

My Body

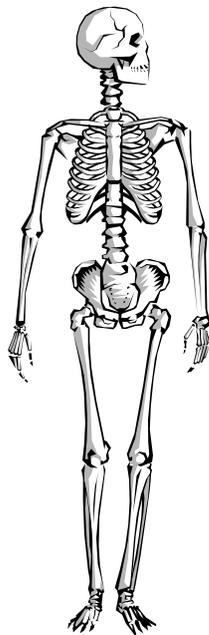


My Health

A Collection of Learning Experiences

My Body Works Together

Teacher Guide



Grade 1

Cattaraugus Allegany BOCES

Development supported by Cornell Cooperative Extension

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MY BODY WORKS TOGETHER

GRADE 1

Unit Overview

Students will identify major body parts and their functions, identify basic needs of living things, describe how senses help the body, describe the location of the heart and lungs and how they contribute to body function, skeletal parts, and examine how healthy food and exercise contribute to a healthy body.

The skills emphasized in the kit are observing, discussing, describing, comparing, classifying, brainstorming, interpreting data, making decisions, manipulating materials, and measuring.

Scheduling

This unit may take from five to nine weeks to complete depending upon the goals of the teacher and interests of the students. Use of the section included in this manual called More Ideas may extend the time span of this kit.

Materials to be obtained locally:

drawing paper	markers
crayons	chart paper
butcher paper	construction paper
pencils	colored pencils
scissors	tape
brown paper bags	

Caution

Remind students to wash their hands after handling any of the materials in the kit.

About the Format

Each learning experience is numbered and titled. Under each title is the objective for the learning experience.

Each learning experience page has two columns. The column on the left side of the page lists materials, preparations, basic skill processes, evaluation strategy, and vocabulary. The right column begins with a "Focus Question" which is typed in italicized print. The purpose of the "Focus Question" is to guide the teacher's instruction toward the main idea of the learning experience. The "Focus Question" is not to be answered by the students. The learning experience includes direction for students, illustrations, and discussion questions. These discussion questions can be used as a basis for class interaction.

Background Information

Basic Needs

All organisms require basic needs to be met for survival. **Food** is one of those basic needs. Some animals, like humans, eat plants for food while some animals eat other animals as their food source. Some animals eat both plants and animals. Organisms also need **water**. Some desert animals get water from the food they eat, but most animals need to drink water. Another need of animals is **shelter**. Holes in the ground, holes in trees and rocks and/or caves are all examples of places animals may go to hide from predators or seek shelter from extreme temperatures. **Air** is another other basic needs. Oxygen is required for animals and carbon dioxide and oxygen is required for plants. All organisms occupy **space**. Animals move around in their space to find the things that meet their needs. The species of animal and the availability of the animal's needs determine the amount of space needed.

Five Senses

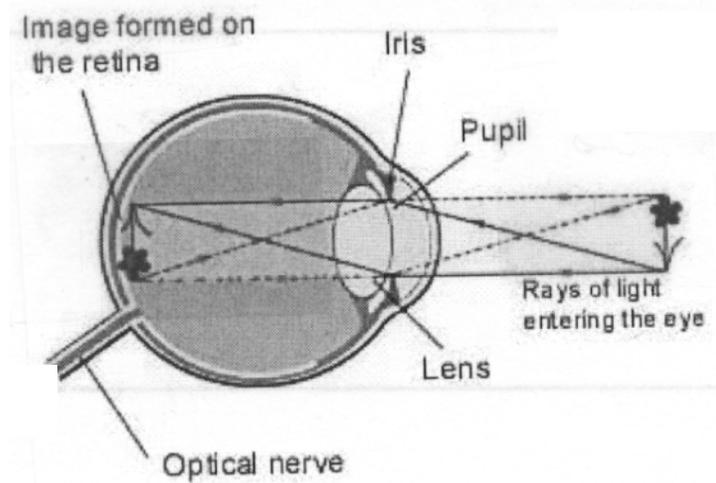
The senses help us learn about the world around us. Without the information we receive through our five senses, we would not be able to function. Each sense is important, but each has limitations. One sense can be used to make up for another that is injured or harmed. The way to receive information most effectively is to use all our senses.

Another important aspect of learning about our senses is to become aware of physical handicaps and/or illnesses that may make it difficult for people to use their senses, though this does not make people different or lesser. The gift of our five senses to understand the world we live in must be protected and cared for.

Sight

Your eyes are optical instruments. They can tell different objects apart, adapt quickly to variations in light, and can focus automatically. The eye lets light in through the **cornea**. We cannot see objects without light. The cornea provides most of the focusing power when light enters the eye. The iris controls the quantity of light allowed in. The **iris** is the colored part of the eye. The iris controls the pupil by contracting or expanding the muscles of the iris. The **pupil** is the black circle seen in the center of the eye. It is similar to the shutter of a camera by controlling the amount of light that enters the eye. When in a bright environment, the pupil becomes smaller to allow less light through. When it is dark, the pupil expands to allow more light to reach the back of the eye. The **lens** of the eye provides focus to the light entering the eye. The light then reaches the **retina**, which lines the wall of the eye and acts like film in a camera. The retina sends images to the **optic nerve** in the form of electrical signals to the

brain. The eye forms a reversed image, however, at the beginning of our development, our brain learned to turn the image right side up and interpret it.



Your perception of the world is based upon how the brain interprets the sensory clues it receives. Your sense of sight can trick you. These are called **optical illusions**. The cues deceive us into thinking we see something that isn't even there.

Hearing

The ear has three separate sections -the outer ear, the middle ear, and the inner ear. Each section performs a function related to hearing or balance. The **outer ear** contains three parts -the pinna, ear canal, and eardrum. The **pinna** collects sound waves from the air and funnels them into the ear canal. The **ear canal** is a curved corridor that leads to the eardrum. The eardrum separates the external ear from the middle ear. The **middle ear** is an irregular-shaped, air filled space. A link of three tiny bones, the **ossicles**, spans the middle ear. As sound waves strike the outer surface of the **eardrum**, it vibrates. The vibrations are transmitted through the middle ear by the ossicles. The **hammer** is the first ossicle to receive vibrations, which then passes to the second ossicle, the **anvil**. The third ossicle, **stirrup**, relays the vibrations to a membrane covering the opening of the inner ear. This membrane also transmits vibrations. The vibrations enter a fluid that fills the **cochlea**. This coiled tube houses the true mechanism of hearing, the **organ of corti**. When vibrations pass into the inner ear, they cause waves in the cochlear fluid. Receptor nerve cells send the impulses to the brain where sound is identified.

Taste

The **tongue** has more nerve endings per square centimeter than any other areas of the body. The nerve receptors are called **taste buds**. They are located in and around the tiny bumps on the surface of the tongue called the **papillae**. The taste buds are sensitive to salty and sweet tastes around the tip of the tongue. The taste buds that detect sourness tastes are found on either side of the tongue. The taste buds at the back of the tongue detect bitterness. It is a combined function of smell and taste that help us recognize the flavor of foods. The tongue moves food around in the mouth during chewing and it moistens the food with saliva. During swallowing, the tongue contracts and pushes food back toward the pharynx. The tongue is also an organ of speech. The tongue helps in the formation of sound.

Sense of Smell

Our sense of smell is our most primal sense. Animals need their sense of smell to survive. The average person can discriminate between 4,000 to 10,000 odor molecules. We breathe in airborne molecules that travel to and combine with receptors in nasal cells. The **cilia** are the hairlike receptors that extend from cells inside the nose. They are covered with a thin, clear mucus that dissolves odor molecules not in vapor form. When you put food in your mouth, odor molecules from that food travel through the passage between your nose and mouth to **olfactory cells** at the top of the nasal cavity. If mucus in your nasal passages becomes too thick, air and odor molecules can't reach the olfactory cells. The brain receives no signal identifying odor. This is what occurs when you have a cold and all foods seem to taste the same or have little taste.

Sense of Touch

The sense of touch consists of five sensations: touch, pressure, pain, heat, and cold. The nervous system detects pain, touch, heat and cold and instantly passes these findings to the brain. The nerve endings that detect pain are the most numerous, followed by touch then heat and cold.

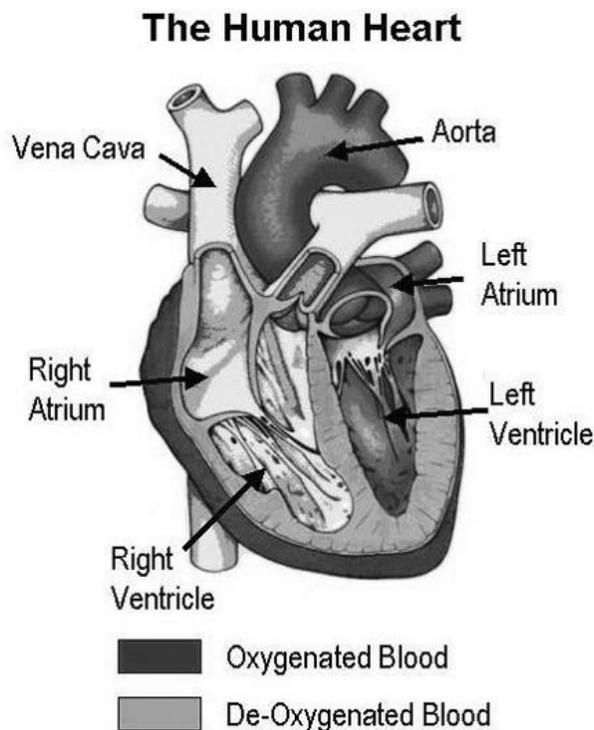
The skin contains two main layers: the dermis and the epidermis. The epidermis is the outer layer of skin formed by the cells constantly being pushed up toward the surface. The dermis contains the blood capillaries, nerve endings, fat cells, sweat glands, roots of hairs and other loose connective tissue.

The Heart

The movement of the blood through the heart and around the body is called **circulation**. The heart is part of the **circulatory system**. It only takes about 20 seconds to pump blood to every cell in your body. Your body needs this steady supply of blood to keep it working properly. The blood also gets rid of waste that would make your body sick. The left side of your heart sends blood to the body. This blood has lots of **oxygen** in it, and the oxygen is one of the things that your cells need to stay alive. The body takes the oxygen out of the blood and uses it in your body's cells. The cells use the oxygen, making **carbon dioxide**, and

dumping the carbon dioxide and wastes back into the blood to be carried away. Each time the blood circulates from the heart out to the body, about 20% (one fifth) of it goes through the kidneys where some of the waste is taken out, and then the blood heads back to the heart, the right side. It takes the blood to the lungs. The carbon dioxide leaves the blood by getting breathed out by the lungs, and the oxygen gets into the blood from the air we breathe in. Now the blood has got the oxygen it needs to go back to the left side of the heart and start all over. The process all happens in less than half a minute. A healthy heart makes a “lub-dub” sound with each beat. This sound comes from the **valves** opening and shutting on the blood inside the heart. The first sound (the lub) happens when the blood hits the **mitral** and **tricuspid** valves between the **atria** and **ventricles**. The next sound (the dub) happens when the blood hits the **aortic** and **pulmonic** valves that close up after the blood has been squeezed out of the heart and as the heart relaxes to fill with blood for the next beat.

One way to know the heart is working from the outside of the body is by feeling your **pulse**. The pulse can be found by lightly pressing on the skin anywhere there's a large artery running just beneath your skin. Two good places to find it are on the side of your neck and the inside of your wrist. Once the pulse is found, you can feel a small beat under your skin. Each beat is caused by the **contraction** of your heart. To find out what your heart rate is, count how many beats you feel in 1 minute. When one is resting, one will probably feel between 70 and 100 beats per minute. When you exercise, your body needs a lot more oxygen-filled blood. Your heart pumps faster to supply the oxygen-filled blood that your body needs.



To help keep the heart happy:

- Remember that your heart is a muscle. Just like you need to exercise your leg and arm muscles, you need to exercise your heart, too. Aerobic exercise, like walking, running, and swimming, is a great way to keep your heart in shape.
- Eating a variety of healthy foods is great for your heart. Avoiding a lot of high-fat foods will help keep your heart happy, too.
- Stay away from smoking! Smoking is bad for every part of your body, especially your heart. Your heart and blood vessels hate cigarettes because smoking makes their jobs much harder and can damage them.

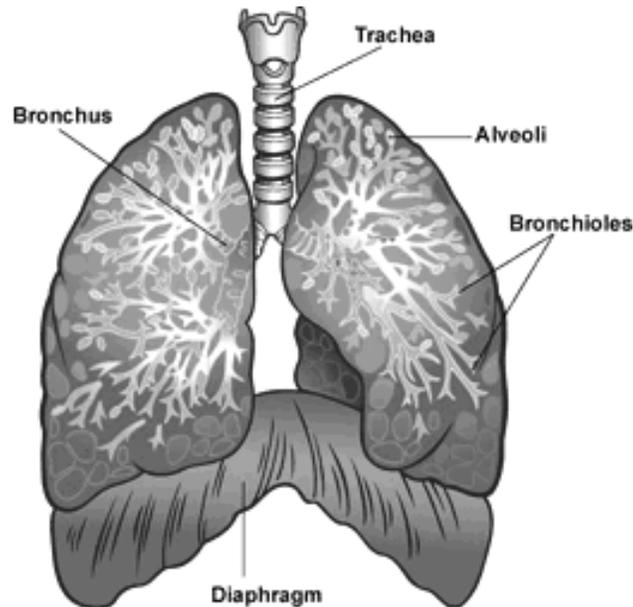
The Lungs

Your lungs make up one of the largest organs in your body. They work with your **respiratory system** to allow you to take in fresh air, get rid of stale air, and even talk. Your lungs are in your chest, and they are so large that they take up most of the space in there. You have two lungs, but they aren't the same size. Instead, the lung on the left side of your body is a bit smaller than the lung on the right. This extra space on the left leaves room for your heart. Your lungs are protected by your **rib cage**, which is made up of 12 sets of ribs. These ribs are connected to your spine in your back and go around your lungs to keep them safe. Beneath the lungs is the **diaphragm**. This is a dome-shaped muscle that works with your lungs to allow you to inhale (breathe in) and exhale (breathe out) air. You can't see your lungs, but it's easy to feel them in action: put your hands on your chest and breathe in very deeply. You will feel your chest getting slightly bigger. Now breathe out the air, and feel your chest return to its regular size.

Inside the Lungs

From the outside, lungs are pink and a bit like a sponge. At the bottom of the **trachea**, or windpipe, there are two large tubes. These tubes are called the **main stem bronchi**, and one heads left into the left lung, while the other heads right into the right lung. Each **main stem bronchus** - the name for just one of the bronchi - then branches off into tubes, or bronchi, that get smaller and even smaller still, like branches on a tree. The tiniest tubes are called **bronchioles**, and there are about 30,000 of them in each lung. Each bronchiole is about the same thickness as a piece of hair.

At the end of each bronchiole is a special area that leads into clumps of teeny tiny air sacs called **alveoli**. There are about 600 million alveoli in your lungs. Each **alveolus** - the name for one of the alveoli - has a mesh-like covering of very small blood vessels called **capillaries**. These capillaries are so tiny that the cells in your blood need to line up single file to move through them.



Every time you inhale air, dozens of body parts work together to help get that air in there without you ever thinking about it. As you breathe in, your diaphragm contracts and flattens out. This allows it to move down, so your lungs have more room to grow larger as they fill up with air. Your rib muscles also lift the ribs up and outward to give the lungs more space.

At the same time, you inhale air through your mouth or nose, and the air moves down your trachea or windpipe. On the way down the windpipe, tiny hairs called **cilia** move gently to keep mucus and dirt out of the lungs. The air then goes through the series of branches in your lungs, through the bronchi and the bronchioles. The air finally ends up in the 600 million alveoli. As these millions of alveoli fill up with air, the lungs get bigger. It is the alveoli that allow oxygen from the air to pass into your blood. All the cells in the body need oxygen every minute of the day. Oxygen passes through the walls of each alveolus into the tiny capillaries that surround it. The oxygen enters the blood in the tiny capillaries, then on to red blood cells and traveling through layers of blood vessels to the heart. The heart then sends the oxygenated blood out to all the cells in the body. When it's time to exhale, everything happens in reverse. The diaphragm relaxes

and moves up, pushing air out of the lungs. Your rib muscles become relaxed, and your ribs move in again, creating a smaller space in your chest.

By now your cells have used the oxygen they need, and your blood is carrying carbon dioxide and other wastes that must leave your body. The blood comes back through the capillaries and the wastes enter the alveoli. Then you breathe them out in the reverse order of how they came in: the air goes through the bronchioles, out the bronchi, out the trachea, and finally out through your mouth or nose. The air that you breathe out not only contains wastes and carbon dioxide, but it is warm. As air travels through your body, it picks up heat along the way.

Talking

Your lungs are important for breathing and also for talking. Above the trachea is the **larynx**, which is sometimes called the voice box. Across the voice box are two tiny ridges called **vocal cords**, which open and close to make sounds. When you exhale air from the lungs, it comes through the trachea and larynx and reaches the vocal cords. If the vocal cords are closed and the air flows between them, the vocal cords vibrate and a sound is made.

The amount of air you blow out from your lungs determines how loud a sound will be and how long you can make the sound. Shouting requires lots of air, so you'd need to breathe in more frequently than you would if you were only saying the words. When you hiccup, the diaphragm moves in a funny way that causes you to breathe in air suddenly, and that air hits your vocal cords when you're not ready.

To help keep the lungs happy:

- The best way to keep your lungs pink and healthy is not to smoke. Smoking isn't good for any part of your body, and your lungs especially hate it. Cigarette smoke damages the cilia in the trachea so they can no longer move to keep dirt and other substances out of the lungs. The chemicals in cigarette smoke can cause the walls of the alveoli to break down making it much harder to breathe. Finally, cigarette smoke can damage the cells of the lungs so much that the healthy cells go away, only to be replaced by cancer cells. A protective mask should also be worn to keep chemical fumes from entering the lungs.
- Exercise is good for every part of your body, and especially for your lungs and heart. When you exercise, your lungs require more air to give your cells the extra oxygen they need. As you breathe more deeply and take in more air, your lungs become stronger and better at supplying your body with the air it needs.

The Skeleton

Every person - and every other mammal - has a skeleton made up of hundreds of bones. These bones provide structure to the whole body, allow you to move in many ways, protect your internal organs, and more. The human body has 206 bones. A baby's body has about 300 "soft" bones at birth. These eventually fuse to form the 206 bones that adults have. Some of a baby's bones are made of **cartilage**. This cartilage is soft and flexible. During childhood, as you are growing, the cartilage grows and is slowly replaced by bone. At around the age of 25, this process will be complete and growth stops. All of these bones make up a skeleton that is very strong and very light.

The Spine

Your spine is one part of the skeleton that is found in the center of your back. The spine lets you twist and bend, and it holds your body up right. It also protects the **spinal cord**, a large bundle of nerves that sends information from your brain to the rest of your body. The spine is made of 33 bones in all. These bones are called **vertebrae** and each is shaped like a ring.

There are five types of vertebrae in the spine, and each does a different kind of job. The first seven vertebrae at the top are called the **cervical vertebrae**. These bones are in the back of your neck, just below your brain, and they support your head and neck. Below the cervical vertebrae are the **thoracic vertebrae**, and there are 12 in all. They anchor your ribs in place. Below the thoracic vertebrae are five **lumbar vertebrae**. Beneath the lumbar vertebrae is the **sacrum** which is made up of five vertebrae that are joined together. All the way at the bottom of the spine is the **coccyx**, which is made of four fused vertebrae. The bottom sections of the spine are important when it comes to bearing weight and giving you a good center of gravity. In between each vertebra are small **disks** made of cartilage. These disks keep the vertebrae from rubbing against one another, and they also act as the spine's "shock absorbers".

The Ribs

Your heart, lungs, and liver are protected by the ribs that keep them safe. Ribs act like a "cage of bones" around your chest. Your ribs come in pairs, and the left and right sides of each pair are exactly the same. Most people have 12 pairs of ribs, but some people are born with one or more extra ribs, and some people might have one pair less.

All 12 pairs of ribs attach in the back to the spine, where they are held in place by the thoracic vertebrae. The first seven pairs of ribs attach in the front to the **sternum**, a strong bone in the center of your chest that holds the ribs in place. The remaining sets of ribs don't attach to the sternum directly. The next two or three pairs are held on with cartilage to the ribs above them. The very last two

sets of ribs are called **floating ribs** because they aren't connected to the sternum or the ribs above them. Like the rest of the ribs, they are securely attached to the spine in the back.

The Skull

The skull protects the most important part of all, the brain. The skull is actually made up of different bones. Some of these bones protect your brain, whereas others make up the structure of your face. All babies are born with spaces between the bones in their skulls. This allows the bones to move, close up, and even overlap as the baby goes through the birth canal. As the baby grows, the space between the bones slowly closes up and disappears, and special joints called **sutures** connect the bones.

The Hands

Each arm is attached to a shoulder blade or **scapula**, a large triangular bone on the upper back corner of each side of the rib cage. The arm is made up of three bones: the **humerus**, which is above your elbow, and the **radius**, and **ulna**, which are below the elbow. Each of these bones is wider at the ends and skinnier in the middle, to help give it strength where it meets another bone. At the end of the radius and ulna are eight smaller bones that make up your wrist. The center part of your hand is made up of five separate bones. Each finger on your hand has three bones, except for your thumb, which has two.

The Legs

The legs are attached to a circular group of bones called your **pelvis**. The pelvis is a bowl-shaped structure that supports the spinal column. It is made up of the two large hip bones in front and behind are the sacrum and the coccyx. The pelvis acts as a tough ring of protection around parts of the digestive system, the urinary system, and parts of the reproductive system. The leg bones are very large and strong to help support the weight of your body. The bone that goes from your pelvis to your knee is called the **femur**, and it's the longest bone in your body. At the knee, there's a triangular-shaped bone called the **patella**, or kneecap, which protects the knee joint. Below the knee are two other leg bones: the **tibia** and the **fibula**. Just like the three bones in the arm, the three bones in the leg are wider at the ends than in the middle to give them strength. The ankle is a bit different from the wrist; it has three larger bones and four smaller ones. The main part of the foot is similar to the hand, with five bones. Each toe has three tiny bones, except for your big toe, which has just two. We are able to balance properly because all the bones of the foot are working together.

To help keep the bones happy:

- Protect the skull bones and brain by wearing a helmet for bike riding and other sports.
- When you use a skateboard, in-line skates, or a scooter, be sure to add wrist supports and elbow and knee pads.
- If you play a sport like football, soccer, or ice hockey, always wear all the right equipment.
- Strengthen your skeleton by drinking milk and eating other dairy products (low-fat cheese, frozen yogurt, and ice cream). They all contain calcium, which helps bones harden and become strong.

Exercise

When we engage in physical activities, we breathe faster, our lungs take in more oxygen. As we breathe faster, our heart begins to pump faster to deliver the oxygen-rich blood to all parts of our bodies. Regular exercise makes bodies stronger.

Exercise Makes Your Heart Happy

The heart is a muscle. It works hard, pumping blood throughout the body. Aerobic exercise helps this important muscle get stronger. Aerobic means "with air," so aerobic exercise is a kind of activity that requires oxygen. When you breathe, you take in oxygen, and, if when doing the aerobic exercise, one may notice they are breathing faster than normal. Aerobic activity can get your heart pumping, make you perspire, and quicken your breathing. When the heart is given this kind of workout on a regular basis, the heart will get even better delivering oxygen to all parts of the body. Some examples of aerobic exercise include: swimming, basketball, jogging, walking, soccer, biking, etc. Playground activities such as skipping or jumping rope, are aerobic activities, as well.

Exercise Strengthens Muscles

Another kind of exercise can help make your muscles stronger. Those are exercises that can build strength. Push-ups or lifting weights are examples of strength building exercises. By using the muscles to do powerful things, they become stronger. For older teens and adults, this kind of workout can make muscles bigger, too.

Here are some exercises and activities to build strong muscles:

- push-ups
- pull-ups
- rowing
- bike riding
- weight lifting

Exercise Makes You Flexible

If the body is flexible, it can bend and stretch without much difficulty. Being flexible is having "full range of motion," which means you can move your arms and legs freely without feeling tightness or pain. Some exercises that are done for flexibility are:

- tumbling and gymnastics
- yoga
- dancing, especially ballet
- martial arts
- simple stretches, such as touching your toes or side stretches

Diet and Nutrition

A healthy diet includes recommended daily servings from each of the major food groups and portion sizes based on age and activity level.

New Pyramid and Servings

The U.S. Department of Agriculture Food Guide Pyramid is one way for people to understand how to eat healthy. A rainbow of colored, vertical stripes represents the five food groups plus fats and oils. Here's what the colors stand for:

- orange - grains
- green - vegetables
- red - fruits
- yellow - fats and oils
- blue - milk and dairy products
- purple - meat, beans, fish, and nuts

The USDA changed the pyramid in spring 2005 because they wanted to do a better job of telling Americans how to be healthy. The agency later released a special version for kids. The girl climbing the staircase up the side of the pyramid shows kids how important it is to exercise and be active every day.

The Pyramid also tells us to:

- **Eat a variety of foods.** A balanced diet is one that includes all the food groups. Have foods from every color, every day.
- **Eat less of some foods, and more of others.** You can see that the bands for meat and protein (purple) and oils (yellow) are skinnier than the others. That's because you need less of those kinds of foods than you do of fruits, vegetables, grains, and dairy foods.

The bands start out wider and get thinner as they approach the top. That shows that not all foods are created equal, even within a healthy food group like fruit. For example, apple pie might be in that thin part of the fruit band because it has a lot of added sugar and fat. A whole apple would be down in the wide part because you can eat more of those within a healthy diet.

- **Make it personal.** Everyone needs to personalize the mix of foods they need to eat and how much they should be eating.

Serving Size

How much one should eat to stay healthy depends on a variety of factors such as, your age, gender, and activity level. Kids who are more active burn more calories, so they need more calories. Listed below are some estimates for how much you need of each food group.

Grains

Grains are measured out in ounce equivalents. Here are ounce equivalents for common grain foods. An ounce equivalent equals:

- 1 piece of bread
- 1/2 cup of cooked cereal, like oatmeal
- 1/2 cup of rice or pasta
- 1 cup of cold cereal

* 4- to 8-year-olds need 4-5 ounce equivalents each day.

* 9- to 13-year-old girls need 5 ounce equivalents each day.

* 9- to 13-year-old boys need 6 ounce equivalents each day.

We should eat a lot of whole grains, such as 100% wheat bread, brown rice, and oatmeal.

Vegetables

Vegetable servings are measured in cups.

- * 4- to 8-year-olds need 1 1/2 cups of veggies each day.
- * 9- to 13-year-old girls need 2 cups of veggies each day.
- * 9- to 13-year-old boys need 2 1/2 cups of veggies each day.

Fruits

Fruit servings are measured in cups :

- * 4- to 8-year-olds need 1-1 1/2 cups of fruit each day.
- * 9- to 13-year-old girls need 1 1/2 cups of fruit each day.
- * 9- to 13-year-old boys need 1 1/2 cups of fruit each day.

Milk and Other Calcium-Rich Foods

Calcium builds strong bones, so you need these foods in your diet. These servings are also measured in cups.

- * 4- to 8-year-olds need 1-2 cups of milk (or another calcium -rich food) each day.
- * 9- to 13-year-old girls need 3 cups of milk (or another calcium -rich food) each day.
- * 9- to 13-year-old boys need 3 cups of milk (or another calcium -rich food) each day.

Yogurt, cheese, or calcium-fortified orange juice can be substituted for milk.

Meats, Beans, Fish, and Nuts

These foods contain iron and other important nutrients. These foods are measured in ounce equivalents.

An ounce equivalent of this group would be:

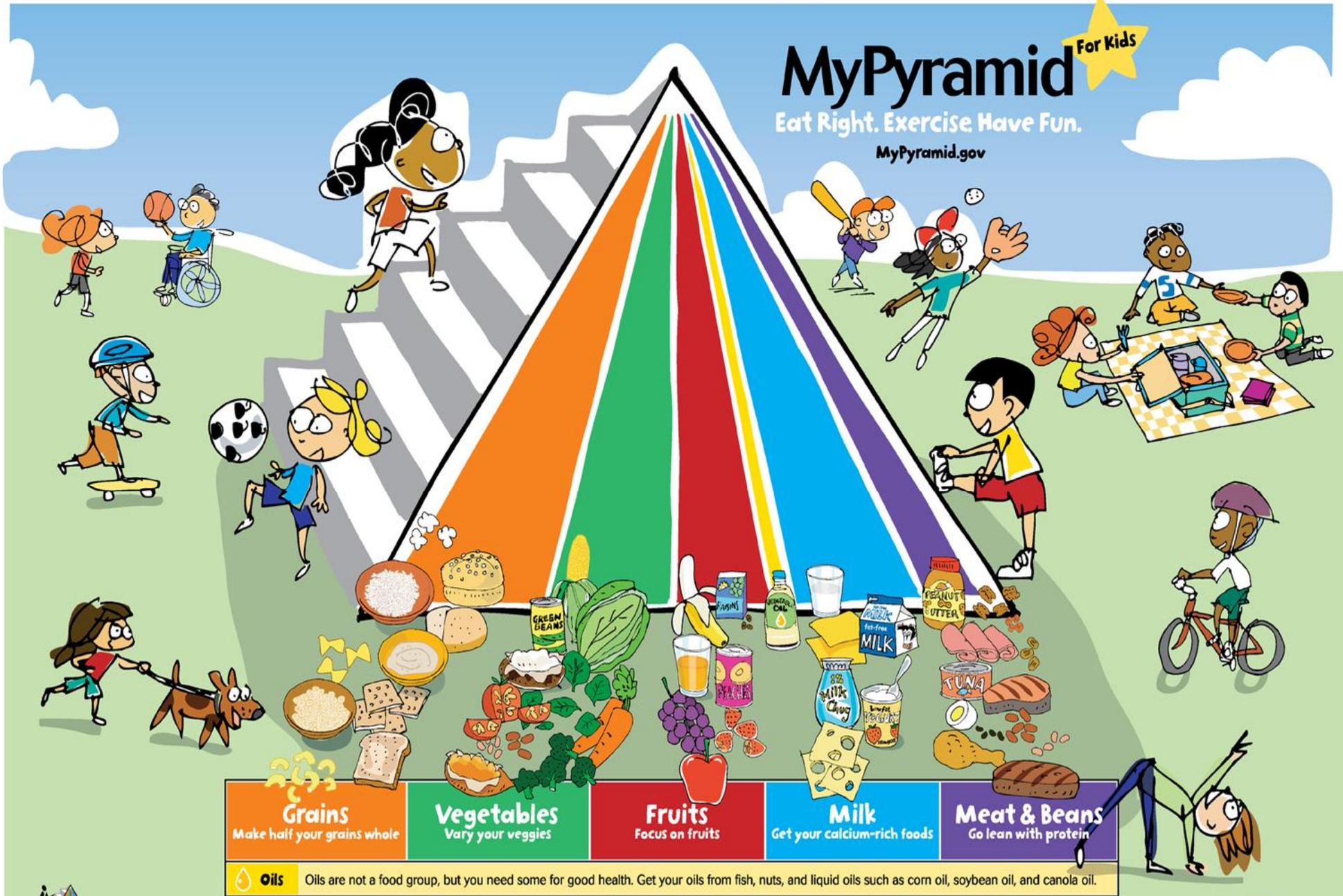
- 1 ounce of meat, poultry, or fish
 - 1/4 cup cooked dry beans
 - 1 egg
 - 1 tablespoon of peanut butter
 - a small handful of nuts or seeds
-
- * 4- to 8-year-olds need 3-4 ounce equivalents each day.
 - * 9- to 13-year-old girls need 5 ounce equivalents each day.
 - * 9- to 13-year-old boys need 5 ounce equivalents each day.

MyPyramid

For Kids

Eat Right. Exercise Have Fun.

MyPyramid.gov



Grains

Make half your grains whole

Vegetables

Vary your veggies

Fruits

Focus on fruits

Milk

Get your calcium-rich foods

Meat & Beans

Go lean with protein



Oils

Oils are not a food group, but you need some for good health. Get your oils from fish, nuts, and liquid oils such as corn oil, soybean oil, and canola oil.



Find your balance between food and fun



Fats and sugars — know your limits

U.S. Department of Agriculture
Food and Nutrition Service
September 2005
FNS-301



USDA is an equal opportunity provider and employer.

Learning Experience 1 – Getting Started

Objective: Students will observe/draw their facial features and identify facial characteristics that make each person unique.

Materials:

For each student:

Hand mirrors
Drawing paper*
Crayons*
Self-portraits*
*provided by teacher/student

For the class:

Book – Just Because I Am by Lauren Murphy Pane
Book – Bein' With You This Way by W. Nikola-Lisa

Preparation:

Designate a bulletin board area to place self portraits for collage. The finger play songs provided on p. 19 can be used at any time during this Learning Experience.

Basic Skills Development:

Observing
Discussing
Describing
Comparing
Classifying

Evaluation Strategy:

Students will create self- portraits and compare unique characteristics of classmates.

Vocabulary:

observe
portrait
characteristics
alike
different

What are our unique characteristics?

Session 1

Begin this session by reading the book Bein With You This Way by W. Nikola-Lisa .

Discussion Questions:

Did anyone ever say you looked like someone in your family? Who?
What characteristics do you have in common with your brothers/sisters? Different?

Distribute a hand mirror to each student, and ask them to look closely at their head and faces in the mirror. Pose questions to students as they make their observations to help them observe more closely.

Example:

Is one eye larger than the other?
Is one ear higher than the other?
Are your teeth different shapes?
Are you missing teeth?
Do you have any freckles or dimples?

Students are to then draw a self-portrait. Instruct them to specifically include characteristics that make them special. Display self-portraits in a collage. Discuss and reinforce traits in common (brown eyes, curly hair) but that each one is unique.

Learning Experience 1 – Getting Started, cont.

Page 2

Session 2

Use, again, the collage of self-portraits to classify students as:

- alike
- like some classmates and different from others, and
- different from classmates.

Ask students to give ways in which all pictures are alike? (ex. 2 eyes, 1 nose, 1 mouth, hair). Then discuss ways self-portraits are like classmates but different from others (ex. Jim, Mary, and I have brown hair, but they have green eyes and mine are brown). Finally, look at characteristics that are unique to each student (ex. I'm the only girl with red hair, only student with 2 missing teeth).

Read the book, Just Because I Am by Lauren Murphy Pane.

Discussion Questions:

Is it important that we look different from each other? Why?

How do we sometimes treat people that are different from us? Why?

How should we treat everyone?

Sample Finger Plays

This is Me...

This is me, from my head to my toes.
I have two eyes and a little nose.
I can wiggle my ears and stamp my feet.
From my head, to my toes, I'm really neat!

Everybody Says...

Everybody says
I look just like my mother
Everybody says
I'm the image of Aunt Bee.
Everybody says
My nose is like my father's
But I want to look like me!

I'm Glad I'm Me...

No one looks
The way I do.
I have noticed
That it's true.
No one walks, the way I walk.
No one talks, the way I talk.
No one plays, the way I play.
No one says the things I say.
I am special.
I am me.
There's no one
I'd rather be than me!

Learning Experience 2 – Body Parts

Objective: Students will identify major body/facial parts and their functions.

Materials:

For each student:

My Body Works Together Student Activity Book

For groups of 3:

Butcher paper*

Pencils*

The Amazing Incredible You by Palooza Readers

*provided by teacher/student

Preparation:

Cut butcher paper for each group. Find an area of the classroom or hallway to post body posters.

Basic Skills Development:

Brainstorming

Discussing

Describing

Evaluation Strategy:

Students will participate in groups to label body parts and name their function.

Vocabulary:

Session 1

arm

foot

hand

head

neck

shin

shoulder

thigh

torso

waist

Session 2

nose

eye

mouth

nostril

eyelash

forehead

hair

elbow

knee

How do our body parts function?

Session 1

Divide students into groups of 3. Ask students to choose one person from the group and trace their body on a large piece of butcher paper. One student will lie on the paper with their back to the floor and face to the ceiling while the group members trace their body outline. Ask students not to draw a face on their outline yet. Refer to the names of the body parts listed in Session 1 Vocabulary for Learning Experience 2. Ask students to work with group members to label the body traced on butcher paper. Students can cut and paste these words from the My Body Works Together Student Activity Book. Explain to students that each body part has a specific function. Students should refer to the Activity Sheet for Learning Experience 2 in the My Body Works Together Student Activity Book for phrases that will help them brainstorm functions of each body part. Students can copy these phrases on their posters and finish the phrase with the function of each body part. Each group will finish each phrase differently. Ask student groups to share their ideas so groups can get different ideas from each group. As students are finished with their

Learning Experience 2 – Body Parts, cont.

Page 2

body pictures, have them read The Amazing Incredible You by Palooza Readers. There are 8 readers provided in the kit to use in a small group center.

Session 2

Student groups are to finish their body pictures on butcher paper.

Discussion Questions:

What's wrong with our body picture? (no face)

Explain to student groups that you will give them a clue, and they will draw the missing part of the face. Group members should take turns drawing the parts of the face.

Read the clues:

- Give the face something to smell with (nose).
- Now, the face needs something to see with (eyes).
- Add something to talk through or eat with (mouth).
- And holes to breathe through (nostrils).
- We keep dust out of eyes with our (eyelashes).
- The big space over the eyes and below the hair (forehead)
- What covers the top of the head? (hair)

After students have completed the facial drawing, review terms and discuss what each part of the face helps us do and enjoy. The sample finger play provided below also emphasizes the function of each facial feature.

All About Me...

In my mirror, I can see
Two little eyes
That look at me.

Two little ears,
One little nose,
Ten little fingers,
Ten little toes.

One little mouth, I open wide.
Two little rows of teeth, inside.
A tongue that pops
Both in and out,
The hair on my head makes me shout.

Learning Experience 3 – Basic Needs

Objective: Students will identify basic needs of living things.

Materials:

My Body Works Together Student Activity Book
Pencils*
Chart paper*

*provided by teacher/student

Preparation:

Read background information on p. 4.

Basic Skills Development:

Describing
Discussing
Interpreting Data

Evaluation Strategy:

Students will identify basic needs of living things.

Vocabulary:

needs
shelter
air
water
warmth
food

What are the basic needs of humans?

Discuss with students that living things have basic needs that allow them to survive.

Ask students to go to the Activity Sheet for Learning Experience 3 in the My Body Works Together Student Activity Book. On the Activity Sheet, there are clues listed that describe the basic needs of 3 animals. Read the clues with students of each animal. Students are to then write on their activity sheet the animal they think the clues are describing. If there are students who are not sure of what the animal is, read students the “hint clue”. The “hint clue” is only listed in the Teacher’s Guide on page 23, not on their Activity Sheet. Go over the answers after clues have been read.

Ask students to review the clues again and discuss with them what basic needs each animal has in common (Clue #1 -shelter, Clue #2 -food, Clue #3 - air, Clue #4 - water, Clue #5 - warmth). Write these basic needs on the chalkboard.

Ask students if these needs apply to humans. Students are to then get into groups of 3 and write some clues they would give for the animal of “human”. Ask each

Learning Experience 3 – Basic Needs, cont.

Page 2

group to read their clues to the class.

Discussion Questions:

How do these basic needs similar to the needs of plants?

Can you write clues for a plant?

Animal #1 – Hint Clue: I sometimes climb trees and eat honey. (Bear)

Animal #2 – Hint Clue: I can spout water from an air hole. (Whale)

Animal #3 – Hint Clue: I can swing from trees. (Monkey)

Learning Experience 4 – How Senses Help Us

Objective: Students will name the five senses and describe how the senses help the body stay healthy and protect us.

Materials:

For each student:

My Body Works Together Student Activity Book

For the class:

Chart paper*

Markers*

My Body, Your Body by Mick Manning and Brita Granstrom

*provided by teacher/student

Preparation:

Read background information on p. 4-6. Ask students to bring in cardboard tubes (from paper towel or toilet paper rolls) to be used in Learning Experience 5.

Basic Skills Development:

Brainstorming
Discussing
Describing
Interpreting Data

Evaluation Strategy:

Students will identify the five senses and how they help us experience our environment and adapt to our environment.

Vocabulary:

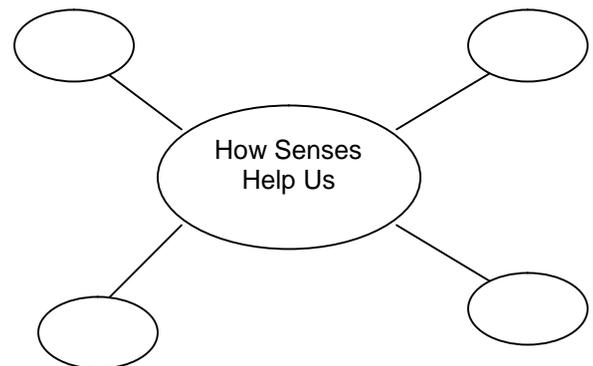
senses
healthy
adapt
hear
smell
taste
touch
see

How do our senses help us?

Session 1

Begin with an introductory discussion about the five senses. Define with students what is meant by “sense”. It can be defined as a way to understand and experience the world around us. Read the book My Body, Your Body by Mick Manning and Brita Granstrom.

Ask students to name the five senses and the body part associated with that sense and list on the chalkboard (ex. eye-sight, nose-smell, ear-hear, tongue-taste, skin-feel). Ask students to get into groups and discuss how senses help us. Create a class web of ideas from their discussions. The outer circles of the web can be used to write student ideas of these senses.



Learning Experience 4 – How Senses Help Us, cont. Page 2

Discussion Questions:

When might you use each of your senses?

How do senses help you find out more about an environment or situation?

Now that students have spent some time thinking about the five senses they are ready to learn more about how their senses help them gain information about the world around them. Explain that each sense brings messages to the brain/body about the world around us. These messages help us “adapt” to our environment.

The activity for Learning Experience 4 can be done indoors or outdoors. Ask students to notice the kind of things they can touch, taste, see, hear and smell. The sense of taste may be difficult for students to explore freely, but they can notice things people are able to taste (food in cafeteria, lunch). Students are to record their observations on page 1 of the Activity Sheet for Learning Experience 4 in the My Body Works Together Student Activity Book.

Discussion Questions:

What kinds of things did you touch, smell, hear, see, or taste?

What did you notice when you were exploring?

When you used your fingers to touch something, what did you learn?

Did you learn new things about something when you used more than one sense?

Session 2

Our senses not only help us “adapt” to our environment, they protect us within the environment. Present students with the following story of a girl traveling to the park. During the trip, she encounters several dangerous scenarios. Students are to identify the correct sense used to solve each problem. Once the sense is chosen, ask students how our senses can help solve the problem?

Our five senses work night and day to help protect us. Our friend, Susie, is walking to the park. On her way, she will need the help of her senses to get her there safely. She encounters several dangers on her way. As we hear about each problem, we are going to identify the correct sense that helps identify the problems and helps solve each of the problems along the way.

As Susie leaves the house, it is a sunny day. It looks like Susie could get a sunburn. What sense can warn her that it is too hot to be outside without sun protection? What should we do now?

Sense of touch- Go put on some sunscreen to protect our skin.

Learning Experience 4 – How Senses Help Us, cont. Page 3

More trouble heading her way. She is walking along a fence near her house, and she hears a dog barking. What sense is telling us this? What should we do?

Sense of hearing - Close gate because she hears a dog coming. Now she is safe from harm.

As she closes in on the road, she sees the “Don’t Walk” sign. What should she do?

Use her eyes or sense of sight to carefully read all signs. They keep you out of harms way.

As she is crossing the road, there are leaves smoldering in the street. Which sense helps Susie to detect a fire?

Sense of smell – Smells something burning. Call 911 or tell adult .

Now, there is an approaching siren. What sense tells Susie that?

Sense of hearing - Step back on the curb and look both ways.

Now on the other side of the road, there is milk being sold at a stand for \$.25, but it has not been kept cold. What sense could help her now?

Sense of taste – Spoiled milk, don’t drink, could make you sick.

She made it through! She’s now headed safely to the park with her friends. Hope this story helps you remember to trust to your senses.

Discussion Questions:

How do your senses protect you?

How can they help you cross the street safely?

Which sense do you think protects you the most?

Why is it important to use all of your senses?

What are some ways to protect your eyes?

What are some ways to protect your ears?

What are some ways to protect your sense of smell?

What are some ways to protect your sense of taste?

Learning Experience 4 – How Senses Help Us, cont. Page 4

As a culminating activity, ask students to get into groups and complete page 2 of the Activity Sheet for Learning Experience 4. Groups should brainstorm all the ways each sense helps protect our bodies on a daily basis. They may even think of ways our senses help us that weren't discussed in the story/learning experience. Examples are listed in the chart below:

Sense	Organ	How sense helps us...
Hear	Ears	Hear cars, smoke alarms, warns of danger before see it, hear dogs barking, sirens
Smell	Nose	Detect dangers from chemicals, fires
Taste	Tongue	Spoiled food, unwanted objects in food
Touch	Skin	Keeps germs out of body, sun too hot need sunscreen, react to good and bad feelings
See	Eyes	Look before crossing street, don't bump into things, surroundings look dangerous, see signs.

Learning Experience 5 – Heart

Objective: Students will describe the location of the heart and the important functions of the heart.

Materials:

For each student:

My Body Works Together Student

Activity Book

Cardboard tubes

Brown paper grocery bag

Scissors*

Tape*

Assorted crayons*

For the class:

Chart paper*

Markers*

Stethoscopes -3

Alcohol wipes

Book: Hear Your Heart by Paul Showers

Book: Adorable Wearables by Donald Silver and Patricia Wayne

Book: Thump, Thump by Pamela Hill Nettleton

Preparation:

Read background information on p. 6-8.

Basic Skills Development:

Brainstorming

Discussing

Observing

Making Decisions

Manipulating Materials

Evaluation Strategy:

Students will describe size and location of the heart and explain main function of the heart as a pump that moves blood throughout the body.

Vocabulary:

Heart

Artery

Lung

Vein

blood vessel

What is the heart's function?

Session 1

Begin this Learning Experience by reading students the following riddle:

*What is something we all have,
Is the size of your fist,
And makes a lub-dub sound?*

After students guess correctly that the riddle describes the heart, ask students to brainstorm what they know about the heart and how it helps the body. Create a list of their brainstorm ideas on chart paper titled, "What We Know About Our Heart", and post in classroom. Write down all student ideas, as we will look for accurate statements after reading a book on the heart and its function. Read the book, Hear Your Heart by Paul Showers and Thump, Thump by Pamela Hill Nettleton to students. As you come across something on the chart that is found in the book, circle, star, or highlight that statement as correct. If there are any statements on the brainstorming list that are not accurate, ask students to rewrite statements to make them accurate.

Discussion Questions:

What function of the heart do you think is the most important?

Learning Experience 5 – Heart, cont.

Page 2

What surprises you most about how the heart helps our body?

Ask students if they know where their heart is located. Ask them to place their hand where they normally do to say the Pledge of Allegiance as the heart location. Remind them the heart is about the size of their fist. Have them make a fist and place it on their chest over their heart. Go to p. 21 in the Paul Showers book so students can again see where the heart is located in their body. Introduce the poem, “My Special Pump” to students:

My Special Pump

My heart is a special pump,
And it's good at pumping blood.
When I listen to my heart beat,
I hear it go lub-dub.

My heart is made of muscle,
Which makes it very strong.
If I work to keep it healthy,
It will last my whole life long.

Make up actions that will help student remember the poem. Ask student if anyone noticed that the poem calls the heart a muscle. Tell them it is different than muscles in our arms and legs. Ask students to feel the muscles in their upper arm (biceps) and notice how it feels. Then ask them to flex the muscle to see how it feels different. Explain that they had to think about moving that muscle. It is a skeletal muscle. The heart muscle is different; it keeps working without us thinking about it, even when we sleep. Ask students if they remember the name of the instrument the doctor/nurse uses to listen to our heartbeat as it was described in the Paul Showers book (stethoscope). The stethoscope provided in the kit will allow students to take turns hearing their heartbeat. Remember to use the alcohol wipes to clean ear piece before each student uses it. The cardboard tubes provided are to be used as stethoscopes. Go back and reread pages 5 - 9 in the Hear Your Heart book to remind students how they can use the cardboard tubes to hear their classmates' hearts. Students can be listening to their classmates' hearts as they wait for their turn with the stethoscope.

Next, show students how they can feel their heart beat by placing their first two fingers on the inside of their wrist or front of their neck. You may need to assist students in finding the correct location. The sound/feel of our heart beating tells

Learning Experience 5 – Heart, cont.

Page 3

us our heart is pumping blood through our body. Ask students to hold out their fist and squeeze and relax their fist again and again. Explain that this is how a pump works and our heart works like a pump. Our heart pumps blood throughout our bodies. The blood carries good things to our body cells (oxygen and nutrients) and takes away the things our body doesn't need. Refer to p. 21 of the Paul Showers book, and show where the lungs are in relation to the heart. The lungs breathe in the air we need and breathes out air our bodies have used.

Students are to then refer to the Activity Sheet for Learning Experience 5 in the My Body Works Together Student Activity Book. The picture provided shows the heart, lungs, and blood vessels in the body. Work with students to follow directions provided on the activity sheet. Students should then be given time to discuss with a partner the body parts shown and how the heart works within the body.

Session 2

Refer to pages 46-47 in the book, Adorable Wearables. Follow the directions for making the vest and heart wearable. You will find the diagram of the heart for students to color and cut in Learning Experience 5 of the My Body Works Together Student Activity Book. Learning Experience 6 and 7 will add the lungs and the ribcage to the vest.

Learning Experience 6 – Lungs

Objective: Students will explain the oxygen flow in the respiratory system and describe the function of the lungs in the body.

Materials:

For each student:

My Body Works Together Student

Activity Book

1 pink balloon

Crayon*

For the class:

Chart paper*

Markers*

Book: Breathe in, Breathe Out by Pamela Hill Nettleton

Book: Adorable Wearables by Donald Silver and Patricia Wayne

Preparation:

Read background information on p. 8-10.

Book: Adorable Wearables by Donald Silver and Patricia Wayne

Basic Skills Development:

Brainstorming

Discussing

Observing

Evaluation Strategy:

Students will name several main parts of the respiratory system and the main function of the lungs in the body.

Vocabulary:

lung

nose

mouth

windpipe

oxygen

breathe

What do the lungs do for the body?

Session 1

Begin this Learning Experience by asking students to turn to the Activity Sheet for Learning Experience 6 in their My Body Works Together Student Activity Books. The diagram on the Activity Sheet shows a simplified version the picture of the respiratory system.

Discussion Questions:

What does this picture show?

What do you think these organs do for the body?

Explain that the lungs are part of the respiratory system. Read the book Breathe In, Breathe Out by Pamela Hill Nettleton. Reread page 22 of the book, and ask students to cut and paste the words provided onto the appropriate parts of the diagram. Then ask students to show how the air moves through the respiratory system on the picture with their finger as you describe how air enters their body through the nose and mouth, down the windpipe and into the lungs. Students can then trace the path of air with a crayon. Students can compare how their bodies take in air by having them gently pinch their nose so they can take in air just through their mouth. Then

Learning Experience 6 – Lungs, cont.

Page 2

switch and have them cover their mouth and take in air just through their nose. Give each student a pink balloon and have them count how many breaths it takes to blow it up. Explain the air takes up space even though we can't see it. It's what is taking up space inside the balloon. Explain to students that the air we breathe is a mixture of different types of gases. Oxygen is one of the gases in the air. Your body needs oxygen to stay alive. You take in oxygen when you breathe. Students can also feel their windpipe at the front of their neck and how their chest rises and falls as lungs fill with air and the air is then exhaled.

Now, ask students to get into groups of 3 and brainstorm the ways how the lungs help us. They can use the ideas from the discussion or from the book. Have each group present one of their ideas to the class. As groups present ideas, create a word web on chart paper. If groups have more ideas to add, they can contribute to the discussion after all groups have presented.

Ask students if they know what activities can help our lungs (exercise) or hurt our lungs (smoking). Why are our lungs so important for survival? Discuss in a large group.

Session 2

Refer to pages 48-49 in the book Adorable Wearables. Follow the directions for adding lungs to the vest started in Learning Experience 5. You will find the diagram of the lungs for students to color and cut in Learning Experience 6 of the My Body Works Together Student Activity Book.

Learning Experience 7 – Skeleton

Objective: Students will identify the main parts of the skeleton and measure specific parts of their skeleton.

Materials:

For each student:

My Body Works Together Student Activity Book

Measuring tape

Piece of 12x18 black construction paper

10 Q-tips

For the class:

Book: The Skeleton Inside You by Philip Balestrino

Chart paper*

Markers*

Glue*

White Chalk*

Copies of X-rays

Foam skeleton

Preparation:

Read background information on p. 11 - 13. A mini-lesson on how to use the measuring tape may be required.

Basic Skills Development:

Describing

Discussing

Comparing

Measuring

Interpreting Data

Evaluation Strategy:

Students will identify the main parts and function of the human skeleton and measure their skeletal parts accurately.

Vocabulary:

bone

ribs

skull

spine

humerus

tibia

ulna

fibia

radius

femur

How does the skeleton help shape the body?

Session 1

Begin this Learning Experience by reading the book, The Skeleton Inside You by Philip Balestrino and discuss its contents. List 3 main functions of the skeleton on the chalkboard.

Discussion Questions:

Why do we have bones in our bodies?

Describe what our bodies would feel like without bones?

On page 1 of the Activity Sheet for Learning Experience 7 in the My Body Works Together Student Activity Book, assist reading the names of the major bones in the human skeleton. Point to each part on the body and discuss its main function. Then divide students into groups of 2 and provide a measuring tape. Students are to measure the length of their skeleton parts listed on page 2 of the Activity Sheet for Learning Experience 7. Remind students that these measurements are approximate and that the measurements for the ribs are not included in the chart due to the different lengths of each rib (see diagram). Compare measurements and create a class graph of average measurements on chart paper

Learning Experience 7 – Skeleton, cont.

Page 2

and post in the classroom. Discuss trends and unusual measurements for each skeletal part from graph results.

Session 2

Show students the x-rays found in the back pocket of the Teacher's Manual.

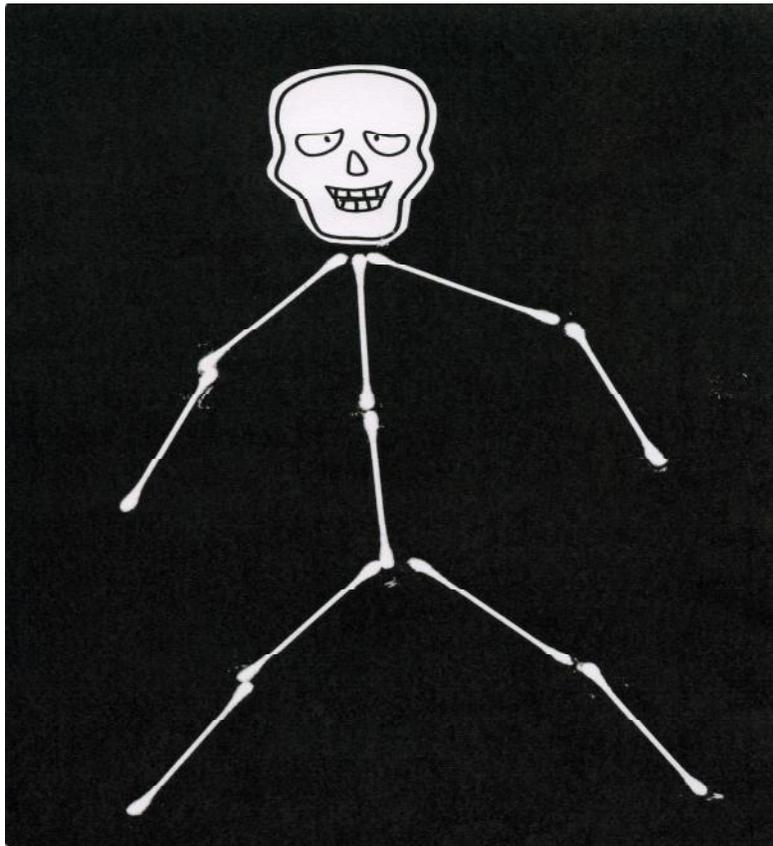
Discussion Questions:

What things can we do to protect our bones?

Have you ever had an x-ray taken?

Have you ever broken a bone? What happened? How was it treated?

Have students cut out the skull (head) from Learning Experience 7 in the My Body Works Together Student Activity Book. Each student will then build their own x-ray using 10 Q-tips, which represent the bones, glued to the 12 x 18 sheet of black construction paper. They may use a piece of white chalk to add fingers, toes and/or ribs. (See example on next page) Use the foam skeleton model in the kit as an example of where to place bones (Q -tips).



Learning Experience 7 – Skeleton, cont.

Page 3

My Bones

The purpose of this activity is to integrate physical activity while teaching the names of the bones in the body to small children in a fun game form. Have students form a circle and teach them the words to the song My Bones (a spin-off of Dem Dry Bones). The students perform the locomotion skill around a circle during the chorus and stop and do the actions for each bone.

My Bones – Words and Action Music to Dem Dry Bones, Edited by Jan Dieckow

My bones, My bones, Are gonna
walk around.

My bones, My bones, Are gonna
walk around.

My bones, My bones, Are gonna
walk around.

These are the bones in me!

My toes (wiggle toes) are connected to my
foot bone (shake either foot),
and my foot bone is connected to my
ankle bone (rotate either ankle),
and my ankle bone is connected to my
leg bone (kick either leg).

These are the bones in me!

My bones, My bones, Are gonna
hop around.

My bones, My bones, Are gonna
hop around.

My bones, My bones, Are gonna
hop around.

These are the bones in me!

My leg bone is (kick either leg) connected to my
knee bone (raise knee in air),
and my knee bone is connected to my
thigh bone (wiggle thighs),
and my thigh bone is connected to my
hip bone (shake hips).

These are the bones in me!

Learning Experience 7 – Skeleton, cont.

Page 4

My bones, My bones, Are gonna
skip around.

My bones, My bones, Are gonna
skip around.

My bones, My bones, Are gonna
skip around.

These are the bones in me!

My hip bone is (shake hips) connected to my
back bone (put your hands on your back),
my back bone is connected to my
shoulder bone (shrug shoulders),
and my shoulder bone is connected to my
head bone (shake head back and forth),
These are the bones in me!

My bones, My bones, Are gonna
gallop around.

My bones, My bones, Are gonna
gallop around.

My bones, My bones, Are gonna
gallop around.

These are the bones in me!

My hand bones are (wave hands) connected to my
wrist bone (shake wrist),
and my wrist bone is connected to my
elbow bone (bend elbow),
and my elbow bone is connected to my
shoulder bones (shrug shoulders),
These are the bones in me!

My bones, My bones, Are gonna
dance around.

My bones, My bones, Are gonna
dance around.

My bones, My bones, Are gonna
dance around.

These are the bones in me!

Learning Experience 7 – Skeleton, cont.

Page 5

Teaching Suggestions:

Don't connect particular bones to "sides" of the body. Teach students that "feet and hands" are on BOTH sides of the body.

Assessment Ideas:

Assessment is to observe the children as they sing the names of the bones in their body and the general location of it inside their body.

Session 3

Refer to page 50 in the book Adorable Wearables. Follow the directions for adding the ribcage to the vest.

Discussion Questions:

How does our ribcage protect our heart and lungs?

Are there any other bones in our body that protect special organs? What are they?

Learning Experience 8 – Staying Healthy

Objective: Students will plan a healthy, nutritious meal and explain the role nutrition and physical exercise plays in keeping the body strong and healthy.

Materials:

For each student:

My Body Works Together Student Activity Book

Paper plate

Construction Paper*

Colored pencils (orange, green, red, blue, purple, yellow)*

Old magazines/newspapers*

For the class:

Book: The Berenstain Bears and Too Much Junk Food by Stan and Jan Berenstain

Book: A Trip to the Dentist by Penny Smith

Food Pyramid Poster

Chart paper*

Markers*

CD player/music*

*provided by teacher/student

Preparation:

Read background information on p. 13-16.

Basic Skills Development:

Describing

Discussing

Classifying

Evaluation Strategy:

Students will create a healthy meal based on the food groups and explain how exercise helps the body stay healthy.

Vocabulary:

exercise

oxygen

heart

nutrients

lung

muscle

bone

active

healthy

inactive

breathe

How does the proper exercise and nutrition help the body?

Session 1

To begin this session, ask students to review the general function of the heart, lungs, and skeleton. Ask students what might happen if we don't take care of our bodies. Read the book, The Berenstain Bears and Too Much Junk Food by Stan and Jan Berenstain, which focuses on the subject of food choices. Discuss the main characters' food choices. Make a list of the food characterized as "healthy food" and "junk food". Remind students we want to make meals that are healthful for our bodies.

Introduce a simple version of the major food groups using the coloring page of the new USDA Food Pyramid on the Activity Sheet for learning Experience 8 in the My Body Works Together Student Activity Book. There is a completed Food Pyramid for Kids poster provided in the kit. Guide students through the coloring and labeling of their food pyramid (Grains-orange, Vegetables-green, Fruit-red, Milk-blue, Meat/Beans-purple, Oils-yellow). On p. 15-16 in the Background Information of this unit, specific

Learning Experience 8 – Staying Healthy, cont.

Page 2

information is given for the serving size needed for students of this age group in each food group. Along with the name of each food group, ask students to write the servings amount in the box below each colored section of the pyramid. Discuss how the Pyramid recommends daily servings of some food and limits other foods and how eating too much of one kind of food can be unhealthy. Discuss the types of foods one would find in each food group by creating a class chart listing the main food groups. Students can think about the foods they eat at home and add these foods to the appropriate group. The list of “healthy food” and “junk foods” from the Berenstain Bears book can also be categorized into the different food groups listed. We need nutrients from all the food groups to keep our bodies healthy.

Using the food group chart as a guide, have students find pictures of food in magazines or newspapers and plan a nutritious meal (breakfast, lunch or dinner). They are to cut out pictures of the food and glue the pictures to a paper plate. Remind students that they may not have foods from every group in their one meal. We should be eating foods from all the groups throughout the day. It is important, however, that their meal shows a variety of foods from the different food groups. Ask students to share their meals with the class. Students can describe which food group each food item belongs to and tell why they think it is a nutritious meal. Post meals in the classroom for students to examine after the lesson.

Discussion Questions:

Can the kind of food you eat also affect your teeth?

What happens if we do not take care of our teeth by brushing and flossing?

Read the book A Trip to the Dentist by Penny Smith.

Session 2

Gather student in an area where they can move around safely. Begin by asking student to put their hand over their mouth and nose to feel their breathing pattern. Then put their hand over their chest to feel how their heart is beating. Lead them in dance movements/exercises. Start the music and ask students to march in place. Then ask them to copy other movements (jumping jacks, twists, etc.). Stop the music and while students stand and cool down, ask questions to discuss how they feel and the signs that their heart and lungs are working harder. Student can put their hand over their mouth and nose again and their hand on their chest.

Learning Experience 8 – Staying Healthy, cont.

Page 3

Discussion Questions:

Are you breathing heavily or softly?

Do you feel your heart beating harder?

Are you feeling warmer than you were before?

What do you think this exercise will do for your heart/lungs?

Go back to the Activity Sheet for Learning Experience 5 showing the heart and lungs in the body. Identify lungs again with students and review that they help us breathe in good air and breathe out used air. When we exercise, our lungs work harder to take in air with oxygen. The lungs fill the blood with oxygen and heart begins to pump faster to get oxygen-rich blood to other parts of the body. That is why we feel our heart beating faster and why we breathe harder during and after exercise. When we exercise our muscles, they get stronger. Ask students if their heart is a muscle.

Discussion Questions:

Will our heart grow stronger if we exercise?

Ask students the kinds of activities they like to do. Write these activities on the chalkboard as they list them. Decide with students if activities are *active* or *inactive* (TV watching, reading, listen music, soccer). Just as we eat different types of food to keep our bodies healthy, we need to do different type of activities/exercises to keep the body strong and healthy. We need quiet activities for learning and rest, but we also need active exercise for heart/lungs/bones.

Give students a large piece of construction paper and ask them to draw a picture of each person in their family doing an “active” exercise activity that they love. This can include sports/exercise or daily activities like mowing lawn, washing car, cleaning house. Ask students to share their picture, and they may even demonstrate a few activities in their picture.

Discuss how some exercises:

- make our muscles/bones stronger – strength-building exercises
- make the heart and lungs healthy – aerobic exercises
- stretch muscles and keep body flexible – flexibility exercises

Discuss examples of each type of exercise from the pictures they have drawn of their families.

Learning Experience 8 – Staying Healthy, cont.

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Heart Power

This tag game is used to reinforce three important ways to keep your heart healthy. It should be played in a large open area like a gym or outdoors. This game reinforces the American Heart Association's motto for having a healthy heart. "You can have a healthy heart, it's as easy as 1,2,3,!" "Eat healthy stuff" "Move around enough" and "Live tobacco-free"

To play the game you will need wristbands, scrimmage vests or other items to identify taggers. This tag game reinforces the three important ways of keeping the heart healthy. The first discussion revolves around eating healthy stuff. The taggers are the unhealthy foods that one wants to stay away from. If tagged, the student jogs in place with his/her hand over the heart. Two persons running around join hands over the tagged person. (i.e. like playing "London Bridge") They say, "Eat healthy stuff." And the tagged person is now free.

The second round is played focusing on the theme of "move around enough." Discussion takes place about how important exercise is for the heart. The taggers represent "Couch Potatoes." During this round, the students unfreezing the child jogging in place join hands and say, "Move around enough."

In the third round the class discusses living tobacco-free. The taggers represent cigarettes that one should stay away from. The children unfreezing the tagged students say "Live tobacco-free."

Assessment Ideas:

During the closure see if the students can repeat the three ways to keep a heart healthy.

MORE IDEAS

Language Arts

- Ask students to keep a food diary for a week and investigate how their diets correlate to the USDA Food Pyramid recommendations.
- Ask students to create a group story/play of how the blood flows through the heart.
- Ask students to create a group story/play of how air gets into the body and flows through the respiratory system.

Book Suggestions:

Eat Right by Katie Bagley

The Very Hungry Caterpillar by Eric Carle

School Lunch by True Kelley

Gregory the Terrible Eater by Mitchell Sharmat

The Heart by Seymour Simon

Bones by Seymour Simon

My Heart and Blood by Dana Meachen Rau

Math

- Calculate breathing rate after completing different types of exercise and chart/graph results of rate after one minute.
- Calculate pulse rate after completing different types of exercise and chart/graph results of rate after one minute.

Arts

- Create a Pictionary game of 4 teams. The name of a body part is shown to one representative of each team and one person from each team goes to the chalkboard and draws the body parts for their team members to guess.

Physical Education

- Play Simon Says with the names of the body parts. Scientific names of the body parts could be used.
- Ask students to make an exercise goal for themselves and create an exercise journal that helps track their progress.

Music

- Sing the Hokey Pokey song and ask student to use the body parts they learned about in this unit.

Science

- Research the scientific names for various body parts. For example: mandible-jaw, phalanges-fingers, femur-thigh, cranium-skull.
- Investigate the different blood types and how they are different. Have students ask their parents what their blood type is.
- Research the heart and bone structures of other animals and compare to human.
- Ask students to look at the school lunch menu for the week and compare the contents and servings to the new USDA Food Pyramid recommendations.
- Research other body systems and find out how they help the circulatory, respiratory, and skeletal systems function.

INQUIRY AND PROCESS SKILLS

Classifying	Arranging or distributing objects or events in classes according to some method of system.
Collecting Data	Obtaining visible or measurable information which illustrates a specific situation.
Communicating	Displaying or transmitting information to others.
Generalizing	Drawing general conclusions from information.
Formulating Hypotheses	Constructing a proposition or assumption of what is thought likely to be true based on reasoning, which serves as a tentative testable theory.
Identifying Variables	Recognizing characteristics of objects or events, which are constant or change under different conditions.
Inferring	Making a statement based on reasoning to explain an observation.
Interpreting Data	Analyzing information that has been collected and organized and describing apparent patterns or relationships for information.
Making Decisions	Choosing an alternative from among several and basing the judgment on defensible reasons.
Manipulating	Handling or treating materials from among several and basing the judgment on defensible reasons.
Measuring	Making quantitative observations by comparing to a standard.
Observing	Becoming aware of an object or event by using any of the senses to identify properties.
Predicting	Making a forecast or estimate of what future events may occur.
Replicating	Performing acts that duplicate demonstrated symbols or patterns.
Using Numbers	Stating and applying mathematical rules or formulas to calculate or compute quantities for basic measurements.

GLOSSARY

Active	moving about, working, or doing something, and not resting or sleeping.
Adapt	to become, or make somebody or something become, used to a new environment or different conditions.
Alike	similar in appearance or character.
Air	the mixture of gases, mainly nitrogen and oxygen, that forms the Earth's atmosphere .
Arm	a limb attached to the shoulder of the human body.
Artery	a blood vessel that is part of the system carrying blood under pressure from the heart to the rest of the body.
Blood vessel	an artery, vein, or capillary through which blood flows.
Bone	one of the hard parts forming the skeleton in vertebrate animals.
Breathe	to repeatedly and alternately take in and blow out air in order to stay alive.
Characteristics	a feature or quality that makes somebody or something recognizable.
Different	not the same as something or somebody else.
Exercise	physical activity and movement, especially when intended to keep a person or animal fit and healthy.
Eye	the organ of sight or light sensitivity in vertebrates, usually occurring in pairs.
Eyelash	a short stiff hair that grows in a row from the edge of the eyelid.

Food	material that provides living things with the nutrients they need for energy and growth .
Foot	the part of the leg of a vertebrate below the ankle joint that supports the rest of the body and maintains balance when standing and walking, plural.
Femur	the main bone in the human thigh, the strongest bone in the body .
Fibula	the outer and narrower of the two bones in the human lower leg between the knee and ankle.
Forehead	the part of the face above the eyebrows, below the hairline and between the temples .
Hair	the mass of fine flexible protein strands that grow from follicles on the skin of a person or animal, especially those on somebody's head.
Hands	the part of the human arm below the wrist, consisting of a thumb, four fingers, and a palm and capable of holding and manipulating things.
Head	the topmost part of a vertebrate body, where the brain, eyes, nose, ears, mouth, and jaws are situated.
Hear	to perceive or be able to perceive sound.
Heart	a hollow muscular organ that pumps blood around the body, in humans situated in the center of the chest.
Healthy	in good physical or mental condition .
Humerus	the long bone of the human upper arm .
Inactive	not involving or taking part in physical activity .

Lung	in air-breathing vertebrate animals, either of the paired spongy respiratory organs, situated inside the rib cage, that transfer oxygen into the blood and remove carbon dioxide from it .
Mouth	in people and animals, the opening in the head and its surrounding lips, gums, tongue, and teeth, through which food is taken in and through which sounds come out .
Muscle	a tissue that can undergo repeated contraction and relaxation, so that it is able to produce movement of body parts .
Neck	the part of the body that joins the head to the rest of the body .
Needs	something that is a requirement or is wanted.
Nose	the part of the face or head through which a person or animal breathes and smells .
Nostril	either of the two openings at the end of the nose of a person or animal.
Nutrients	a substance that provides nourishment .
Observe	to watch somebody or something attentively, especially for scientific purposes .
Oxygen	a colorless odorless gas that is essential for plant and animal respiration.
Portrait	a painting, photograph, or drawing of somebody, somebody's face, or a related group.
Radius	the shorter and thicker of the two bones in the human forearm, the one on the thumb side .
Ribs	any of the curved bones extending from the vertebrae and in some cases meeting the sternum, forming a cavity housing vital organs in many vertebrates .

See	to examine, look at, or watch somebody or something using the eyes.
Senses	any of the faculties by which a person or animal obtains information about the physical world, e.g. sight or taste.
Shelter	a structure or building that provides cover from weather or protection against danger .
Shin	the front part of the leg from below the knee to above the ankle.
Shoulder	either of the two parts of the human body immediately below and at each side of the neck, where the arm joins the trunk .
Skull	the skeletal part of the head in humans and other vertebrates, consisting of the cranium, which encases the brain, and the bones of the face and jaws.
Smell	to detect or recognize something by means of sensitive nerves in the nose .
Spine	the axis of the skeleton of a vertebrate animal, extending from the head and consisting of a series of interconnected vertebrae that enclose and protect the spinal cord .
Taste	the sense that perceives the distinctive qualities of something such as a food by means of the sensory organs in the tongue taste buds.
Thigh	the top of the leg between the knee and the hip.
Tibia	the inner and larger of the two bones in the lower leg, extending from the knee to the ankle bone alongside the fibula .
Torso	the upper part of the human body, not including the head and arms.

Touch	to put a part of the body, especially the fingertips, in contact with something so as to feel it.
Ulna	the longer of the two bones in the human forearm, situated on the inner side .
Vein	a blood vessel that carries blood to the heart .
Waist	the part of the human trunk between the rib cage and the hips, usually narrower than the rest of the trunk.
Warmth	the feeling, quality, or state of being warm.
Water	the clear colorless liquid, odorless and tasteless when pure, that occurs as rain, snow, and ice, forms rivers, lakes, and seas, and is essential for life.
Windpipe	the tube in air-breathing vertebrates that conducts air from the throat to the bronchi.

TEACHER REFERENCES

Media Library

Please use the BOCES Instructional Support Website to check out the media available on this science topic. Call the media library to order media materials and to check on new materials that are available. The number to be reached is (716)376-8260.

Websites

<http://teamnutrition.usda.gov/>

http://www.americanheart.org/pre_senter.jhtml?identifier=3028650

http://www.lung.ca/lung101-renseignez/students-etudiants_e.php

<http://homeschooling.gomilpitas.com/explore/skeleton.htm>

<http://www.childfun.com/modules.php?name=News&file=article&sid=135>