

## Essential Question

# What Are Some Parts of Your Body?

### Engage

Use this page and the Try This! activity to engage students, determine students' background knowledge, and create excitement about the lesson content.

### Get Ready to Learn

**What are some parts of your body?** On a display board, make a K-W-L chart titled "My Body." Ask students to name some different body parts. Provide direction by asking some leading questions.

After students have named some body parts, ask them to name things they want to know. Write answers in the "Want to Know" column. Keep the chart displayed throughout the unit. Add facts as they are learned to the "What I Learned" column.

**How do your body parts work together?**

**How do they help you live and grow?** Have students answer the questions aloud and discuss their answers. In this chapter they will learn more about how different parts of their bodies work together.

### Try This!

**Is all of your skin the same?** Distribute hand lenses to students. Have them look at the skin on their arms and fingertips. **Does the skin on your fingertips look the same as the skin on your arms? What differences do you see?** Students may notice that the skin on their fingers has ridges, but the skin on their arms is smooth. They can see the hair on their arms.

### Vocabulary

**Preview Vocabulary** Pronounce each term as you write it on the board. Have students write each term on a separate index card and make picture vocabulary cards.

### Vocabulary

brain	p. 100
stomach	p. 101
oxygen	p. 102
lungs	p. 102
heart	p. 104
blood	p. 104
skin	p. 105

Find out what these words mean as you study this lesson.

### Essential Question

# What Are Some Parts of Your Body?

### Engage

**Get Ready to Learn** What are some parts of your body? God made your body in His image. Your body is made of many parts. Some parts you can see. Other parts you can not see. How do your body parts work together? How do they help you live and grow?



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**Try This!** Is all of your skin the same? Look at your skin with a hand lens. Does the skin on your fingertips look the same as the skin on your arms? What differences do you see?

## Science Background

The skin on our arms is usually smooth and has many fine hairs. The skin on the palms of our hands and the soles of our feet is hairless and has ridges. These ridges are thought to make it easier for us to grip on wet or rough surfaces. When these ridges move across a surface, they create very tiny vibrations that are sensed by special nerves found in the ridges. These nerves help us feel things. In this way, the ridges help contribute to the sensitivity in our fingertips.

The patterns of arches, loops, and whorls that make up our fingerprints are unique from person to person. Even identical twins have different fingerprints.

Hands and feet have more sweat glands than any other parts of the body. These sweat glands are activated when we are stressed. This is why hands feel slippery when we are nervous.



## Structured Inquiry

### Discover

Record your work for this inquiry.  
Your teacher may also assign the  
related Guided Inquiry.



## Draw Your Body

**What body parts are on the inside of your body?**

### Your Group Needs

- two big sheets of paper
- sidewalk chalk or a crayon
- paper cutouts of various body parts



**Step 1** Trace the shape of your partner's body on a sheet of paper. Then, have your partner trace your body.

**Step 2** Draw a face on your picture. Color the body parts and paste them on your body outline.

**Step 3** Fold the paper in half along the long sides. Unfold it. **Compare** the sides. Record your observations.

### Create Explanations

1. What body parts are on the inside of your body?
2. How are the body outlines different?

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## Discover

Use the inquiry activities as an opportunity for students to perform hands-on investigations and think like a scientist.



## Structured Inquiry

## Draw Your Body

**What body parts are on the inside of your body?**

### Preparation and Tips

Use butcher or brown paper rolls cut in child-size pieces about 1–2 meters long (about 50–55 inches) to allow plenty of room for labels. Tape multiple sheets together if needed. Provide students with sidewalk chalk, crayons, or washable markers.

Help students take turns tracing the outlines of their bodies. Demonstrate a lengthwise fold, and instruct students to fold their drawings so that the long sides touch. Provide students with an example that has the body part cutouts already placed inside the body.

**Predict** How will my outline be different from my classmates' outlines?



Have students use their *Science Journals* to record their work for this inquiry.

### Inquiry Practice Tip

**Compare** Students should observe and list the parts on each side of the fold. Make sure they list things that are different and things that are the same. Point out that hands are mirror images, not identical.

### Expected Results

Students should identify body parts that are inside the body, such as lungs, heart, and stomach.

### Create Explanations

1. Sample answer: the heart and lungs, the blood, the brain, and the stomach
2. Sample answer: My outline is taller than some of my classmates' outlines.

## Inquiry Extension

### Body Parts in Other Living Things

**What are the body parts of other living things like?**

Extend the Structured Inquiry by having students research what body parts of other living things look like.

**Teaching Tip** Have students choose an animal or plant and research its body parts. Encourage them to think about how the body parts are the same and different from ours.

Students may record their work in their *Science Journals*. A scoring rubric can be found as an *Online Teacher Resource*.



## Guided Inquiry

## Explain

### Your Brain Is the Boss

#### Objective

- Identify the location and functions of the brain.

#### Set Goals

As students study this lesson, have them list the main idea for each section.


#### Develop Key Vocabulary

**brain** Explain that the brain does more than help us think, learn, and remember. The brain is the body's command center. The brain monitors our health and gives our other parts orders. Explain to students that the brain is in the skull, or head.

#### Teach Science Concepts

Ask students to raise their hands. Explain to them that this is a voluntary action. Each student made a decision to do what you asked. **Did you have to think about raising your hand and choose to do it?** Yes. However, your body does some things without choice. **What are some things your body does that are not voluntary?** Lead students to think about digesting food, or pulling their hands away from a hot stove.

#### Understand Visuals

 **How is the inside of a computer like your brain?** Sample answer: The inside of a computer tells the computer what to do, just like the brain tells body parts what to do.



#### Faith Connection

Remind students that our brains help our body parts to do their jobs. Ask students to think of things they did today that they used their brains to accomplish. Sample answers could be almost anything because we use our brains to talk, for movement, for reading, and so on.

## Your Brain Is the Boss Explain



#### Faith Connection


Our bodies are evidence of God's perfect design. Each body part has an important job to do. All the parts fit together and work together perfectly.

Your **brain** is an important body part. Your brain is inside your head. You use it to think, feel, and remember. Your brain tells other body parts what to do using nerves. Nerves are like messengers that send signals to your body parts. Then your body parts react to the signals.

Even when you sleep, your brain is at work. It tells your lungs to breathe. Your brain is in charge of your body!



Your brain allows you to read, think, and learn.

 **How is the inside of a computer like your brain?**

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### History of Science

Some involuntary actions are unconditioned. We do not need to learn to remove our hand from a hot kettle—it is an automatic reaction. But some involuntary actions can be learned. In 1904, Ivan Petrovich Pavlov was awarded a Nobel Prize in medicine. At that time, he was working on his theories of conditioned reflexes. In his research, he found that dogs would salivate when they encountered food. If he rang a bell at the time the dogs were given food, they would soon come to associate the sound of the bell with food. Once they had made this association, the dogs would salivate at the sound of the bell, even without food. Pavlov's dogs helped scientists understand how our experiences shape our behavior. Ask: **Are there certain sounds or smells that make you hungry?** Answers will vary. Explain that hunger is not a voluntary action.



## Power Up

People must eat food. Food gives you the energy you need to live. Many parts of your body help turn food into energy.



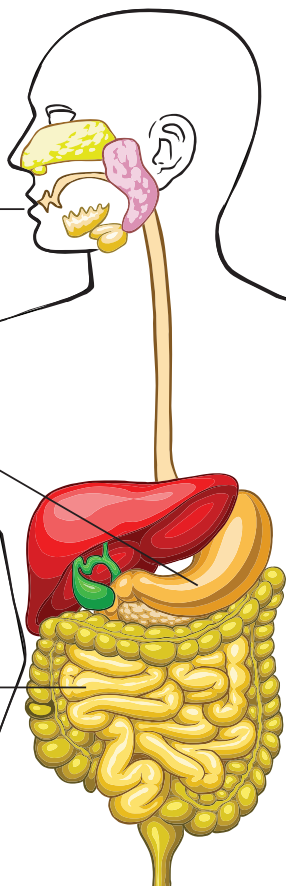
### Think About It

What might happen if you don't have enough to eat?

You chew food into small pieces, and then swallow.

The food goes to your stomach. Your **stomach** breaks food into smaller pieces. Acid in your stomach helps to digest the pieces of food and kills germs.

Food leaves the stomach and enters the intestines. The intestines break down the food more so that the body can use it. Food you do not use leaves your body. It is called *waste*.



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## English Language Learners

**Cognates** Write the words *stomach*, *estomac*, and *el estómago* on the board. Show that the noun *stomach* in English looks similar to the nouns in French and Spanish.

**Develop Vocabulary** Write the words *tooth* and *el diente* on the board. Although these two words look very different, other English words share the same roots. A dentist (*el dentista*) is someone who takes care of people's teeth. The words *dentist* (*el dentista*) and *dental* (*dental*) derive from the Latin word *dens*, which means "tooth."

## Power Up

### Objectives

- Identify food as an energy source.
- Describe the role of the stomach.

### Develop Key Vocabulary

**stomach** Children often use the word "stomach" to refer to the abdomen. Explain that the stomach is actually a pouch-like organ with two openings inside the body that they cannot see from the outside.

### Teach Science Concepts

After students study this section, ask them what they know about their stomachs. Ask them if their stomachs ever growl or feel full. Make sure they understand that they get hungry when their bodies need more food for energy.

Walk students through the process of eating food. Explain that they use their teeth to chew food. Chewing breaks down food, and saliva in the mouth starts the process of digestion. Then they swallow, and the food moves to the stomach where it is broken down even more. Special fluids in the stomach break the food into very tiny pieces, kill germs, and help energy move to other body parts. From the stomach, food travels through the intestines and is taken to where the body needs it. When the stomach is empty, people feel hungry.



### Think About It

What might happen if you don't have enough to eat? You won't have the energy you need to work and play.

## Explain (cont.)

### Take a Deep Breath

#### Objectives

- Identify oxygen as the part of air we need to breathe to live.
- Identify the job of the lungs.

#### Develop Key Vocabulary

**oxygen** Explain that air has a lot of parts that we cannot see. These parts are very tiny. Oxygen is the part of the air that our bodies use when we breathe.

**lungs** Explain that the lungs are just as important as the heart and brain. Without our lungs, we couldn't get oxygen and our hearts and brains wouldn't work.

#### Teach Science Concepts

Advanced students may want to know more about oxygen. Explain that it is one kind of gas. Helium is a gas used to fill balloons. Bubbles in soda are made of another kind of gas called carbon dioxide. The air around us is made of several kinds of gases mixed together. Point out that all plants and animals need oxygen for the same reason—to turn energy stored in food into a form the body can use.

#### Understand Visuals

🔍 **Place your hands on your chest and breathe in. How does your chest change when you breathe in and then out?**

Your chest expands or moves up when you breathe in (inhale) and compresses or moves down as you breathe out (exhale).



#### Scripture Spotlight

**Read Genesis 2:7. How did God make man?**  
God made man by breathing the "breath of life" into Adam's nostrils.

## Take a Deep Breath

Explain

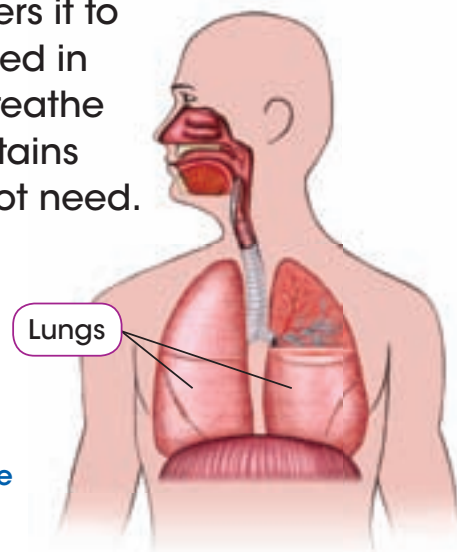


#### Scripture Spotlight

**Read Genesis 2:7. How did God make man?**

You breathe all day long. You take in air and then blow it out. **Oxygen** is the part of air that people need to live. Oxygen helps turn food into energy your body can use.

You breathe air through your mouth or nose. The air goes into your lungs. **Lungs** take oxygen from the air. The oxygen goes into your blood. The blood delivers it to where it is needed in the body. You breathe out air that contains gases you do not need.



You have two lungs in your chest. They help get oxygen into your body.

🔍 **Place your hands on your chest and breathe in. How does your chest change when you breathe in and then out?**

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### Science Background


The body uses oxygen to help transform food into usable energy. This process happens in the cells of the body. Cells break down sugars and form a molecule that the body can use for all its energy needs.

This process involves many other body parts. The lungs have to breathe in air. The oxygen from the air has to enter the blood and travel to cells. We also have to bring sugars into the body by eating. Sugars move from the stomach to the blood to cells. Then the body breaks down the sugars inside the cells.

When discussing this with students, they will probably not understand the concept of cells. It may be enough to tell them that oxygen helps turn sugars into energy, kind of like a plug and cord bring electricity for energy into a TV. Explain that without oxygen to supply energy, our bodies wouldn't work.



These friends are running.

 **How do you think their breathing changes when they are running?**

Your body can not store oxygen.  
You must breathe all the time. You  
breathe 16 to 30 times each minute!

You need more oxygen when you  
work harder.

You do not need to remember to  
breathe. Your brain tells your lungs  
when to breathe.



### Think About It

Your brain tells your lungs to breathe. Name another job your brain tells your body to do.

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## Teach Science Concepts


Explain that the body can not store oxygen. To demonstrate, have students take a deep breath and hold it for as long as they can.

**How did you feel while holding your breath?**  
**Did you want to breathe again?** Yes. Teach students that the body uses a lot of oxygen, so people always need to breathe more in.

## Incorporate Inquiry Practice

**Practice: Observe** Explain that we need to protect our lungs from damage. Ask students if they have observed people who wear masks in their jobs to protect their lungs from damage. For example, firefighters often wear facemasks to protect their lungs from smoke. People should wear a mask whenever they are in a very dusty environment. This is also why it is important to never smoke or use tobacco.

## Understand Visuals

 **How do you think their breathing changes when they are running?**

Students should respond that their breathing gets faster. If students need help answering, have them think about how they breathe when they are sitting in the classroom and how they might breathe if they were playing on the playground.



### Think About It

Your brain tells your lungs to breathe. Name another job your brain tells your body to do. Sample answers: to swallow, to blink, to draw a picture, to speak words

## Scaffolded Questions

Help students understand the importance of lungs.

**Approaching Level** Name a body part that you breathe air through.  
nose or mouth

**On Level** What part of the air do we need to live? oxygen

**Above Level** Why do we need oxygen? We need oxygen to turn our food into energy our bodies can use.

## I Can Be More Fit

Encourage students to complete the analysis of the data gathered in the Open Inquiry activity. Remind them that they should think like scientists and use the scientific process when creating explanations.



Reminder



## Explain (cont.)

### A Busy Heart

#### Objectives

- Describe the function of the heart.
- Identify the function of blood.

#### Develop Key Vocabulary

**heart** The heart works like a pump to move blood through the body.

**blood** Different parts of blood do different things.



#### Structured Inquiry

#### Discover

### How Many Heart Beats?

What makes your heart beat faster?

#### Preparation and Tips

Caution students to be careful when exercising if they have any health or breathing issues. Have students practice taking their pulse. To find your pulse in your wrist hold your hand in front of you. Stick your thumb up in the air and turn the palm towards you. With the first two fingers of your other hand, move from the top of your thumb down the side until your fingers reach your wrist. Move your fingers downward onto the inside of your wrist, and push gently to feel for your pulse.

**Predict** What will make my heart beat faster?



Have students use their *Science Journals* to record their work for this inquiry.

#### Inquiry Practice Tip

**Record Data** Students will exercise to make their hearts beat faster and record their results.

#### Expected Results

Exercise should increase students' heart rates.

#### Create Explanations

1. Sample answer: exercise
2. Sample answer: My muscles needed more blood to work as I exercised.

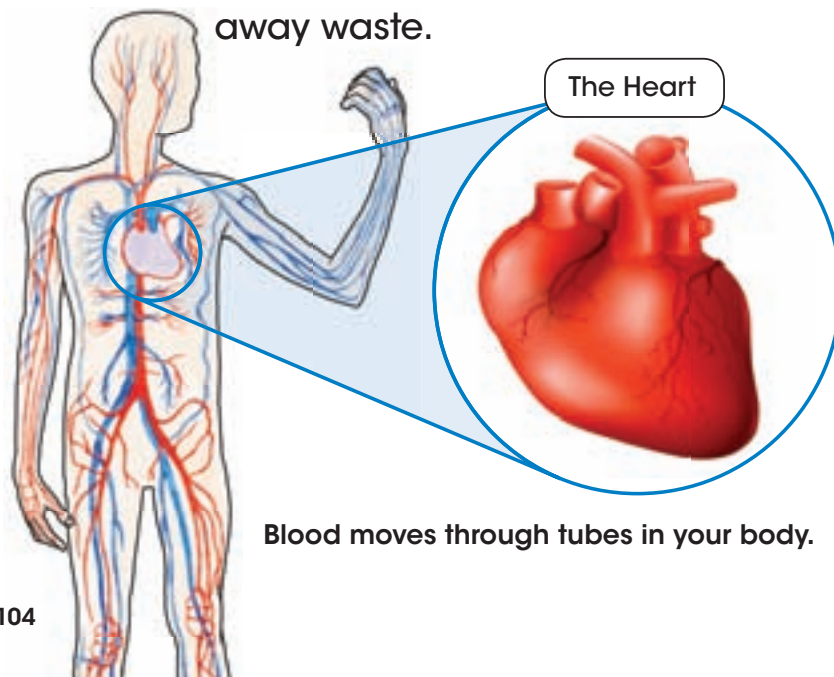


Check out your *Science Journal* for a Structured Inquiry about your heart beats.

#### Discover

## A Busy Heart Explain

Put your hand over your chest and feel the beats. This is your heart. Your **heart** is a muscle that pumps blood through your body. The **blood** carries food and oxygen to your body. Blood contains small parts called cells. Red blood cells carry oxygen. They make your blood look red. The liquid part of blood is yellow. The liquid part carries food and takes away waste.



### Science Background

One easy way of explaining that blood has many parts is to make a model. Gather a test tube or other clear, narrow container; yellow food dye; water; red beads; a funnel; and a stand to keep the tube upright. Fill the test tube about halfway with water, and put in the food dye. Explain that the yellow water is like the liquid in your blood that carries the other parts. Show the container of red beads. Explain that they are like the red blood cells that carry oxygen. Using a funnel, pour the beads into the test tube. Notice that it now looks red. Your blood looks red when you get a cut and bleed. **Can you see the blood cells then?** No. Blood cells are a body part too small to see. Have students draw a before-and-after picture of their beads.



When it is cool outside, your skin helps you stay warm. When it is hot, your skin sweats to help you cool down.

? What else do you think skin can do?

## A Colorful Cover

**Skin** is your body's cover. It keeps your other parts together. Skin guards your body. It also helps keep you from getting too hot or too cold.

The biggest part of your body is skin. It comes in different colors. It lets you feel the things you touch. It helps keep water and harmful things out of your body.



### Think About It

Why do you think skin is the biggest part of your body?



### Focus on Health

A bandage is used to cover a cut. It helps stop bleeding. It helps prevent germs from getting inside your body.

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## A Colorful Cover

### Objectives

- Identify the skin as the largest body part.
- Recall that the skin does many things for the body.

### Develop Key Vocabulary

**skin** Children may not realize the importance of skin to their health. Explain that skin is not just a pretty wrapping; it is an essential part of the body.

### Teach Science Concepts

Explain to students that skin does many jobs. It holds the insides in and keeps outside things out—including germs. When you are hot, special parts of the skin help you sweat, which cools you off. When it is cold, the skin helps keep in heat. **What happens when you get cold? Does your skin change?** Students may recognize they get goose bumps when it is cold outside. They might also get goose bumps when they are frightened. Skin helps us feel lots of things. We can feel hot, cold, and the things we touch.



### Think About It

**Why do you think skin is the biggest part of your body?** Sample answer: because there has to be enough to cover the entire body



### Focus on Health

Explain that God expects us to care for our bodies. He made our bodies so they heal and can fight off germs. However, we can help our bodies by keeping cuts clean and bandaged. Tell students that cuts can become infected if not properly cared for. Cuts can be an entryway that allows germs to enter the body. Cuts should always be washed out, cleaned, and bandaged.

### Understand Visuals

? What else do you think skin can do?

Sample answers: It helps keep harmful substances out of the body; it also helps keep us cool when it is warm.

## Science Background

Skin is made up of three layers—the epidermis, the dermis, and subcutaneous layer. These terms are probably too advanced for students, but they should understand that one layer is on top of the other two. The outer layer is the one they can see. It is smooth but tough. It keeps water out. This is why they can shower and the water runs off their skin. The outer layer is also the one that gives skin its color.

Students may want to compare the palms of their hands. The skin there has less color than anywhere else on the body. Even students with dark skin will have light palms. This is something all people have in common, no matter where they are from.



## Explain (cont.)

### Different Bodies

#### Objectives

- Identify that each person was created by God in his or her own unique way.
- Explain that we all have the same body parts, but that everyone looks different.

#### Teach Science Concepts

Babies all start out very small, but people can grow to different sizes. Some people are tall because others in their families are tall. Some people have dark-colored hair because one or both of their parents have dark hair. While people come in different shapes and sizes, God made everyone unique and in His image.



#### Think About It

**Why do you think some of your classmates are taller than others?** Students should respond that some classmates are taller than others because everyone grows at a different rate. So the classmates who are taller have grown quicker, so far. Students might also recognize that some people are naturally taller than others.

#### Explore-a-Lab Directed Inquiry

**Practice: Compare** Students will compare fingerprints with their classmates.

- 🔍 **How are your fingerprints alike and different from a classmate's?** Sample answer: There are fewer lines on my fingerprint than on one of my classmate's.



#### Think About It

Why do you think some of your classmates are taller than others?

## Different Bodies Explain

Each person is special. God loves you very much. He gave you the body parts you need to be happy and healthy. People do not all look the same, but they have the same body parts. All people are made in God's image.

Your body parts will grow until you become an adult. People grow at different speeds. One thing is sure—you will grow.

#### Explore-a-Lab Directed Inquiry

- 🔍 **How are your fingerprints alike and different from a classmate's?**

Use an ink pad and white paper. Press one fingertip onto the ink pad and then onto the white paper. Use a hand lens to compare your fingerprint with a classmate's.

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## Assessment Options

**Informal Assessment** Use the questions and features provided at point-of-use in the teacher wrap.

**Formal Assessment** Consider assigning the lesson review in the *Student Edition* or the lesson support page found as an *Online Teacher Resource*. The chapter test in the *Teacher Edition* may be used for formal assessment.

**Performance Assessment** Ask students to perform the task described below. Use the rubric on the next page to assess students.

**Task:** Show students a picture of a person. Have the students make a list of at least three parts they can see. Ask them to list at least three parts they cannot see. Tell them to include the part that helps break down and store food and that they should circle that word in the list. Provide a word bank.

## Make a Connection **Extend**

Your lungs are body parts that help you breathe. It is important to keep them healthy. Make a poster showing one way you can help keep your lungs healthy.

### Lesson Review **Assess/Reflect**

#### **Summary:** What are some parts of your body?

Your body is made of many parts, including a brain, heart, stomach, lungs, and skin. People have the same parts. But God made each person different and special. Your body will continue to grow.

- 1. Graphic Organizer** Draw a picture of two body parts you can see. Draw some inside body parts. Label them.
- 2. Vocabulary** What part of your body takes **oxygen** from the air?
- 3. Test Prep** Which does your brain do?  
**A.** removes waste      **C.** breaks down food  
**B.** carries oxygen      **D.** controls your body
- 4.** What happens to your breathing when you run?
- 5.** How do the lungs and the heart work together?



**Family Link** Look at pictures of when you and your family members were younger. How have each of you changed?

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**Rubric:** Use the following rubric to evaluate student performance.

**3**—Students list at least three body parts that can be seen and three that can not. The stomach is listed under parts that can not be seen and is circled.

**2**—Students list at least three parts that can be seen and three that can not be seen. They do not correctly identify the stomach as the part that helps store and break down food, or they put it in the wrong list.

**1**—Students list at least one but fewer than three parts in each list.

**0**—Students are unable to list any body parts.

## Extend

### Make a Connection

Discuss with students the importance of keeping their lungs healthy. Have them research ways to keep their lungs healthy, such as exercising and not smoking.

## Assess/Reflect

### Lesson Review

Read the essential question and lesson summary with students. Ask students if they have any questions about the summary. Then ask students what additional details they would add to it.

Assign the lesson review. Evaluate students' responses, and review concepts as needed. Sample responses are shown below.

- 1.** Students' pictures should include body parts they can see, like skin and eyes, and body parts they can't see, like lungs and the stomach.
- 2.** the lungs
- 3.** D
- 4.** Your breathing becomes faster when you run.
- 5.** The heart pumps blood to the lungs to put oxygen in the blood, which is then carried throughout the body.

**Family Link** To prepare children for this activity, send a note home asking parents or family members to gather photographs of themselves and other family members when they were young, as well as baby pictures of the students. Encourage them to spend some time making a family album or a framed collection showing how they all looked as they grew.

## Extend

### Set Goals

As students study this page, have them think about how important their eyes are to them.

### Dr. George Marshall Teach Science Concepts

We often take our vision for granted. When you are awake, your eyes and brain are seamlessly processing information.

To point out the incredible value of vision, do the following activity with students. Have several small beanbags. Begin by pairing students and giving each pair a beanbag. Have them stand a few feet apart and toss the beanbags to each other. Then have them gradually increase their distance.

Next, have students come closer together again and toss the beanbags again. Only this time, have them do it either with one eye closed or both eyes closed. If they are able, challenge them to move further apart. Have them compare the number of successful catches in each instance.

Students may not realize all of the amazing things vision allows them to do. Discuss with them how we use our vision every day and how dependent we are on it.

Be sure to point out that many people have vision impairments and learn to live well even though their eyes do not work perfectly. They compensate by using their other senses, using guide dogs, reading large-print books, or using braille.



### Called to Serve

Dr. Marshall uses his talent to help others see God's Creation. Discuss with students ways they can help honor God like Dr. Marshall.



### Concept Check

1. Sample answer: He uses the talent God gave him to help others see.
2. Sample answer: The eye has many parts that all work together perfectly.

## Extend

### Get to Know Dr. George Marshall

George Marshall is a scientist. He studies the eye. He learns about eye diseases. The human eye amazes Dr. Marshall.

The eye has many parts. All of the parts work together so you can see. **Matthew 6:22** says the eye is the light of the body. Dr. Marshall believes that the eyes prove God is the Creator. God made the eyes perfect.



### Called to Serve

Dr. Marshall uses his talent to help others see God's Creation.



### Concept Check

1. How does Dr. Marshall use his work to honor God?
2. How does the eye show Dr. Marshall that God is the Creator?

## History of Science

The field of ophthalmology traces its roots to the mid-1800s. In 1854, Hermann von Helmholtz, a Viennese scientist, invented the ophthalmoscope. This was the first tool that allowed people to see the interior of the eye. Ten years later, the American Ophthalmological Society was created.

Today the field of ophthalmology encompasses much more than correcting vision with eyeglasses. It also includes cutting-edge treatments for cataracts, glaucoma, macular degeneration, and other eye diseases.



## Careers in Science

Extend

### Optometrist

Many people wear glasses. An optometrist tells people if they need glasses. Optometrists do eye exams. An eye exam tests how well you can see. Optometrists look at your eyes to see if they work well. They check your eyes for diseases.

Optometrists work in offices. They have special tools. They can even look inside your eyes!



### Audiologist

Some people can not hear very well. They may visit an audiologist. The audiologist helps find out why people can not hear and works to find ways to help people hear better.

Sometimes the parts inside the ears do not work. To hear, the ears and brain must work together.



#### Concept Check

1. How are an optometrist and audiologist similar?
2. How can eye and ear exams help you to see and hear?

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### History of Science

No one knows for sure who first invented eyeglasses, but they have been in use since the 1200s. The earliest eyeglasses were far from comfortable. The lenses were made of quartz. The "frame" was often made of bone, metal, or leather. Earpieces to hold the glasses on the nose were not used until the 1600s. Before then, the lenses were pinched onto the bridge of the nose.

The invention of bifocals can be credited to Benjamin Franklin in the 1780s. Franklin grew frustrated with always having to switch glasses in order to be able to see. He had his reading glasses cut in half and fused with his distance glasses.

### Set Goals

As students study this page, have them talk about whether they would prefer to work as an optometrist, with vision, or as an audiologist, with hearing.

### Optometrist Teach Science Concepts

Although optometrists use many tools to examine your eyes, they still rely on the simple tool of an eye chart to measure visual acuity. The most typical eye chart used is the Snellen eye chart.

You can find copies of the Snellen eye chart online. Print copies and place them around the room, carefully measuring the necessary distance from the chart to where a student will stand. Then have students practice in small groups reading lines on the eye chart from a distance.

### Audiologist Teach Science Concepts

Audiologists work not only in the field of hearing, but also in balance assessment. The labyrinth in the inner ear is primarily responsible for balance.

Although there are very specific tests that audiologists may do to assess balance, you can explore balance in the classroom with a roll of masking tape.

Tape a straight line onto the floor that is 1 meter (4 feet) long. Challenge students to walk from one end to the other only stepping on the line. Next, tape a dot on the floor and have students stand on one foot on the dot for as long as they can. For an added challenge, mark three spots on the floor and challenge students to hop between them on only one foot.

**Caution:** Move furniture as far away as possible to avoid any injury.



#### Concept Check

1. Sample answer: They both work to keep people healthy.
2. Sample answer: They help identify problems and find solutions.