves your body.
- h. **(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.

Blood and Guts

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



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Week 3 Activity Sheets

10. 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

Food and Nutrition for Every Kid

11. 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 emulsion)

12. 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.)
13. 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)

Week 3 Activity Sheets



5-Day: Understanding Your Brain

14. 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.)

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

(See page 32 in the book for answers)

16. 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)



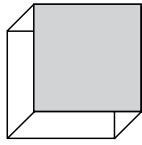
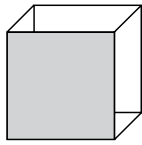
17. Look at the picture of the street scene in your book. Describe which key element your brain uses to know that each of the below statements is true and why. We have completed the first one for you. (p. 12)

- 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



18. 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.

19. 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. 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 |



Week 3 Activity Sheets

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



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

saliva

mucus

water

blood

8. 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	

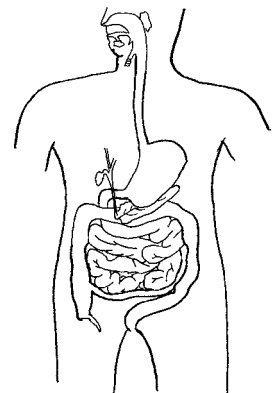
a) _____ The _____ is about 4 meters long; here, enzymes break down food into very small pieces.

b) _____ 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.

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

d) _____ The _____ is a stretchy bag that mashes food into a sloppy soup by soaking it in acid.

e) _____ 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.



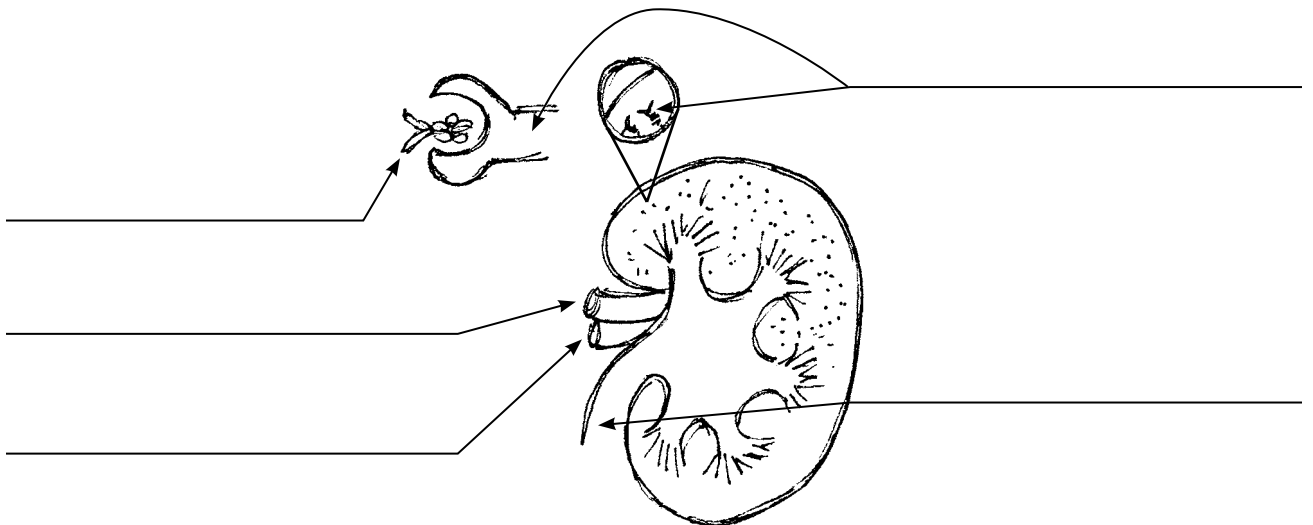


- f) **3** The _____ produces a digestive juice containing many different enzymes that can break down many types of food, including fat, in the first part of the small intestine.
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Blood and Guts

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

glomerulus	nephron	vein	artery	ureter
------------	---------	------	--------	--------





Week 3 Activity Sheets

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

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

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

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Arrows: Our brains interpret arrow-shaped lines as inside or outside corners.

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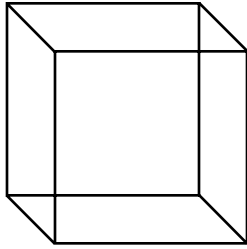
c. There are two rows of trees, one tree in front of the other, lining both sides of the street. _____

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

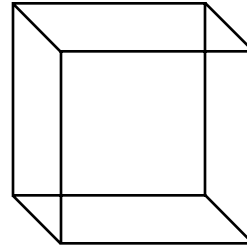


Week 3 Activity Sheets

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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.

19. Do we notice our blind spot very often?

Yes

No

Why or why not? _____

Appendix 2: Science F—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

Appendix 2: Science F—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