



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
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Adolescent Obesity and Susceptibility to Disease

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by Grace Malangone

Introduction

I teach fifth grade language arts and social studies at Betsy Ross Arts Magnet School in New Haven, Connecticut. Betsy Ross Arts Magnet School is a unique school. It consists of grades five through eight. The students attend five academic classes and one art class on a daily basis. The school is part of the inner city school system and is also an arts magnet choice school; that is, students from surrounding towns are able to enroll in the New Haven Public School System. The mixture of both urban students and suburban students allows for diversity. The students learn not only what is taught by a teacher but also what the students teach each other about their ethnicity and personal cultural background.

The language arts curriculum is quite versatile. It exposes the students to many types of fiction genre and nonfiction texts. The language arts curriculum also incorporates social studies themes into the shared reading texts. Five of the shared reading texts in the language arts curriculum are historical fiction as well as two historical nonfiction texts. Each shared reading planner focuses on the six comprehension strategies (predicting, connecting, wondering, figuring out, picturing, and noticing) along with setting a purpose for reading the intended texts daily assigned pages. The students apply these six comprehension strategies to both fiction and nonfiction texts, but the nonfiction texts are taught with the use of text features. The students are taught to utilize text features to locate information quickly and effectively. I teach my students to change each of the subtitles into questions using the five W's (who, what, where, when, and why) and one H (how) and to answer each question using the paragraph. Comprehending nonfiction text is often difficult for students, due to the fact that each sentence is important. Each sentence in nonfiction text contains facts to support a main idea and it is important for the students to determine which facts are most important to comprehend the text. Most students do not have enough exposure to nonfiction text such as: recipes, food labels, and newspaper articles etc. Along with the limited exposure to nonfiction most of the students can not define unknown vocabulary used in nonfiction pieces of writing.

Reasoning for the Unit

After considering the deficit in nonfiction texts in the fifth grade language arts /social studies curriculum, I decided that the type of texts used in this unit would be nonfiction. The topic of this unit is an up and rising issue in the lives of our students, the news, and on television. I recently read an article in the New Haven Register reported by the Associated Press titled *Obesity Surgery for Children Rises* .¹ This article reported that the number of U.S. children having obesity surgery has tripled. The data from the study was taken from the year 1996 through 2003. This is a recent study and adolescent obesity is affecting the students that are in our classrooms today. Therefore I have decided to title this unit, *adolescent obesity and susceptibility to disease* . This unit will not only educate the students on the dangers of obesity but also how to read and understand nonfiction texts that relate to health issues and make overall better food choices as to not be affected by diseases that can develop from obesity.

Objectives

The objectives for this unit are for students to understand the importance of maintaining a healthy body weight for overall good health. The students will develop strong nonfiction reading skills from a variety of nonfiction texts presented. The students will utilize the knowledge gained throughout the unit to create a pamphlet on the four sections described in the unit overview.

Unit Overview

This unit is divided into four sections. The first section of this unit will consist of an overview of the general functions of the cardiovascular system. This overview will include vocabulary, how the heart functions, and a healthy heart rate. The second section will focus on weight gain: how do we gain weight and what is Body Mass Index (BMI), and what role does physical activity and good eating habits play in obesity. The third section will focus on over-the-counter pills, and what role surgery plays in the treatment of obesity. The fourth section will focus on the susceptibility to disease/ health risks that stem from obesity and adolescent obesity. Obesity in adolescence is directly associated with obesity in adulthood.² The health risks/diseases covered in this section are heart attack and type II adult-onset diabetes.

Content Standards: Connecticut Mastery Test Strands

B3 Use stated evidence from the text to support a conclusion

Editing and Revising: Identify the topic sentence of a paragraph, and selecting appropriate supporting details.

C2 Select, synthesize, and/or use relevant information within a written work to form a personal opinion.

Unit Goal

A school wide health fair is the ultimate goal of this unit. Four teachers will be working together as a team to prepare the students to educate their peers about the importance of living and maintaining a healthy lifestyle. The students will develop strong nonfiction reading skills from a variety of nonfiction texts presented and form an opinion on important health issues that can be supported with factual information. The students will create a formal presentation, including a pamphlet to be handed out to their peers at the school wide health fair. My students will work with the students from three other classes to reach this goal. The students will overall begin to make better health choices and increase their quality of life as an adult.

Introduction to the Lessons

I will begin the lessons in this unit by writing the word obese and asking the students to state what they think it means. I will then present the journal article titled *Childhood Obesity: The Health Issue* to facilitate an open forum discussion on the information presented in the journal article.³ The students will state their opinions on childhood obesity and the reasons for the increase in the amount of overweight children. I will chart their responses on chart paper and hang the chart paper in the classroom. This chart of responses will be revisited to see if any of the reasons stated are actual reasons for childhood obesity. The students will also predict if they think an obese child will become an obese adult. I will then go on to inform the students that obesity is not just what we see on our bodies, but that there are underlying factors involved and underlying organ systems that are affected.

The lessons will be presented using the correct terminology. The students will be given a journal to write all new unit vocabulary words and their definitions. The students will also be encouraged to draw a quick sketch of the unit vocabulary word to gain a clearer understanding and a better connection to the unit vocabulary words introduced. At the end of each lesson the students will also be asked to summarize the information presented in the lesson. In summarizing the information presented in the lesson the students will be synthesizing the information to gain a better understanding of the nonfiction information presented. Along with summarizing the students will also be encouraged to add any sketches/drawings that can help them personalize the information.

This journal will also serve as a daily assessment tool for me and through these daily assessments I will be

better able to provide students with immediate feedback and/or redirect any misunderstandings. The lessons will be presented in the four sections stated in the unit overview.

Circulatory System

I will introduce the circulatory system as an organ that has the main function of delivering blood: that is, moving blood throughout the body. I will ask the students to brainstorm other delivery systems that they know in our world. I will amaze the students by setting the classroom timer for one minute/ sixty seconds. All the students will remain still and quiet during that minute. At the end of the minute, I will tell the students that blood was just circulated throughout their whole body. The students will be informed that it takes a little less than a minute for their blood to circulate throughout their whole body.⁴ The body consists of five liters of blood and in that minute, when we are sitting still, our body circulated one liter of our five liters of blood throughout the body. To demonstrate this concretely, I will display five liters of water with red food coloring. The students will pour all five liters of red water into a clear bucket. This bucket will demonstrate how much blood is in their body.

Vocabulary word : blood

Blood

The blood consists of water and three types of blood cells carried around in yellow liquid called blood plasma. The three types of blood cells are red blood cells, white blood cells, and platelets.⁵ The students will view illustrations of each type of blood cell and create their own illustrations in their journals.

Vocabulary words : plasma, red blood cells, white blood cell, platelets

Blood Vessels

I will explain to the students that the blood flows throughout the body through a network of tubes called blood vessels. The main types of blood vessels in the body are arteries, veins, and capillaries. Arteries carry blood away from the heart. Veins carry blood toward the heart.⁶ Capillaries are the smallest vessels between the arteries and veins, where the exchange of oxygen and nutrients occurs.

Vocabulary words : blood vessel, arteries, veins, capillaries

The Heart

I will place an enlarged illustration of the heart on the board and explain that the heart is what pumps the blood throughout the body. It is located in the middle of the chest, slightly tilted to the left. It weighs about ten ounces. The heart pumps blood by constantly contracting (squeezing) and relaxing (releasing).⁷ This will be demonstrated by squeezing and releasing a sand filled small red balloon. I will then go on to tell them the basic structure of the heart and functions of the heart using the illustration. The heart has two pumps that are called the left and right ventricles. The right ventricle pumps blood to the lungs and the left ventricle pumps blood throughout the rest of the body to every cell. When listening to a heartbeat the sound is often described as lub-dub lub-dub. The first sound (lub) is caused by the acceleration and deceleration of blood and a

vibration of the heart at the time of the closure of the first set of valves. The second heart sound (dub) is caused by the same acceleration and deceleration of blood and vibrations at the time of closure of the second set of valves. Your heart, blood vessels, and blood work together to supply each cell with food and oxygen, and carries away waste. The heart, blood, and blood vessels make up the circulatory system. After the basic explanation of the functions of the heart the students will participate in listening to a human heart beat on the website: <http://www.fi.edu/biosci/monitor/heartbeat.html>. The students will identify the closing of the valves through the "lub, dub" sounds made. The students will then follow the path of blood flow through the heart using a coloring handout that can be downloaded and printed from the website: www.childrenheartinstitute.org

Vocabulary words : heart, ventricle, cell

Blood Pressure

I will explain to the students that when blood is pumped out from the heart it rushes through the blood vessels, pressing on their walls as it passes by. Blood pressure depends on the amount of blood in the system. I will demonstrate the action of blood pressure to the student by flowing different amounts of red water (blood) through a malleable tube, like varies sized drinking straws. The students will observe the difference in the tube's shape based on increasing and decreasing the red water supply. The average blood pressure for an individual should or close to 120 over 80. I will tap prior knowledge by asking the students, "Has anyone here ever gone to the doctor's office or a hospital? Has anyone here ever had a cuff placed on their arm and tightened at the doctor's office or the hospital?" Well, if yes then you have had you blood pressure taken. Blood pressure is measured by numbers. The top number (120) is called systolic pressure. The systolic pressure is the blood pressure when the heart is contracting. The bottom number (80) is called diastole pressure. The diastole pressure is the pressure of the blood when the heart is relaxing.

Vocabulary words : pulse, systolic, diastolic

Healthy Heart Rate

I will ask the students to take their own pulse by placing two fingers on their opposite wrist and press down gently. The students will participate in taking their own pulse twice, the first time they will be at rest. The second time will be after a quick spurt of exercise such as running in place. We will then compare how the heartbeats differed for each activity. We would then talk about being active keeps are heart healthy. The students will then pair up with a partner and the pair will take each others pulse after different activities. Physical activities can influence a heart health by making the heart stronger. I will then go on to explain that there are average healthy pulse rates that are based on the age of a person. Create a classroom chart of age and target and average heart rates. Target and average heart rate information provided by *Target Heart Rates* . 8

Weight Gain/Obesity

How do we Gain Weight?

Many students do not know that there can be many reasons why a person is overweight. The media often

portrays overweight individual as "lazy" and "unattractive." Most portrayals of overweight individuals do not address the many health issues and reasons behind obesity. Most obese individuals have been obese since childhood and have grown up with the negative attention associated with obesity set forth through the media. One in three Americans is obese and obesity is increasing rapidly throughout the world.⁹ Most often the magazine covers are decorated with thin beautiful women who make their living based on being thin and beautiful and our young overweight youth aspiring to be perfect like the people they see on these covers are practicing dangerous weight loss methods. Although the most common causes of obesity are overeating and physical inactivity there are also other factors that may contribute to being obese.

I will introduce the lessons on weight gain/obesity by showing the students magazine photos of various individuals with different body weights. I will ask the students to sort the photos into two piles: one pile containing pictures of people with normal weight. The second pile containing photos of people they feel that are overweight. Then the students will predict some reason why they think the people in the overweight pile are overweight. I will chart the reason stated on chart paper and I will introduce the valid reasons stated in research why people are overweight. We will then revisit the prediction chart and match up any of our stated reasons to actual valid researched reasons.

What Causes Obesity?

I will introduce the students to other factors that may contribute to the obesity. At present, we know that there are many factors that contribute to obesity.

1. Genetics. A person is more likely to develop obesity if one or both parents are obese. Genetics affects hormones involved in fat regulation. For Example, Leptin is a hormone involved in fat regulation in the body. Leptin controls weight by signaling the brain to eat less when body fat stores are high.¹⁰
2. Overeating. Overeating foods that are high in fat and sugar lead to weight gain. Foods that are high in fat and sugar have high energy density, that is, foods that have a lot of calories in a small amount of food.¹¹
3. Slow Metabolism. Muscle burns more calories than any other tissue. As we age, we tend to lose muscle and our metabolism slows, therefore, we tend to gain weight as we get older. ¹²
4. Physical Inactivity. People who are physically active burn more calories than people who are physically inactive.
5. Composition of Diet: It is known that the composition of the foods that we eat can affect our rate of metabolism. Trans fats, for example, appear to turn off fat burning genes. Visit mypyramid.com

Vocabulary words: calorie, physical inactivity

What is the Body Mass Index (BMI)?

The body mass index (BMI) is a mathematical formula that accounts for both a person's weight and height. The body mass index (BMI) is a guideline and a good estimator of for most adults between the ages of 19-70 years of age. The definition of a "healthy weight" is a body mass index (BMI) equal or greater than 19 and less than 25 among all people aged 20 or over. Body mass index is commonly used to classify overweight and obesity among adults, and is also recommended to identify children who are overweight or at risk of becoming overweight.¹³ Obesity is defined as a body mass index (BMI) equal to or greater than 30, which is equal to approximately 30 pounds of excess weight. Having excess weight according to the body mass index (BMI)

table also places people at risk of developing serious health problems.¹⁴

Abdominal obesity in kids has increased by more than 65% in recent years. The percentage of abdominal obesity in boys and girls increased significantly in every age group between 1999 and 2004. The percentage of 6 to 11 year old children with a high BMI scores increased by 25% from 1999 to 2004, but the increase in the percentage of children with abdominal obesity in this age group rose by more than 35%.¹⁵ Data from a number of studies provide strong evidence that higher levels of BMI during childhood can predict overweight later in life.¹⁶

Vocabulary words : abdominal obesity

What Role does Physical Activity and Good Eating Habits Play in Obesity?

For children who are overweight, the goals should be to maintain a healthy weight, begin to practice good eating habits, and get more physical activity on a daily basis. Physical activity and exercise help burn calories. The amount of calories burned depends on the type, duration, and intensity of the activity. Children need a total of 60 minutes of physical activity per day, but this does not have to be done all at one time. Short 10 or 5 minute bouts of activity throughout the day are just as good.¹⁷

In this lesson the students will maintain a daily log. In the daily log the student must document all of their daily routine, for example: wake-up, walk three blocks to school, etc. The next day we will examine the student daily logs and calculate how much physical activity they received in one day. The students will then rearrange their daily routine to incorporate one or more types of physical activities:

1. Riding bikes
2. Playing an outdoor sport such as; soccer, baseball, or tennis.
3. Taking a walk
4. Dancing
5. Skating
6. Join school or community sports teams
7. Rake leaves
8. Park the car at the end of the parking lot
9. Take the stairs instead of the elevator
10. Walk around with a quick brisk pace

The foods you eat not only affect the increase of body weight it also can affect the way blood flows through your heart and arteries. A diet high in fat and cholesterol can gradually causes build-up in your arteries. That build-up slows down the blood flow and blocks small arteries. Along with physical activity, it is very important for children to learn and practice good eating habits.

In this lesson the students will brainstorm possible ways to help a person lose weight and maintain a healthy lifestyle. The student responses will be written on chart paper and placed in the classroom. After reviewing the student responses, I will place valid/factual tips and invalid/ non- factual based tips on how to maintain a

healthy lifestyle in a bag. The students will come up and grab a tip out of the bag, read it to the class, and the student will the help of the class will decide based on what we have learning from our nonfiction readings if it is a valid or invalid ways of maintaining a healthy weight and lifestyle. Some of the tips include:

1. Eat fast food less often
2. Eat breakfast everyday
3. Eat more fruits and vegetables
4. Avoid inactive pastimes
5. Limit television time
6. Get up and move during commercials
7. Eat food high in fat
8. Substitute fruit for candy and chocolate
9. Drink soft drinks instead of water
10. Eat low- fat fruits and snacks

In concluding this lesson the students will visit the website mypyramid.com to view the recommended daily intake of foods types, including fats. The students will print the page and begin to brainstorm healthy meals and snacks that can replace fast foods, junk food, and foods high in fat.

What Role Do Over- the- Counter Pills Play in Weight Loss?

As a society, America seems to be obsessed with weight and with dieting to lose weight. In films, on television, and in magazines and newspaper, we see thin people. These images are what the media is telling the public is good to be and that it is not good to be overweight. It is very hard in today's society to be an overweight adult, but it is even harder to be an overweight child. Due to this push for being thin, most people feel helpless and need to find something, anything that can help them loss weight and that is when "quick weight loss" and over-the-counter diet pill are being utilized to deliver quick weight loss solution.

In this lesson we will examine the use of diet pills. The students will be given a various types of diet pill empty boxes and they will read the label and research the ingredients on the internet. The students will be given a graphic organizer to organize the information taken from the internet. The students will be researching the health effects associated with certain types of diet pill ingredients.

The students will become educated on the effects of the ingredients in over-the-counter diet pills. The ingredients that are common on most diet pill ingredients labels amphetamines, methamphetamines, Phenylpropanolamine, herbal weight loss products. Amphetamines and methamphetamines both offer results in weight loss by speeding up the user's body and brain. Unfortunately, these ingredients cause many serious physical effects, for example; speeding up the heart, making it pound as it pumps through the body. This pounding of the heart dramatically increases the blood pressure and makes strokes and heart attack. Another side effect is that it speeds up the lungs, causing breathing to become difficult. These drugs also increase

gastric juices in the stomach. As a result, the person often develops a nervous stomach. They may feel nauseous and have stomach cramps, diarrhea and vomiting. Above all the physical side effects there are also be emotional side effects, that is, not only the body is sped up but the mind is also sped up. This can cause people to become overwhelmed and have trouble concentrating. It can also cause anxiety and panic attacks.

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In their research the students will come across many public warnings concerning the ingredients used in popular diet pills. For example, The Federal Drug Administration (FDA) issued the following warning to the public on July 8, 1997: "The popular diet - drug combination fenfluramine and phentermine might cause valvular heart disease in otherwise healthy women.¹⁹ Also, The FDA issued a public health advisory concerning the risk of hemorrhagic stroke, or bleeding into the brain, associated with phenylpropanolamine.²⁰ The students will compile all of their information from their research and use it to determine the risks associated with diet pills. The students will also present their researched information at the school-wide health fair.

Vocabulary words: New vocabulary words from ingredients labels will be researched and defined.

What Role Does Surgery Plays in the Treatment of Obesity?

It is often very difficult to maintain a healthy body weight that is, late night fast food commercials, fast food being the only available option during time restrained lunch hours, restaurants cooking with lots of butter, and limited healthy meals available to purchase. Often when people gather to celebrate it is most often with food and beverages. It is often difficult to be a consistent dieter. This is when weight becomes more of an issue because you begin to lose weight and then you change your eating habits and gain the weight back then lose it then gain it back. This inconsistency does not allow you to maintain a healthy body weight. Often people get either very discouraged or morbidly obese to where as they are almost left with no other option then to consider surgery. Before an individual is accepted as a recipient of obesity surgery they must be qualified. The prerequisites are as follows: 1. Person must have a BMI greater than forty.

2. Person must have a BMI greater than 35 and serious medical problem that would improve with weight loss. The current procedures being done today consist of making the stomach area smaller by bypassing the stomach completely. This surgery is called gastroplasty. Gastroplasty is where the esophagus is banded early in the stomach. The other procedure is gastric banding. Gastric banding is where an inflatable pouch causes gastric constriction. Gastric bypass essentially causes weight loss by bypassing the stomach.²¹

The students will be introduced to this type of surgery using visual aids. The students will then view the effects of making the stomach smaller by replicating the stomach using a balloon and constraining part of the balloon to create a smaller stomach area. The students will be able to concretely examine the difference in size and the difference in the amount of sand (symbolizing food) that is allowed into the stomach area before and after the constraint is placed on the balloon (stomach).

Vocabulary words: gastric, esophagus, constraints, morbidly obese

Susceptibility to Disease/ Health Risks that Stem from Obesity and Adolescent Obesity: Heart Attack and Type II Adult-Onset Diabetes.

In the fourth section of the unit the students will learn about the overall health risks associated with obesity. The students will utilize and apply the knowledge learned from the previous section lessons to gain a better

understanding of how weight can affect not only one's overall appearance but can also negatively influence the functioning of major organ systems in the body.

During this section of the unit the students will be exposed to nonfiction texts that contain information on the symptoms, warning signs, and factors that can increase or decrease one's risk of having a heart attack, stroke, high blood pressure, and developing adult-onset diabetes.

What is a Heart Attack?

A heart attack occurs when blood flow to a section of heart muscle becomes blocked. If the blood is not restored quickly, the section of heart muscle becomes damaged from lack of oxygen and begins to die.²²

This lesson will begin with an informal discussion. I will prompt the discussion by asking the students: What is a heart attack? Has anyone you know ever suffered a heart attack? What do you think happens to the heart during a heart attack? What do you think can increase one's risk of having a heart attack? What do you think can decrease one's risk of having a heart attack? After our informal discussion, the students will be given a handout containing questions to guide their research (Appendix A). The students will need to name five warning signs of a heart attack, list three to five causes of a heart attack, identify at least three risk factors, and visit the website: [http://www.nhlbi.nih.gov/health/dci/Disease/HeartAttack/Heart AttackWhatIs.html](http://www.nhlbi.nih.gov/health/dci/Disease/HeartAttack/HeartAttackWhatIs.html)

Here the students will view images of the heart with a blocked artery causing dead heart muscles.

At the conclusion of the research the students will then work in groups of four to discuss the information collected and determine if there are any similarities and/or differences in the answers to the questions on the handout. The students will also determine whether any of their responses in the discussion are valid.

After the student compare information, the teacher will read the first chapter in the book *Hatchet* by Gary Paulsen to the class. In this first chapter of the book *Hatchet*, the pilot suffers a heart attack and dies. If the students did not research the sign, symptoms, and risks of a heart attack then they would be a bit confused on why the pilot died, but now they are able to better determine the possible causes of the pilot's heart attack. The students will work in groups of three and list the possible reason why the pilot had a heart attack. The students will also be asked to create a visual representation in a comic strip sequence format of the pilot demonstrating symptoms before, after, and during the heart attack.

What are the Risk Factors for a Heart Attack?

The students will then come together as a whole class and create a classroom chart on the factors that can increase one's risk of suffering a heart attack. The risk factors will include:

1. Obesity and overweight: Having a body mass index score of twenty-five or more. The excess weight increases the heart's work.²³
2. Physical inactivity: Getting less than thirty minutes of physical activity per day. Physical activity can help control blood cholesterol, diabetes, and obesity, as well as lower blood pressure.²⁴
3. High blood pressure: High blood pressure increases the heart's workload, causing the heart to thicken and become stiff. When high blood pressure exists with obesity, smoking, or diabetes the risk of heart attack increases several times.²⁵

The students can also view a table that list the risk factors according to age range and low, average, and high risk factors at <https://www.heart-health-for-life.com>.

The students will construct a questionnaire survey to be distributed at the school wide health fair. The questionnaire will consist of questions that determine whether an individual is at risk of suffering a heart attack. The students will generate the questions based on the risk factors discussed in the lesson. (See appendix B for a list of sample questions).

Along with the questionnaire, the student will also offer information on how to reduce the risk of suffering a heart attack.

Vocabulary words: review previous vocabulary words that were revisited in this lesson, cholesterol.

What is Adult-Onset Type II Diabetes?

Diabetes is a disease in which your blood glucose or sugar levels are too high. Glucose comes from foods you eat. Insulin is a hormone that helps the glucose get into your cells to give them energy. In the case of Type II Diabetes, the more common type, your body does not make or use insulin well and without insulin the glucose stays in your blood.²⁶

What are the Symptoms of Diabetes?

The symptoms of diabetes may include fatigue, thirst, weight loss, blurred vision, and frequent urination. A blood test can be administered to find out if one has diabetes.²⁷

Who is at Risk for Type II Diabetes?

The students will create mini- public- service- announcement posters containing the risk factors for Type II Diabetes. The risk factors will include:

1. Weight: A high body mass index can increase the risk of diabetes. A body mass index of greater than twenty-seven indicates a risk for developing Type II diabetes.²⁸
2. Lack of being active: Being inactive can lead to excess body fat, high blood sugar, and high blood pressure.²⁹
3. Smoking: Smoking makes it hard for one to control their blood sugar.³⁰

The students will display these posters around the school building on the day of the school-wide health fair.

How Can Diabetes be Prevented?

Diabetes can be prevented by maintaining a healthy weight, being active, and maintaining proper nutrition. Healthy eating and regular physical activity also helps those with diabetes. ³¹

We are going to pretend that the students will have just been told by their physician that they have Type II Diabetes. The students will be informed on the steps that need to be taken to manage their diabetes. Along with the proper amount of insulin required the students will also have to revamp their meals and incorporate some physical activity into their lifestyle. The students are going to be given a meal plan menu chart (Appendix C) and a daily exercise plan chart (Appendix D).

The students will complete the meal plan menu by visiting the following websites and construct balanced healthy meals to maintain their diabetes.

The websites are:

<http://www.dietian.com.ibw/ibw.html>

<http://www.nutri-facts.com>

<http://www.eatright.org/nfs/>

<https://www.allfood.com/mmeal.cfm>

Along with creating nutritious meals the students will also complete a daily exercise plan. The students must incorporate at least thirty-minutes or more of physical activity to maintain their diabetes.

Appendix A

Internet Guide

Name _____ Date _____

1. List five warning signs of a heart attack.
2. List three to five causes of a heart attack.
3. Identify at least three risk factors for suffering a heart attack.

Appendix B

Are You at Risk of Having a Heart Attack?

Yes No

1. Do you smoke?
2. Are you overweight?

3. Do you get less than thirty-minutes of physical activity on most days?

4. Have you been told by your doctor that you have high blood pressure?

Appendix C

Monday | Breakfast | Lunch | Snacks | Dinner

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

Appendix D

Daily Exercise Plan

Day | Activity | Activity

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

Notes

1 *Obesity Surgery for Children Rises* . New Haven Register, 2007.

2 *Obesity in Youth* . American Heart Association, New Orleans, 2004.

www.cardiosource.com

3 Deckelbaum, Richard J. and Williams, Christine L. *Childhood Obesity : The Health Issue*. Obesity Research, 2001. www.obesityresearch.org

4 Silverstein, Alvin, Silverstein, Virginia, and Silverstein Robert. *The Circulatory System Twenty-First Century Book*: Connecticut 1994.

5 Simon, Seymour. *The Heart: Our Circulatory System Mulberry Paperback Book*: New York 1999.

6 Simon, Seymour. *The Heart: Our Circulatory System Mulberry Paperback Book*: New York 1999.

7 Walker, Richard. *Heart: How the Blood Gets Around* Grolier Educational, Connecticut 1998.

8 <http://americanheart.org>

9 Ruchi, Mather M.D. *Obesity*. 2007

<http://www.medicinenet.com>

10 Ruchi, Mather M.D. *Obesity*. 2007

<http://www.medicinenet.com>

11 Ruchi, Mather M.D. *Obesity*. 2007

<http://www.medicinenet.com>

12 Ruchi, Mather M.D. *Obesity*. 2007

<http://www.medicinenet.com>

13 *Prevalence of Overweight Among Children and Adolescents in the United States: 1999-2002*. National Center for Health Statistics, April 2007,

<http://www.cdc.gov>

14 Ruchi, Mather M.D. *Obesity*. 2007

<http://www.medicinenet.com>

15 Warner, Jennifer. *Kid's Belly Fat Growing Fast*. 2006.

<http://www.medicinenet.com>

16 Deckelbaum, Richard J. and Williams, Christine L. *Childhood Obesity : The Health*

Issue . Obesity Research, 2001. www.obesityresearch.org

17 *Helping Your Overweight Child* . Weight Control Information Network.

<http://win.niddk.nih.gov>

18 Clayton, Lawrence, Ph.D. *Diet Pills Drug Dangers* Enslow Publishers: New Jersey

1999.

19 Clayton, Lawrence, Ph.D. *Diet Pills Drug Dangers* Enslow Publishers: New Jersey

1999.

20 Ruchi, Mather M.D. *Obesity*. 2007

<http://www.medicinenet.com>

21 Ruchi, Mather M.D. *Obesity*. 2007

<http://www.medicinenet.com>

22. http://www.nhlbi.nih.gov/health/dci/disease/heartattack/heart_attack_what.html

23 <http://www.americanheart.org>

24 <http://www.americanheart.org>

25 <http://www.americanheart.org>

26 <http://www.nlm.nih.gov/medlineplus/diabetes.html>

27 <http://www.nlm.nih.gov/medlineplus/diabetes.html>

28 <http://www.diabetes.com>

29 <http://www.diabetes.com>

30 <http://www.diabetes.com>

31 <http://gc.ca/ccdpc-cpcmc/diabetes-diabete/english/prevention/index.html://www.phac-aspc>

Reading List

Allison, Linda. *Blood and Guts: A Working Guide to Your Own Insides*. Little, Brown and Company, New York, 1976.

- A great book for students that describes the functions of the human heart.

Center for Disease Control and Prevention, *Physical Activity and Health for Young People*, 2006, US Department of Health and Human Services, 9 Mar. 2007,

<http://www.cdc.gov/healthyYouth/PhysicalActivity.html>.

- A site for teachers and students containing facts from the CDC about physical activity for today's young people

Cole, Joanna. *The Magic School Bus: Inside the Human Body*. Scholastic, New York 1989.

- A great book for student describing a school field trip through the human body.

Kids Health, 10 March, 2007, Kids and Exercise,

www.kidshealth.org/parent/nutrition_fit/fitness/exercise.html

- A site for students and teachers explaining the benefits of exercise.

Powell, Jillian. *Fats for a Healthy Body*. Heinemann Library, Chicago, 2003.

School Meals Need Upgrading. *New Haven Register*, April 2007.

www.nhregister.com

- A great newspaper article for students and teachers to read about the dilemma in creating healthy school lunches.

Summerfield, Liane. *Promoting Physical Activity and Exercise in the Classroom*. ERIC

Digest, 10 March, 2007. www.kidsource.com/kidsource/content4/promote.phyed.html.

- A study describing the importance of physical activity in everyday life

The Human Heart

<http://www.worldinvisible.com>

- A great site for students to view color images of the heart.

Walker, Richard. Heart: How the Blood Gets Around. Grolier Educational, Connecticut, 1998.

- A book for students on the heart and how it functions using microphotography to view realistic illustrations.

Internet Sites for Students

www.mypyramid.com

- A site for students to view the food pyramid and the daily allowances in a kid friendly manner

<http://www.kidnetic.com>

- A site for students on physical activity and proper eating habits.

<http://www.kidshealth.org/kid>

- A site for students about healthy living

<http://www.getkidsinaction.org/kids/#home>.

- A site for students on the importance of physical activity

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