Fighting Back: Our Immune System

Grade Level: 6th grade Science
Written by: (Melissa Hernandez, Bean Elementary School Lubbock, TX)
Length of Unit: (10 – 12 days)

I. ABSTRACT
The student will enter the blood vessels of the circulatory system and channel their way through the heart to discover the many chambers. They’ll trace the flow of blood along their body outline. Along with this the student will discover how the lymphatic system and its organs help fight infections. Seeing blood slides will help them take a closer look at our immune system by observing white and red blood cells. Students will make the connection between our circulatory, lymphatic, and immune systems. They will be able to research communicable and non-communicable diseases and increase in value the importance of living a healthy lifestyle. Final presentations will include puppet shows, display boards, dramas, and lots of information on pamphlets to go along with their oral presentations during the health fair.

II. OVERVIEW
A. Concept Objectives
1. The student will recognize the role that the circulatory and lymphatic systems play in our body’s immune system.
2. The student will develop an awareness of how the immune system fights infections.
3. The student will appreciate the significance of a healthy lifestyle.

B. Content Objectives
1. The Human Body
   • The circulatory and lymphatic systems.
     Briefly review from grade 4: circulatory system
     Lymph, lymph nodes, white cells, tonsils, blood pressure, hardening and clogging of arteries.
   • The immune system fights infections from bacteria viruses, fungi.
     White cells, antibodies, antigens.
     Vaccines, communicable and non-communicable diseases, epidemics.
     Bacterial diseases: tetanus, typhoid, tuberculosis; antibiotics like penicillin, discovered by Alexander Fleming.
     Viral diseases: common cold, chicken pox, mononucleosis, rabies, polio, AIDS. (Page 154)

C. Skill Objectives (List specific skills to be taught in each lesson – and use the same ones from your lessons.)
1. The learner will determine that all organisms are composed of cells that carry on functions to sustain life. (Science TEKS 6.10B)
2. The learner will identify how structure complements function at different levels of organization including organs, organ systems, organisms, and populations. (Science TEKS 6.10C)
3. The learner will analyze and interpret information to construct reasonable explanations from direct and indirect evidence. (Science TEKS 6.2C)
4. The learner will construct graph to organize, examine, and evaluate data. (Science TEKS 6.2E)
5. The learner will analyze the relationships among the body systems. (Health TEKS 6.2 A)
6. The learner will list noncommunicable and hereditary diseases and respective prevention and treatment techniques. (Health TEKS 6.3C)
7. The learner will explain ways of maintaining healthy relationships. (Health TEKS 6.7B)
8. The learner will listen to learn by taking notes, organizing, and summarizing spoken ideas. (ELA 6.1D)
9. The learner will read for varied purposes such as to be informed and develop vocabulary. (ELA TEKS adapted 6.8C, 6.9A)
10. The learner will write to inform such as to explain, describe, report, and narrate. (ELA TEKS 6.15C)

III. BACKGROUND KNOWLEDGE
A. For Teachers
6. [www.encarta.msn.com](http://www.encarta.msn.com)
7. [http://www.cayuga-cc.edu/about/facultypages/greer/biol204/lymphatic1/lymphatic1.html](http://www.cayuga-cc.edu/about/facultypages/greer/biol204/lymphatic1/lymphatic1.html)
8. [http://www.lymphomainfo.net/lymphoma/lymphsys.html](http://www.lymphomainfo.net/lymphoma/lymphsys.html)

B. For Students
1. **The Circulatory System**
Pioneering work of William Harvey
Heart: four chambers (auricles and ventricles), aorta
Blood: red blood cells (corpuscles), white blood cells (corpuscles), platelets, hemoglobin, plasma, antibodies, blood vessels (arteries, veins, capillaries), blood pressure, pulse, coagulation (clotting)
Filtering function of liver and spleen

IV. RESOURCES
F. [www.encarta.msn.com](http://www.encarta.msn.com)
G. [http://www.cayuga-cc.edu/about/facultypages/greer/biol204/lymphatic1/lymphatic1.html](http://www.cayuga-cc.edu/about/facultypages/greer/biol204/lymphatic1/lymphatic1.html)
H. http://www.lymphomainfo.net/lymphoma/lymphsys.html
I. www.dictionary.com

V. LESSONS
Lesson One: A Busy Pump: Heart

A. Daily Objectives
1. Concept Objective(s)
   a. The student will recognize the role that the circulatory and lymphatic
      systems play in our body’s immune system.

2. Lesson Content
   a. Briefly review from grade 4: circulatory system

3. Skill Objective(s)
   a. The learner will identify how structure complements function at different
      levels of organization including organs, organ systems, organisms, and
      populations. (Science TEKS 6.10C)
   b. The learner will analyze the relationships among the body systems.  
      (Health TEKS 6.2A)
   c. The learner will listen to learn by taking notes, organizing, and 
      summarizing spoken ideas.  (ELA 6.1D)

B. Materials
1. Contact local meat market for a pig heart
2. Diagram of the heart
3. Crayons
4. Pencil
5. Latex gloves
6. Transparency of heart diagram
7. Overhead

C. Key Vocabulary
1. Superior vena cava – upper blood vessel that carries used blood into the right side 
   of the heart
2. Inferior vena cava –lower blood vessel that carries used blood into the right side 
   of the heart.
3. Right atrium – chamber that receives blood from the inferior and superior vena 
   cava.
4. Right ventricle – a powerful, muscled chamber of your heart that receives blood 
   from the right atrium, then pumps it through the pulmonary artery.
5. Pulmonary artery – splits into two branches that carry blood from the right 
   ventricle of the heart to the lungs.
6. Left atrium – chamber that receives blood from the lungs and pumps it into the 
   left ventricle.
7. Left ventricle –chamber that pumps the blood through the aorta.
8. Aortic arch – curved blood vessel that becomes the dorsal aorta.

D. Procedures/Activities
1. Introduce lesson by using a real pig’s heart to invoke student interest.  Discuss 
   what students are able to see including different chambers, size, and features of 
   the heart.  If possible have guest speaker such as cardiologist talk about 
   similarities and differences between a human and pig heart.
2. Using a KWL chart, determine what students recall from previous Core Knowledge lessons.
3. Using the KWL chart decide what they would like to learn about the circulatory system.
4. Using diagram of heart label the different areas of the heart using the vocabulary words and definitions. Be sure to use different colors to represent different areas. Teacher will have transparency of the diagram to use on overhead.
5. Teacher will have students place hands over their heart and feel the beating.
6. Ask students what is the heart doing? (Pumping blood)
7. Discuss the terms oxygen-rich and oxygen-poor (blood that is full of oxygen and blood that has been depleted of oxygen)
8. Trace a path through the heart diagram using blue and red arrows. Students will be able to recognize figure 8 patterns.

E. Assessment/Evaluation
1. Completed diagram of heart

Lesson Two: The Super Highway: Circulatory System
A. Daily Objectives
1. Concept Objective(s)
   a. The student will recognize the role that the circulatory system and lymphatic systems play in our body’s immune system.
2. Lesson Content
   a. Briefly review from grade 4: circulatory system
3. Skill Objective(s)
   a. The learner will determine that all organisms are composed of cells that carry on functions to sustain life. (Science TEKS 6.10B)
   b. The learner will identify how structure complements function at different levels of organization including organs, organ systems, organisms, and populations. (Science TEKS 6.10C)
   c. The learner will analyze the relationships among the body systems. (Health TEKS 6.2A)
   d. The learner will write to inform such as to explain, describe, report, and narrate. (ELA TEKS 6.15C)

B. Materials
1. Butcher paper
2. Markers
3. Heart diagram from Lesson 1
4. Scissors
5. Glue
6. Transparency with Venn diagram
7. Overhead
8. Pencil
9. Paper

C. Key Vocabulary
1. Blood vessel – an elastic tubular channel, such as an artery, a vein, or a capillary, through which the blood circulates.
2. Veins – blood vessels that carry blood to the heart
3. Capillaries - tiny blood vessels that carry blood between the smallest arteries and the smallest veins.

4. Arteries – blood vessels carry blood away from the heart

D. Procedures/Activities
1. Introduce the lesson by discussing what students learned in lesson one.
2. Tell students they will trace the flow of blood not only through their heart, but their body.
3. Using transparency with Venn diagram, compare facts about arteries, veins, and capillaries.
4. Pair students with a partner.
5. Hand out the paper and markers.
6. Each student will trace his partner’s body outline on the butcher paper.
7. Have students draw a lung on the human body diagram.
8. Using the heart diagram, have students glue the heart in center of paper.
9. Use a red marker to trace the path of blood through the heart to the body parts (share with students the idea of arteries being like an upside-down tree trunk with many branches that get smaller).
10. Use a blue marker to trace the path of blood through the heart from the body parts to the lungs (give students an opportunity to locate veins on themselves).
11. Use a green marker to represent capillaries.
12. Allow students an opportunity to explain to one another the flow of blood through the heart and body.
13. Have students pretend they are on a boat and are traveling through the different blood vessels. As they are journeying farther from the heart students should describe the effects felt as the boat begins to run out of gas. Students should realize the necessity to return to the heart to refuel. Students should be encouraged to use key vocabulary from Lesson 1 and 2 in this descriptive writing.

E. Assessment/Evaluation
1. Teacher will use writing sample as means of assessing student’s knowledge of the processes of the circulatory system.

Lesson Three: Exercises, Exercises: Testing Our Heart Rate
A. Daily Objectives
1. Concept Objective(s)
   a. The student will recognize the role that the circulatory and lymphatic systems play in our body’s immune system.
   b. The student will appreciate the significance of a health lifestyle.

2. Lesson Content
   a. Briefly review from grade 4: circulatory system

3. Skill Objective(s)
   a. The learner will analyze and interpret information to construct reasonable explanations from direct and indirect evidence. (Science TEKS 6.2C)
   b. The learner will construct graph to organize, examine, and evaluate data. (Science TEKS 6.2E)
   c. The learner will explain ways of maintaining healthy relationships. (Health TEKS 6.7B)
d. The learner will listen to learn by taking notes, organizing, and summarizing, spoken ideas. (ELA 6.1D)

B. **Materials**
1. Stethoscope
2. Graph paper
3. Pencil
4. Stop watch
5. Cotton swabs
6. Alcohol
7. Nurse (if one is available)

C. **Key Vocabulary**
1. Heart rate – the number of heartbeats per unit of time, usually expressed as beats per minute.
2. Blood pressure – the pressure exerted by the blood against the walls of the vessels, especially the arteries.
3. Hardening of the arteries – when the coronary arteries become narrowed or clogged by cholesterol and fat deposits.

D. **Procedures/Activities**
1. Allow time for students to locate their pulse using their fingertips.
2. Have students listen to their heart rate using a stethoscope (make sure students are cleaning stethoscope with alcohol using cotton swab).
3. Give students opportunity to count their pulse for thirty seconds and multiply by 2 and also using the stethoscope and actually counting their pulse for a full minute. Excellent time to discuss why we are multiplying by 2.
4. Make predictions as to what would happen to our heart rate once we perform a few exercises.
5. Tell students we will be recording our heart rate after each exercise.
6. Students will record their resting heart rate simply by counting their pulsations for sixty seconds.
7. Ask students to walk in place for one minute, immediately count their heart rate for thirty seconds and multiply this number by two. Students will record their heart rate on paper.
8. Use the same procedure as above to run in place, do jumping jacks, and sit-ups.
9. Hand out graph paper.
10. Have students brainstorm possible titles for graph.
11. Discuss labels that will be needed in order to graph this information.
12. Once the labels have been determined students will need to decide increments that will be used on number of pulses.
13. Students will need to record their information to mark on their graph.
14. Have students interpret data from graph.
15. If nurse is available, this is a wonderful opportunity for a small presentation regarding blood pressure. They will learn what the normal blood pressure is and gain tips as to how to maintain a healthy lifestyle. Nurse can share a few of the diseases when one does not live a healthy lifestyle.
16. Students can make a list of what they had for breakfast and lunch.
17. Discuss foods that would help maintain healthy blood vessels.
18. For extra credit, students could create a poster encouraging healthy foods.

E. **Assessment/Evaluation**
1. Student created graphs.
2. Students can create a poster encouraging healthy foods.

Lesson Four: Our First Defense: Lymphatic System

A. Daily Objectives
   1. Concept Objective(s)
      a. The student will recognize the role that the circulatory and lymphatic systems play in our body’s immune system.
      b. The student will develop an awareness of how the immune system fights infections.
   2. Lesson Content
      a. Briefly review from grade 4: circulatory system.
      b. Lymph, lymph nodes, white cells, tonsils, blood pressure, hardening and clogging of the arteries
   3. Skill Objective(s)
      a. The learner will determine that all organisms are composed of cells that carry on functions to sustain life. (Science TEKS 6.10B)
      b. The learner will identify how structure complements function at different levels of organization including organs, organ systems, organisms, and populations. (Science TEKS 6.10C)
      c. The learner will analyze the relationships among the body systems. (Health TEKS 6.2A)
      d. The learner will listen to learn by taking notes, organizing, and summing up spoken ideas. (ELA 6.1D)

B. Materials
   1. Appendix A (Lymphatic Body Diagram)
   2. Paper
   3. Pencil
   4. Construction paper
   5. Bone marrow (local meat market)

C. Key Vocabulary
   1. Lymphatic system – common name for the circulatory vessels or ducts in which the fluid bathing the tissue cells of vertebrates is collected and carried to join the bloodstream. The system transports digested fat from intestine to bloodstream, removes and destroys toxic substances, and resists the spread of disease.
   2. Lymph – a clear, watery, sometimes faintly yellowish fluid derived from body tissues that contains white blood cells and circulates throughout the lymphatic system, returning to the venous bloodstream through the thoracic duct. Lymph acts to remove bacteria and certain proteins from the tissues, transport fat from the small intestine, and supply mature lymphocytes to the blood.
   3. Lymph nodes – any of the rounded masses of lymphoid tissue surrounded by a capsule. These glands filter out infectious and toxic materials and destroy it.
   4. Spleen – a vascular organ located near the stomach in most vertebrates that is concerned especially with the filtration and storage of blood, destruction of red blood cells, and production of lymphocytes.
   6. Lymphocytes – any of the nearly colorless cells found in the blood, lymph, and lymphoid tissues, constituting approximately 25 percent of white blood cells and...
including B cells, which function in humoral immunity, and T cells, which function cellular immunity.

7. Immune system – the integrated body system of organs, tissues, cells, and cell products such as antibodies that differentiates self from nonself and neutralizes potentially pathogenic organisms or substances.

D. Procedures/Activities
1. Teacher will engage students in discussion of tonsil and appendix removal to promote interest.
2. Teacher will share Appendix A in order for students to label parts of the lymphatic system.
3. When students are ready to label bone marrow, teacher will show students actual bone marrow.
4. Hand out construction paper.
5. Students will create a vocabulary book (refer to Dinah Zyke)
6. Teacher will label different parts of lymphatic system and students will do the same on their copy.
7. As key vocabulary is presented, students will record definition on vocabulary books.

E. Assessment/Evaluation
1. Completion of Appendix A
2. Completion of Vocabulary book

Lesson Five: Cells, Cells, Everywhere: Immune System

A. Daily Objectives
1. Concept Objective(s)
   a. The student will recognize the role that the circulatory and lymphatic systems play in our body’s immune system.
   b. The student will develop an awareness of how the immune system fights infections.

2. Lesson Content
   a. The circulatory and lymphatic systems.
   b. Lymph, lymph nodes, white cells, tonsils, blood pressure, hardening and clogging of arteries.
   c. The immune system fights infections from bacteria, viruses, fungi.
   d. White cells, antibodies, antigens.

3. Skill Objective(s)
   a. The learner will determine that all organisms are composed of cells that carry on functions to sustain life. (Science TEKS 6.10B)
   b. The learner will identify how structure complements function at different levels of organization including organs, organ systems, organisms, and populations. (Science TEKS 6.10C)
   c. The learner will analyze the relationships among the body systems. (Health TEKS 6.2A)
   d. The learner will write to inform such as to explain, describe, report, and narrate. (ELA TEKS 6.15C)

B. Materials
1. Microscope
2. Appendix B (PowerPoint outline)
3. Paper
4. Pencil
5. Slide of blood cell (can obtain from local Jr. High)

C. Key Vocabulary
1. Red blood cells – carry oxygen to all parts of the body.
2. White blood cells – any various blood cells that have a nucleus and cytoplasm, which separate into a thin white layer when whole blood is centrifuged, and help protect the body from infection and disease.
3. Platelets – a minute disk like cytoplasmic body found in the blood plasma of mammals that functions to promote blood clotting.
4. Plasma – the liquid part of the blood.
5. Microbe – a minute life form; a microorganism, especially a bacterium that causes disease.

D. Procedures/Activities
1. Ask students if they recall the make up of blood?
2. Hand out a sheet of paper.
3. Ask students to fold into four parts.
4. Label parts: plasma, red blood cells, white blood cells and platelets.
5. Have students write in the definitions.
6. Share with students that our blood is made up of about 55% plasma, 43% red blood cells, and 2% white blood cells.
7. Partner students up in groups of 3-4 students each.
8. Have microscopes set up with a blood cell slide.
9. Discuss handling of microscope. This would be an excellent opportunity to review parts of a microscope if students are not accustomed to working with microscopes.
10. Students will take turns viewing the slide.
11. Have students draw what they see.
12. Have students share some of the differences they notice between the white blood cells and red blood cells.
13. As a whole class, have students break up into the percentages of the make up of blood.
14. Have students create a reenactment of what each part does when a microbe enters the body.

E. Assessment/Evaluation
1. Students will create a story that tells what the different functions of the red blood and white blood cells are.

Lesson Six: Germs: Friend or Enemy? (2 days)

A. Daily Objectives
1. Concept Objective(s)
   a. The student will develop an awareness of how the immune system fights infections.
2. Lesson Content
   a. The immune system fights infections from bacteria, viruses, fungi.
   b. White cells, antibodies, antigens.
   c. Vaccines, communicable and non-communicable diseases, epidemics.
   d. Bacterial diseases: tetanus, typhoid, tuberculosis; antibiotics like penicillin, discovered by Alexander Fleming.
e. Viral diseases: common cold, chicken pox, mononucleosis, rabies, polio, AIDS. (Page 154)

3. Skill Objective(s)
   a. The learner will determine that all organisms are composed of cells that carry on functions to sustain life. (Science TEKS 6.10B)
   b. The learner will identify how structure complements function at different levels of organization including organs, organ systems, organisms, and populations. (Science TEKS 6.10C)
   c. The learner will listen to learn by taking notes, organizing, and summarizing spoken ideas. (ELA 6.1D)

B. Materials
1. Glitter (at least four different colors)
2. Computers
3. Appendix B (Power Point presentation)
4. Pencil
5. Paper

C. Key Vocabulary
1. Bacteria – a single celled creature that can only be seen with a microscope.
2. Virus – microbes that need a host to survive, its main goal is to reproduce and spread.
3. Protozoa – extremely small creatures that mostly live in water.
4. Fungi – almost like plants and have many cells, these creatures live off of plants and animals.
5. Antibodies – a protein produced in the blood as an immune response to a specific antigen.
6. Antigen – a substance, such as a toxin, bacterium, or foreign cell, that when introduced into the body stimulates the production of an antibody.

D. Procedures/Activity
1. Teacher will need to have access to computer monitor and lab. (Students will need some prior knowledge in working with Windows XP)
2. Teacher will use PowerPoint to present information to students.
3. Students will take notes on information.
4. Once presentation has been presented have four student volunteers.
5. Teacher will place a small amount of glitter in hand of first volunteer.
6. Do the same for each student with a different color glitter.
7. Instruct students to shake each other’s hand, trying to include every classmate.
8. When this has been done ask students to look at their hands. Students should notice that they have every color glitter on their hand. Teacher will share that this is basically how some germs are transmitted.
9. Teacher will have students placed with a partner.
10. Students will begin the research process using the Internet. (Make sure students have permission to work on Internet, if unable to work with this resource then have students gather information from library books).
11. Teacher can decide which disease students will research. Ex: Sickle cell, leukemia, malaria, HIV, Aids, Hardening of the Arteries, Congestive heart failure, and Hypertension.
12. Students will gather information in order to create a pamphlet.
13. (Day 2) Students will need to have access to computer lab.
14. Computer lab teacher will demonstrate how to create a pamphlet.
15. Students will work in their groups to create a pamphlet regarding the disease they have researched.

E. Assessment/Evaluation
1. Students will work in groups of 3-4 to create a pamphlet that describes their disease, gives preventative measures, and discusses any health measures that are available.
2. Use a rubric to evaluate the pamphlet.

Lesson Seven: Our Immune System under Attack

A. Daily Objectives
1. Concept Objective(s)
   a. The student will develop an awareness of how the immune system fights infections
2. Lesson Content
   a. The immune system fights infections from bacteria, viruses, fungi.
   b. White cells, antibodies, and antigens.
   c. Vaccines, communicable and non-communicable diseases, epidemics.
   d. Bacterial diseases: tetanus, typhoid, tuberculosis; antibiotics like penicillin, discovered by Alexander Fleming.
   e. Viral diseases: common cold, chicken pox, mononucleosis, rabies, polio, AIDS. (Page 154)
3. Skill Objective(s)
   a. The learner will determine that all organisms are composed of cells that carry on functions to sustain life. (Science TEKS 6.10B)
   b. The learner will identify how structure complements function at different levels of organization including organs, organ systems, organisms, and populations. (Science TEKS 6.10C)
   c. The learner will analyze the relationships among the body systems. (Health TEKS 6.2A)
   d. The learner will list non-communicable and hereditary diseases and respective prevention and treatment techniques. (Health TEKS 6.3C)
   e. The learner will listen to learn by taking notes, organizing, and summarizing spoken ideas. (ELA 6.1D)

B. Materials
1. Appendix
2. Pencil
3. Paper
4. Transparencies
5. Overhead
6. Nurse
7. Flashcards with vocabulary words
8. Butcher paper
9. Colored markers

C. Key Vocabulary
1. Epidemic – spreading rapidly among many individuals in an area.
2. Communicable disease – disease that can be spread in a variety of ways. These microbes can be passed from one person to another with a simple handshake.
3. Non-communicable disease – disease that is not contagious. These can be passed down from parent to child through their genes.

4. Viruses – Made of proteins and genetic material. They lack cell parts common to the cells of living things. They do not need nutrients to survive; they cannot reproduce outside of a host organism.

5. T-cells – lymphocytes or white blood cells that stimulate the immune response. The HIV virus attacks and destroys t-cells.

6. Macrophage – white blood cells that are part of the immune system. It has the ability to ingest and destroy foreign substances such as bacteria, protozoa, and cell debris.

7. HIV – Human Immune Deficiency Virus; a virus that attacks the immune system

8. AIDS – Acquired Immune Deficiency Syndrome; the end result of infection by the HIV characterized by one or more symptoms brought on by the weakening of the immune system.

D. Procedures/Activities

1. This lesson should be taught as a team with teacher and nurse.

2. Label one side of the room “communicable” and the other side “non-communicable.” Using transparency give definition of both. Allow students to choose which side of the room to go to when the teacher reads the name of the disease.

3. Teacher will call colds, sore throat, flu, hepatitis, chicken pox, measles, and HIV.

4. Ask students what they have heard about HIV.

5. Pass out handouts regarding HIV.

6. Teacher or nurse can read questions while students answer.

7. When students are finished responding, have one child read question, class will then discuss answers.

8. After discussion, teacher will use transparencies to discuss how HIV destroys the immune system.

9. Place students in groups of 3-4 students.

10. Students will be given a scenario regarding HIV.

11. Students will create a skit regarding HIV awareness.

12. Teacher will use transparency to lead discussion towards the AIDS virus.

13. Teacher will use vocabulary cards to discuss their vocabulary words.

14. On a large sheet of butcher paper have students make a three column chart labeled “unsafe practice,” “consequences,” and “healthy behavior.

15. Have students respond to each unsafe practice by telling the consequence of the activity and steps to avoid the unsafe practice.

16. Introduce the concept of peer pressure and have students discuss.

17. Explain that it is when a friend tries to get you to do something.

E. Assessment/Evaluation

1. Vocabulary Quiz

Lesson Eight: A Healthier Lifestyle (2-3 days)

A. Daily Objectives

1. Concept Objective(s)
   a. The student will develop an awareness of how the immune system fights infections.

2. Lesson Content
a. The immune system fights infections from bacteria, viruses, fungi.
b. Vaccines, communicable and non-communicable diseases, epidemics.

3. Skill Objective(s)
a. The learner will analyze and interpret information to construct reasonable explanations from direct and indirect evidence. (Science TEKS 6.2C)
b. The learner will list non-communicable and hereditary diseases and respective prevention and treatment techniques. (Health TEKS 6.3C)
c. The learner will explain ways of maintaining healthy relationships. (Health TEKS 6.7B)
d. The learner will write to inform such as to explain, describe, report, and narrate. (ELA TEKS 6.15C)

B. Materials
1. Display boards
2. Construction paper
3. Butcher paper
4. Markers
5. Other materials deemed necessary for presentations.

C. Key Vocabulary
1. Previous vocabulary from all lessons should be used.

D. Procedures/Activities
1. Teacher will need to obtain permission in advance as to the time, place, and date of the event. (Health fair)
2. Brainstorm possibilities regarding different forms of presentation such as puppet show, lectures, and dramas.
3. Students will work in the same groups they worked before when researching their particular disease.
4. Students will create a display board sharing what they learned about the disease.
5. Students will create some type of oral presentation to share with school.
6. Students will present during health fair.

E. Assessment/Evaluation
1. Student’s presentation will demonstrate their knowledge of their findings.

VI. CULMINATING ACTIVITY
A. None

VII. HANDOUTS/WORKSHEETS
See attached

VIII. BIBLIOGRAPHY

F. [www.encarta.msn.com](http://www.encarta.msn.com)

G. [http://www.cayuga.cc.edu/about/facultypages/greer/bio1204/lymphatic/lymphatic1.html](http://www.cayuga.cc.edu/about/facultypages/greer/bio1204/lymphatic/lymphatic1.html)

H. [http://www.lyphomainfo.net/lymphoma/lymphsys.html](http://www.lyphomainfo.net/lymphoma/lymphsys.html)
Appendix A
Appendix B

Power Point Slide Show

The Immune System

Fights Back
Microbes (germs)

- A minute life form; a microorganism, especially a bacterium that causes disease.
- Best place to live is inside the human body.
- Not all microbes are bad.
Viruses

- These microbes need a host to survive.
- They need to be inside the cell of a living plant or animal.
- The goal of this microbe is to reproduce and spread.
Fungi

- Almost like plants and have many cells.
- Mushrooms and yeast are type of fungi
- Live off of plants and animals.
Protozoa

• Extremely small
• Most live in water
• Eat bacteria and the waste of other organisms
• Some are parasites and live off of other living things.
Alexander Fleming

- British bacteriologist
- Known for his discovery of penicillin
- Outstanding research in bacteriology and immunology

[Photo of Alexander Fleming]

www.wikipedia.org/.../alexander-fleming.jpg
Appendix C

HIV Transmission

Directions: Discuss the probability of contracting HIV in the following settings. Circle your answers and tell why you chose your answer.

1. Getting bit by an insect.   Yes  No  Why?
2. Hugging or touching someone with AIDS  Yes  No  Why?
3. Having intimate sexual contact.  Yes  No  Why?
4. Seating on toilet seats.   Yes  No  Why?
5. Prenatal exposure from a woman who has AIDS.  Yes  No  Why?
6. Contact with infected blood.   Yes  No  Why?
7. Breathing the air.          Yes  No  Why?
8. Eating with spoons, forks, and knives  Yes  No  Why?
9. Intravenous drug use.   Yes  No  Why?
10. Swimming Pools.           Yes  No  Why?
11. Ear piercing.             Yes  No  Why?
12. Attending School with an AIDS patient. Yes  No  Why?
13. Getting a tattoo.         Yes  No  Why?
Appendix C

AIDS

**Acquired** = The disease is passed from one person to another.

**Immuno** = The body’s defense system which normally protects us from disease.

**Deficiency** = the defense system is not working correctly.

**Syndrome** = A group of symptoms which, when they occur together, mean a person has a particular disease or condition.
HOW HIV DESTROYS THE IMMUNE SYSTEM
HOW HIV DESTROYS THE IMMUNE SYSTEM
HOW HIV DESTROYS THE IMMUNE SYSTEM
HOW HIV DESTROYS THE IMMUNE SYSTEM
Appendix C

Vocabulary Quiz

Directions: Match the following to the correct definition.

A. To avoid or refrain from having intimate sexual contact.

B. A fatal disease caused by the HIV virus.

C. The period of time between the exposure of a virus and the development of the disease.

D. Not working normally

E. A pattern of two or more symptoms has developed.

F. The virus that causes AIDS.

G. Before marriage.

H. Not inherited, getting something before, during or after birth.

I. Refers to the body’s natural mechanism for protecting itself against disease.

J. Before birth.

1. _____ Syndrome

2. _____ Abstinence

3. _____ Immune

4. _____ Prenatal

5. _____ AIDS

6. _____ Incubation

7. _____ Acquired

8. _____ Deficiency

9. _____ Premarital

10. _____ HIV

11. _____ T-cells