



4th - 8th Grade

4-H PROJECT

LESSON

PLANS:

4-H Helps

YOUTH

into the

21st Century

Series **1**

"Blood & Guts"

LSU
AgCenter
Research & Extension

Dear Project Helper,

This lesson is part of an effort by the 4-H Youth Development Division of the LSU AgCenter to provide teaching activities that are fun as well as educational. We are pleased you have agreed to work with youth as they learn and grow. You will help them learn scientific concepts that they will use for many years.

These lessons address Louisiana Content Standards science benchmarks; therefore, what you do with this activity should help strengthen students for LEAP testing. We appreciate your being part of this effort.



Learning Activity: "Blood & Guts"

Key Concepts:

1. The human body has many organs, each with a different function.
2. Major organ systems in the human body include the respiratory, circulatory, digestive, nerve and skeletal systems.

How can members apply this information?

1. Apply team-building skills.
2. Make well-informed decisions concerning the human body.

Getting Ready:

1. Gather all supplies needed.
2. Read lesson and be thoroughly prepared.
3. Prepare copy of human body torso, Resource Sheet #1 for each group. Attach sticky tack at organ locations.
 Copy and cut out human body organs, Resource Sheet #2. Respiratory System - lungs. Circulatory System - heart. Digestive System - esophagus, stomach, liver, small intestine, large intestine, (optional for higher level: gall bladder and pancreas). Nervous System - brain. Skeletal System - bones. (One set for each group).
4. Prepare the body systems poster. Use Resource Sheet #2 for this also.
5. Prepare the healthy behaviors poster, Resource Sheet #3.
6. Copy and cut apart organ function cards, Resource Sheets #4-A & 4-B. Copy the answer key, Resource Sheet 4-C for instructor.
7. Copy trivia fact sheets, Resource Sheets #5-A and #5-B, and Resource Sheet #6 to be used as extra activities.

Track:
 Human Body

Life Skill:
 Healthy lifestyle choices

NNST Science:
 Defining Operation

SCANS:
 Interprets and communicates information, creative thinking, decision making, listening and speaking

Character Focus:
 Respect, Responsibility

Project Skill:
 Properly identifying human body organs, their placement in the body and describing their function

Louisiana Content Standards

Benchmarks:
 LS-M-A5

Delivery Mode:

4-H Club Meetings, Science Class and School Enrichment

Time Allotted:

20-30 minutes

Number of Participants:

10-30

What You Need for the Lesson:

1. Posters of outline of human body torso - one per group
2. Cutouts of human organs in plastic bags for each group
3. Organ function cards in plastic bags for each group
4. Poster of body systems - one per class/club
5. Healthy Behaviors that Affect Body Systems poster - one per class/club

4th-8th Grade “Blood and Guts”

What You Say:	What You Show or Do:	What Participants Do:
<p>Can anyone tell me what a body organ is or does? (Answer: An organ is a part of our body that has a special job to do. For example, our heart pumps blood and our eyes help us to see.)</p>	<p>Allow participants time to discuss and respond.</p>	<p>Discuss and respond.</p>
<p>Many organs work together to form a system. One example of an organ system is the digestive system. Can you think of any other organ systems? (Answers: Some of the body systems are: the digestive system, nervous system, circulatory system, skeletal system and respiratory system.)</p>	<p>Allow participants time to discuss and respond. Use the Fact Sheet, page 67 as a reference.</p>	<p>Discuss and respond.</p>
<p>Why is it important to know about the body systems? (Answers will vary.)</p> <p>The purpose of this lesson is to teach you about the basic structures and functions of the human body and how these structures and functions relate to your personal health.</p>	<p>Allow participants time to discuss and respond.</p>	<p>Discuss and respond.</p>
<p>Now it is time to discover what is inside all of us. Count off from one to four (or five or more) and form groups of four (or five or more).</p>	<p>Break class into groups of four to five. (Groups may be larger, if needed.)</p>	<p>Move into groups.</p>
<p>(Experience)</p> <p>To discover the “blood and guts” of the human body, each group will be given an outline of a human torso, organ cutouts and organ function cards. Working as a team, you will determine where each organ should be placed on the torso; attach by using the sticky tack. Once you have placed each organ, then work together to decide what function each organ must complete. Attach</p>	<p>Give each group an outline of a human torso, a bag of organ cutouts and a set of organ function cards.</p>	<p>Groups place organs in the correct location of the torso and identify the organ functions by placing the organ function card on the correct organ.</p>

4th-8th Grade "Blood and Guts"

What You Say:	What You Show or Do:	What Participants Do:
the function cards you have to the corresponding organs, using the sticky tack.		
The first team to finish will report its findings to the whole class/club.	Allow all teams to finish.	Teams finish activity.
(Share) We will now have the group that finished first come to the front and share with us how it placed each organ and which function went with each organ.	As a team is reporting to the group, allow feedback if group disagrees with the choices. (Encourage communication)	The first team to finish reports to the whole group.
Thank you. Did anyone or any other group come up with anything different, such as organs placed in different locations?	After responses, the teacher/agent/volunteer can refer to poster of Body Systems and match each organ with its system. (Use Resource Sheet #4-C, "Answer Key," to match all the parts and functions.)	Make suggestions for organ placement.
(Process) What did you learn about "blood and guts" through this activity? (Answers will vary.) Why is it important to know about the different organs, their functions and the different body systems? (Possible answers: To understand how our bodies function, to know where the organs are located and how to care for them, etc.)	Allow for discussion and responses. Use Resource Sheet #3, "Healthy Behaviors that Affect Body Systems," to give some reminders for giving good care to our organs. Follow instructions given on the resource sheet.	Discuss and respond.
(Generalize) What did you learn about your decision-making skills? (Answers will vary.) Where can you go to find more information about the human body? (Possible answers: the Internet, health textbooks, science teacher, physician, etc.)	Allow time for discussion and responses.	Discuss and respond.

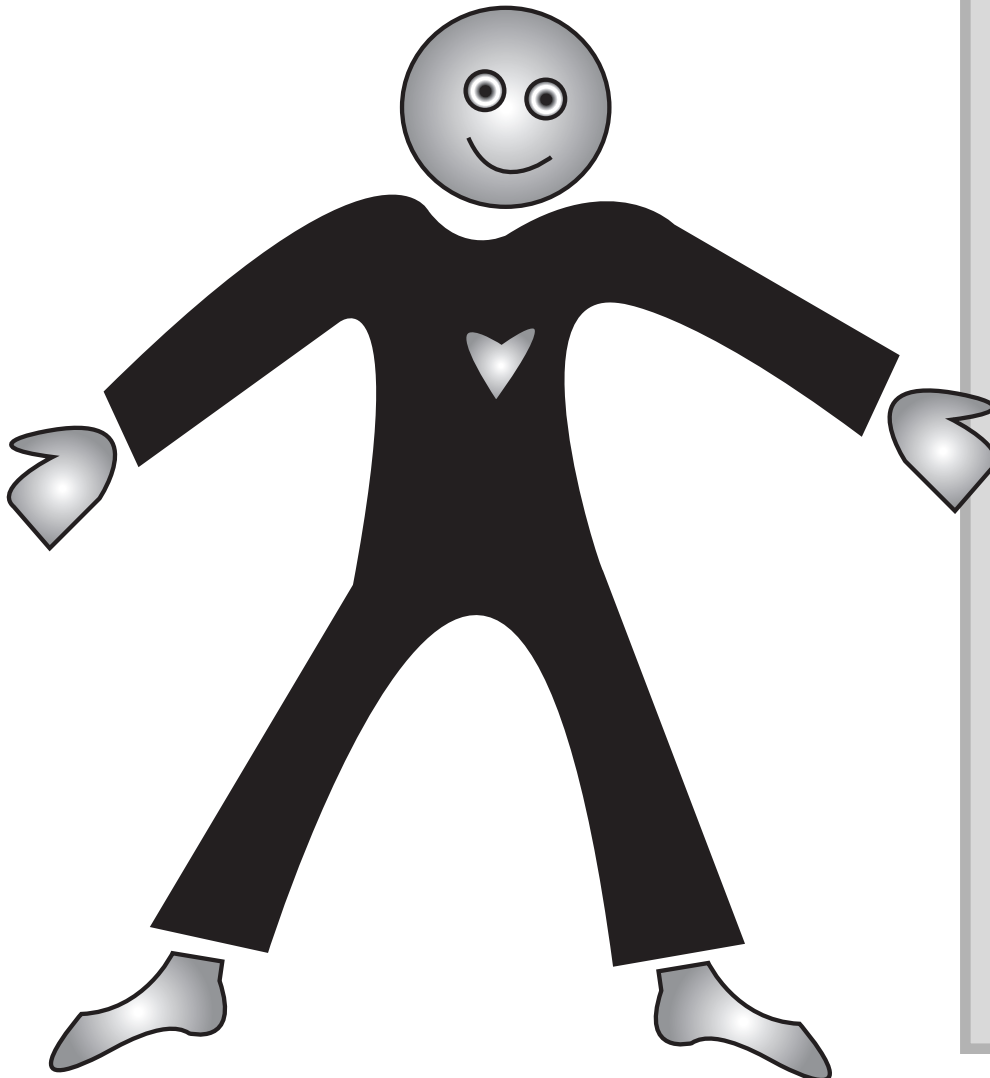
4th-8th Grade “Blood and Guts”

What You Say:	What You Show or Do:	What Participants Do:
<p>(Apply) How did this activity change your thinking about blood and guts? (Possible answers: I now know more about the organs in my body and how they function, I now know why it is important to keep the organs of my body healthy, I know where the major organs of the human body are located.) What will you do tomorrow/ next week/ next month to use what you have learned? (Answers will vary.)</p>	<p>Allow time for discussion and responses.</p>	<p>Discuss and respond.</p>
<p>Each of you is responsible for caring for your body, inside and out. Accept responsibility for what you eat; how much you eat; how much rest and sleep you get; get the right amount of good exercise every day and avoid habits such as smoking and using alcohol and drugs. Following those guidelines, you should have a much healthier set of organs to keep your body working the way it should work. Have respect for those around you. If you have younger brothers or sisters, or if you help take care of younger children, teach them the importance of taking good care of their bodies.</p>		

Ways to Help Members Learn More

1. Use questions on Resource Sheets #4-A & B and 5-B, "Body Trivia," to quiz students about what they have learned. Divide the group into teams. 1. Moving from team to team, read a question aloud and keep score for correct answers. 2. Make a set of game cards for each team and use as a game that each team can play individually.

2. Read aloud the facts from Resource Sheet # 6, "Amazing Facts!" Ask students to give other amazing facts they have learned about the human body.



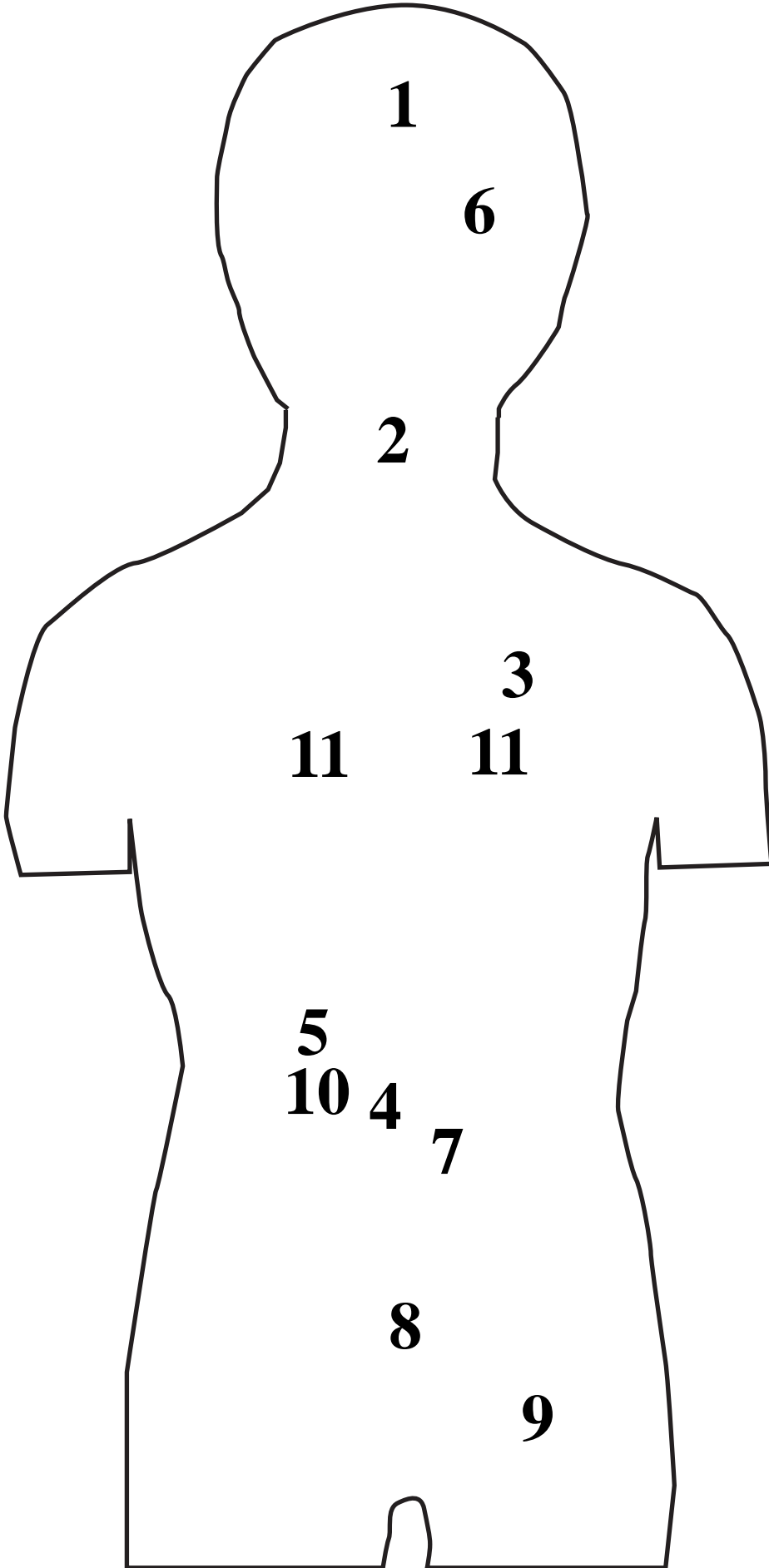
Acknowledgments:
Louisiana Content Standards,
published by Louisiana State
Department of Education.

Authors:

*Donna Ayo, Associate Extension Agent,
Lafourche Parish; Patricia Trosclair, Associate
Extension Agent, Assumption Parish; Layne
Langley, Extension Agent, Pointe Coupee Parish*

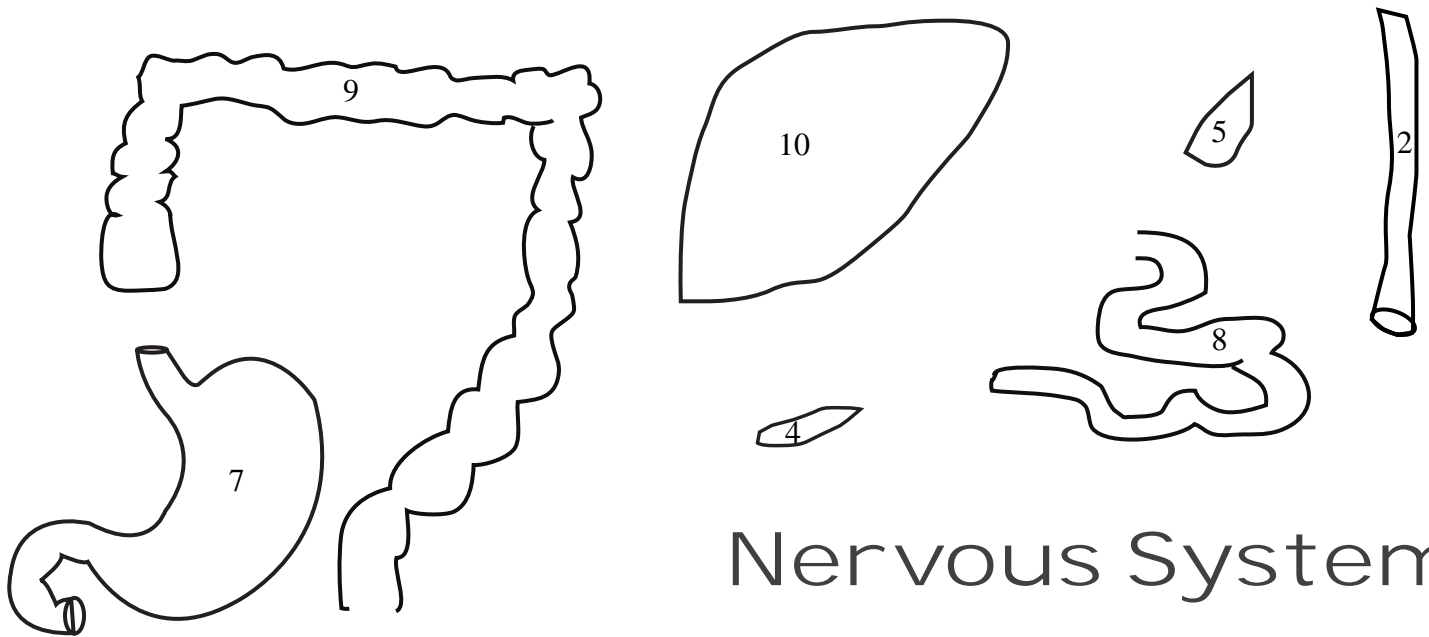
Coordinators:

*Terril Faul, 4-H Division Leader and Sarah
Williams, Extension Associate, 4-H Youth
Development*



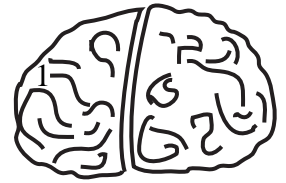
Body Systems Poster
Use Resource Sheet #1 - Poster and Resource Sheet #2 - Poster to create the body systems poster. Use for group activity. Cut out the organ pictures and attach sticky tack to the front of torso at organ locations.

Digestive System



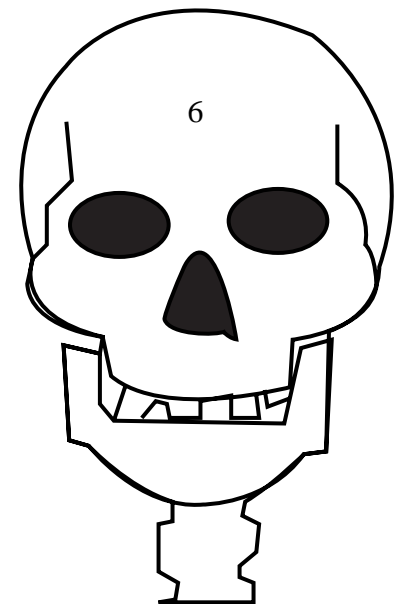
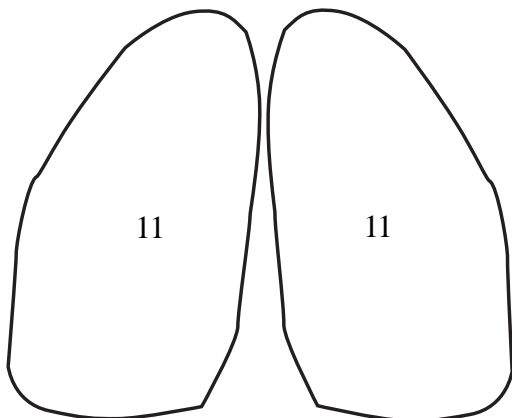
Nervous System

Circulatory System



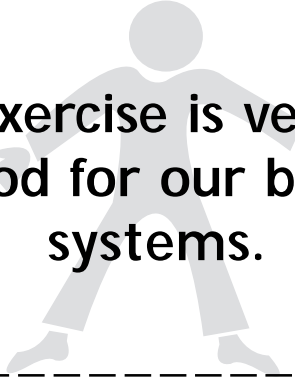
Skeletal System

Respiratory System



Healthy Behaviors that Affect Body Systems

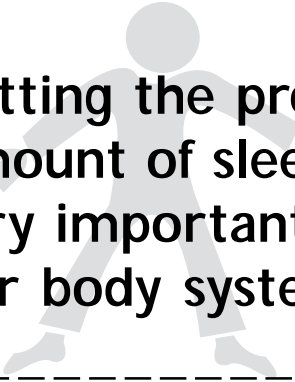
Cut apart. Give one statement to each of six students.
Ask students to read statements aloud.



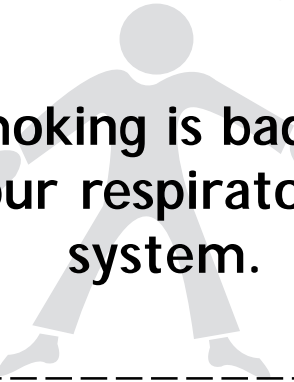
Exercise is very good for our body systems.



Eating good foods is very important for our body systems.



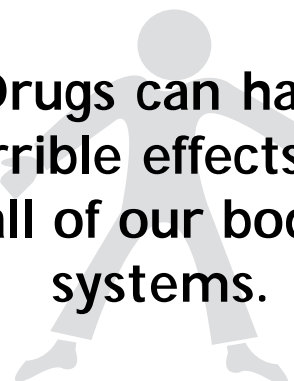
Getting the proper amount of sleep is very important for our body systems.



Smoking is bad for our respiratory system.








Alcohol is also bad for the body.



Drugs can have terrible effects on all of our body systems.

Function Cards:

Cut apart and attach sticky tack to the back of each card. Give one set to each group. These will be attached to organs.

 Carries food to the stomach	 Makes food small enough to mix with bloodstream
 Cleanses food and mixes it with blood	 Water and minerals are absorbed here
 Stores bile produced by liver and sends it to small intestine	

Function Cards, cont.:

**Gives fresh oxygen
to the blood and
takes away
carbon dioxide**

**Controls the
circulatory system.
Provides you with
a pulse.**

**Protects the soft
organs inside
your body**

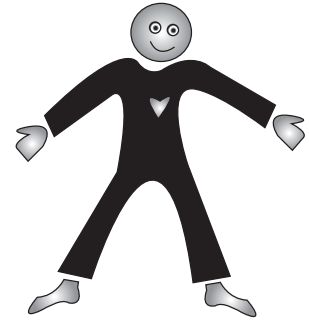
**Receives information,
analyzes this
information and
decides how your
body should respond**

Answer Key



1. **Brain** – receives information, analyzes this information and decides how the body should respond. The brain is like a computer that answers questions and sends messages all over our bodies. It keeps our hearts beating, our lungs breathing and makes us move.
2. **Esophagus** – long muscular tube that squeezes the food down to the stomach.
3. **Heart** – controls the circulatory system. Provides you with a pulse. It is a strong pump that moves blood through the body. Located in the center of the body and is almost the size of our fist.
4. **Pancreas** – makes food small enough to mix with bloodstream and is very important in the body's use of sugar.
5. **Gall Bladder** – stores bile produced by the liver and sends it to the small intestines. It is under the liver and shaped like a pear. The gall bladder's greenish-yellow liquid helps our body break down and use fats and makes stomach acid harmless.
6. **Bones** – protect the soft organs inside your body. Bones are like the strong boards that make a framework for a house.
7. **Stomach** – is like a stretchy bag that holds food after we eat. The stomach also helps to break food into smaller pieces so the body can use it.
8. **Small intestine** - is about 20 feet long. Food is pushed slowly through twists and turns of the small intestine to the large intestine.
9. **Large intestine** - gets the waste products from the small intestine. The waste stays in the large intestine for 10 to 12 hours and then is pushed five feet by the muscle wall. The solid waste is pushed out of the body.
10. **Liver** – cleanses food and mixes it with blood. The liver is a very important factory and storehouse for the body. The liver works hard to clean the blood that is used to digest food. It takes out worn-out red blood cells. It also fights and destroys things in the blood that might poison the body.
11. **Lungs** – give fresh oxygen to the blood and take away carbon dioxide. Lungs help the body breathe. The upper part of our chest is almost filled with lungs. Lungs are made up of millions of elastic-like sacs that fill up with air. They hold about as much air as a basketball.

Body Trivia!!



What's your body's largest organ?
Your skin (You're surrounded by it!)



True or False? When you touch a hot stove, your nerves must carry a message through your spinal cord to your brain before you can move your hand.

False - To keep you from burning yourself, your spinal cord sends a quick message to your muscles, making you move your hand. At the same time, a message goes to your brain saying you're in pain. This is called a reflex.



Does respiration mean "breathing" or "sweating"?
Breathing



What is the main entrance to your respiratory system? HINT: It smells!
Your nose - Your mouth is also an entrance, but you usually breathe through your nose.



Which is not the kind of cell you would find in your body - blood cell, skin cell, jail cell, muscle cell?
Jail cell.



True or False? All cells live about a week and are then replaced by new ones.
False - Some cells, like nerve cells, last a lifetime, while others, like skin cells, survive only a few days.



True or False? Your skin cells stop dividing and making up new skin cells when you are 21 years old.
False - Skin cells keep dividing and making new cells your whole life.



True or False: Your skin is considered an organ.
True - Your skin is an organ whose job is to protect the internal organs in your body.



Take your pulse. What internal organ are you checking?
Your heart. (Did you get the beat?)



You just did a backbend. Did your skin stretch?
Yes - Whenever you move a body part, your skin must stretch.



True or False? Blood gets to all parts of the body by flowing through tubes, or vessels, called arteries, capillaries and veins.
True



Choose one. Is the heart like a pump, a fan or hose?
A pump - It actually has two sides, one that pumps blood to your lungs and another that sends the blood to the rest of your body.

Body Trivia!! cont.



Point to your heart. Did you point to the right, left or middle of your chest?

The middle. (Although most of it is on the left side.)



Does your heart beat faster or slower when you're playing sports?

Faster, to send extra blood and oxygen to your muscles.



You exercise your leg muscles when you jog or ride a bike. Are you also exercising your heart?

Yes - When your heart beats harder and faster, your heart muscle becomes stronger.



Your sense of touch includes everything you can feel with your skin. Which of these is NOT one of those things - heat, cold, color or pain?

Color - Other things you can feel are pressure and texture.



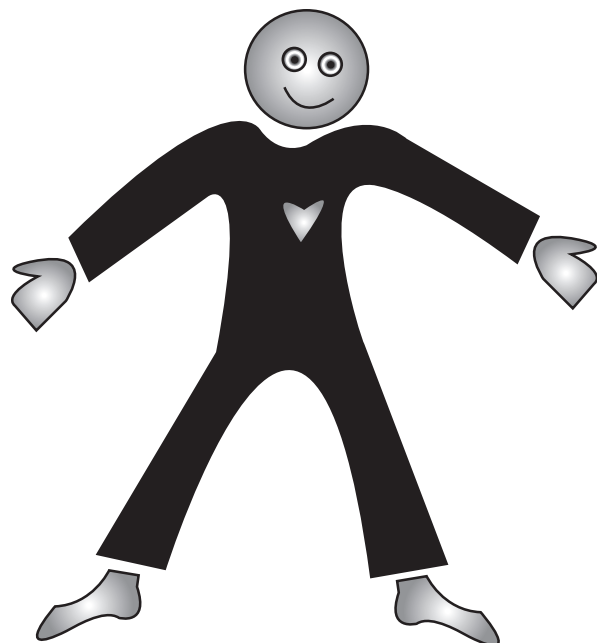
Guess how much blood is in the body.

A baby has 1 quart. A child has 3 quarts. An adult has 5-6 quarts.



True or False? Your fingers and toes become wrinkled when you take a bath because they're dry.

Believe it or not, it's true - even though you're surrounded by wet water, it's actually pulling the moisture right out of your skin.



Amazing Facts!

In your whole body, only one organ is light enough to float on water - your air-filled lungs!

Did you know that wearing light-colored clothing will keep you cooler when it is hot outside? Light colors reflect the sun's heat, and dark colors absorb it.

Your body is made up of about 75 trillion cells (give or take a hundred million).

The heart is the strongest muscle in the body. It has to do the job of pumping all your blood throughout the body for your whole lifetime. Laid end to end, all the body's blood vessels would measure 60,000 miles—enough to go around the earth twice! The heart is about the same size as your fist.

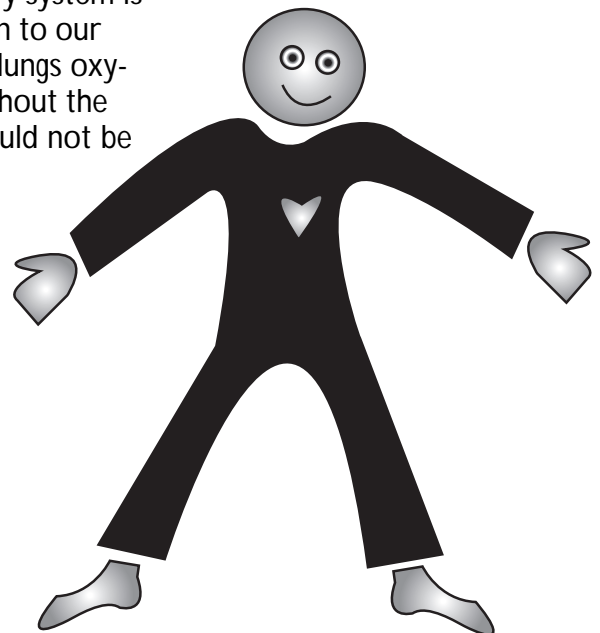
Most men have more blood in their bodies than women - about one quart (one liter) more.

A heart beats more than 2 billion times during the average lifetime. (But who's counting?)

You can live a few days without water and even longer without food, but you can't live without oxygen for more than a few minutes.

Fact Sheet

- The Digestive System includes our mouth, esophagus (tube from mouth to stomach), stomach and anus. Our stomach breaks down the food that we eat and absorbs vitamins and minerals from the food. It provides nutrients for the cells of all other systems in our body to work. The remaining part of the food exits our body through the anus.
- The Nervous System involves the brain and nerve cells. The nervous system controls activities in our body. It makes sure the heart beats and that we breathe. It allows us to think and move our body.
- The Circulatory System includes our heart and blood vessels. It pumps blood throughout the body.
- The Skeletal System includes all the bones that make up the body. The skeletal system gives our body structure. What do you think our body would look like without bones? Without bones we wouldn't be able to stand upright.
- The Respiratory System includes the nose, which leads to the trachea (or windpipe) and then to the lungs. The respiratory system is important to the circulatory system because it provides oxygen to our body's cells. Blood is pumped from the heart to the lungs. The lungs oxygenate the blood, then the oxygenated blood is carried throughout the body. Without oxygen, our cells could not function and we would not be able to survive.



Visit our Web site: www.lsuagcenter.com

This material is based on work supported by the Technology Assisting Louisiana Youth (TALY) project funded in part by the United States Department of Education through Online Louisiana, Inc.

Louisiana State University Agricultural Center, William B. Richardson, Chancellor
Louisiana Agricultural Experiment Station, David J. Boethel, Vice Chancellor and Director
Louisiana Cooperative Extension Service, Paul D. Coreil, Vice Chancellor and Director

Pub. 2889-C

(Online)

7/04

Issued in furtherance of Cooperative Extension work, Acts of Congress of May 8 and June 30, 1914, in cooperation with the United States Department of Agriculture. The Louisiana Cooperative Extension Service provides equal opportunities in programs and employment.