

Amazing Body Systems

Grade Level or Special Area: First grade Technology, Science, Reading, and Writing

Written by: Debbie DeFrancesco and Ivette Orama

Length of Unit: 5 lessons + 12 days of Culminating Activities

I. ABSTRACT

The first grade students have been invited to host a hands-on learning kiosk at the school's Health Fair. This year's theme is Amazing Body Systems. The students will become experts in 5 human body systems during a unit of study facilitated by the teacher. This unit will focus on using storyboards, rubrics and technology to teach the students about the body systems and to evaluate their learning. After the content lessons have been completed, the students will work in cooperative groups to conduct research, participate in experiments, discuss their findings, and use the computers to create publications and electronic presentations to show their findings. The experts will use their projects to share their discoveries about the human body systems at the Health Fair. This unit will meet the needs of the gifted and LEP students by providing partner activities, scaffolding materials, demonstrations, and vocabulary development.

II. OVERVIEW

A. Concept Objectives

1. The students will develop an understanding of the functions and complexity of the many body systems.

B. Content from the *Core Knowledge Sequence*

1. Human body systems

C. Skill Objectives

Lesson One: The Skeletal System

1. The students will locate and identify the skull, rib cage, spine, leg bones and arm bones.
2. The students will identify one organ that is protected by the skeletal system.
3. The students will create and label a diagram of the skeletal systems to show the following: skull, spinal cord, and the rib cage.
4. The students will make predictions about what they think is inside their bones.
5. The students will conduct an experiment to find out what is inside the bones.
6. The students will describe the function of the skeletal system by using the following vocabulary: hollow, bones, muscle, and protect.

Lesson Two: The Muscular System

7. The students will describe the parts that make up the muscular system.
8. The students will exercise in order to discover the muscles in the face, neck, arms, legs, back, feet, and toes.
9. The students will identify and list 3 areas of the body where they felt muscle movement as they exercised.
10. The students will describe the function of the muscular system by using the following vocabulary: contract, exercise, healthy, heart, muscle, pump, relax.

Lesson Three: The Digestive System

11. The students will identify the parts of the digestive system.
12. The students will conduct an experiment to see what happens to food as it travels through the digestive system.
13. The students will explain what happens to food when it enters the mouth.
14. The students will describe the function of the digestive system by using the following vocabulary: enzyme, saliva, esophagus, stomach, small intestines, and large intestines.

Lesson Four: The Circulatory System

15. The students will count and record how many times their heart beats in 1 minute during rest.

16. The students will count and record how many times their heartbeats in 1 minute after exercise.
 17. The students will compare the amount of heartbeats after exercise to the amount of heartbeats after rest to determine when their heart is working harder.
 18. The students will describe the function of the circulatory system by using the following vocabulary: aorta, artery, blood, blood vessel, heart, lung, oxygen, and vein.
- Lesson Five: The Nervous System**
19. The students will examine objects through touch and smell to determine what they are, based on signals sent to their brains.
 20. The students make predictions about what is inside the touch bags and the smell jars.
 21. The students conduct an experiment using the sense of smell and touch to see if their predictions were correct.
 22. The students will describe the function of the circulatory system by using the following vocabulary: brain, nerve, nervous system, signal, and spinal cord.

III. BACKGROUND KNOWLEDGE

- A. For Teachers
 1. Hirsch, Jr.; E.D. *What Your First Grader Needs To Know* (Revised Edition). New York, NY: Doubleday, 1997. ISBN 0-83504119-5
- B. For Students
 1. The Human Body: exercise, cleanliness, healthy foods, rest. Kindergarten

IV. RESOURCES

- A. Frost, Helen. *The Circulatory System*. Mankato, MN: Capstone, 2001. ISBN 0-7368-0648-2
- B. Frost, Helen. *The Digestive System*. Mankato, MN: Capstone, 2001. ISBN 0-7368-0649-0
- C. Frost, Helen. *The Muscular System*. Mankato, MN: Capstone, 2001. ISBN 0-7368-0650-4
- D. Frost, Helen. *The Nervous System*. Mankato, MN: Capstone, 2001. ISBN 0-7368-0651-2
- E. Frost, Helen. *The Skeletal System*. Mankato, MN: Capstone, 2001. ISBN 0-7368-0653-9
- F. Hirsch, Jr.; E.D. *What Your First Grader Needs To Know* (Revised Edition). New York, NY: Doubleday, 1997. ISBN 0-83504119-5
- G. Maurer, Tracy. *Bones Bodyworks*. Vero Beach, FL: Rourke, 1999. ISBN 0-86593-580-7
- H. Sandeman, Anna. *Body Books: Bones*. Brookfield, CT: Cooper Beech, 1995. ISBN 1-56294-621-8
- I. Sandeman, Anna. *Body Books: Brain*. Brookfield, CT: Cooper Beech, 1995. ISBN 1-7613-0490-8
- J. Simon, Seymour. *Muscles Our Muscular System*. New York, NY: Morrow, 1998. ISBN 0-688-14642-2
- K. Technology- Presentation Station (ex. VGA Elite, Smart Board), projector, computers, Internet connection, printer.

V. LESSONS

Lesson One: Skeletal System

- A. *Daily Objectives*
 1. Concept Objective(s)
 - a. The students will develop an understanding of the functions and complexity of the many body systems.
 2. Lesson Content
 - a. Introduction to the human body and the skeletal system.
 3. Skill Objective(s)
 - a. The students will locate and identify the skull, rib cage, spine, leg bones and arm bones.

- b. The students will identify one organ that is protected by these bones.
- c. The students will create and label a diagram of the skeletal system to show the following: skull, spinal cord, and the rib cage.
- d. The students will make predictions about what they think is inside their bones.
- e. The students will conduct an experiment to find out what is inside the bones.
- f. The students will describe the function of the skeletal system by using the following vocabulary: hollow, bones, muscle, and protect.

B. *Materials*

1. Classroom materials required for every lesson: Chart paper, markers, pencils, scissors, and Learning Log (journal for this unit).
2. Key vocabulary written on chart paper
3. Teacher-made PowerPoint presentation
4. Full size skeleton
5. X-rays
6. Chicken bones, pre-cut, one per team
7. *Book-Body Books Bones*
8. *Book- What Your First Grader Needs to Know*
9. Appendix A Invitation
10. Appendix B PowerPoint Presentation
11. Appendix C Skeletal System Diagram
12. Appendix D Blank Skeletal System Diagram
13. Appendix E Skeletal System Rubric

C. *Key Vocabulary*

1. bone- a hard white body part that makes up the skeletal system
2. hollow- having a space inside; some parts of the bones are empty inside.
3. joint- a place where two bones meet
4. muscle- a part of the body that causes movement; muscles are attached to the bones; they pull on the bones to make them move.
5. protect- to guard or keep something safe from injury.
6. rib cage- the set of curved bones around the chest; the rib cage is connected to the spine.
7. skull- the set of bones in the head; the skull protects the brain, eyes and ears.
8. spinal cord- a long, thick cord of nerve tissue; it starts at the brain and goes down the back; the spinal cord carries signals between the brain and other parts of the body; the spine protects the spinal cord.

D. *Procedures/Activities*

1. Read the invitation for the Health Fair to the students. Engage in a discussion about the meaning of the word “system”. Write the question, “What is a system?” on chart paper. (Appendix A)
2. Brainstorm with the students simple answers to the essential question, “What is a system?” List their answers on chart paper. Work with the students to write a simple definition for the word “system”. Tell the students that the body is made up of many systems.
3. Use the teacher-made PowerPoint presentation to introduce the body systems. (Appendix B)
4. Tell the students that today they will be learning about skeletal system. Introduce the vocabulary for Lesson One. While you are introducing the vocabulary, have the students write the vocabulary words in their Learning Logs.

5. Read *The Skeletal System* pages 286-287 from the book *What Your First Grader Needs to Know*. Discuss the skeletal system.
6. Read *The Skeletal System* aloud. Have the students feel for each bone as they listen to the story. Tell the students that the skeletal system's job is to give the body shape, protect the parts inside the body and to help the body stand and move.
7. Use the life-size skeleton model to identify and label the following bones: skull, rib cage, spine, leg bones, joint, and arm bones. Have student volunteers come up and label the bones.
8. Discuss the names of the organs that are protected by these bones.
9. Go to the Skeletal System web site.
<http://www4.tpgi.com.au/users/amcgann/body/skeletal.html>
10. Open the skeletal system diagram. Show labels for the skull, rib cage, spine, leg bones, joint, and arm bones. (Appendix C)
11. Read *Body Books Bones* "Broken Bones" pages 26-27. Explain x-rays. Doctors can take a picture of our bones. Show the pictures of old x-rays. Have students point to the healthy bones and to broken bones.
12. Go to the How do x-rays work? web site. Read about how these work.
http://vilenski.org/science/humanbody/hb_html/skeleton-x-ray.html
13. Make predictions about what they think bones are made up of. Open a Word document and list their answers.
14. Experiment- Give each team one bone from a chicken bone. Assist them with cutting or breaking the bone to see what is inside.
15. Share and list their findings on the Word document.
16. Open the blank skeletal system diagram. Identify the parts of the skeletal system. Have student volunteers come up and type the answers to label the parts. (Appendix D)
17. Learning Logs- The students refer to the labeled skeletal system in order to illustrate and label their own skeletal system.
18. Review the vocabulary for today's lesson. Remind students to use the vocabulary in their oral and written answers.
19. Discuss what the skeletal system is made up of and what it does. Open a Word document and type the answers as the students share them.
20. Learning Logs- The students use the following vocabulary to tell about the function of the skeletal system: hollow, bones, muscles, and protect.

E. *Assessment/Evaluation*

1. The teacher will use a content-based rubric to assess the students' written entry in the Learning Log. (Appendix E)

Lesson Two: Muscular System

A. *Daily Objectives*

1. Concept Objective(s)
 - a. The students will develop an understanding of the functions and complexity of the many body systems..
2. Lesson Content
 - a. Introduction to the muscular system.
3. Skill Objective(s)
 - a. The students will describe the parts that make up the muscular system.
 - b. The students will exercise in order to discover the muscles in the face, neck, arms, legs, back, feet, and toes.
 - c. The students will identify and list 3 areas of the body where they felt muscle movement as they exercised.

- d. The students will describe the function of the muscular system by using the following vocabulary: contract, exercise, healthy, heart, muscle, pump, relax.

B. *Materials*

1. Classroom materials required for every lesson: Chart paper, markers, pencils, scissors, and Learning Log (journal for this unit).
2. Key vocabulary written on chart paper
3. *Book- Muscle Our Muscular System*
4. *Book- What Your First Grader Needs to Know*
5. Appendix F Muscular System Rubric

C. *Key Vocabulary*

1. contract- to tighten; a muscle becomes shorter when it contracts; this causes part of the body to move.
2. exercise- activity that keeps people fit and healthy; exercise uses muscles and makes them stronger.
3. healthy- fit and well; healthy muscles are strong.
4. heart- a body part that is inside the chest; the heart pumps blood through the body; the heart is a muscle that works all the time.
5. muscle- a body part that produces movement.
6. pump- to force a liquid or gas from one place to another.
7. relax- to loosen; a muscle becomes longer when it relaxes.

D. *Procedures/Activities*

1. Review the vocabulary and Learning Log entries from Lesson One.
2. Tell the students that today they will be learning about the muscular system.
3. Introduce the vocabulary for Lesson Two. While you are introducing the vocabulary, have the students write the vocabulary words in their Learning Logs.
4. Read the Muscular System page 288 from the book *What Your First Grader Needs to Know*. Discuss the muscular system.
5. Read *The Muscular System*. Describe the parts that make up the muscular system. Tell the students that the muscular system's job is to help the body move.
6. Go to the Muscular system website. Read about the different types of muscles. http://vilenski.org/science/humanbody/hb_html/muscles.html
Look at the heart muscle. Discuss how the heart contracts and expands to pump the blood throughout the body. http://vilenski.org/science/humanbody/hb_html/heart.html
7. Tell the students that we have muscles in our legs, arms, back, hands, face, and heart.
8. Activity- Practice identifying various areas of the body where muscles are at work by playing Simon Says. Instruct the students to do the following actions: flutter their eyes, frown, smile, flap their arms, swim with their arms, make fists, flex fingers, touch their toes, stand on one foot, jog in place, feel their heart beat in their chest. As the students play, emphasize that during all these actions their muscles are working.
9. Review the vocabulary for today's lesson. Remind students to use the vocabulary in their oral and written answers.
10. Discuss what the muscular system is made up of and what it does. Open a Word document and type the answers as the students share them.
11. Have students share the names of their body parts where they felt muscle movement as they exercised during the game.
12. Learning Log- The students use the following vocabulary to tell about the function of the muscular system: contract, exercise, healthy, heart, muscle, pump, relax.

E. *Assessment/Evaluation*

1. The teacher will use a content-based rubric to assess the students' written entry in the Learning Log. (Appendix F)

Lesson Three: Digestive System

A. *Daily Objectives*

1. Concept Objective(s)
 - a. The students will develop an understanding of the functions and complexity of the many body systems.
2. Lesson Content
 - a. Introduction to the human digestive system.
3. Skill Objective(s)
 - a. The students will identify the parts of the digestive system.
 - b. The students will conduct and experiment to see what happens to food as it travels through the digestive system.
 - c. The students will explain what happens to food when it enters the mouth.
 - d. The students will describe the function of the digestive system by using the following vocabulary: enzyme, saliva, esophagus, stomach, small intestines, and large intestines.

B. *Materials*

1. Classroom materials required for every lesson: Chart paper, markers, pencils, scissors, and Learning Log (journal for this unit).
2. Key vocabulary written on chart paper
3. Raisins, plastic knife, plastic fork, bowl (one per student), gallon of water
4. *Book- What Your First Grader Needs to Know*
5. *Book- The Digestive System*
6. Appendix G Digestive System Rubric

C. *Key Vocabulary*

1. enzyme- a substance that helps break down food.
2. Saliva- the clear liquid in the mouth; an enzyme in saliva begins to break down food.
3. esophagus- the tube that carries food from the mouth to the stomach; muscles in the esophagus push food into the stomach.
4. stomach- the place where chewed food is broken down: the stomach uses gastric juices to digest food; gastric juices are made of water, acid and enzymes.
5. small intestines- long tubes between the stomach and the large intestine; the small intestine is coiled to fit in the body; digested food in the small intestine passes into the bloodstream.
6. large intestine- a tube that is the last part on the digestive system; the large intestines push solid waste out of the body.

D. *Procedures/Activities*

1. Review the vocabulary and Learning Log entries from Lesson Two.
2. Tell the students that today they will be learning about the digestive system.
3. Introduce the vocabulary for Lesson Three. While you are introducing the vocabulary, have the students write the vocabulary words in their Learning Logs.
4. Read *The Digestive System* pages 288-289 from the book *What Your First Grader Needs to Know*. Discuss the digestive system.
5. Read *The Digestive System*. Tell the students that the digestive system's job is to digest the food. As food travels through the body it is broken down into smaller pieces. Discuss the path that foods take and what happens to it along the way. Tell the student that after the food is broken down into smaller pieces the body absorbs the nutrients we need. It changes it into energy.

6. Go to the Digestive system 1 website to see its parts and to learn about how food is digested. http://vilenski.org/science/humanbody/hb_html/digestivesystem.html
 7. Learning Log- The students refer to the diagram of the digestive system in order to illustrate and label the digestive system. Label the following parts: mouth, esophagus, stomach, small intestines, and the large intestines.
 8. Experiment- Ask the students, “What happens when we chew or food?” Have the students make predictions. Open a Word document and type their answers. Tell the students that they will use raisins to see what happens to food when we chew it. Give each student a few raisins in a bowl, a plastic knife, and a plastic fork. Have each student look at the raisins carefully. Use a magnifying glass. Have the students draw what they see. Next, place the raisins in the bowl. Chop them into little pieces. Add a little water. Use a fork to mash them. Have the students look at the raisins again. Have them draw what the raisins look like now.
 9. Tell the students that this is how the parts of the digestive system work together to break down food.
 10. Review the vocabulary for today’s lesson. Remind students to use the vocabulary in their oral and written answers. Go to the Digestive system 2 website to review the parts of the system and to play the match game.
http://hes.ucf.k12.pa.us/gclaypo/swap2/image_swap2.html
 11. Discuss the function of the digestive system. Open a Word document and type the answers as the students share them.
 12. Learning Log-The students use the following vocabulary to describe the function of the digestive system: enzyme, saliva, esophagus, stomach, small intestines, large intestines.
- E. *Assessment/Evaluation*
1. The teacher will use a content-based rubric to assess the students’ written entry in the Learning Log. (Appendix G)

Lesson Four: Circulatory System

A. *Daily Objectives*

1. Concept Objective(s)
 - a. The students will develop an understanding of the functions and complexity of the many body systems.
2. Lesson Content
 - a. Introduction to the circulatory system.
3. Skill Objective(s)
 - a. The students will count and record how many times their heart beats in 1 minute during rest.
 - b. The students will count and record how many times their heartbeats in 1 minute after exercise.
 - c. The students will compare the amount of heart beats after exercise to the amount of heart beats after rest to determine when their heart is working harder.
 - d. The students will describe the function of the circulatory system by using the following vocabulary: aorta, artery, blood, blood vessel, heart, lung, oxygen, and vein.

B. *Materials*

1. Classroom materials required for every lesson: Chart paper, markers, pencils, scissors, and Learning Log (journal for this unit).
2. Key vocabulary written on chart paper
3. Food coloring, 2 (1 gallon size), stopwatch
4. Heartbeat sounds tape

5. CD- upbeat music, soothing music
 6. *Book- What Your First Grader Needs to Know*
 7. *Book- The Circulatory System*
 8. Appendix H Heartbeat Experiment Document
 9. Appendix I Circulatory System Rubric
 - 10.
- C. *Key Vocabulary*
1. aorta- the biggest artery in the body; the aorta carries blood away from the heart.
 2. artery- a blood vessel that carries blood away from the heart to every part of the body; blood in arteries carry oxygen.
 3. blood- the red liquid pumped through the body by the heart; an adult has about 1.5 gallons of blood.
 4. blood vessels- tubes that carries blood around the body.
 5. heart- a body part inside the chest; the heart pumps blood all the time.
 6. lungs- the body part that takes air into and out of the body.
 7. oxygen- a gas found in the air; oxygen has no color or smell; all humans and animals need oxygen.
 8. veins- blood vessels that carry blood back to the heart from everywhere in the body; blood in veins does not carry oxygen.
- D. *Procedures/Activities*
1. Review the vocabulary and Learning Log entries from Lesson Three.
 2. Tell the students that today they will be learning about the circulatory system.
 3. Introduce the vocabulary for Lesson Four. While you are introducing the vocabulary, have the students write the vocabulary words in their Learning Logs.
 4. Read *The Circulatory System* page 288 from the book *What Your First Grader Needs to Know*. Discuss the circulatory system.
 5. Read *The Circulatory System*. Tell the students that the circulatory system's job is to move the blood around the body and keep the body healthy.
 6. Go to the Circulatory system 1 website to see how the heart pumps the blood.
http://kidshealth.org/kid/body/heart_SW_p3.html
 7. Go to the Circulatory system 2 website to learn about the parts that make up the circulatory system. http://vilenski.org/science/humanbody/hb_html/circ_system.html
 8. Name the organs that are part of the circulatory system. Discuss their purpose and function. (1. The heart is a muscle. It pumps blood throughout into the aorta. 2. The aorta is an artery. It carries the blood away from the heart. 3. The aorta breaks up into smaller parts; veins, arteries. 4. The blood carries oxygen to all parts of the body. 5. The blood that flows through veins does not carry oxygen. 6. Blood flows back into the heart and the heart pumps it back around the body.
 9. Go to the Circulatory system 3 website and read about finding your pulse.
http://kidshealth.org/kid/body/heart_SW_p5.html
 10. Ask the students to show you where their hearts are. As the students feel their heartbeats, tell them that their heart is a muscle that pumps blood. Put some food coloring in the gallons of water and mix it. Show the students the two 1gallon bottles of water and explain that an adult body holds 1-½ gallons of blood.
 11. Experiment- Ask the students, "How many times does your heart beat in 1 minute?" Open the Heartbeat Experiment document. Type the students' names and their prediction. (Appendix H)
 12. Listen to the heartbeat sounds tape and practice counting heart beats. Have the students place their hands over their hearts and practice counting.

13. Start the stopwatch and have the students count heartbeats for one minute. Tell the students that this is their resting heart rate.
14. After counting heart beats for 1 minute, have the students write the number of heart type the number of heart beats in the next column of the Heart beat Experiment document.
15. Check the chart to see if their predictions were correct.
16. Ask the students, “How many times do you think your heart will beat after 2 minutes of exercise?” Have the students write a prediction and type it on the next column of the chart.
17. Play some upbeat music and have the students jog or dance in place for 2 minutes. Turn off the music, start the stopwatch and have them count their heart beats for 1 minute. Tell the students that this is their heart rate after exercise. It beats faster when it is pumping more blood through the circulatory system.
18. Have the students share and type the number of heartbeats that they have counted on the next column of the chart. Check the chart to see if their predictions were correct.
19. Play some soothing music and have the students lie on the carpet with their eyes closed for 2 minutes. Turn off the music, start the stopwatch and have them count their heart beats for 1 minute. Tell the students that this is their heart rate after resting. Type the number of heart beats in the last column of the chart. Allow the students to compare the number of heart beats. Find out the highest, the lowest, and discuss numbers that are very low or too high.
20. Review the vocabulary for today’s lesson. Remind students to use the vocabulary in their oral and written answers.
21. Discuss the function of the circulatory system. Open a Word document and type the answers as the students share them.
22. Learning Log- The students use the following vocabulary to describe the function of the circulatory system: aorta, artery, blood, blood vessel, heart, lung, oxygen, and vein.

E. *Assessment/Evaluation*

1. The teacher will use a content-based rubric to assess the students’ written entry in the Learning Log.

Lesson Five: Nervous System

A. *Daily Objectives*

1. Concept Objective(s)
 - a. The students will develop an understanding of the functions and complexity of the many body systems.
2. Lesson Content
 - a. Introduction to the nervous system.
3. Skill Objective(s)
 - a. The students will examine objects through touch and smell to determine what they are, based on signals sent to their brains.
 - b. The students make predictions about what is inside the touch bags and the smell jars.
 - c. The students conduct an experiment using the sense of smell and touch to see if their predictions were correct.
 - d. The students will describe the function of the circulatory system by using the following vocabulary: brain, nerve, nervous system, signal, and spinal cord.

B. *Materials*

1. Classroom materials required for every lesson: Chart paper, markers, pencils, scissors, and Learning Log (journal for this unit).
2. Key vocabulary written on chart paper

3. 4 touch bags, brown paper bags with the following items: elbow macaroni, salt, cotton balls, plastic fork
 4. 4 smell jars, baby food jars with the following items: garlic clove, cotton ball with vanilla extract, orange, cinnamon
 5. *Book- What Your First Grader Needs to Know*
 6. *Book- The Nervous System*
 7. Appendix J Brain Signals Document
 8. Appendix K Nervous System Rubric
- C. *Key Vocabulary*
1. brain- the body part in the head that controls the body; the brain helps people move, think and feel; it controls breathing and the heartbeat.
 2. nerve- a thick bundle of fibers that send signals; the signals go from one part of the body to another.
 3. signal- a message; nerves carry signals to and from the brain to the spinal cord.
 4. spinal cord- a long thick cord of nerve tissue; the spinal cord starts at the brain and goes down the back; the spinal cord carries signals between the brain and other parts of the body; the spine protects the spinal cord.
- D. *Procedures/Activities*
1. Review the vocabulary and Learning Log entries from Lesson Four.
 2. Tell the students that today they will be learning about the nervous system.
 3. Introduce the vocabulary for Lesson Five. While you are introducing the vocabulary, have the students write the vocabulary words in their Learning Logs.
 4. Read *The Nervous System* pages 289-290 from the book *What Your First Grader Needs to Know*. Discuss the nervous system.
 5. Read *The Nervous System*. Tell the students that the nervous system's job is to control the body. It helps us move and speak. The nervous system is made up of the brain, spinal cord, and the nerves.
 6. Go to the Nervous system website to see its parts.
<http://www.innerbody.com/image/nervov.html>
 7. Read "Nerve Signals" pages 12-13. Demonstrate the knee jerk reflex with a rubber mallet (Try this on your knee while sitting down). Tell the students that this is an involuntary reflex.
 8. Experiment- Tell the students that they will use the nerve in their hands and noses to determine what they are touching and smelling. Give each team a copy of the Brain Signals Experiment document. (Appendix J)
 9. Show students each numbered touch bag and jar. Have each team touch or smell the unknown bags and jars. The students make predictions about what they think is inside each one. The teams discuss their predictions and write them on the Brain Signals chart.
 10. Open the bags and have the students check their predictions. Remind the students that the nerves on their hands sent the signals to the brain. The brain figured out what was inside the bag.
 11. Tell the students the name of the scent in each smell jar. Have the students check their predictions. Tell them that the nerves in their noses sent the signal to their brains.
 12. Review the vocabulary for today's lesson. Remind students to use the vocabulary in their oral and written answers.
 13. Discuss the function of the nervous system. Open a Word document and type the answers as the students share them.
 14. Learning Log- The students use the following vocabulary to describe the function of the nervous system: brain, nerve, nervous system, signal, spinal cord.
- E. *Assessment/Evaluation*

1. The teacher will use a content-based rubric to assess the students' written entry in the Learning Log. (Appendix K)

VI. CULMINATING ACTIVITY

The culminating activities will be conducted in order to integrate the technology component. This will provide the students an opportunity to apply their new knowledge and share their learning experience with parents and other students.

- A. Day 1-2 Assign each team one human body system: skeletal system, muscular system, digestive system, circulatory system, and nervous system. Review the charts posted around the room with information about each of the body systems. Activity- Students will use Publisher to create an invitation for their parents to come to the Health Fair.
- B. Day 3-5 Activity- Students will use Publisher to create a flyer to post around the school in order to provide information about the body system they are researching and to invite students to stop by the Health Fair.
- C. Day 6-10 Activity- Students will use PowerPoint to create a presentation to tell about their assigned human body system.
- D. Day 11 Set up Health Fair kiosks around the classroom. Have a "Sharing Session" for the teams to practice presenting their information to other class members. The teacher uses different rubrics to grade the student publications and presentations.
 1. Invitation Rubric (Appendix L)
 2. Flyer Rubric (Appendix M)
 3. Presentation Rubric (Appendix N)
- E. Day 12 Host Health Fair for parents and other students.

VII. HANDOUTS/WORKSHEETS

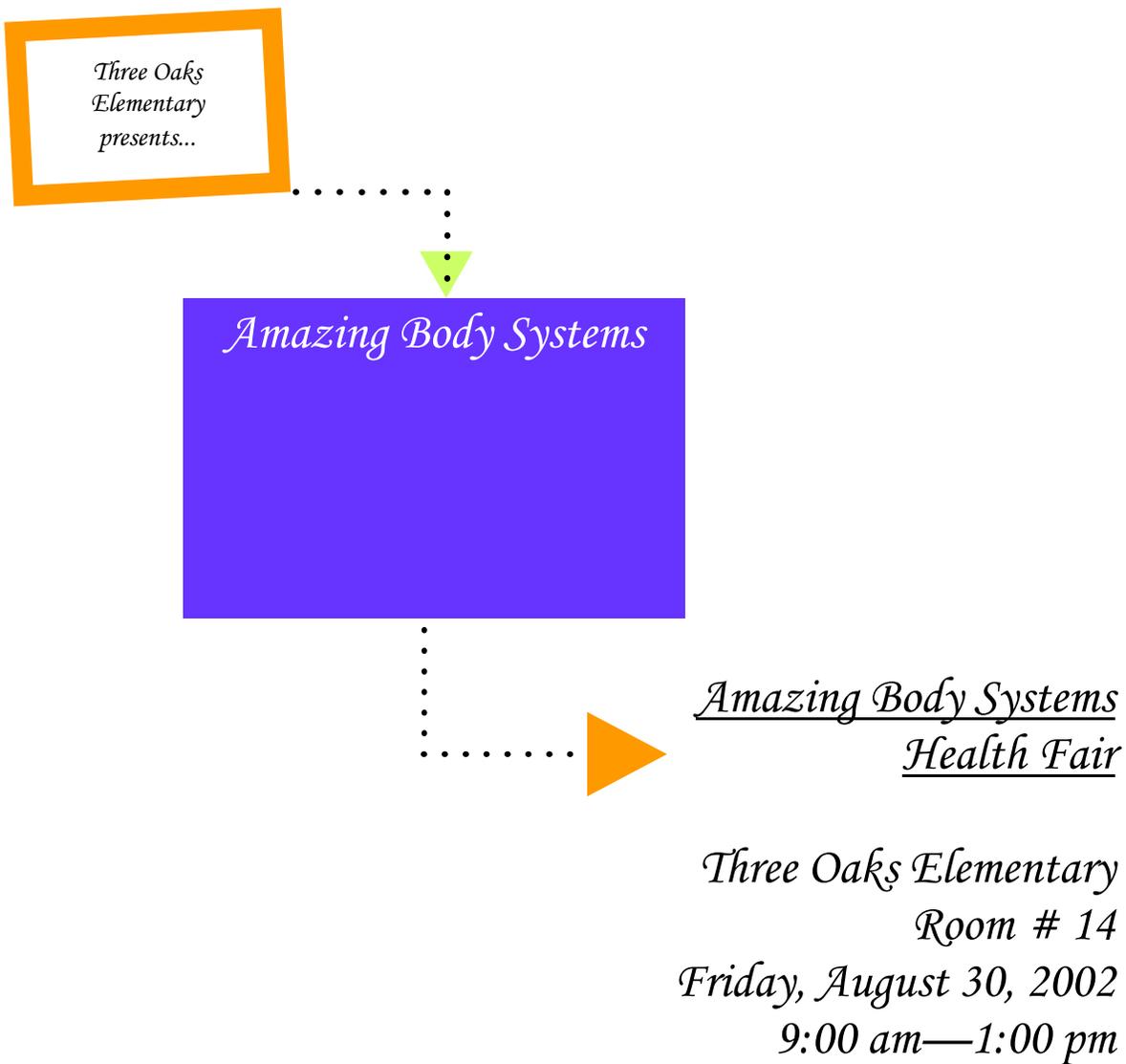
- A. Appendix A Invitation
- B. Appendix B PowerPoint Presentation (Presenters will provide examples at the conference)
- C. Appendix C Skeletal System Diagram (Presenters will provide examples at the conference)
- D. Appendix D Blank Skeletal System Diagram (Presenters will provide examples at the conference)
- E. Appendix E Skeletal System Rubric
- F. Appendix F Muscular System Rubric
- G. Appendix G Digestive System Rubric
- H. Appendix H Heartbeat Experiment Document
- I. Appendix I Circulatory System Rubric
- J. Appendix J Brain Signals Document
- K. Appendix K Nervous System Rubric
- L. Appendix L Invitation Rubric (Presenters will provide examples at the conference)
- M. Appendix M Flyer Rubric (Presenters will provide examples at the conference)
- N. Appendix N Presentation Rubric (Presenters will provide examples at the conference)

VIII. BIBLIOGRAPHY

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- B. Frost, Helen. *The Digestive System*. Mankato, MN: Capstone, 2001. ISBN 0-7368-0649-0
- C. Frost, Helen. *The Muscular System*. Mankato, MN: Capstone, 2001. ISBN 0-7368-0650-4

- D. Frost, Helen. *The Nervous System*. Mankato, MN: Capstone, 2001. ISBN 0-7368-0651-2
- E. Frost, Helen. *The Skeletal System*. Mankato, MN: Capstone, 2001. ISBN 0-7368-0653-9
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- I. Sandeman, Anna. *Body Books: Brain*. Brookfield, CT: Cooper Beech, 1995. ISBN 1-7613-0490-8
- J. Simon, Seymour. *Muscles Our Muscular System*. New York, NY: Morrow, 1998. ISBN 0-688-14642-2

Amazing Body Systems Appendix A Invitation



- **What is a system?**
- **A system is...**
 - **A group of smaller parts that work together.**
- **The human body is made up of many systems.**

The Body Systems

- **Skeletal System**
- **Muscular System**
- **Digestive System**
- **Circulatory System**
- **Nervous System**

Skeletal System

- **The skeletal system gives the body its shape.**
- **It protects the body organs.**
- **It helps the body stand and move.**

Muscular System

- **The muscular system helps the body move.**

Digestive System

- **The digestive systems helps the body break down food.**

Circulatory System

- **The circulatory system moves the blood around the body.**

Nervous System

- **The nervous system controls the body.**
- **It helps us move and speak.**
- **It helps us think, speak, and remember.**
- **It helps us learn!**

Sources

- **Enchanted Learning <http://www.enchantedlearning.com/themes/skeleton.shtml>**
- **Life Science Connections http://vilenski.org/science/humanbody/hb_html/map.html**
- **Yucky Gross and Cool Body <http://yucky.kids.discovery.com/noflash/body/pg000008.html>**
- **Tour of the Human Body <http://tqjunior.thinkquest.org/5777/tour.htm>**

(Presenters will provide examples at the conference for the following:)

All computer files and appendices.

Amazing Body Systems Appendix C Skeletal System Diagram

Amazing Body Systems Appendix D Blank Skeletal System Diagram

Amazing Body Systems Appendix E Skeletal System Rubric

<p align="center">Skeletal System~ Learning Log Rubric</p> <p>Name: _____</p> <p>Date _____</p> <p align="center">Did you complete these things?</p>	<p align="center">5</p> 	<p align="center">3</p> 	<p align="center">1</p> 
1.I have a title. (name of the body system)			
2.I have my best handwriting.			
3.I have a drawing of the body system.			
4.I have Capital letters at the beginning of each sentence.			
5.I have ending punctuation (. ! ?) at the end of every sentence.			
6.I have used the vocabulary <u>hollow, bones, muscles, and protect</u> to describe the function of the skeletal system.	I used 3-4 vocabulary words.	I used 2 vocabulary words.	I used 1 vocabulary word.
<u>Subtotal</u>			
<p><u>Total Points</u> <u>Grade</u></p> <p>30-22 points = Satisfactory</p> <p>21-11 points = Needs Improvement</p> <p>10-0 points = Unsatisfactory</p>			
<p><u>Comments~</u></p> 			

Amazing Body Systems Appendix F Muscular System Rubric

Muscular System~ Learning Log Rubric Name: _____ Date _____ Did you complete these things?	5 	3 	1 								
1.I have a title. (name of the body system)											
2.I have my best handwriting.											
3.I have a drawing of the body system.											
4.I have Capital letters at the beginning of each sentence.											
5.I have ending punctuation (. ! ?) at the end of every sentence.											
6.I have used the vocabulary <u>contract, exercise, healthy, heart, muscle, pump, and relax</u> to describe the function of the muscular system.	I used 5-7 vocabulary words.	I used 4-2 vocabulary words.	I used 1 vocabulary word.								
<u>Subtotal</u>											
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;"><u>Total Points</u></td> <td style="width: 50%;"><u>Grade</u></td> </tr> <tr> <td colspan="2">30-22 points = Satisfactory</td> </tr> <tr> <td colspan="2">21-11 points = Needs Improvement</td> </tr> <tr> <td colspan="2">10-0 points = Unsatisfactory</td> </tr> </table>				<u>Total Points</u>	<u>Grade</u>	30-22 points = Satisfactory		21-11 points = Needs Improvement		10-0 points = Unsatisfactory	
<u>Total Points</u>	<u>Grade</u>										
30-22 points = Satisfactory											
21-11 points = Needs Improvement											
10-0 points = Unsatisfactory											
<u>Comments~</u> 											

Amazing Body Systems Appendix G Digestive System Rubric

Digestive System~ Learning Log Rubric Name: _____ Date _____ Did you complete these things?	5 	3 	1 
1.I have a title. (name of the body system)			
2.I have my best handwriting.			
3.I have a drawing of the body system. Label the following parts: mouth, esophagus, stomach, small intestines, large intestines.	I labeled 4-5 parts.	I labeled 2-3 parts.	I labeled 1 part.
4.I have Capital letters at the beginning of each sentence.			
5.I have ending punctuation (. ! ?) at the end of every sentence.			
6.I have used the vocabulary <u>enzyme</u> , <u>saliva</u> , <u>esophagus</u> , <u>stomach</u> , <u>small intestines</u> , and <u>large intestines</u> to describe the function of the digestive system.	I used 4-6 vocabulary words.	I used 3-2 vocabulary words.	I used 1 vocabulary word.
<u>Subtotal</u>			
<u>Total Points</u> <u>Grade</u> 30-22 points = S atisfactory 21-11 points = N eeds Improvement 10-0 points = U nsatisfactory			
<u>Comments~</u> 			

Amazing Body Systems Appendix I Circulatory System Rubric

Circulatory System~ Learning Log Rubric Name: _____ Date _____ Did you complete these things?	5 	3 	1 
1.I have a title. (name of the body system)			
2.I have my best handwriting.			
3.I have a drawing of the body system.			
4.I have capital letters at the beginning of each sentence.			
5.I have ending punctuation (. ! ?) at the end of every sentence.			
6.I have used the vocabulary aorta, artery, blood, blood vessel, heart, lung, oxygen, and vein to describe the function of the Circulatory system.	I used 8-5 vocabulary words.	I used 4-2 vocabulary words.	I used 1 vocabulary word.
<u>Subtotal</u>			
<u>Total Points</u> _____ <u>Grade</u> _____ 30-22 points = S atisfactory 21-11 points = N eeds Improvement 10-0 points = U nsatisfactory			
<u>Comments~</u> _____ _____			

Name	Date				
Touch Bags- touch the bag and try to figure out what is inside. Discuss it with your team. Write your team's prediction on this chart.					
Touch Bag # 1					
Touch Bag # 2					
Touch Bag # 3					
Touch Bag # 4					
Smell Jars- smell each jar and try to figure out what it is. Discuss it you're your team. Write your team's prediction on this chart.					
Smell Jar # 1					
Smell Jar # 2					
Smell Jar # 3					
Smell Jar # 4					
Notes-					

Amazing Body Systems Appendix K Nervous System Rubric

Nervous System~ Learning Log Rubric Name: _____ Date _____ Did you complete these things?	5 	3 	1 
1.I have a title. (name of the body system)			
2.I have my best handwriting.			
3.I have a drawing of the body system.			
4.I have capital letters at the beginning of each sentence.			
5.I have ending punctuation (. ! ?) at the end of every sentence.			
6.I have used the vocabulary <u>brain, nerve, nervous system, signal, and spinal cord</u> to describe the function of the nervous system.	I used 5-4 vocabulary words.	I used 3-2 vocabulary words.	I used 1 vocabulary word.
<u>Subtotal</u>			
<u>Total Points</u> <u>Grade</u> 30-22 points = S atisfactory 21-11 points = N eeds Improvement 10-0 points = U nsatisfactory			
<u>Comments~</u> _____ _____ _____			