

MY BODY

MY BRAIN: NOT JUST FOR THINKING!

There's no doubt each student knows he uses his brain to complete schoolwork, but does he realize that his brain controls everything he does? Use this simple lesson to introduce students to several functions of the brain.

Students Will Learn:

- The brain is the control center of the body.
- The brain is a wrinkly gray mass.
- Different parts of the brain have different roles.
- The brain depends on blood to deliver oxygen to it.

Estimated Activity Time: 30–35 minutes

WORDS TO KNOW

brain: the control center of the body

coordination: to be able to move different parts of your body together easily

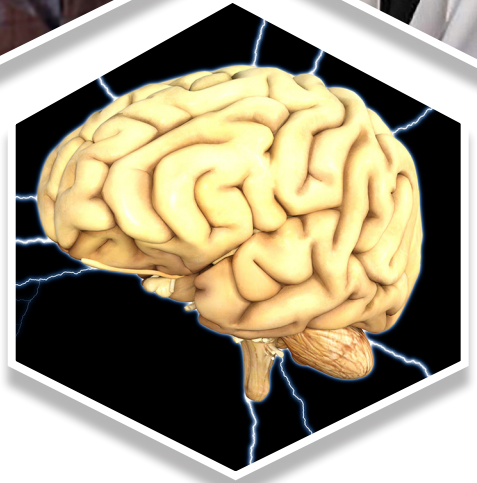
balance: allows your body to be steady without falling

oxygen: a gas that does not have any color or smell and is needed for plants and animals to live

circulate: to flow

Background Information

The human brain is only about the size of two fists put together, but it controls everything a person does. The wrinkly gray mass is the body's control center. Different parts of the brain control different aspects of life, such as thought, emotions, memory, balance, and even involuntary actions including breathing and shivering. The brain needs help to do all that, though. It depends on an oxygen-rich supply of blood. The brain receives about 20% of the body's blood supply. No other part of the body gets a bigger share.

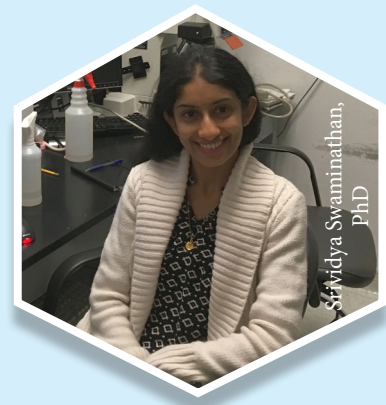


Materials:

slide 1 from the Classroom Presentation
copy of the “Brainpower” printable for each student
scrap paper for each student

Steps:

1. Tell students that they will learn about an important part of the human body. Explain that they will use this body part as they follow instructions. Give each student a piece of scrap paper. Then read each instruction below, in turn, and have each student follow it.
 - Write the numbers from 1 to 10.
 - Clap your hands five times.
 - Stand on one foot.
 - Tell a neighbor what you did after school yesterday.
 - Sit down.
2. Ask students to name a body part they used to follow each instruction. Guide each student to realize that he used his brain for all the tasks.
3. Explain that the brain is the boss of the body. It controls everything a person does. Different parts of the brain have different roles, such as thinking, coordination, balance, and memory. Point out that students use their brains all day, including when they complete schoolwork, listen to a story being read aloud, eat lunch, and play outside. Tell students that their brains work even when they are asleep. A person’s brain helps his body work well and controls actions that he doesn’t think about, such as shivering when he is cold.
4. Invite students to guess how big a person’s brain is. After youngsters share their guesses, have each student make two fists and hold them together. Explain that a person’s brain is about as big as two fists. Share slide 1 from the Classroom Presentation to show students what a brain looks like. Explain that the brain needs oxygen in order to work. It gets oxygen from the blood that circulates in our bodies.
5. Give each student a copy of the printable. Read the printable with students. Then have each student draw a daytime activity and an evening activity to show two activities for which he uses his brain. Ask him to write a title or short sentence to describe each illustration.



Building Better Blood

What better way to use brainpower than to help others? That’s exactly what Srividya Swaminathan, PhD, does. She specializes in important health-science research funded by The Leukemia & Lymphoma Society. She hopes that what she learns can be used to help children whose blood doesn’t work well.

Standards Covered:

CCSS.SL.K.1a: Follow agreed-upon rules for discussions.

CCSS.SL.K.2: Confirm understanding of information presented orally by asking and answering questions about key details.

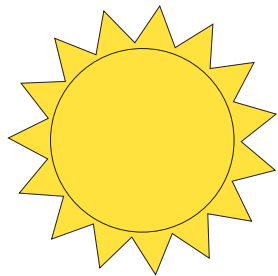
CCSS.W.K.2: Use a combination of drawing, dictating, and writing to compose informative texts in which they name what they are writing about and supply some information about the topic.

Name _____

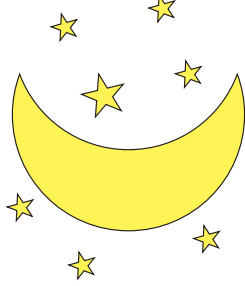
The Human Body: The brain

Brainpower

Draw and write.



Run, sit, eat, think, or play.
My brain is in control all
through the day.



Sleep, dream, or turn off a light.
My brain is in control all
through the night.

It's a fact!
The brain needs
blood to work.

“Brainpower”

Answer Key

Answers will vary.



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Grade K: My Body
My Brain: Not Just for Thinking!
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MY BODY

Includes
social-emotional
learning

MY HEART: PUMP THAT BLOOD

During this activity, students learn that the human heart isn't an ordinary muscle—it's a one-of-a-kind muscle that pumps blood throughout our bodies.

Students Will Learn:

- The heart is a muscle that pumps blood.
- Blood doesn't stay in one place in our bodies.
- Blood keeps our bodies alive.
- Exercise is important for a healthy heart and blood flow.
- Setting goals helps people succeed.

Estimated Activity Time: 45–50 minutes, 5–10 minutes follow-up

WORDS TO KNOW

muscle: part of the body that can contract (get smaller) to produce movement

heart: muscle that pumps blood throughout the body

pump: something that forces a liquid into or out of something

blood: fluid that moves around through the human body and carries oxygen and nutrients throughout the body

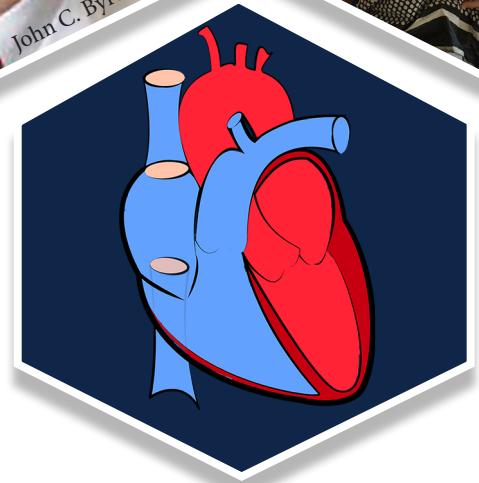
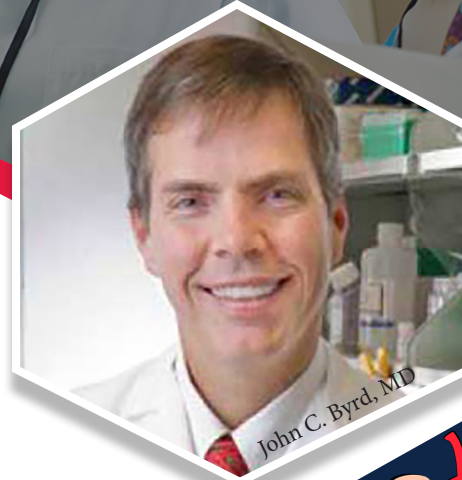
circulate: move around

oxygen: a gas that does not have any color or smell and is needed for plants and animals to live

goal setting: planning what you want to accomplish and when you want to accomplish it

Background Information

Your body has more than 600 muscles, but one is extra special. It's the heart. What makes the heart so unique? It's the only muscle that pumps blood throughout the body. We depend on blood to deliver oxygen and nutrients throughout our body. Without oxygen-rich blood, we cannot survive. That's why it's so important to have a healthy heart. If a person's heart doesn't work well, it might have a hard time circulating blood. Exercise is one way to improve heart and blood health.



Materials:

slides 2 and 3 from the Classroom Presentation
copy of the “A Great Goal” printable for each student
stack of heavy books
turkey baster for each small group
small bowl of water for each small group
red food coloring to tint water
paper towels for easy cleanup
jumbo heart cutout
old magazines
sentence strip
crayons
scissors
glue
class supply of provided exit tickets, cut apart

Steps:

1. Pick up the stack of books with exaggerated effort. Point out that you used muscles to complete the task. Tell students that they have a lot of muscles in their bodies. Comment that one muscle is extra special—the heart.
2. Tell students that the heart is different from the muscles that helped you lift the books because it works without you thinking about it. It works all day and all night.
3. Explain that the heart is unique because it is the only muscle that pumps blood throughout our bodies. Blood delivers oxygen and nutrients that our bodies need to survive.
4. Use the food coloring to tint the water red. Show students the turkey baster. Use a bowl of tinted water to demonstrate how the baster takes in a liquid and forces it out much like a heart pumps blood. Then divide students into small groups and have group members take turns using a turkey baster as you demonstrated.
5. Display slide 2 from the Classroom Presentation to show students a model of a heart. Then display the heart cutout within student reach. Point out that the cutout doesn't look like a real heart; it's a symbol.
6. Invite students to share their ideas about why it is important to keep their hearts healthy. Guide them to realize that if a person's heart isn't healthy, it might not be able to pump enough blood throughout his or her body. Explain that physical activity is important to heart health just as exercise is important to other muscles.



Helping Hand

Sometimes a person's blood doesn't work well even if he or she practices healthy habits. The Leukemia & Lymphoma Society (LLS) can help. LLS funds research for cures and improved treatments, provides valuable information, and offers a support community.

Social-Emotional Learning Tip: Why is goal-setting important?

When students set reasonable and specific goals, it

- teaches them to take responsibility for their own behavior
- promotes a can-do attitude
- provides an opportunity to learn the value of perseverance
- builds a foundation for a lifelong habit of working toward goals
- focuses efforts and increases the likelihood of achievements
- presents opportunities to experience and celebrate success

7. Suggest that setting a physical activity goal is one way for students to ensure that they keep moving. Display slide 3 from the Classroom Presentation. Direct students' attention to the photographs, and guide them to identify relevant goals and achievements, such as riding a bike without training wheels or climbing all the way across a set of monkey bars. Encourage students to discuss how they feel when they achieve something they worked hard for.
8. Give each student a copy of the printable and read it aloud. Have each student draw one way he or she likes to be physically active. Then guide each student to complete the goal sentence with a number between 2 and 7. Stress the importance of making goals that are reasonable.
9. Ask students to take the printable home, and encourage them to record their physical activity for a week by drawing a smiley face in a blank box each day they exercise. At the week's end, follow up with a class discussion about the physical activity students had throughout the week and how it made them feel. Encourage them to continue participating in regular physical activity for healthy hearts and blood. Use the printable certificate to recognize students' efforts in reaching their goals. If desired, wrap up this lesson by having each student complete one or both of the provided exit tickets.



Goal Setting for Kids

Even young children can be taught how to set and meet goals. One easy way is by using the following formula: *I will + what + when*. The “what” is the goal the child hopes to accomplish. The “when” tells when the child hopes to meet his or her goal. Teaching children this simple formula can help them gain self-discipline and stay motivated as they work to meet their goals.

Standards Covered:

CCSS.SL.K.1a: Follow agreed-upon rules for discussions.

CCSS.SL.K.2: Confirm understanding of information presented orally by asking and answering questions about key details.

Name _____

EXIT TICKET

Use the letters to write the word.

Today I learned that setting

_____ helps me succeed.

a g l o s

Name _____

EXIT TICKET

Use the letters to write the word.

The human heart pumps

_____ throughout my body.

o b d l o

Name _____

EXIT TICKET

Use the letters to write the word.

Today I learned that setting

_____ helps me succeed.

a g l o s

Name _____

EXIT TICKET

Use the letters to write the word.

The human heart pumps

_____ throughout my body.

o b d l o

Name _____

Social-emotional learning: Setting a goal

Date _____

A Great Goal

Being active helps your heart and blood work well.



shutterstock.com

Here is one way I like to be active:



I will be active _____ days in a week.

😊 = I was active!

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MY BODY

MY LUNGS: TAKE A DEEP BREATH

Students learn about the connection between lungs and blood with this hands-on lesson.

Students Will Learn:

- When we breathe in air, it goes to our lungs.
- Our blood picks up oxygen from the air we breathe in.
- Blood delivers oxygen throughout the body.

Estimated Activity Time: 30–35 minutes

WORDS TO KNOW

inhale: breathe in

lungs: body part involved in breathing

ribs: bones that form a cage around the heart and lungs to protect them

oxygen: a gas that does not have any color or smell and is needed for plants and animals to live



Background Information

What does breathing have to do with blood? A lot. When you inhale, you take in air and send it to your lungs. The heart pumps blood to the lungs, where it picks up oxygen from the air you breathe in. Then the blood delivers oxygen throughout the body.

Materials:

2 plastic sandwich bags for each student, plus 2 more
2 plastic drinking straws for each student, plus 2 more
tape
copy of the My Lungs printable for each student

Steps:

1. Instruct each student to put his hands on his chest and take a deep breath. Then have him breathe out. Explain that as he felt his chest expand and return to its normal size, he felt his two lungs at work. Lungs expand and contract like balloons. Special bones called ribs go around the lungs and heart to protect them.
2. Ask students to observe carefully as you take a straw, insert one end of it in a plastic bag, gather the top of the bag, and then tape the bag to the straw. Repeat with a different straw and bag. Then wrap a piece of tape around the upper part of the two straws to hold them together. Encourage students to imagine that the bags are lungs. Point to the straws as you explain that when a person breathes in air, it goes into two large tubes. One tube goes into the left lung and one tube goes into the right lung. Then blow air through the straws to inflate the bags. Let the air out. Repeat a few times as students watch.
3. Remind students that blood travels throughout their bodies. When blood goes to the lungs, it picks up oxygen from the air that was breathed in. Then the blood delivers the oxygen all around the body.
4. Give each student a copy of the printable. Remind students that they use their lungs all the time, especially when they blow up balloons, blow bubbles, or participate in physical activity. Read the caption and sentence starters with students. As students complete the sentences, circulate among them. If desired, help youngsters assemble models of lungs like the one you made.



Terrific Teams

Lungs and blood use teamwork to ensure that oxygen is delivered throughout the body. The Leukemia & Lymphoma Society (LLS) depends on teamwork too. LLS teams up with experts from the medical and science fields to make a positive impact on the lives of people whose blood doesn't work well.

Standards Covered:

CCSS.W.K.2: Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic.

Name _____

The Human Body: The Lungs

My Lungs

Follow your teacher's directions.



I use my lungs when I breathe. They help my blood get oxygen.

My lungs are _____

My lungs can _____

“My Lungs”

Answer Key

Answers will vary.



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Grade K: My Body
My Lungs: Take a Deep Breath
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MY BODY

MY BODY: AT WORK

This booklet activity recaps key information about the brain, heart, and lungs and highlights two roles that blood plays in our well-being.

Students Will Learn:

- Different parts of our bodies depend on each other to work well.
- Part of our blood fights germs.

Estimated Activity Time: 25–30 minutes

WORDS TO KNOW

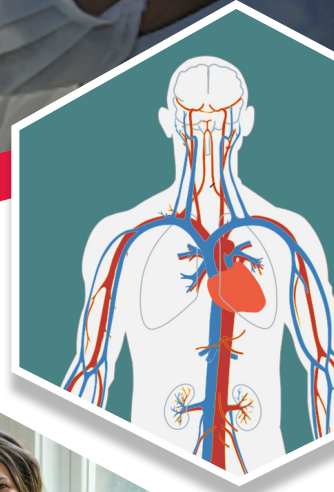
oxygen: a gas that does not have any color or smell and is needed for plants and animals to live

germs: very small living things that cause illness

Background Information

Our bodies are like machines. The parts do not work in isolation; they depend on each other to work well. Blood is necessary to keep the machine running well. The heart pumps blood throughout the body. Blood picks up oxygen from the lungs and delivers it to different parts of the body, including the brain. Another critical function of blood is fighting germs. Part of our blood fights germs to prevent illness and disease.

Irene Ghobrial, MD

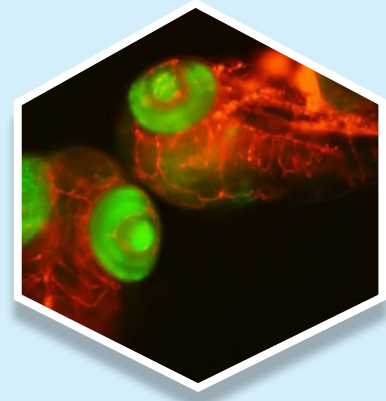


Materials:

slides 4–7 from the Classroom Presentation
copy of the “My Body at Work” booklet cover, pages, and word cards for each student
scissors for each student
crayons for each student
glue
stapler

Steps:

1. Use slides 4–7 from the Classroom Presentation to review the following information with students:
 - The brain is our body’s control center.
 - The brain depends on blood to supply it with oxygen.
 - The heart is a muscle that pumps blood around the body.
 - The lungs take in air. The blood picks up oxygen from the lungs and takes it to other parts of the body.
2. Remind students that the body is like a machine with many different parts. Each part has a job to do but the parts also work together. For example, the brain controls the body but it needs blood in order to work. Blood gives the brain oxygen. Explain that blood also has another important job—fighting germs to prevent illness.
3. Distribute the printables and scissors. Have each student cut out his booklet cover and pages and then stack his pages behind the cover. Staple the stack to make a booklet. Instruct him to cut out the word cards, set them aside, and then carefully discard the paper scraps.
4. Ask each student to write his name on the booklet cover. Read the title aloud. Invite students to share their ideas about what the title means.
5. Read page 1 with students two times. Guide them to use the illustration and text clues to determine the missing word. After students determine the correct word, have each youngster glue the correct word card in place. Continue with pages 2 and 3.
6. Read page 4 with students two times. After they glue the correct word card in place, have each student draw a self-portrait in the provided space.
7. Read the completed booklet with students.



Seeing Solutions

Innovation goes hand in hand with scientific research. One particular study funded by The Leukemia & Lymphoma Society is a great example. The study uses zebrafish to study blood cell development. Modeling blood cells in new ways increases the chances of finding better treatments for blood that doesn’t work well.

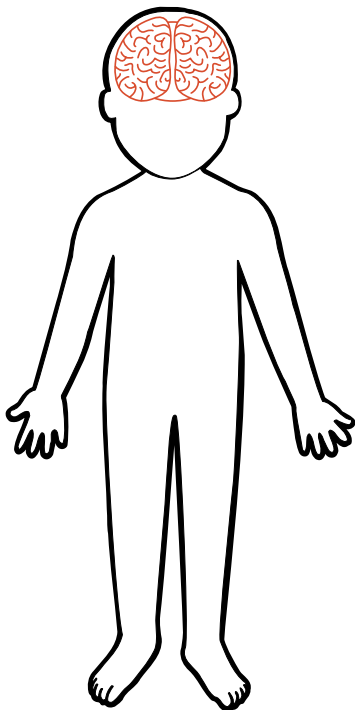
Standards Covered:

CCSS.RI.K.10: Actively engage in group reading activities with purpose and understanding.

CCSS.SL.K.2: Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.

My Body at Work

Name _____

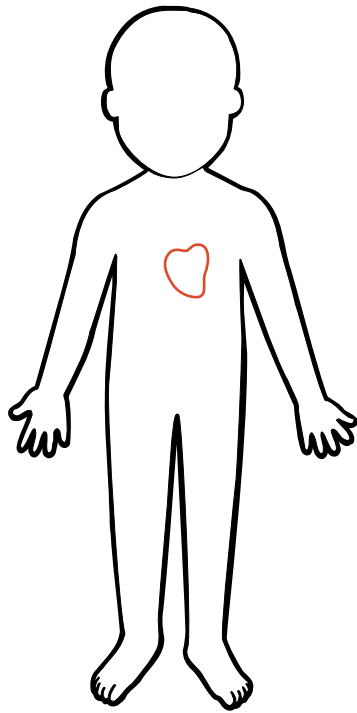


My controls all I do

When I laugh, play, or run.

It even works when I sleep;

Its work is never done!



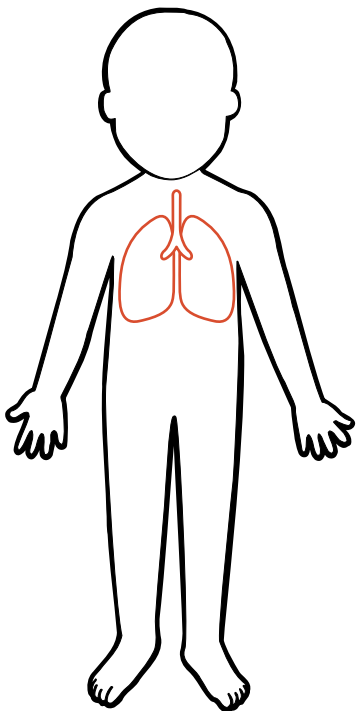
My is a special muscle

About the size of my fist.

It pumps blood all around my body—

Not one part is missed.

2



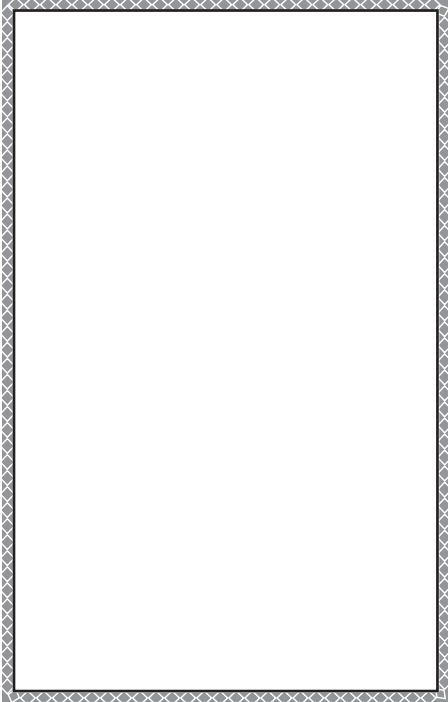
My help me breathe.

They take in fresh air.

My ribs go around my lungs

To protect them and take good care.

3



This is me!

My body is like a machine;

Each part has a job to do.

My  keeps it running;

It delivers oxygen and fights germs too!

lungs

brain

blood

heart

“My Body at Work”

Answer Key

Page 1: brain

Page 2: heart

Page 3: lungs

Page 4: blood

MY BODY

I WONDER!

Use the provided video clip and the follow-up activity to cultivate students' curiosity and interest in scientific research.

Students Will Learn:

- Curiosity is important in science.
- Asking questions is a key part of research.
- Words such as *how* and *why* are question words.

Estimated Activity Time: 50–55 minutes

WORDS TO KNOW

researcher: person who does a careful study in order to find out new information about a certain subject

scientist: person who is an expert in the study of how the world works and how living things live and grow

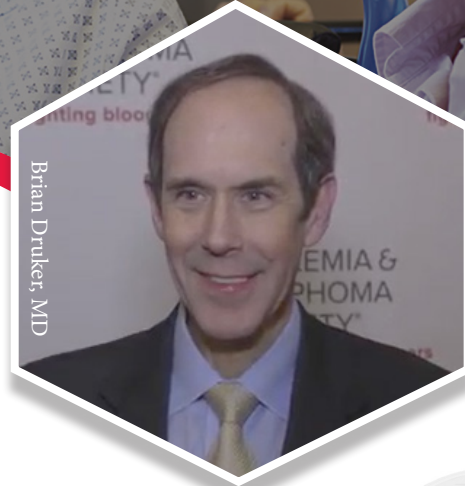
curiosity: strong feeling of wanting to know or learn

observe: watch closely

wonder: want to know

Background Information

The researchers featured in the video clip explain that their natural curiosity led to their interest in science. Their careers in scientific research provide opportunities for them to ask big questions and conduct research to find answers. Answers to questions such as “How do our bodies work?” and “How can we fix our bodies when they don’t work as they should?” have the potential to change other people’s lives.



Brian Druker, MD



Ross Levine, MD



Curiosity and questions are driving forces behind scientific research funded by The Leukemia & Lymphoma Society. The research is designed to find better treatments and cures for people whose blood doesn't work well.

Materials:

slide 10 from the Classroom Presentation
copy of the “I Wonder!” printable for each student
“Meet the Researchers” video
“Discover” poster
crayons

Steps:

1. Display slide 10 of the Classroom Presentation. Read the slide. Explain that the two scientists featured in the video do research to learn about certain illnesses. Their goal is to find better treatments or cures. Ask students to listen carefully to learn about the scientists’ work. Then click on the link and watch the video as a class.
2. Invite students to name qualities that the scientists believe are helpful in their work. Also guide students to describe positive aspects of being a scientist.
3. Comment that the human body is so complex, you have a lot of questions about how it works. Explain that one thing you’re curious about is blinking. Wonder aloud why people blink. Then pair students. Have each student observe his partner for a few moments and determine whether or not he blinks.
4. Invite students to tell what they observed. Explain that you read about the topic and learned that people blink for a few reasons. One reason is to keep their eyes from drying out. When a person blinks, his eyelids spread fluid over his eyes. Another reason people blink is to keep foreign objects such as dust out of their eyes. That is why people tend to blink more often when they’re outside on a windy day and a lot of dust or sand is in the air.
5. Tell students that you’d like to know what they’re curious about. Guide them to brainstorm questions on topics related to the human body, such as sneezes, yawns, laughter, hiccups, and goosebumps. You might also encourage students to brainstorm questions related to plants and animals.
6. Give each student a copy of the printable. Read the title and remind students that *wonder* means “want to know.” Then ask each student to draw in each box something he wonders about. Guide him to use a question word to write a relevant question for each drawing or to dictate questions for you to write.
7. Invite each student, in turn, to tell the class one of his questions. Display students’ papers along with the poster.

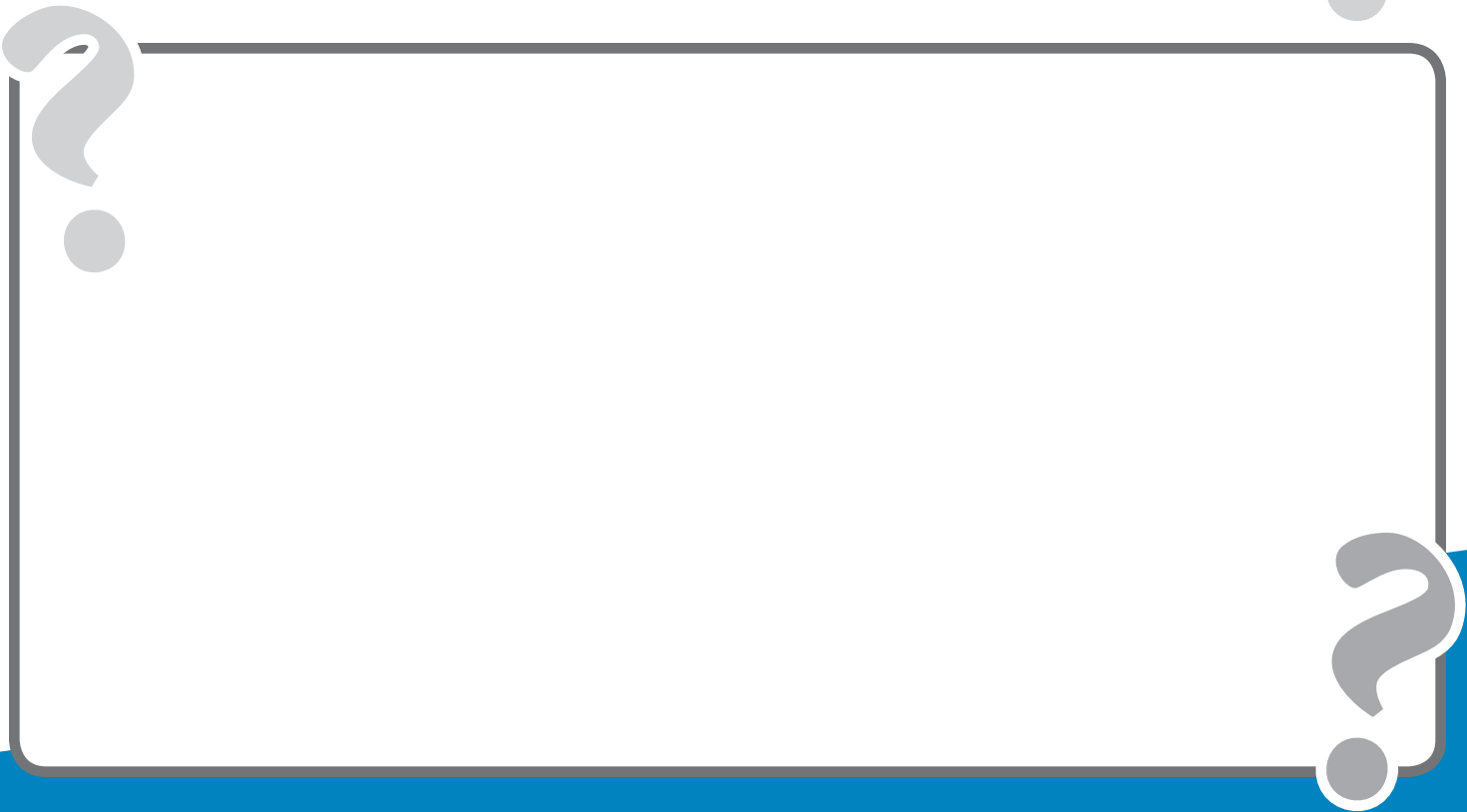
Standards Covered:

CCSS.SL.K.2: Confirm understanding of information presented orally or through other media by asking and answering questions.

CCSS.L.K.1d: Understand and use question words.

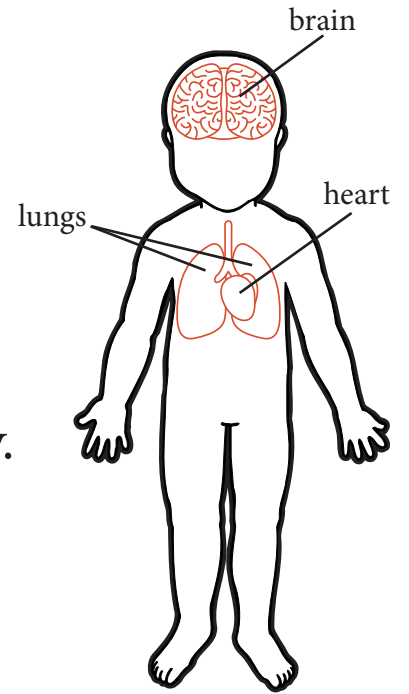
I Wonder!

Draw and write.



My Body

Cut.
Read each sentence with your teacher.
Find the missing word. Glue.



1. My is the boss of my body.

2. My carries oxygen.

3. My take in air.

4. My pumps blood.

Think about it!

How does blood help your body work?
Write on a different sheet of paper.

lungs

brain

blood

heart

“My Body”

Answer Key

1. brain
2. blood
3. lungs
4. heart

Possible written responses include

- Blood takes oxygen to different parts of my body. I need oxygen to live.
- My brain can't do its job without oxygen. It gets oxygen from blood.
- Part of my blood protects my body from germs.



Like a Car

Read with your teacher.

A car has a lot of parts. It has oil too. It needs oil to go. A car will not work without oil.



Your body has a lot of parts. It has blood too. You need blood to run. You need blood to play. Your body will not work without blood.



Circle.

Write.

1. A car needs _____ to work.
map oil wax

2. My body needs _____ to work.
candy soda blood

Did you know?

The Leukemia & Lymphoma Society gives money to others around the world to find better ways to help people whose blood does not work well.



Standard Covered

CCSS.RI.K.10: Actively engage in group reading activities with purpose and understanding.

“Like a Car”

Answer Key

1. oil
2. blood



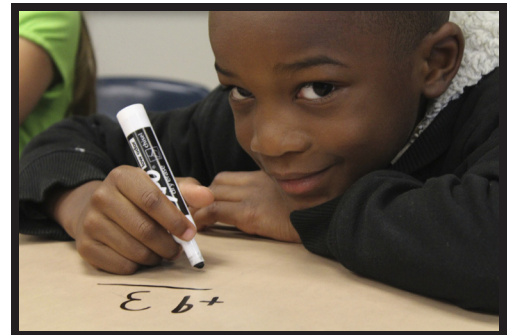
Your Brain: The Boss

Read with your teacher.

Make two fists. Put them side by side. That is about how big your brain is. Your brain is gray. Your brain is wrinkly.



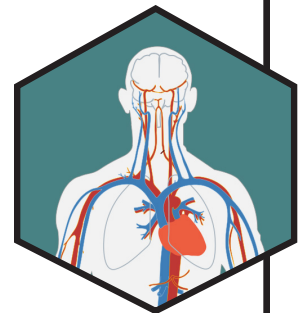
Your brain is the boss of your body. It is in control when you do school work. It is in control when you play. It is in control all of the time!



Circle.
Write.

1. My brain is about as big as two _____.
legs fists arms

2. My brain is in control _____ of the time.
all some part



Did you know?

The brain is in charge, but it needs help to do its work. It needs blood. The blood gives the brain oxygen. The brain receives more oxygen than any other part of the body.

Standard Covered

CCSS.RI.K.10: Actively engage in group reading activities with purpose and understanding.

“Your Brain: The Boss”

Answer Key

1. fist
2. all

Healthy Habits

Read with your teacher.

Run. Jump. Ride a bike. Exercise makes your muscles strong. Exercise helps your body work well.

Eat foods that are good for you. They help your heart work well. Your body works better when your heart is healthy.



Circle.

Write.

1. Exercise is _____ for muscles.
hot bad good

2. Some _____ help your heart and blood work well.
cake foods TV



Standard Covered

CCSS.RI.K.10: Actively engage in group reading activities with purpose and understanding.

“Healthy Habits”

Answer Key

1. good
2. foods



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Healthy Habits
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A Winner

Read with your teacher.

This is Storm. Storm loves to play ice hockey. One day he found out that he was sick. He was too sick to play hockey. He needed special care.

Storm was brave. He worked for months to get better. He did not give up. Finally, he played hockey again. Everyone was happy. They clapped and cheered. They were proud of Storm.



Write.

1. I think Storm was _____ when he could not play hockey.

2. I think people were proud of Storm because _____

Standard Covered

CCSS.RI.K.10: Actively engage in group reading activities with purpose and understanding.

“A Winner”

Answer Key

(Wording may vary.)

1. sad
2. he did not give up.

Hooray for Science!



Read with your teacher.

Did you know that science is all around you? There is science in how a TV works. There is science in how dogs run and play. There is science in how you grow and change!

Dr. Nichols uses science to help people. She studies how our bodies work. She studies why people get sick. She looks for new ways to help sick people get better.



Science is exciting to Dr. Gwen Nichols. She loves to learn how things work!

Science is not just for school. It is for helping people too!

Let's Talk About It!

Imagine that one day you have a job that involves science. What might that be like? Explain.

Circle.

Write.

1. Science is _____ around.

an all at

2. Dr. Nichols helps people who are _____.

sock sack sick

3. Science can be used to _____ people.

help TV dogs

Standards Covered

CCSS.RI.K.10: Actively engage in group reading activities with purpose and understanding.

“Hooray for Science!” Answer Key

1. all
2. sick
3. help



For the Teacher

Dr. Gwen Nichols’ interest in science was fueled by a biology teacher who helped her realize that what she was learning connected to the world around her. As a physician-scientist, Dr. Nichols uses her science knowledge to advance cures for cancers. Knowing that her efforts make a difference to real people motivates her to continue her work.

In her current role as the Chief Medical Officer for The Leukemia & Lymphoma Society, Dr. Nichols draws on her various clinical, academic, and pharmaceutical experiences. She oversees LLS’s scientific research portfolio, patient services, and policy and advocacy initiatives.

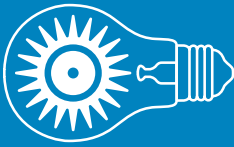
Prior to this role Dr. Nichols was the Oncology Site Head of the Roche Translational Clinical Research Center, where she worked to develop new cancer therapies. She also worked at Columbia University for more than ten years as the director of the Hematologic Malignancies Program.

Dr. Nichols’ honors include Physician of the Year from Columbia University and the Humanism in Medicine Award from the American Association of Medical Colleges.



When we breathe in, air goes to our lungs.

Red bone marrow makes cells for the body.



Think creatively.

DISCOVER



MAKE CONNECTIONS

Questions lead to answers.
Answers lead to breakthroughs.
That's the way we'll outsmart cancer.



Platelets help blood form clots to stop bleeding.



Discover new information.



Your body's largest organ is the skin; the skin helps protect you from germs.



Our blood delivers oxygen throughout our bodies.



Ask questions.

The circulatory system moves blood around the body.



The brain is the control center for the body



Learn all we can.

WHAT DO WE WANT TO KNOW?

WHAT DO WE KNOW?

Materials move in and out of cells through a process called diffusion.



With us you will learn about

Kindergarten:
My Body

Grade 1:
My Blood

Grade 2:
My Bones

Grade 3:
My Circulatory System

Grade 4:
My Cells

Grade 5:
My Immune System