The Human Body

Internet Lesson Plan
Grade level:  1-3

Teacher Activities

Goal:
To use Internet resources to explore interesting topics related to the human body and its major systems.

Objectives:
At the end of this unit, the participant will be able to:

• Describe the functions of the skeletal system.
• Form a simple human skeleton from spaghetti or macaroni.
• Tell how many bones the human body has.
• Name and locate the longest and shortest bones.
• Compare a human skeleton to a frog skeleton.
• List the different types of muscles and what they do.
• Explain how muscles provide movement.
• List the main parts of the central nervous system.
• Draw and label the four lobes of the brain.
• Categorize activities according to which part of the brain controls them.
• Compare the weight of brains in different animals.
• List the main parts of the circulatory system.
• Describe the texture, shape and color of a heart.
• Make a model of the heart from clay.
• Name the jobs of white and red blood cells.
• List the main parts of the respiratory system.
• Sketch the respiratory system showing how air is processed.
• Describe the function of the digestive system.
• Draw a picture of the digestive system.
• List the main parts of the digestive system.
• Create a food pyramid with the number of servings per day of each food group.
• Analyze what he/she ate by using the serving recommendations in the food pyramid.

**Duration:**

Two to three weeks, ½ hour to 1 hour each day.

**Instructional Strategy**

Students should work in pairs or small groups and use the Internet stations to locate information pertaining to the topics. They can also print out pages necessary to complete off-line activities. These activities provide an opportunity for older students with Internet experience to serve as mentors or tutors for the younger student groups, giving assistance with advanced vocabulary on some Internet sites. Students can keep research information on the human body in folders.

Students should be encouraged to do additional reading and research both on-line and off-line. These activities are designed to be interdisciplinary so that students can see connections between all subject areas.

**Prerequisite**

An introduction to the Internet, specifically the World Wide Web, on how to obtain information using specific addresses is needed as well as how to use a Web browser. Students should also be familiar with the concept of "hypertext" so that they can do research at several levels. If students do not have an extended period of time to complete their research, bookmarks can and should be used.

**Other Projects**

Projects that can be coordinated with this Internet activity are:

• Create a graph or chart that classifies class members according to eye color, hair color, skin color, height and other physical attributes.
• Read *Why I Cough, Sneeze, Shiver, Hiccup, and Yawn* by Melvin Berger.
• Read *The Human Body: How it Works* by Michael Gabb.
• Read *The Magic School Bus: Inside the Human Body* by Joanna Cole.
• Create a "Get Well" banner for a sick student.
• Create body part riddles.
• Make a picture dictionary by cutting out or drawing pictures of body words. Write definitions and make a book.
• Make a body flip book, illustrating a main body part on each layer such as skin/clothes, muscles, bones, organs and circulatory system.
• Make organ shape books. Trace an organ on construction paper and writing paper, then write about that organ in the book.
• Make a vocabulary word wall, adding word cards as you learn about them. Review daily.
• Sing "Head, Shoulders, Knees and Toes."
• Do "The Hokey Pokey."
• Read What's Inside? My Body by Angela Royston.
• Read The Human Body by Terry Jennings.
• Make an alphabet book of body parts, using a body part for each letter.
• Make body parts with paper mache.
• Make an organ T-shirt using shirt paint.
• Have a partner outline your body, including your head profile, on two pieces of butcher paper. Cut it out, staple the edges and stuff it with newspaper to make it three dimensional. Hang it from the ceiling.
• Play "Simon Says" using body parts.
• Teacher: Collect joints from a hardware store such as hinges, universal joints, and ball and socket joints. Ask students to compare them to joints in the body.
• Teacher: Ask students to bring in baby pictures. Put them on a bulletin board. Have students guess who's who and discuss how bodies grow and change.
• Teacher: Have a speaker from a local hospital or a paramedic visit your classroom.
• Teacher: Make an organ apron. Get an apron and make paper models of body organs. Have one child wear the apron and another child place each body organ where it would be found on the body.
• Teacher: Invite a pediatrician to speak to the class about immunization, bacteria, viruses and antibodies.
• Teacher: Invite an aerobics instructor or square dance caller to teach the fun and importance of exercise.

Activity #1: Boning up

• Imagine what bone Jack broke in the nursery rhyme "Jack and Jill." Draw a picture of his X-ray with chalk on black construction paper.
• Make a paper towel and toilet paper tube skeleton.
• Sing "Them Bones."
• List parts of the body that come in pairs, then count by twos.
• List parts of the body that come in sets of ten, then count by tens.
• Measure and compare body parts such as the skull, arms, fingers, legs and feet.
• Graph heights of classmates.
• Compare and contrast the human skeleton with different animal skeletons.
• To music, pretend to be a body with no bones, then pretend to be a body with no joints.
• Label parts of a skeleton with body part names on word cards. Match names with string.
• Compare and contrast a cooked chicken wing (with the meat off) with a human arm (bones, joints and movement).
• Make pipe cleaner skeletons by cutting and bending pipe cleaners to form bones. Glue these on a piece of construction paper.
• Read The Skeleton Inside You by Philip Balestrino.
• Read A Book About Your Skeleton by Ruth Belov Gross.
• Read Skeletons! Skeletons! All About Bones by Katy Hall.
• Identify an animal by its skeleton.
• Wear dark clothes. With a friend, use masking tape on your clothes to show where your bones are.
• Paint and label your bones using black construction paper and white paint.
• Survey and graph the number of students who have had broken a bone.
• Teacher: Have an orthopedic surgeon or a physical therapist visit the classroom to talk about bones.
• Teacher: Have a doctor or veterinarian show X-rays of bones.

Activity #2: Make a Muscle

• To music, pretend to be a body with no muscles.
• Make a muscle with your arm. Now put your other hand on the muscle and bend your forearm up and down. You are feeling your muscle move. Can you do this with other parts of your body?
• Write a story entitled "A Day in the Life of a Muscle," pretending to be a muscle. Illustrate your story too.
• Research how athletes exercise and train to make their muscles stronger.
• Examine a chicken leg. The part around the bone is muscle. Muscle is the lean part of meat.
• Make different muscles out of clay.

Activity #3: The Control Center

• To illustrate that the brain controls the body, make a collage in the shape of a head. Draw or cut pictures from magazines that show what the brain helps people do.
• Read Fingers Are Always Bringing Me News by Mary O'Neill.
• Create a story "A Day in the Life of a Brain."
• Design and personalize a pair of glasses. Write a story about these glasses.
• Read Glasses, Who Needs 'Em! by Lane Smith.
• Read Professor I.Q. Explores the Brain by Seymour Simon.
- Read *You and Your Body: Brain* by Douglas Mather.
- Generate a survey of students who have blue eyes, brown eyes, green eyes, glasses or no glasses. Graph your results.
- Read *Germs Make Me Sick* by Melvin Berger.
- Write a list of instructions explaining how to stay healthy.
- Put together a list of words that describe how children feel when they are sick.
- Pretend you are doctors who have discovered a cure for the common cold. Draw pictures and write explanations for your cure(s).
- Design your own T-shirts to advertise good health slogans.
- Read *Who's Sick Today?* by Lynn Cherry.
- Pretend you are a doctor writing a letter to a patient with a cold. Describe what to do to feel better.
- Read *I Can Be a Doctor* by Rebecca Hankin.
- Teacher: Display a sign language alphabet chart. Work in pairs to spell out messages by "signing" for the rest of the class to interpret.
- Teacher: Pop popcorn and have the students describe what their brain is telling them about the way it looks, smells, tastes, sounds and feels.
- Teacher: Read aloud *The Listening Walk* by Paul Showers. Take the class on a walk around the block and listen. Have the children list the different sounds their brain helps them hear.
- Teacher: Divide students into small groups and give each group a sealed bag full of fruits and vegetables. After the students have examined the contents of the bags, have them describe how each bag is the similar and different.
- Teacher: Have a doctor visit the classroom to discuss how to stay healthy.
- Teacher: Create a bar graph with your students entitled "Have You Had Chickenpox?"

**Activity #4: What goes 'round**

- Use a paper towel cardboard tube to listen to a partner's heartbeat.
- Count how many times you can open and close your hand in a minute. Record data. How is this like the beating of your heart?
- Listen to your heart with a stethoscope.
- Find your pulse on your neck and wrist. Compare your heart and pulse rates while you are resting and after running in place for five minutes. Take your blood pressure. Keep a record of your heart rate for two weeks.
- Plan meals that are healthy for your heart.
- Create a poster with a healthy heart message. Hang it in the school hall.
- Trace the path of blood through the heart and lungs.
Activity #5: Take a deep breath

- Measure your chest after you inhale and then after you exhale. Compare your measurements.
- Create a word search using parts of the respiratory system such as nose, trachea and lungs.
- Breathe into a balloon. See and feel how your lungs expand and contract as the balloon expands and contracts.
- Make paper lungs with small brown paper bags.
- Draw a picture of the respiratory system on cardboard. Cut into pieces to make a puzzle.
- Count how many times you breathe per minute while sitting. Count how many times you breathe per minute after exercising for five minutes.
- Teacher: Ask a speaker from the American Lung Association to visit your class.

Activity #6 : Food for Thought

- Reach into a bag and try to identify the mystery fruit or vegetable.
- Compare the teeth of different animals such as a horse, cow, mouse, shark and human. Discuss what kinds of food they would eat.
- Make a mobile which displays the basic food groups.
- List which foods help you feel better when you have a stomach ache.
- Show how our digestion works by filling a clear glass jar with warm water, then place a piece of bread in the water. Screw on the lid, shake up the jar and observe what happens.
- Create a list of your favorite things to eat.
- Keep a daily journal of what you eat.
- Write a story entitled "A Day in the Life of a Stomach."
- Teacher: Have a paramedic demonstrate the Heimlich maneuver to the class.
- Teacher: Take a school lunch and put it in a blender. Show the liquids and the solids, then mix it up. Explain that this is similar to what happens in their stomach.
- Teacher: Divide students into pairs and have them look into each other's mouth. Use a flashlight if necessary. What kind of teeth do they see? What do the tongue and throat look like? Have them draw a picture of the inside of a mouth.

Software Connections

- Writing and More: Observing People, Places, and Things. Students can study and write about health professionals and facilities in the community.
- Writing and More: Telling About a Character's Actions. Students can choose to write about the activities of the human body.
• **Writing and More: Reporting an Event.** Students can act as a reporter visiting the human body.
• **Writing and More: Describing an Event.** Students can describe the events that occur in the body.
• **Stories and More: My Five Senses.** Students can read this story about a child who shows how he uses his five senses in the world.

**Materials Needed by Teacher**

For Internet activities:

• paper
• pencils, crayons and markers
• construction paper
• macaroni or spaghetti
• clay

For other activities:

• paper
• pencils, crayons and markers
• scissors
• T-shirts and paints
• glue
• yarn
• mirrors
• newspaper and magazines
• butcher block paper
• hardware joints
• apron
• paper towel and toilet paper tubes
• string
• cooked chicken wing
• pipe cleaners
• masking tape
• construction paper
• white paint
• cooked chicken leg
• sign language chart
• popcorn
• self-sealing plastic bags
• fruits and vegetables
• stethoscope
• blood pressure cuff
• poster board
• tape measure
• balloons
• small paper bags
• cardboard
• clear glass jar
• bread
• blender

Teacher Notes

Get your students ready for a magical tour of the human body and some of its complex systems. Each activity focuses on a component of the body. Students with limited reading skills will need assistance in understanding some of the materials presented on the Web.
The Human Body

Student Activities

Activity #1: Boning up

Did you know that the human body has 206 bones? Bones are hard, and they help give us our shape. All our bones together are called our skeleton.

• Find out about the skeletal system at "Onhealth: Skeletal System" at http://www.healthnet.ivi.com/bh/anatomy/htm/tc6d161.htm. View the skeleton from the front, then click on "next image" for a rear view.
• Each bone in our body has a name. To learn some of their names, go to "Click on the Bones and They Will Speak" at http://www.cs.brown.edu/people/oa/Bin/skeleton.html. Click on a bone in the human skeleton and hear its name.
• Use macaroni or spaghetti to form a simple human skeleton.
• To learn interesting facts about the skeletal system, go to "NJ Yucky: Skeletal System" at http://www.nj.com/yucky/body/systems/skeletal/. What is the longest bone? What is the shortest bone?
• Select a bone to measure on your body. Have a friend do the same. Compare your results.
• Do you have the same number of bones you did when you were born? Why or why not?
• Who do you think has more neck bones? You or a giraffe?
• First look at the human skeleton at "Click on the Bones and They Will Speak" at http://www.cs.brown.edu/people/oa/Bin/skeleton.html. Then compare it to the skeleton of a frog at "Virtual Frog Dissection Kit: The Whole Frog" at http://george.lbl.gov/ITG/Whole.Frog/frog/frog.anatomy.html. How are the skeletons the same? How are they different?
• Bonus activity: Find out what happens when you sprain your ankle. Go to "NJ Yucky: Sprained Ankle" at http://www.nj.com/yucky/body/yuckystuff/anklesprain/.
Activity #2: Make a Muscle

Wave your arms in the air. Now, lift your pinkie finger just a tiny bit. Did you know that your muscles made you able to make those big movements with your arms and that very small movement with your pinkie?

Muscles move bones and help our whole bodies move. Muscles also give us strength. They are wrapped around our bones. They work like rubber bands. They pull hard on the bones so that body parts can move. Without your muscles you could not throw a ball or color a picture. You could not even eat a cookie!

- Look at a picture of the muscular system at "onhealth: Muscular System" at http://www.healthnet.iv.com/bh/anatomy/htm/tc6d160.htm. View the muscular system from the front, then click on "next image" for a rear view.
- Read about the different kinds of muscles at "Scenic Heights Elementary School and The University of West Florida Curriculum Project: The Muscular System" at http://science.cc.uwf.edu/sh/curr/muscle/muscle.htm.
- List each type of muscle and describe what they help you do.
- Find the answers to the following questions at "NJ Yucky: Muscular System" at http://www.nj.com/yucky/body/systems/muscular/: What do muscles do? How many muscles do you have? How much of your weight is made up of muscles? How do muscles move? Can you hurt muscles?

Activity #3: The Control Center

Everything you do is controlled by the brain. Running down from the base of your brain through the middle of your back is your spinal chord. It is made up of thousands of nerves that send messages all over the body. The brain controls everything your body does through these nerves.

- To find out how the brain controls everything, go to "Neuroscience for Kids: Lobes of the Brain" at http://weber.u.washington.edu/~chudler/lobe.html.
- Draw the brain with its four sections: Frontal, Parietal, Occipital and Temporal. Each part of the brain is responsible for specific actions:
  - Frontal - feelings, planning, problem-solving, movement and talking
  - Parietal - touch, pain, hot and cold, and pressure
  - Occipital - sight
  - Temporal - hearing and memory
- Make a chart for each part of the brain. Place each action on the appropriate chart.
  - Hurting after scraping your knee
  - Planning what you are going to eat
  - Talking on the telephone
  - Feeling cold after diving into a pool
  - Remembering last year’s vacation
  - Figuring out how to open a box
- Laughing at a movie
- Jumping rope
- Feeling the soft fur on a puppy
- Being able to walk in the dark
- Hearing a bird sing
- Seeing a yellow ball

• Guess how much your brain weighs. How close were you to three pounds? What do you think the following animals' brains weigh? Make sure to think about how big the animals are and how smart they are too!
- Dog
- Elephant
- Rabbit
- Horse
- Hamster

• See how you did in your guesses by going to "Neuroscience for Kids: Brain Facts and Figures" at http://weber.u.washington.edu/~chudler/facts.html#brain. Well, how did you do?

**Activity #4: What Goes 'Round**

Find your pulse on your neck or your wrist. Does it ever stop? Of course not! The pulse is part of the circulatory system, which moves blood to your heart and throughout your body. The circulatory system is made up of the heart, blood vessels, capillaries and arteries.

- Draw a heart. Does it look like one on a Valentine's Day card?
- What does a heart really look like? How much does it weigh? Which is bigger - the heart or the brain?
- Go to "The Heart: An Online Exploration: Cardiovascular Pathology" at http://www-medlib.med.utah.edu/WebPath/CVHTML/CV001.html to see a real human heart.
- Describe the color, texture and shape of a real heart. Using clay, make a model of a heart.

Where is the heart? Where does the blood circulate? Your heart pumps blood throughout your body. There are two types of blood cells moving about - red and white. They feed your body and take away wastes as well as serve as the body's "army."
• Beside each job, write which type of blood cell does it.
  ✓ Carry oxygen or food to your lungs
  ✓ Find germs
  ✓ Eat foreign things in your body
  ✓ Take carbon dioxide or waste away
  ✓ Kill infections
• What do you think happens when you are sick? Which blood cell type is the busiest?
• Bonus activity: What can you do to have a healthy heart? Find out at "The Heart: An Online Exploration: A Prescription for Living" at http://sln.fi.edu/biosci/healthy/healthy.html. Make a list of activities that you can do to be healthy.

**Activity #5: Take a Deep Breath**

What happens if you run out of breath either when you run too fast or hold your breath under water? You take deep breaths for more air. We must breathe in air to live. But why and where does it go?

You can think of air or oxygen bringing food to our body. One other system helps feed the body as well. Can you remember which one? That's right - the blood in the circulatory system! The circulatory and respiratory systems work very closely in removing carbon dioxide (waste) and bringing oxygen (food) from and to the lungs.

• To find out about the respiratory system, go to "Asthma" at http://galen.med.virginia.edu/~smb4v/tutorials/asthma/asthma1.html.
• What parts make up the respiratory system? List them.
• Read about what happens to air after we inhale or breathe it at "onhealth: Respiratory System" at http://www.healthnet.ivi.com/bh/anatomy/htm/tc6d166.htm.
• Now go to "Scenic Heights Elementary School and The University of West Florida Curriculum Project: The Human Respiratory System" at http://science.cc.uwf.edu/sh/curr/respiratory/respiratory.htm.
• Read about the respiratory system and answer these questions:
  ✓ What is breathing?
  ✓ How does your nose help the respiratory system?
  ✓ What is the trachea? What does it do?
  ✓ What do lungs look like? What happens there?
  ✓ What muscle makes air come in and out of our lungs?
• Sketch your own respiratory system. With a red marker show how air flows through your body.
• Bonus activity: Learn about asthma, a disease of the respiratory system. Go to "Asthma" at http://galen.med virginia.edu/~smb4v/tutorials/asthma/symptom.htm. Study the diagram of the respiratory system. Click on one of the girls to hear what it feels like to have an asthma attack. What are some of the symptoms?

Activity #6: Food for thought

The food that you swallow goes on a long journey through your body - from your mouth, to your esophagus, to your stomach, to your small intestine and onto your large intestine. What is not needed leaves your body.

• Find out about what happens when you eat something and the path it takes through your body. Go to "Human Anatomy On-Line: innerbody.com" at http://www.innerbody.com/htm/body.html. Click on the illustrated digestive system. (It is in the top row, the second box from the left.)
• Draw a picture of the digestive system.
• Move the mouse over the picture on the Web page. You will see little green/yellow/red/black spots which will display the names of the parts.
• Label the names of the different parts on your drawing.
• Check out the guidelines for a nutritious, balanced and yummy diet. Find out what you should be eating and how much at the Web page "Food Pyramid" at http://ganesa.com/food/foodpyramid.html.
• Find out how much you should eat from the following categories each day by clicking on them:
  ✓ Fats
  ✓ Milk
  ✓ Meat
  ✓ Vegetables
  ✓ Fruits
  ✓ Breads
• Draw an empty food triangle and label it with the different food groups. Write each food you ate in the groups where it belongs. How did you do? Are you eating nutritiously?
• Find fun facts about digestion and take a food journey through your body at the Web page "Your Gross and Cool Body: Your Digestive System" at http://www.nj.com/yucky/body/systems/digestion/.
• Trace the route that food takes through your body using the picture you drew of the digestive system. How long does food stay in each area?