

Teacher/School: Patience Washington

Unit Title: Major Body Systems

Grade Level: 5th or 6th

Subject/topics: Science, Health, Technology

Time Needed: 10- 45 minute class periods (2 weeks)

Learning Objectives:

- 1.) Students will explain the purpose of the skeletal system.
- 2.) Students will describe what the circulatory system consists of.
- 3.) Students will explain how the muscles relate to movement.
- 4.) Students will summarize the major organs of the respiratory system.
- 5.) Students will explain how digestion works.
- 6.) Students will summarize the parts of the nervous system.
- 7.) Students will understand how their immune system fights off diseases.

Sunshine State Standards:

SC.F.1.2.1,
SC.H.1.2.5,
LA.A.2.2.5,
LA.A.2.2.1

Materials/Supplies:

overhead projector, transparencies of body systems, filmstrip, FCAT Science Coach book, magazines, videotapes of Unit VI (correlates with this unit), crayons, markers, construction paper, glue, computer, television, VCR, meter stick, tape, chicken leg bones, water, soap, vinegar, 2 jars, chunks of potatoes, graded potatoes, bags of popcorn (enough for each student to sample), I-Respond equipment (when I get it)

Prerequisite Skills:

Basic knowledge of the human body

Instructional Procedures:

Day 1.) Introduce key vocabulary words to students. Pass out study guide with vocabulary words and definitions printed on it. Tell students to take out their FCAT Science Coach books. Call on volunteers to read pp.108-110 in their FCAT Science

Coach books. These pages give an overall summary of what each body system does and their components. Periodically ask questions about what was read. Pass out comprehension sheet on the lesson.

Day 2.) Discuss the purpose of the skeletal system. Display 2 chicken leg bones, water, soap, vinegar, and 2 jars on the table. Have one volunteer to wash the bones with soap and water. Next have another volunteer put one bone in a jar filled with vinegar (vinegar removes some of the minerals in the bone). Another volunteer will put the other bone in the jar filled with water. Leave the bones in the jars for about seven days. After the seven days, wash the bones with soap and water again. Last observe the bones. Students will tell what happens to the bones if minerals are removed.

Day 3.) Display a diagram of the circulatory system. Discuss functions of the circulatory system in detail and its organs. Afterwards have students to label a blank diagram of the circulatory system from memory. Pull up <http://www.medtropolis.com/VBody.asp> on the computer via big screen television to take a virtual tour of the heart online.

Day 4.) Display a diagram of the respiratory system on the overhead. Discuss the major organs of the respiratory system in detail. Afterwards students will label a blank diagram of the respiratory system and write what each organ does.

Day 5.) Pull up http://kidshealth.org/kid/body/muscles_SW.html on the computer via big screen television. This website has a link for ESOL students so that they may explore it in Spanish. Discuss with students how muscles relate to movement. Watch "The Magic School Bus flexes its muscles" from the school's media center. Afterwards have students to write a summary of what they learned from the video.

Day 6.) Describe how the teeth and stomach work together to begin the digestive process. Divide the class into pairs, and give each pair two jars. Put some potato chunks in one jar. Put some grated potato in the other jar. Add water to each jar. Fasten each lid. Students take turns shaking both jars for 10 minutes. Look at the mixture. Discuss what happened to the potato and where does the body begin to break down food. This activity was taken from www.proteacher.com web site. Students will write a paragraph about why chewing is so important.

Day 7.) Review with students that the nervous system is composed of the brain, spinal cord, sense organs, and nerves. Discuss how the sense organs are the eyes, ears, nose, tongue, and skin. Remind students that the sense organs help the brain react to what is going on around their bodies. Pass out a handful of popcorn to each student. Tell students to eat the popcorn. Then have students to describe the taste, sounds, smell, touch, and sight of the food. Compile a list of all the experiences of the students. This activity was taken from www.proteacher.com.

Day 8.) Discuss with students how the immune system fights off diseases in the body. Watch "Germs Make Me Sick" video from the school's media center. Afterwards students will answer questions from the video in which I have created.

Day 9.) Students will be given magazines, construction paper, scissors, and glue. I will explain to them that they are to create a mini-bulletin board of a body system in which they have been assigned to. They are to make sure that their bulletin board consists of the parts of the system they were given and an overall summary of what that particular system does.

Day 10.) Have students to observe what happened to the chicken bones that were placed in the jar of vinegar and the jar or water from Day 2. Have students complete their observations. Put students in groups of 4 to participate in a system's game to review all of the functions and parts of each system for test. The game will be set up just like Jeopardy. A PowerPoint presentation will be on the television for me to ask the questions.

Day 11.) Students will be given a vocabulary test on all of the words that were introduced and taught throughout this unit. They will match each vocabulary word to its correct definition. (When I receive the I-Respond I will put the test on it instead of having a paper-pencil test.)

Differentiated Instruction:

For my ESOL/Limited English students:

I will let them explore the http://kidshealth.org/kid/body/muscles_SW.html website because it has a link where they can click on the Spanish version. This will allow them to explore the body systems in their native tongue. I will also pair them up with a bilingual student when they are working on independent assignments.

For my ESE students:

I will modify the comprehension sheets and the tests to their ability level. I will also have the students to verbally paraphrase material just read in order to assess their comprehension, In addition, I will arrange for a peer tutor to study with the students for the test.

For my gifted students:

I will have them research on the internet with my guidance one of the body systems. They will complete a research paper on their findings. They will also make a collage displaying a *creative* way of demonstrating the parts of their body system without using the actual parts. For example, they wouldn't have an actual heart on their collage. They could think of something in the real world that acts like a heart on something,

Assessments:

1. Students will be given a vocabulary test sheet in which they match vocabulary terms from the body systems to the correct definition. (Evaluation: written)
2. Students will create a mini-bulletin board displaying the parts of their assigned body system and what it does. (Evaluation: Rubric will determine if all parts are included in display)
3. Students will write an "Incredible Voyage" short story tracing an imaginary trip through the circulatory system. (Evaluation: District Writing Rubric for 5th grade)
4. Students will participate in a review game. (Evaluation: Observation)
5. Students will document observation of chicken bone experiment daily and summarize their findings. (Evaluation: Observation)

Resources:

Hill, Dana. FCAT Science Coach, Grade 5. New York: Educational Design. 2002

<http://proteacher.com>

<http://metroplis.com/VBody.asp>

http://kidshealth.org/kid/body/muscles_SW.html

The Magic School Bus Flexes Its Muscles, Joycelyn Stevenson. ISBN 1-56832-710-2

Scholastic, Inc.

Germes Make Me Sick, Lancit Media Productions



Science Unit 6 Study Sheet for Test Form A

Lesson 22 Vocabulary

- 1. Arteries:** vessels that carry blood filled with oxygen away from the heart to the body.
- 2. Brain:** the core of the nervous system that sends signals throughout the body. It is the center of intelligence and thought.
- 3. Capillaries:** fine meshes of tiny vessels. They pass blood between arteries and veins.
- 4. Carbon dioxide:** a gas found in the air that is given off by animals through respiration. Plants use this gas to make food.
- 5. Circulation:** the process that moves blood through the body
- 6. Circulatory system:** the blood supply system in the body. The organs that move blood around the body, including the heart, veins, arteries, and capillaries. Just think the pipes and plumbing that circulate water in your house. They are your houses' circulatory system.
- 7. Diaphragm:** sheets of muscle that work with the bones in the chest. They relax and contract to force air into and out of the lungs.
- 8. Digestive system:** vessels and organs that work together to digest or break down food in the body. So it can be changed into energy. Your digestive system is made up of every part of your body the food touches from the time you put it in your mouth to the time you use the bathroom!
- 9. Disease:** a breakdown in body functions.
- 10. Excretory system:** organs and tissues that remove all kinds of wastes from the body.
- 11. Heart:** an organ in the body that pumps blood in the circulatory system.
- 12. Immune System:** organs and tissues working together to defend the body against disease. It helps you resist something bad for your body like harmful bacteria or other bad germs.
- 13. Kidneys:** organs that help to clean the blood.
- 14. Large intestine:** an organ of the body that helps to digest food and remove wastes.
- 15. Liver:** an organ that cleans and adds needed chemicals to the blood.
- 16. Lungs:** organs in the body where carbon dioxide in the blood is exchanged for oxygen from the air.
- 17. Muscular system:** muscle system that moves bones and helps to digest food, pump blood, and remove body wastes.
- 18. Nerves:** a bundle of tissue that carries signals to and from the brain.
- 19. Nervous system:** a collection of nerves that controls all the other systems
- 20. Organs:** a group of tissues working together to perform a certain function. They work together to do a job in the body.
- 21. Oxygen:** a gas produced by plants that animals need to live.

22. Reproductive system: organs and tissues that work together to create new life.

23. Respiratory system: organs and tissues that bring oxygen to the body and remove carbon dioxide. This is the group of organs that keep you breathing. If you think of it in terms of your house, things that circulate air-like fans and air conditioners-are your houses respiratory system

24. Sense organs: the eyes, ears, nose, tongue, and skin. They help the brain to react to what is going on around the body.

25. Skeletal system: the bones of the body organized into a system that supports the body, protects your internal organs, and allows your body to move.

26. Skeleton: the bones that form the framework of the body.

27. Small intestine: an organ that helps digest food. It also removes wastes.

28. Spinal cord: the main nerve of the body that stretches from the brain down to the backbone

29. Stomach: an organ that holds food until it can be digested.

30. Systems: organs and tissues working together to perform a function.

31. Veins: vessels that carry blood back to the heart and lungs from the body.

Unit 6 Test Form A

Directions: Match the following definitions to the correct vocabulary words.

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|------------------------------|--|
| 1. _____ Digestive System | a. The bones of the body that support the body, protect the organs, and allow your body to move |
| 2. _____ Circulatory System | b. Blood supply system in the body that move the blood around the body |
| 3. _____ Excretory System | c. Organs and tissues that bring oxygen to the body and remove carbon dioxide, Group of organs keeps you breathing |
| 4. _____ Immune System | d. Vessels and organs that work together to break down food in the body |
| 5. _____ Muscular System | e. Organs and tissues that work together to create new life |
| 6. _____ Nervous System | f. Organs and tissues that remove waste from the body |
| 7. _____ Reproductive System | g. Collection of nerves that controls all the other systems |
| 8. _____ Respiratory System | h. Organs and tissues working t-together to defend the body against disease |
| 9. _____ Skeletal System | i. System that moves bones and helps digest food, pump blood, and remove body waste |
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|---------------------------------|--|
| 1. _____ arteries | a. a gas produced by plants that <u>animals</u> need to live |
| 2. _____ brain | b. vessels that carry blood away from the heart |
| 3. _____ capillaries | c. group of tissues working together to do a job |
| 4. _____ carbon dioxide | d. bundle of tissues carrying signals to and from the brain |
| 5. _____ circulation | e. organs in the body where carbon dioxide is exchanged for oxygen from the air |
| 6. _____ waphragm | f. the center of intelligence and thought that sends signals throughout the body |
| 7. _____ disease | g. the process that moves blood through the body |
| 8. _____ heart | h. pass blood between arteries and veins |
| 9. _____ kidneys | i. muscle that force air into and out of the lungs |
| 10. _____ large/small intestine | j. an organ that cleans and adds chemicals to the blood |
| 11. _____ liver | k. organs of the body that help digest food and remove wastes |
| 12. _____ lungs | l. breakdown in body functions |
| 13. _____ nerves | m. organ that pumps blood throughout the body |
| 14. _____ organs | n. organs that help clean the blood |
| 15. _____ oxygen | o. eyes, ears, nose, tongue, and skin. |
| 16. _____ sense organs | p. vessels that carry blood to the heart and lungs |
| 17. _____ skeleton | q. organs and tissues working together to perform a job |
| 18. _____ spinal cord | r. bones that form the frame of the body |
| 19. _____ stomach | s. gas found in the air that is given off by animals through respiration |
| 20. _____ systems | t. organ that holds food until it can be digested |
| 21. _____ veins | u. the main nerve of the body |

Measurement of the Skeleton

Materials: Paper, tape, and a meterstick.

Step 1. Stand straight against a wall in your classroom.

Step 2. Have a friend tape a piece of paper to the wall, behind your head.

Step 3. Have your friend place the meterstick lightly on top of your head.

(Step 4. Ask your friend to make a mark on the paper where the meterstick touches it.

Step 5. Use the meterstick to measure the distance from the distance from the floor to the mark on the paper. How tall are you?

Step 6. Have your friend stand against the wall and measure your friend's height.

Step 7. Measure some other people's height.

Step 8. Make a chart of all the people that you measured.

Do the boys or girls have the longer skeleton?