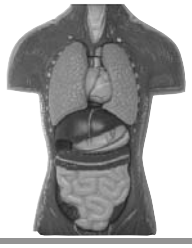


Chew, Swallow, Squeeze, and Churn

4

☑ *Lesson Objectives*

Core Content Objectives

Students will:

- ✓ Identify the digestive system
- ✓ Recall basic facts about the digestive system

Language Arts Objectives

The following language arts objectives are addressed in this lesson. Objectives aligning with the Common Core State Standards are noted with the corresponding standard in parentheses. Refer to the Alignment Chart for additional standards addressed in all lessons in this domain.

Students will:

- ✓ Describe the connection between the parts of the body associated with the digestive process (RI.1.3)
- ✓ Describe an illustration of food and use pictures and details in "Chew, Swallow, Squeeze, and Churn" to describe the read-aloud's key ideas (RI.1.7)
- ✓ With assistance, categorize and organize facts about the digestive system to answer questions (W.1.8)
- ✓ Generate questions and gather information to add to a KWL Chart pertaining to *The Human Body* (W.1.8)
- ✓ Ask and answer *what* questions orally, requiring literal recall and understanding of the details or facts of "Chew, Swallow, Squeeze, and Churn" (SL.1.2)
- ✓ Add drawings to descriptions of the digestive system to clarify ideas and thoughts (SL.1.5)
- ✓ Sort the words *digestion* and *indigestion* into categories to gain a sense of the concepts they represent (L.1.5a)

- ✓ Prior to listening to "Chew, Swallow, Squeeze, and Churn," identify orally what they know and have learned about the skeletal and muscular systems
- ✓ Prior to listening to "Chew, Swallow, Squeeze, and Churn," orally predict how long it takes a human body to digest food, and then compare the actual outcome to the prediction
- ✓ Share writing with others

Core Vocabulary

digestion, *n.* The bodily process by which food is broken down into a usable form
Example: The digestion of food takes the body several days to complete.
Variation(s): none

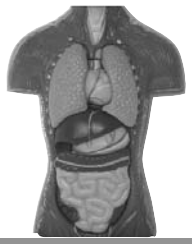
digestive system, *n.* The system that processes energy-giving food in the body
Example: The digestive system uses special juices to turn solid foods into liquids.
Variation(s): digestive systems

esophagus, *n.* A muscular tube that connects the mouth to the stomach
Example: He could feel the warm milk move down his esophagus.
Variation(s): esophagi

intestine, *n.* An organ, connected to the stomach, that continues the digestive process
Example: Food passes from your stomach into your small intestine.
Variation(s): intestines

stomach, *n.* The organ in your body where food goes to be partially digested
Example: Whereas humans only have one stomach, cows have four.
Variation(s): stomachs

At a Glance	Exercise	Materials	Minutes
Introducing the Read-Aloud	**What Have We Already Learned?**		10
	Making Predictions About the Read-Aloud		
	Purpose for Listening		
Presenting the Read-Aloud	**Chew, Swallow, Squeeze, and Churn**		15
Discussing the Read-Aloud	**Comprehension Questions**	Image Cards 1–5	10
	Word Work: Digestion		5
	**Complete Remainder of the Lesson Later in the Day**		
Extensions	**Know-Wonder-Learn Chart**	KWL Chart	20
	"My Body Systems" Booklets	"My Body Systems" booklets; chart paper, chalkboard or whiteboard	



Chew, Swallow, Squeeze, and Churn

4A

Introducing the Read-Aloud *10 minutes*

What Have We Already Learned?

Remind students that Dr. Welbody, the rhyming pediatrician, has been teaching them about various systems at work within their body. Each system is made up of different organs or parts that do special jobs for the human body. The systems are all tied together in a network to keep the human body alive and healthy.

Ask students to share what they learned so far about the skeletal system and muscular system. You may prompt discussion with the following questions:

- Name some bones that make up the skeletal system. (Answers may vary.)
- What does the skeletal system do for the human body? (provides support as a framework; helps with movement of the body; protects important organs)
- Give an example of a bone that protects an organ. (the skull protects brain; ribs protect heart and lungs, etc.)
- What makes it possible for you to bend your body in different places? (joints)
- What system works with the skeletal system to help you move your body? (muscular system)
- Tendons are rope-like bands under the skin. What two things do they join together? (muscles and bones)
- Remember, you control voluntary muscles with your brain by thinking. Point to a voluntary muscle and tell me what you can use it to do? (Answers may vary.)
- What is the most important muscle in your body that needs to keep working for you to live? Hint: It's involuntary, meaning it works automatically. (heart)

As students share, expand their responses using richer and more complex language, including, if possible, any read-aloud vocabulary.

Now, remind students that at the end of yesterday's read-aloud, Dr. Welbody gave them a clue about the system they will be learning about today. In the previous read-aloud she said, "We'll have a lot to chew on." Ask them to guess what she meant. Then, affirm that they are going to talk about food and how food travels through their bodies. Explain that today they are going to learn about the digestive system.

It is recommended that you do a quick review of liquids and solids prior to the read-aloud if your students are unfamiliar with those terms.

Making Predictions About the Read-Aloud

Tell students that the process of breaking food down into energy for their bodies is called digestion. Ask students to predict how long it takes their bodies to process, or digest, food.

Purpose for Listening

Tell students to listen carefully to find out if their predictions are correct.

Presenting the Read-Aloud **15** *minutes*

Chew, Swallow, Squeeze, and Churn

Show image 4A-1: Food [1]

Yum! A chicken burrito! I, Dr. Welbody, the rhyming pediatrician, am feeling hungry! I think a chicken burrito would taste mighty good right about now.

1 What do you see in the picture? Are any of your favorite foods pictured? [Point to the chicken burrito as you read the first sentence.]

Healthy foods like chicken burritos, homemade pizza, apples, and carrots are extremely important to our bodies. We cannot live without food. Food is the fuel that gives us the energy we need to stay alive, to walk, talk, think, and breathe. The energy from food helps us stay warm. We use its energy even when we are sleeping. Food helps children grow. It helps us heal when we are hurt or sick. So, how do our bodies process, or digest, the food we eat? Your **digestive system** makes all this happen. Let's find out how it works.[2]

2 Who remembers what a system is? (a group of organs that work together in the body) The digestive system is the group of organs that work together to help your body turn the food you eat into energy.

Show image 4A-2: Child eating a cracker

Pretend that you just took a bite out of a cracker. What are you going to do now? That's right, *chew!* And while your teeth are crushing and chomping on the cracker, a liquid called saliva is helping to soften the food in your mouth and make it even mushier. Does anyone know another name for saliva?[3] It's spit!

3 [Pause for suggestions.]

Show image 4A-3: Esophagus and stomach

Once your food is good and mushy it is time to swallow. When you do, the chewed-up food goes into a tube that connects your mouth to your **stomach.** This tube is called your **esophagus.**[4] It is about half as long as your arm and about as wide as your thumb. The food doesn't just slide down it. There are muscles in your esophagus that squeeze the food along, the way you squeeze toothpaste from a tube. From there, the food goes into your stomach.[5]

4 [Point out the esophagus in the illustration.]

5 How do your muscles help the digestive system?

Show image 4A-4: Stomach

Do you know where your stomach is? If you point to a spot a little above your belly button and then move your hand a little more to the left, you can feel your rib bones.[6] Your stomach is there, partly behind your ribs. Your stomach is like a big bag or balloon. It expands, or gets bigger, as it fills with food. Powerful muscles in your stomach squeeze the food and churn it around like clothes in a washing machine.[7] At the same time, stomach juices—a watery mixture made by your body—help turn the mushy food into liquid. Food stays in your stomach for about three or four hours. **Digestion** is happening while you work, play, and sleep.[8]

Every time you eat a meal, you swallow a little air. As your stomach churns the food, the air makes noises, sometimes called "tummy rumblings." When the air passes back out through your mouth, sometimes with a loud noise, it is called belching or burping.[9]

6 [Pause while students find their stomachs.]

7 Again, how does your muscular system help your digestive system?

8 Digestion is the process your body uses to turn your food into the things your body needs.Think about what you ate last. Your body might be digesting it right now.

9 Is it polite to say, "excuse me" when you burp? Well, now you know that burping happens during digestion.

Show image 4A-5: Small intestine

The liquid moves from your stomach a little bit at a time into a tube called the small **intestine.**[10] Your small intestine is narrow, but it is very long—around fifteen feet in all. Since you are probably only around four feet tall, how does your intestine, more than three times longer than you are tall, fit inside you?[11] The answer is that your intestine is all coiled (or folded) up inside you, underneath your stomach. Food stays in the small intestine about six hours.

In the small intestine all the good things from the liquid food get absorbed by, or taken into, your blood. The blood carries these nutrients and vitamins from the liquid food that's been digested around your body so they can give you energy, help you grow, and keep you healthy.

10 [Point to the illustration.]

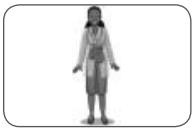
11 Here's a hint: Think of a jump rope or water hose that is not stretched out but that is folded up.

Show image 4A-6: Small intestine to large intestine

But there are still some bits of food that aren't used up and are left behind in the small intestine. These leftover bits are called waste. The waste gets pushed into your large intestine. This is a tube like your small intestine, only shorter and wider. It is curled like an upside-down "U" around your small intestine. [12] From there, the waste gets pushed out of your bottom when you go to the bathroom. [13] It may take *two days* for food to travel through your whole digestive system.

12 [Pause and point to the large intestine in the picture.]

13 The word *bottom* can also have other meanings. It can also refer to the lowest part of something.



Show image 4A-7: Dr. Welbody's digestive system

And that is how digestion works. Here's my little rhyme about the digestive system:

A healthy body needs good food

There really is no question.

Your body gets the things it needs —

Just leave it to digestion!

The next time we get together, I'll help you find out all about the most important muscle in your body, one that works all the time but never gets tired! [14]

14 Do you know which muscle Dr. Welbody is talking about? (the heart)

Discussing the Read-Aloud **15** *minutes*

Comprehension Questions **10** *minutes*

If students have difficulty responding to questions, reread pertinent passages of the read-aloud and/or refer to specific images. If students give one-word answers and/or fail to use read-aloud or domain vocabulary in their responses, acknowledge correct responses by expanding the students' responses using richer and more complex language. Ask students to answer in complete sentences by having them restate the question in their responses.

1. *Literal* How long does it take the body to process, or digest, food? (about two days) Were your predictions correct? (Answers may vary.)

2. *Inferential* Why do you need food? (It provides the energy you need to stay alive and to grow.)
3. *Literal* Once you swallow your food, it is squeezed along a tube called the esophagus. What organs have you learned about that help to squeeze the food on its way down? (muscles)
4. *Literal* Muscles also help to turn food from solids into liquids. In what part of your body does this happen? (stomach)
5. *Inferential* Are the stomach muscles voluntary or involuntary? (involuntary)
6. *Literal* How does food get carried to other parts of your body to provide the energy you need? (through the blood)
7. *Evaluative* [Use Image Cards 1–5 to have students sequence the digestive process: mouth, esophagus, stomach, small intestine, and large intestine.]

[Please continue to model the *Question Pair Share* process for students, as necessary, and scaffold students in their use of the process.]

8. *Evaluative* ***What? Pair Share:*** Asking questions after a read-aloud is one way to see how much everyone has learned. In a moment you are going to ask your neighbor a question about the read-aloud that starts with the word *what.* For example, you could ask, "What is it that makes you burp?" Turn to your neighbor and ask your *what* question. Listen to your neighbor's response. Then your neighbor will ask a new *what* question, and you will get a chance to respond. I will call on several of you to share your questions with the class.
9. After hearing today's read-aloud and questions and answers, do you have any remaining questions? [If time permits, you may wish to allow for individual, group, or class research of the text and/or other resources to answer these remaining questions.]

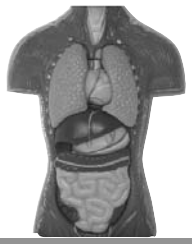
Word Work: Digestion *5 minutes*

1. In the read-aloud you heard, "*Digestion* is happening while you work and play and sleep."
2. Say the word *digestion* with me.
3. Digestion is the process of breaking down food into a form that your body can use.
4. Eating slowly and drinking lots of water helps to make digestion easier.
5. Tell about one of the organs or fluids in your body that helps with the digestion of your food. Try to use the word *digestion* when you tell about it. [Ask two or three students. If necessary, guide and/or rephrase the students' responses: "The saliva in my mouth helps digestion by . . ."]
6. What's the word we've been talking about?

Use an *Antonyms* activity for follow-up. Directions: *Digestion* is a natural process that we hardly notice in our bodies. Sometimes the process gets interrupted. When this happens we sometimes burp and belch. These are signs of *indigestion* and it can feel very unpleasant to our bodies. I will read five sentences to you. If the sentence tells about a normal part of digestion, say, "That's digestion." If it is not a normal part of digestion say, "That's indigestion."

1. I chewed my apple into tiny bits before swallowing it. (That's digestion.)
2. I had stomach pains after lunch yesterday. (That's indigestion.)
3. I began to burp at the dinner table. (That's indigestion.)
4. I used the bathroom after breakfast. (That's digestion.)
5. I swallowed a whole grape and began to cough. (That's indigestion.)

Complete Remainder of the Lesson Later in the Day



Chew, Swallow, Squeeze, and Churn

4B

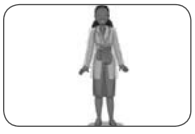
Extensions — *20 minutes*

Know-Wonder-Learn Chart

Review any information that students shared about the digestive system on the KWL Chart (the 'K' and 'W' columns). Ask if there is any information in the 'K' column that should be revised based on what they learned in the read-aloud. Reread small sections of the text aloud as necessary to help students check the accuracy of their responses. For example, "Yesterday when we were talking about what we knew we said our hearts are shaped like Valentine hearts. What do you think now?" Then cross out the inaccurate information in the 'K' column. Make necessary revisions. Then ask if they discovered the answers to any of their questions. If so, record relevant answers in the 'L' column. Ask what else they learned from the read-aloud, recording these responses under the 'L' column as well.

"My Body Systems" Booklets

Today students will complete the third page of their booklets. Hand out the prepared booklets.



Show image 4A-7: Dr. Welbody's digestive system

- Assist students in filling in the blank at the top of the page: My Digestive System.
- Ask students to use Dr. Welbody's digestive system as a model for drawing their own digestive system within the body shape on the third page. Go over the steps of the digestive system with them and remind them to include the *mouth, esophagus, stomach,* and *small* and *large intestines.* (Write these words on a piece of chart paper, a chalkboard, or a whiteboard.) It should be emphasized that students' drawings need not be a perfect depiction of the digestive system. The goal of this activity is for students to become more aware of the details of the digestive

system through the activity of drawing it. Later in the domain, when students' knowledge of the body's systems is assessed, they will be asked to recognize, rather than draw, the various systems.

- Above and Beyond: When students have finished drawing, instruct those who are ready to do so to use the lines at the bottom of the page to write a sentence using one of the words they have learned. For example, "Food gets churned up in my stomach." [Some students may need to dictate their sentences.]

- Have students share their writing and drawings with each other.