



Curriculum Units by Fellows of the Yale-New Haven Teachers Institute
2012 Volume III: Anatomy, Health, and Disease: From the Skeletal System to Cardiovascular Fitness

A Healthy Body is a Healthy Mind

Curriculum Unit 12.03.09
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Introduction

I teach second grade at Roberto Clemente Leadership Academy in New Haven, CT. Roberto Clemente is a Kindergarten through eighth grade school with a student population of approximately 500 students. My classroom is a community of diverse learners, population 26. My students have a wide range of interests, social and emotional needs as well as achievements. The students diverse learning styles help motivate me into creating engaging lessons and activities on a wide range of academic needs.

It is important to me in my teaching that I not only teach the objectives and skills of a lesson, but I point out the life long learning that is occurring every second of every day. This unit is designed to help my students see the correlations among eating, thinking, exercise and their moods and how all 4 components are linked together. Eating, thinking and exercise are key components to be healthy and successful in school. A child's mood will alter if one of these components is uncared for. I want my students to be able to notice the correlation of eating right, and exercising and the positive effects these activities have on their thinking and mood. My students are in the second grade and don't realize how important eating right and exercising is to their bodies and mind. My students will keep logs of their sleeping patterns, their daily exercise and eating habits. Along with this tracker, I will have my students self-assess their moods daily and weekly.

First, the duration of non-interrupted sleep is important for the body and brain to rest. When people are tired, they have difficult time thinking. We will log the amount of hours of sleep every night. Second, we will keep a log of foods we eat during the day. We will calculate how much fruits and vegetables we eat, as well as the amount of water and milk we will be putting into our bodies. The students will get to know the phrase: A healthy body is a healthy mind. And lastly, we will document exercise. What types of exercise we do during the day, and for how long. The body works well and feels good when we are active every day.

The students will engage in activities that promote healthy minds and bodies as well as read and listen to stories. We will keep track of sleep, exercise and eating habits and discuss our moods during each day. The students will be able to notice the benefits and how their mood changes on days they eat right and exercise and how it positively affects their schoolwork. On the days that exercise didn't fit in and/or their eating habits were poor, they may see the change in their moods resulting in a change in their schoolwork. My students do not have a chance to discuss their eating, and their physical activities with one another, so this unit will be full

of excitement for them and will have the appeal of extending their learning from the classroom to their homes and hopefully their families. I hope to hear great discussions in the classroom as well as discussions about what is going on at home. This unit will promote life long learning and will extend into their community to promote a healthy, happy environment.

Overview

The students will begin the unit with a questionnaire that consists of questions regarding their sleep patterns, daily exercise, hours of "screen time" which can include watching TV, playing video games etc. This unit will allow for various discussions and exciting projects for all students. As a class we will chart their responses to the questionnaire on graphs for a visual representation so the class can see the average response to every question. This graph will be a great motivational tool for the students to see throughout the unit. The graphs will be posted on a designated wall where all of the work and progress from this unit will be charted and displayed. There will be several math lessons regarding graphs and data and how to read graphs. Also on the wall will be a chart for a fruit and vegetable challenge. The chart will be printed on synthetic paper so the students can use dry erase markers. We will set a classroom goal and after lunch each day the students will go up to the chart and mark an X in each box for each piece of fruit and/or vegetable eaten. Lastly, we will keep track of "screen time" and exercise time on the same graph, to promote daily exercise instead of daily screen time. I will show children how to improve eating habits as well as physical activity habits by making small gradual changes to their daily schedules. I will promote and support healthy life style choices and opportunities for children to practice healthy eating and being physically active. By the end of this unit, I want my students to be able to encourage other students to have consistent nutrition, as well as to promote physical activity messages through the school and community.

TEAM Nutrition & Research

TEAM nutrition was created to translate the ideas of being healthy into a reality. TEAM nutrition was born as an integrated, behavior-based, comprehensive plan for promoting the nutritional health of the Nation's children. (USDA, "A guide for team nutrition leaders") The research from the United States Department of Agriculture is alarming: The number of overweight children ages 6 to 11 has more than doubled from 7 percent in 1980 to 18.8 percent in 2004. (Ogden CL, 2006) Also noted by the USDA, every day on average, 8 to 18 year-olds spend nearly 4 hours watching television, videos, DVD's, and prerecorded shows and over 1 hour on the computer and about 50 minutes playing video games. (Henry, J. 2005) These statistics are alarming and need to be reversed. The research has linked nutrition and fitness and good health with the ability to learn, and a more important aspect I want to teach my students is that their eating habits, and physical activity and sleep patterns not only affect their academic achievement today, but will also affect their productivity and achievement as adults.

There is a documented relationship between aerobic fitness and motor skills and memory and attention in preschoolers. The study was done because of the decrease in children's aerobic fitness and the associated

pressures of schools to enhance cognitive performance. The study assessed 245 ethnically diverse preschool children for 9 months. The results were not surprising. Aerobic fitness was associated with better attention as well as working memory. (Niederer, 2011) This unit will help children learn positive physical activity habits and be able to understand that their energy and readiness to learn will help them become healthy, happy adults.

Diet, Exercise and Sleep

Everyone sees and hears all about the importance of diet and exercise. If it is on a T.V. commercial, in a magazine or from a friend, we all understand that in order to be healthy we must eat right and exercise. One crucial missing link is the importance of sleep. Sleep rejuvenates the body and mind and is necessary for a healthy lifestyle. According to the National Sleep Foundation, (Davila, December, 2009) not only does sleep regulate mood and is related to learning and memory functions but it will also improve test performance, learning of a new skill, and maintaining concentration. The National Sleep Foundation also stresses the importance of exercise during the day and not right before bed. Exercising right before bed raises body temperature, making the nights sleep less restful. It is important to allow the body to cool down before heading to bed. The NSF also points out research from Dr. Van Cauter. Van Cauter (Davila, December, 2009) points out that people who don't get enough sleep are more likely to have bigger appetites due to a hormone called leptin. When leptin levels fall, your appetite increases since leptin is an appetite-regulating hormone.

Most fundamental to the developing child are health habits involving sleep, diet and exercise. Obesity has become a serious public health problem and childhood obesity is a precursor to adult obesity. Physical activity has been linked with a range of beneficial health outcomes in adults and so it is no surprise that physical activity during childhood has a positive impact on growth and development and psychological and emotional outcomes that may continue into adulthood. (Ross and Hayes, 1988) Inactivity, which includes "screen time", has also been associated with obesity in cross-sectional studies of children, adolescents and adults. (Gortmaker et al. , 1996)

Unit Overview

This unit is designed to last 6 weeks in the classroom, and many years to come. The beginning of the unit will be designed as an overview of healthy living; good sleeping patterns, eating healthy, and being active. Once the class has charted the results of the initial questionnaire, we will discuss our challenge for the next 6 weeks. I will explain to the class that they will have to pay attention to how much sleep they are getting, how many fruits and vegetables they are eating, how much exercise they are getting, and how much "screen time" they are viewing.

Week 2-3 will be focusing on eating habits. I will incorporate children's picture books into the unit and the students will keep a food journal. The foods will be placed into 3 columns: green, yellow and red. One of the many books we will read, is a book by William Sears entitled, *Eat Healthy, Feel Great* . Sears does a terrific job highlighting green light foods, which are the foods that give us great energy and maintain our wellbeing. He touches upon yellow light foods, which are ok some times and then red light foods, which will make you tired

and moody.

Week 4-5 we will concentrate on physical activity. We will discuss the importance of being active every day, and how "screen time" takes away from being active and feeling great. We will use children's picture books to read about different examples from people's lives. We will also start recess during the school day. In our food journals we will add the minutes spent exercising after we logged our daily food intake. Daily, we will also chart our moods. There will be 3 faces; a happy face for a great mood, great energy kind of day, a blah face for an O.K. day with a little energy, and then there will be a sad face for very low energy type of day.

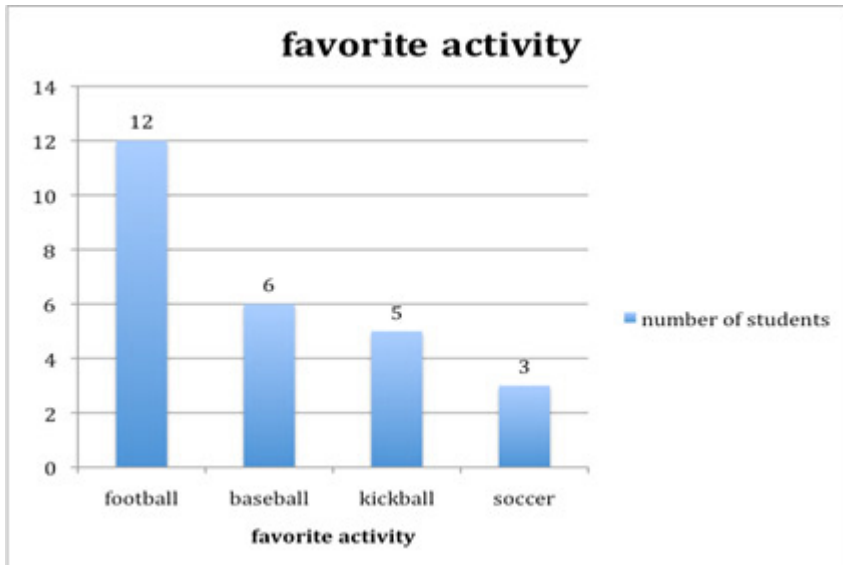
Week 6 will be a week to look at our food journals and notice the outcomes of the past few weeks. We will have discussions, as well as graphing days of the data we collected. We will talk about our good days good energy, as well as our bad days with little energy. This will also be the time we take the questionnaire again that was taken 6 weeks ago and notice the change in responses. The students will be able to see that the body works well and feels good when it is active and healthy.

Purpose

The purpose of this unit is for the students to gain an understanding of how important staying healthy is for the mind. Their academic achievement is affected by what they put into their bodies, as well as how active they are. Another factor in their academic achievement is mood. If a student is in a bad mood, and has very low energy, their academic achievement will suffer. What is great about this unit is that the students will learn life long lessons and will be able to carry them over into their households and communities. Another great factor is that they will be taking this challenge alongside their teacher. My students love to hear about my life outside of the classroom, so by me sharing what I made for dinner and what I did at the gym, will motivate them into being more active and eating healthier.

Week 1

The students will begin with a questionnaire that includes questions regarding their daily sleep, exercise, and diet. There will be 7 questions, and once the students are finished answering, I will calculate the results. At this time I will introduce the students to graphing in math, and how to read a simple bar graph. The sample bar graph, posted to the left will be based on the students responses to their favorite activity. (Figure 1.1)



As the students observe the graph, I will ask them questions such as, "What is a graph?" "Why do we use graphs?" "What do you notice about this graph?" "Which activity is liked by most of you?" "Which activity was liked by the least amount of students?" I will show other examples of graphs that I have created personally using data from the class. This will make the graphs more personal and relatable. After we have reviewed the concept of bar graphs, the students will pick 1 out of 4 foods that is their favorite. I will chart the responses on the board, and the students will independently create a bar graph showing the results. The graph paper I will give them will already have the x and y axis labeled since graphing is a new concept for them. As the students are completing their graphs, I will be graphing their responses from the questionnaire into bar graphs similar to the one in Figure 1.1 onto large chart paper. Once all graphs are completed, we will discuss the outcome of the graph "My favorite food". Once I feel the students have a good handle on reading graphs, I will show the graphs from the questionnaire. We will have a class discussion about the results and discuss any trends we see. I will guide the students to notice the bed times recorded by students, how many students responded to "yes" they exercise. I will also guide the students to notice the answers in regards to the question "Are fruits and vegetables important to eat every day?" By the end of week 1, I will discuss the classroom challenge and the unit that we will be covering for the next 6 weeks. (A copy of the questionnaire is at the end of the unit).

Weeks 2 and 3

These two weeks are designated to focus on healthy eating. Books we will read include; *Eat Healthy, Feel Great* (Sears, 2002), *The Monster Health Book* (Miller, 2008) *Spriggles Health and Nutrition* (Gottlieb, 2011) and *The Vegetables We Eat* (Gibbons, 2008). We will start out with William Sears book, *Eat Healthy, Feel Great* . This is the time I will introduce the unit journal. The students will begin charting the foods they eat, as well as what category the foods fall under. They learned about green light, yellow and red light foods so they will have to categorize their meals inside their journals.




The foods I ate:	Date:
Breakfast	
Lunch	
Dinner	

Figure 1.2

We will explore the food groups that make up the food pyramid. The students will learn how to use the food pyramid to help them make food choices for healthy eating as well as identifying fruits and vegetables they eat throughout the day.

Lesson 1 on exploring the food pyramid: The students will see a poster of MYPYRAMID for Kids and discuss what they notice. We will point out the foods on the poster and how they are arranged in groups. We will also discuss each food group in turn. The students will be able to understand that everyone needs food to live and grow. I will lead the discussion by saying "I am noticing the foods are arranged in groups. Why do you think that is?" We will then discuss each food group in turn. Next I will ask the students, "Why do you think there are stairs?" After our discussion, the students will take home a poster to fill in or cut out pictures to place on each group. These posters will then be displayed in the room to remind students of the food groups.

Lesson 2 on exploring the food pyramid: The students will practice sorting foods into the groups and learn where to find foods from each food group in the lunch line. First, a review of grains, vegetables, fruits, milk, meat and beans will be reviewed by having the students sort through pictures and pasting them on the correct part of the pyramid. Before the lesson, I will have cut out some examples of food for each part and attached a piece of tape onto the back for easy attachment. Next, we will discuss the cafeteria and their school lunches. I will point out that their food tray should have a grain, vegetable, fruit, milk and meat on it. After discussion, the students will then independently draw a picture of their school lunch trays after lunchtime and display them to the class. I will ask questions such as, "What could make your lunch tray healthier?" "Do you think your lunch tray was well balanced?"

These 2 weeks will be fun, and interactive. The students will record the foods they eat and be able to notice if they are getting enough green light foods in their diet. I will also point out the snacks that they bring into school are also a contributor to their diet. Even though it is not on the plate, you are still eating it so it must get recorded into your journal. Hopefully apples, nuts, and/or string cheese will replace the bags of chips and the cookies that they are used to bringing in.

Suggested activities to do during this time:

Moving More Game: Children need to eat enough food to support growth and show be physically active every day. This game helps kids think about the many ways to be physically active while playing a movement game. Gather the students and ask them to brainstorm a list of active thinks they like to do. Write each activity onto an index card. Now, have the students go to the front of the room, draw a card from the deck of activities and read what is on it. Have students act out their movement for 15–30 seconds, then draw another card. You can add music to speed up the tempo (or slow it down).

Pyramid Go Fish: This activity will give students additional practice in sorting foods into groups. Create pictures of foods and paste them onto cards. Put students into groups of 4 and distribute 30 cards to each group. Now play pyramid Go Fish! The dealer deals out 4 cards per student and places the rest in the middle. Student A will ask Student B if he has a fruit. If Student B says yes, Student B hands her card to Student A. Student A will then place the pair on the table. If Student B did not have a fruit, then Student A will take a card from the pile. The students play until all the pairs are found. The students with the most pairs wins!

Lesson 3 will focus on varying fruits and vegetables. In this lesson, I will challenge the students to name as many fruits and vegetables as they can in 1 minute. I will record on the board by food group. Once the minute is up, I will point out that fruits and vegetables are foods children need to grow and be healthy. We will look at the chart on the board. Ask the students, "Are there any fruits or vegetables that your have never tried?" Add more to the list to introduce new fruits and vegetables. Next, I will have the students go into their journals to add up the fruits and vegetables they have eaten the past few days. I will record their responses onto the board and ask the students to now help me create a bar graph. The students have worked a little with bar graphs, so mostly I will guide this lesson. I will draw a box and label the x and y axis. I will now guide the students to help me complete the graph. Once the graph is complete, we will discuss what we notice in regards to the results. I will then reiterate the importance of fruits and vegetables and how they must be eaten every day for a healthy diet and better brain! *Extension of this lesson- we will continue to graph the amount of fruits and vegetables eaten every day, however we will only graph the results on Fridays. The students will total up the amount of fruits and vegetables eaten that week and we will create a class graph to compare to the week prior, and the students will also create their own graphs to chart individual progress made.

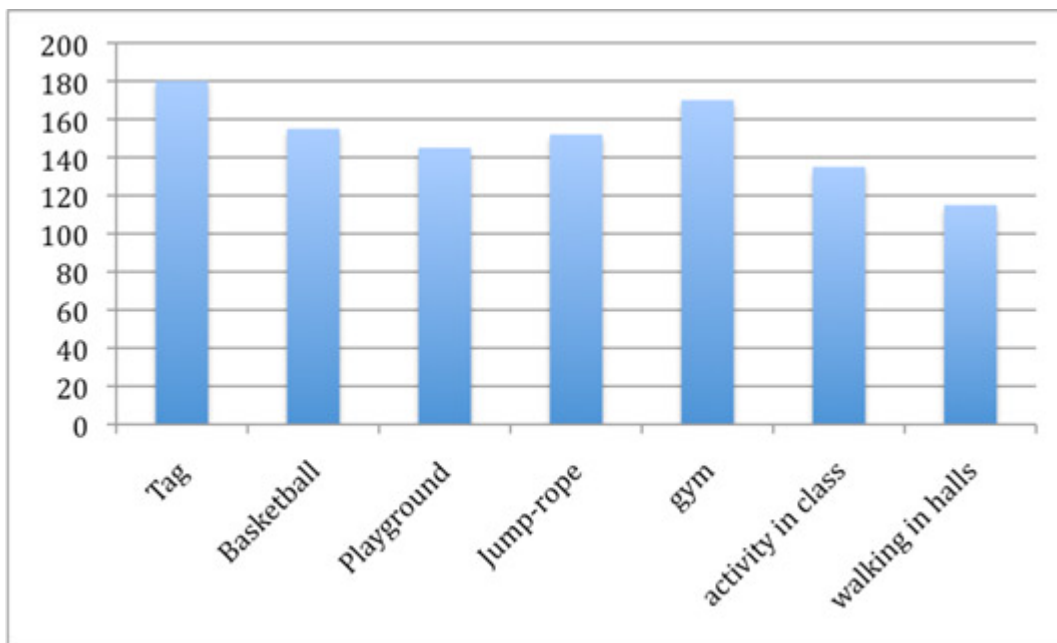
Weeks 4 and 5

These two weeks will focus mainly on physical activity. I will discuss the other section in their unit journal where they have to document their activity time as well as mood for the day. I will point out that eating right is only one part, being active is also important. We will start going outside for recess daily, and use the gym on rainy days. I will plan activities for the class to do during recess, and leave some days free for free play where the students can play on the playscape with each other freely. After recess, the students will come into the classroom and work in their journals. They will chart their food eaten at lunch, as well as what activity was played and the mood that they are in. It will be at this time that the students will start to see the correlation between eating right, exercising and how they both affect a child's mood.

Physical Activity and Mood-

Lessons 1-4: Modeling for the students is the most effective way to get the student to understand what type of behavior you expect from them. Over the next 2 weeks, the students will be introduced to heart rate monitors. The monitors will be exciting for the students and will promote active living. Show the students the heart monitor and ask them questions such as, "Why does one use a heart rate monitor?" "How does this help us to be active?" Invite the students to explore their heart rate monitor and explain that we will be using them during active parts of the day. First step to get the students used to the monitors. Start trying things that are normally done during the day (i.e. walking to lunch, walking to the bathroom etc.) Have the students look at their heart rate and record for each activity. After a few different activities, speed it up! Take the students outside or in the gym and have them run around and not their heart rate after 2 minutes, 5 minutes then 10 minutes. Bring the students back into the classroom and discuss what they noticed about their heart rate when they were active outside as opposed to when they walked in the hallways. Chart student's responses on chart paper to display on the walls.

Lesson 2-4: For the rest of the week, the students will wear a heart rate monitor to observe and record their heart rates during active times of the day. Their heart rates will be recorded into their journals and at the end of the week, the students will graph their



activities completed each day as well as their heart rate. An example of a graph is shown in figure 1.3. We will look at each students graphs after they have completed them and discuss what we have noticed about activity and heart rates.

Week 6: During the second week, we will still keep track of our healthy eating, amount of sleep and heart rates. We will be recording them into our journals as well as having a lot of meaningful discussions about the changes we have made to our diets and lifestyle. During this week, I will focus my attention on great picture books to read to the class.

Book 1: *Exercise* By Liz Gogerly is a great book to read to second graders. The book is about a grandmother who is fit and in great shape because she was always active growing up. She did not watch television, she did a lot of other things including walking to and from school every day. This book will introduce my lesson on

"screen time" the students are still doing. Hopefully, since we are keeping track of our heart rates and enjoying a healthy and active lifestyle, the amount of time the students spend in front of a television and/or computer screen has already gone down. I will point out to the students that sitting in front of a television doesn't raise heart rate. We will discuss what a healthy amount of time should be spent in front of a television and computer screen each day. We will come up with a time that all students must follow every day and the students must log the hours in their journal if they took, for example all 20 minutes of screen time, or if they only spent 5 minutes.

Book 2: *Arthur and The Race to Read* , By Marc Brown. This book has a character every second grader is fond of, Arthur! Arthur is in top shape in this book and he tries to get his friends into shape for a reading fund-raising race. This book will encourage the students to think of more ways to stay active every day! After the story, we will brainstorm a list of new and exciting ways to be active every day and keep our heart rates up.

Book 3: *I.Q. Gets Fit* , By Mary Ann Fraser. This book is all about being active! It is health month and the students must pass a fitness test! The book will review for the class the food pyramid, getting plenty of rest and how to stay active. This is a great book for mid-week since it will review everything the students have been learning about. After the book, the students will have a choice assignment. They will choose from a writing assignment about what they have learned about being active. Or the students can complete an encouragement poster, where the students will design a poster that will be posted in the hallways to encourage other students to eat right, be active and get plenty of sleep. Either assignment will assess the students knowledge of all aspects of the unit.

To close this unit, I will pass out the questionnaire that was completed prior to the unit. The students will now fill it out and we will compare our answers from the beginning of the unit, till now. We will also reflect on how different our lives became. Are we eating more fruits and vegetables? Are we going to sleep earlier? Are we in better moods during the day? Do we feel better? I will also highlight the fact that just because we are closing this unit, does not mean we stop being healthy. A healthy lifestyle and a healthy mind is important every day for the rest of our days.

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Questionnaire:

Name: _____ Date: _____

Student Questionnaire

Please answer every question!

1. What time do you go to bed every night? _____
2. Do you exercise? Yes or no? _____
3. Do you think eating fruits and vegetables every day is important? _____
4. What does being healthy mean?

Appendix

Connecticut Literacy Standards

Reading and Responding: Students read, comprehend and respond in individual, literal, critical and evaluative ways to literary, informational and persuasive texts in multimedia formats.

1.3 Students select and apply strategies to facilitate word recognition and develop vocabulary in order to comprehend text.

1.1 Students use appropriate strategies before, during and after reading in order to construct meaning.

1.2 Students interpret, analyze and evaluate text in order to extend understanding and appreciation.

1.4 Students communicate with others to create interpretations of written, oral and visual texts.

2. Exploring and Responding to Literature

2.4 Students recognize that reads and authors are influenced by individual, social, cultural and historical contexts

3. Communicating with Others

Students produce written, oral and visual texts to express, develop and substantiate ideas and experiences.

3.2 Students prepare, publish and/or present work appropriate to audience, purpose and task.

Connecticut Math Standards

- 1.1** Understand and describe patterns and functional relationships.
- 1.3** Use operations, properties and algebraic symbols to determine equivalence and solve problems.
- 2.2** Use numbers and their properties to compute flexibly and fluently and to reasonably estimate measures and quantities
- 4.1** Collect, organize and display data using appropriate statistical and graphical methods.
- 4.2** Analyze data sets to form hypotheses and make predictions.
- 4.3** Understand and apply basic concepts of probability.

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