



Getting Graphic With Sports: Math, Graphing, Infographics

Mindy Passe, 2013 CTI Fellow

Barringer Academic Center

This curriculum unit is recommended for: 4th Grade, Math, Science.

Keywords: Data analysis, infographics, physical fitness, action research, childhood obesity, problem-based learning, scientific method

Teaching Standards: See [Appendix 1](#) for teaching standards addressed in this unit.

Synopsis: In this unit, students will become researchers as they develop a plan to increase the amount of physical activity that students at our school do during the school day. This interdisciplinary thematic unit is inquiry based, student-centered and problem-based learning. It incorporates math, science/health and literacy. Students will be a part of action research with the goal of developing a plan to increase the physical activity of our class and ultimately our school. Students will be exposed to the critical issues of childhood obesity through data analysis, interpreting infographics, informational text and related literature. Students will use the steps of the scientific method to develop hypotheses, test and analyze their ideas of specific physical fitness activities to incorporate in the school day, both in class and at recess. Infographics will be explored as both a means of acquiring information and as a tool to present their findings to the principal, with the aim of implementing a grade or school wide plan of physical fitness activities, designed, tested and analyzed by the students. Data analysis, problem solving and collaboration are woven throughout the unit.

I plan to teach this unit during the coming year in to 25 students in 4th grade math/science in the coming year.

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Getting Graphic With Sports: Math, Graphing, Infographics

by *Mindy Passe*

Introduction

Is there a link between technology and childhood obesity? The role of technology in childhood obesity is not just a matter of speculation. More than 40 studies have been conducted on the matter and many indicate that the availability of technology contributes to a sedentary lifestyle.¹ The question that I want to answer is IF there is a way to use our students' interest and fascination with technology as a vehicle to engage and inspire students to address this serious issue. I believe that through the expansion and cultivation of students' mathematical skills and their interest in technology, they will develop a better understanding of physical fitness, and in doing so, help to develop a healthier lifestyle for themselves and their peers.

Although brain research has consistently told educators of the value of 'brain breaks', few teachers incorporate physical activities into their instructional day. In his article, *Moving With the Brain in Mind*², Eric Jensen stresses the valuable connection between movement and learning,

“Brain research confirms that physical activity—moving, stretching, walking—can actually enhance the learning process.”

Calling attention to the need to increase students' physical activity, while at the same time increasing their learning, encourages teachers to be more aware of the imperative to incorporate movement into our classrooms. Many books such as *Energizers: Classroom-based Physical Activities*³ have been produced by health and wellness organizations in many states over the past decade. For too long, they have sat on our shelves but we need to be reminded that these activities are not some educational trend but rather research-based practices that enhance student engagement and learning.

This unit will integrate the use of technology, specifically infographics in conjunction with data collection and display, physical fitness and health. Initially, students will focus on reading and interpreting all kinds of infographics in print and online media. Simultaneously, the class will look at the issues of childhood obesity through informational and fictional texts. This will lead students to create infographics based on information that they have collected related to physical activities, including sports and physical fitness. Finally, students will develop a hypothesis about how to impact the amount of physical activity that they and their peers do at school, both in the classroom and at recess. Each student will test their ideas using the scientific method, including a purpose, hypothesis, procedures, results and a conclusion. Students will share

their results using infographics that will be presented to their peers, parents and school administrators.

Objectives

This interdisciplinary thematic unit is designed to be taught over a 10-week period with a focus on mathematics, literacy and science/health. This unit is inquiry based, student centered and reflects the Common Core⁴ structure of incorporating the reading skills needed to understand informational text as the foundation of the curriculum. Fourth grade students are expected to interpret information presented visually, orally and quantitatively (e.g. in charts, graphs, diagrams, time lines or interactive elements on timelines) and explain how the information contributes to an understanding of the text in which it appears. My students, who are generally working above grade level, will be expected to draw on information from multiple print or digital sources, demonstrate the ability to locate an answer to a question or to solve a problem efficiently. In addition, as students learn through novel studies, they will be expected to be able to explore the meaning of texts, explaining what the text says explicitly as well as draw inferences from the text. Students will also be expected to explain events, procedures, ideas or concepts in a historical context including what happened and why, based on specific information in the text.

Physical activity will be an integral part of this unit. Children have a natural inclination to move. Their ability to tackle any task through movement makes it an inviting task. Dr. Carla Hannaford⁵ has noted that math and movement go hand in hand as movement increases circulation and provides stimulation for the release of dopamine and noradrenalin in the brain, which are key components of learning. The integration of movement and learning will have dual purposes in this unit: the intentional physical fitness as well as the positive effects of physical activity on learning.

The unit will correlate closely with Common Core standards and twenty first century learning skills. In addition to the mathematical skills needed to read, interpret and ultimately create infographics, students will develop critical thinking skills. Infographics will help students to transmit and communicate messages; present large amounts of information in a compact and easy to understand way and develop skills in identifying cause-effect relationships. Infographics will enhance understanding of academic and specific domain vocabulary as well as improve students' presentation and communications skills by expanding their use of visual elements and technology. Infographics will help to foster literary independence in the world of data collection, analysis and interpretation. This unit offers many opportunities for differentiation based on the skills, interests and knowledge of the students. It provides extensions of the curriculum directly related to the objectives and skills from the 4th grade curriculum as well as those that will be a part of the grade 6-8 curriculum.

In addition, this unit is closely aligned with the Charlotte Mecklenburg Schools Strategic Plan 2018⁶ in which Superintendent, Dr. Heath Morrison, states that "We have identified six goals that will transform our schools into 21st century learning environments." This unit reflects many of the initiatives outlined in the plan, particularly Goal 6, which is 'to inspire and nurture learning, creativity, innovation and entrepreneurship through technology and strategic school redesign. Students will be empowered as key players in redesigning how our school operates with regard to improving the health and physical well being of their classmates. The mathematical focus of this unit is closely aligned with the 21st Century Learning Skills of critical thinking, problem solving, communication and collaboration. The interdisciplinary theme supports core academic subjects and emphasizes learning and innovation skills, information and technology skills as well as life and career skills.

Childhood obesity has become a matter of grave concern to educators and parents. Our school, like all elementary schools, is working to develop strategies to address this serious problem. By engaging my students in the development and implementation of a plan to address childhood obesity in our school, this study fits in well with my philosophy of inquiry-based learning.

"The inquiry approach is more focused on using and learning content as a means to develop information-processing and problem-solving skills. The system is more student centered, with the teacher as a facilitator of learning. There is more emphasis on "how we come to know" and less on "what we know."⁷

Students are more involved in the construction of knowledge through active involvement.

Using infographics to engage my students in the study of childhood obesity and physical fitness will give my students the opportunity to be researchers, analysts and ultimately disseminators of information. As a teacher of gifted students, I know that with this topic, I will easily differentiate my teaching and curriculum based on my students' academic skills, knowledge base and interests. Students will develop and become a part of a research study that focuses on increasing and monitoring student physical activity at our school.

An important part of my classroom learning is based on my belief that students should be developing *real products for real audiences*. To engage students, I believe that they need to feel empowered with the belief that their work can truly make a difference. I will ask my principal to challenge my class to develop a plan to increase the physical activity of our student body and in doing so, create a healthier student body. Initially, we will focus on our classroom, to see if we can develop strategies that will increase the physical activity of each student. Students will employ experimental procedures, data collection and display of results. The principal will be invited to review the results with

the ultimate goal of defining specific strategies/practices that can be implemented grade wide or school wide throughout our school. Our school nurse will be involved in the assessment of our results and the implementation of the students' ideas.

Problem-based learning⁸ ties in uniquely with the needs of my fourth grade gifted students. Initially, their immersion into data analysis and collection will serve as a key building block in the development of the skills needed to plan and conduct a *science fair project* (a requirement of all students in my class). Over the years, I have seen students struggle with the fundamental skills needed to conduct scientific research and effectively communicate the results and analysis of their work. This unit, will, in essence, serve as a dry run, in which students can practice the important steps in the scientific method. In a community of collaborative learning, I will be able to guide and support students' understanding of the key skills needed to create hypotheses, develop procedures, collect and analyze data and draw conclusions. Secondly, this study will lay the foundation needed to engage students in our health/science unit on nutrition. Often students do not make the connection between nutrition, physical fitness and the increasing problem of childhood obesity. Involving students in real world problem solving will help students see the connection to this important topic in our health/science curriculum.

The unit will be interdisciplinary in that it will incorporate communications skills, mathematical reasoning/data interpretation skills and health/physical fitness. My gifted students will be expected to draw on information from multiple print or digital sources, demonstrate their ability to locate an answer to a question or to solve a problem efficiently. In addition, as students read fiction books related to the issues of physical fitness and childhood obesity, they will be expected to be able to explore the meaning of texts and make connections to themselves and our school population and circumstances. Students will use their creativity and 21st century communication skills, including technological tools such as Power Points, blogs, or animation, as well as drama, public speaking and graphic design, when they 'pitch' their ideas/proposals to the administration and eventually their peers.

Character Education is an important part of our school focus, as it is nationwide, due to the imperative to address the growing issues of bullying in our schools. Issues associated with childhood obesity and physical fitness will be explored through the lens of developing tolerance, acceptance and a supportive environment for all students. Since the playground is one of the most fertile places for bullying, students will develop strategies to encourage and support students with body image issues, which is often one of the main targets of bullying.

Background

I teach fourth grade in a large urban magnet elementary school in the city of Charlotte, North Carolina. My school is part of Charlotte Mecklenburg Schools and is unique in that it has three distinct programs: neighborhood students, who are almost all African American and qualify for free/reduced lunches, a gifted magnet program with a very diverse group of students bused in from middle to upper class suburbs and a very selective program for Highly gifted students from the entire county. On my grade level, for example, there is one highly gifted class, 2 gifted classrooms and 3 classrooms of neighborhood students. Although we are 3 distinct programs, we continuously work to develop our school-wide program through integration of curriculum, special activities, field trips, etc. My class has 25 students that remain in a self-contained classroom, in which I teach all subjects. All of my students are identified as gifted though there is a wide range of abilities and skills. About 60 % of the 625 students at our school are African American and low income. This group has a higher incidence of childhood obesity than the general population.

"Childhood obesity rates in America have tripled, and today, nearly one in three children in America are overweight or obese. The numbers are even higher in African American and Hispanic communities, where nearly 40% of the children are overweight or obese."⁹

Like many other counties and states, we have reached a critical time with regard to our children's health in Charlotte. According to The Blueprint for a Healthier Generation 2020¹⁰, an action plan for Mecklenburg County to utilize and address the issues of healthy lifestyles for children and childhood obesity in the county:

"When it comes to the health of American children, the United States, North Carolina and Mecklenburg County are in crisis. Estimates suggest that because the prevalence of childhood obesity is so high, life expectancy of today's generation of youth is lower than it was just a generation ago. North Carolina is nearly in the top quarter of states with the highest obesity level among adults. And nearly 1 in 4 Mecklenburg County children are obese or overweight."

Environmental safety, transportation, healthy eating are among the many issues addressed in this study. The unit will address one of the key issues cited, which is that since children and adolescents spend the majority of their time in school and child care settings, it is important that our schools help to meet the U.S. Surgeon General and Department of Health and Human Services' recommendation of 60 minutes of physical activity for children every day.

One important resource that we will use is the NFL 60¹¹ initiative, which is a program designed to encourage children to increase their physical fitness to 60 minutes a day. Our school is currently in the process of becoming involved in Fuel Up to Play 60¹², a program founded by the National Dairy Council and NFL60, in collaboration with

USDA, that empowers students to take charge in making small, everyday changes at school to increase physical activity. This program encourages students to make changes not only in their lives, but also their school community.

Strategies

Introductory Activities

What are infographics?

Students' initial engagement with this topic will begin with an exploration of infographics. Beginning with the basic understanding that infographics are visual representations of information, data or knowledge that help us sort, arrange and visually present data, students will be immersed in infographics as they explore, analyze and ultimately create their own infographics based on surveys and data from our student population. Since infographics are an excellent tool to help students understand complex information in more user-friendly way than traditional graphs, I will incorporate infographics across the curriculum. Initially, we will create a bulletin board to display the student found infographics, which will eventually be made into an annotated collection of infographics for our classroom. Students will use Kathy Schrock's Guide to Everything Infographics¹³ as a resource to explore infographics beginning with the introductory video on the home page.

Students will be introduced to the process of data collection and analysis of their physical activities using an activity from *NFL 60*¹⁴ called Time is of the Essence in which students pick one person to be the timer. Everyone but the timer closes their eyes and jogs in place for however long they think one minute is. As students open their eyes, they will silently note the time displayed. Student will be asked to share their perceptions: did they think a minute of jogging was longer or shorter? Students will repeat this activity 3 times, recording the times again and repeat every day for a week. As students get stronger, we may increase the time to two or three minutes. Students will keep an index card with their data taped to their desk. Students will make predictions about what we will see after doing this for a week. Students will create possible graphs that they can use to display this information. We will discuss which type of graph would be appropriate and how to label each axis of the graph. Students will be encouraged to think beyond the graph to what type of infographic they could create using this data. At the end of the week, we will record the data for each student on chart paper without names. We will discuss and determine what data and graphs will be most useful. Students will compare boys vs. girls for this activity. Students will work collaboratively to design multiple graphs using the class data (increase of running time, accuracy of running time prediction, number of students able to run for at least a minute each day, range of running times by day, etc.) and then students work in small groups to create the actual graphs.

Once the graphs are created and displayed in the classroom, each student will select the graph that they think is the most informative and write a short analysis of that graph, explaining why they think it is a good representation of the data. Students will be grouped based on their graph selection and then work collaboratively to create an infographic using the data.

KWL

Students will be introduced to basic background knowledge about childhood obesity with a power point created by a local pediatrician. Using this power point as a starting point, students will begin their study with K/W/L (What I **K**now, **W**ant to Know, What I **L**earned). This approach is a teaching model used to encourage student-centered, inquiry based learning by activating students' prior knowledge (K), developing questions of personal interest to encourage purposeful reading and research (W) and summing up and reflecting on what was learned and if and how questions were answered (L). Ideas, questions and results are recorded collectively on a chart for the whole class to serve as a guide to further study of the overarching question: What can we do to increase physical activity that will lead to the development of healthier lifestyles for our school community?

Depth and Complexity

The framework for this unit will be based on Sandra Kaplan's¹⁵ concepts that incorporate depth and complexity into any unit of study. Sandra Kaplan's model uses simple icons to engage students in complex thinking while adding rigor and critical thinking to instruction. Using these icons is a strategy often used with gifted students but equally effective with all types of learners. To develop depth in lessons, students use icons that represent strategies to build understanding such as learning the language of the *discipline, looking for big ideas, essential details, rules, patterns, trends, unanswered questions and ethics*. Complexity is created as students look at the subject/issue over time, from multiple points of view and across disciplines. Initially, early on in the year, I introduce the students to this very complex approach to learning using popcorn as the theme. By initially using the concrete, fun and tasty topic of popcorn, students get to explore all aspects and use all of the icons/ways of thinking, which we incorporate into a bulletin board, popcorn and all. Focusing on a few aspects of this model at a time, in a variety of subjects enables students to get a grasp of this new vocabulary and provides an excellent way to differentiate for the varied thinking capacities and styles of my students. The complex nature of this unit with many varied perspectives, possibilities and entry points lends itself readily to this model.

Creative Dramatic Interpretation

Another focus in this unit is to help students make inferences and draw conclusions as they read novels, picture books and informational text related to the topic. One strategy that I use to help students gain insight and understanding is creative dramatic interpretation.¹⁶ This is another way to incorporate movement in learning. Students will use their bodies and creative movements to build understanding of the characters and events in the stories. This strategy, for example, will be used effectively in novel studies, such as 'Playground: The Mostly True Story of a Former Bully' by 50 Cent¹⁷, an audio book about Butterball, who is definitely a bully, although he is, at the same time a 13-year-old overweight teenager. Students will act out key events and dramatically portray the characters in the story. Reflective writing following this activity extends thinking, analysis and dialogue between students and teacher. Students will communicate with each other as they read, research, explore, analyze and reflect on the issues related to physical fitness and childhood obesity.

Wordles¹⁸ and Tagxedo¹⁹ as Infographics

Students will explore Wordles or word clouds as a type of infographic. Initially, we will use this tool in class discussions, as a way to review key concepts in science or social studies. For example, as a review of the three regions of North Carolina, students will identify the key resources, industries, landforms and waterways of each region in groups and then be asked to identify which region is being described based on their knowledge of North Carolina. As students create Wordles related to this unit, they will explore the mathematical relationship between the number of times a word is used and its relative size and then they will share and compare their ratios and analysis with the class. Students will also be introduced to Tagxedo, which turns famous speeches, news articles, slogans and themes into word clouds in a shape related to the content, again with words sized appropriately to highlight the frequency. After a review of adjectives, students will use Tagxedo to create word clouds describing their classmates. Students will write an adjective describing each classmate as papers are passed around the class of every student. Then each student will have the opportunity to enter the adjectives describing one classmate and select the shape of the word cloud, matching that student's interests. For example, since Joseph plays guitar, then his word cloud will be in the shape of a musical note.

Glogster²⁰

Glogster will give students another opportunity to explore how to create infographics. Through Glogster, students create GLOGS - online multimedia posters - with text, photos, videos, graphics, sounds, drawings, data attachments and more. I have used this site to introduce myself to my students on our class wiki each year. Students can use it to graphically represent research, analyze information or share ideas and opinions. This site appeals to students whose strengths are more in the linguistic and spatial areas. Students will be asked to compare and contrast two Glogs created by others

as they browse the gallery of student-made glogs. This will help them to determine the key elements needed to develop captivating and informative glogs.

Math Activities

History of Infographics

A brief historical background and analysis of infographics will be introduced to explain the theory and rationale behind infographics. Students will be asked to identify and explore how graphics help convey information and how they can tell a story quicker than text. We will discuss how this relates to the way our brains think. In the *Power of Infographics*²¹, it is stated that 50% of the brain is dedicated directly or indirectly to visual functions. In fact approximately 30% of our total gray matter in the brain is responsible for visual activity. Students will analyze basic infographics beginning with the first known infographic, created by Florence Nightingale. She compiled data on the deaths of soldiers during the Crimean War in what she called a Coxcomb, to visually represent the 70,000 casualties of the Crimean War. They will see how her innovation in presenting data visually was actually one of the earliest known infographics. Students will develop their interpretive skills as they examine and analyze various infographics portraying historical information including Babe Ruth's home run record, contributions to the 2012 presidential campaigns and infographics related to childhood obesity. Students will be given data and asked to analyze it and display it in 3 different ways, identifying their audience and the goal of their work. From this work, students will then move into their infographic development, based on the data they collect about their physical fitness experimentation.

Connection to Scientific Method/Science Fair Projects

In addition, and in conjunction with preparation for students' science fair projects, students will compare graphs and tables as a key element of the scientific method. Though it is assumed that graphics are used to see something more quickly, students will be asked, "Can you see something more quickly with a table or with a graph?" Opinions will vary based on the individual and the data being presented. Students will analyze if it is best to use tables, graphics or infographics for their Science Fair display board. Though traditionally infographics have not been used on Science Fair display boards, students will be asked to consider whether an infographic could be eye catching and add to the viewers'/judges' understanding of the data being presented.

Analyzing Data

Misleading Graphs - To help students understand the complexities of creating infographics, students will be introduced to the concept of misleading graphs. As students learn more about interpreting graphs, they will be better prepared to analyze data

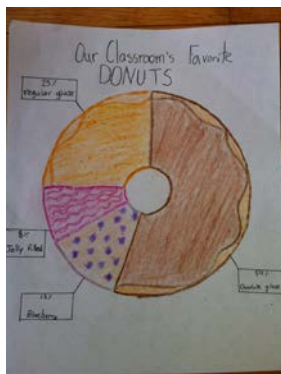
and make informed choices about the type of graph/infographic that they will be creating. Students will learn what is meant by misleading graphs.

"Misleading graphs may be created intentionally to hinder the proper interpretation of data, but can be also created accidentally by users for a variety of reasons including unfamiliarity with the graphing software, the misinterpretation of the data, or because the data cannot be accurately conveyed."²²

After reviewing examples of misleading data, students will be challenged to identify misleading graphs. We will create a bulletin board of examples of misleading graphs and infographics, which will not only help students with the development of their own graph but call their attention to how graphs can be used as false advertising with skewed data presentation.

Pie Graph/Infographics

To help students begin to develop their skills in creating infographics, we will work as a class to create pie graphs, which are easily turned into infographics. By focusing on students' interests and favorites of circular objects, we will engage students by first modeling the creation of a pie graph of our classes' favorite round fruits. After surveying the class based on agreed upon fruit choices, students will work in pairs to determine how they would convert the data to a pie graph. Differentiation will occur as some students use calculators and compasses while others use the site Kids Zone Create a Graph²³. We will compare graph proportions and then work together to decide how to best represent the different fruits, such as apples, oranges, watermelon, etc. within the pieces of the pie graph, thus the easy conversion to an infographic. We will then brainstorm the survey possibilities such as pies, cookies, pizza, donuts or mints. Surveying will occur simultaneously as data is collected and students will continue to work in pairs to create infographics depicting the favorites of our class. Students will be encouraged to use different mediums to represent the pie pieces, including student-made art, graphics from the computer, magazines or even food wrappers.



Student Interest Infographics

Students will work collaboratively as they identify key topics that they will research based on their interests. Then students will be asked, what kind of graph would be best to display their data? Would a pie chart or bar graph be better? Is there a creative way to display this in an infographic? Students will be encouraged to explore different possibilities in pairs and then see how their classmates interpret what they have done. Again, as needed, based on student strengths, some students will use Kids Zone Create a Graph²⁴ while others use their mathematical knowledge and skills to make their graphs. Once the data is turned into a graph, then students will be encouraged to use the software (<http://piktochart.com>) to help them experiment, explore and ultimately create their infogrphahics.

Culminating Project - Physical Activity Action Research

Students will be involved in action research regarding the impact of one selected physical activity over a two-week period done with our class. Students, working in pairs or small groups will select an activity from NFL 60²⁵ activities, Energizers: Classroom-based Physical Activities²⁶ or student created activities to be done either in class or during recess. Students will be both participants and researchers throughout the two-week period, recording data and making observations. Our culminating product will be the development of a group presentation/ pitch to our principal to convince her of the benefits of their selected physical fitness activity based on the data that they have collected. The presentation will include a demonstration of the activity that they have investigated. This process will incorporate data collection as well as the creation of a graph and an infographic from each group. Students will determine the most dramatic graphics to support their efforts and ideas for the presentation that they hope will convince the principal to implement their ideas for our grade or school wide. Issues of ethical considerations, transparency and full disclosure (related their study of misleading graphs) will be discussed as students act in the roles of market analysts and advertising agents of 'change'. Students will include drama, visual arts and technology in their presentation for the principal, parents, nurse, and physical fitness teacher. Self-assessment as well as feedback from their audience will be in the form of a rubric that will also serve as a guide in this process. Implementation of some or all of their suggestions will be the ultimate measure of their success.

Appendix 1: Implementing Common Core Standards

MATH

Represent and interpret data.

- **CCSS.Math.Content.4.MD.B.4** Make a line plot to display a data set of measurements in fractions of a unit. Solve problems involving addition and subtraction of fractions by using information presented in line plots.
- **CCSS.Math.Content.4.OA.A.3** Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted

READING/LANGUAGE ARTS

Integration of Knowledge and Ideas

- **CCSS.ELA-Literacy.RH.6-8.7** Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.

Research to Build and Present Knowledge

- **CCSS.ELA-Literacy.W.6.8** Gather relevant information from multiple print and digital sources

Common Core Reading and Language Arts Objectives (Non-fiction Texts) Craft and Structure

- **CCSS.ELA-Literacy.RI.4.5** Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.

Integration of Knowledge and Ideas

- **CCSS.ELA-Literacy.RI.4.7** Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, time lines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears

Writing/Communication

CCSS.ELA-Literacy.SL.4.5 Add audio recordings and visual displays to presentations when appropriate to enhance the development of main ideas or themes.

Research to Build and Present Knowledge

- **CCSS.ELA-Literacy.W.4.7** Conduct short research projects that build knowledge through investigation of different aspects of a topic.

Appendix 2

Name (s) _____

Due Date _____

Physical Activity Action Research Project

Purpose: The purpose of this research is to determine what physical activities within the classroom and during recess can positively impact students' physical fitness.

Description Activity: _____

Question: How will doing _____ x times a week for _____ minutes in classroom breaks or outside during recess (circle one) impact our physical fitness?

Hypothesis:

Materials Needed: _____

Procedure: Include specific details of how the activity will be done and time allotment. (no more than 3 minutes for classroom-based and 10 minutes for outside recess)

Method of Data Collection: _____

Data, results and observations will be shared as a graph and as an infographic.

Conclusion: _____

Appendix 3

Physical Activity Action Research Project Presentation Rubric

Group Members: _____

Rubric Rating Scale:

1 - Not so much 2 - Need Some Improvement 3 - We are awesome at this!

Group Work	Student	Teacher
We stayed on task.		
We listened to each other.		
We included ideas from each person.		
We completed our presentation on time.		
Total	/4	/4

Data	Student	Teacher
Graphs are accurate, legible with correct labels.		
Observations are clear.		
Infographic is informative and accurate.		
Infographic is creative and eye catching.		
Total	/4	/4

Presentation	Student	Teacher
Students were articulate.		
Data was clear and easy to understand.		
Creativity/Pizazz		
Overall Effectiviesness		
Total	/4	/4
Total Points	/16	/16

Student Resources

- <http://www.schrockguide.net/infographics-as-an-assessment.html> - excellent resource of sample infographics, tutorials for students and teachers
- <http://piktochart.com> - provides formats and guide to make infographics
- "Wordle - Create." *Wordle - Create*. N.p., n.d. Web. 30 Oct. 2013. <<http://www.wordle.net/create>> - resource to create word clouds
- "Tagxedo." *Tagxedo*. N.p., n.d. Web. 16 Nov. 2013. <<http://www.tagxedo.com/>> - resource to create word clouds.
- http://www.heart.org/idc/groups/heart-public/@wcm/@global/documents/downloadable/ucm_305585.pdf - sample physical activity log (NFL 60 - go to student planner for activities)
- <http://nces.ed.gov/nceskids/createagraph/default.aspx> - resource for pie graphs
- <http://www.glogster.com/> - resource to create multi-media blogs

Teacher Resources

- Miller, Worm, and Patrick Casey. *The World Reduced to Infographics From Hollywood's Life Lessons and Doomed Cities of the U.S. to Sociopathic Cats and What Your Drink Order Says About You.* New York: Ulysses Press, 2011. Excellent basic guide to infographics - I cut up and used to create introductory bulletin board
- http://www.heart.org/HEARTORG/Educator/FortheClassroom/NFLPlay60Challenge/PLAY-60-Challenge-Teacher-Guide_UCM_304758_Article.jsp - Teacher Guide to NFL 60
- <http://dailyinfographic.com/> - excellent resource of infographics
- <http://www.byrdseed.com/introducing-depth-and-complexity/> - Sandra Kaplan's Depth and Complexity introductory popcorn lesson, icons and additional resources
- <http://www.eatsmartmovemorenc.com/Energizers/Texts/K-5-Energizers.pdf>. - good source of energizer classroom activities.

¹ "Obesity In Children & Technology LIVESTRONG.COM." *LIVESTRONG.COM - Lose Weight & Get Fit with Diet, Nutrition & Fitness Tools | LIVESTRONG.COM*. N.p., n.d. Web. 23 Sept. 2013. <<http://www.livestrong.com/article/46320-obesity-children-technology/>>.

² "ERIC - Education Resources Information Center." *ERIC - Education Resources Information Center*. N.p., n.d. Web. 26 Oct. 2013. <<http://eric.ed.gov/?id=EJ617847s/>>.

³ "Energizers Classroom-based Physical Activities." *FitKidsNC.com*. North Carolina Health Wellness Trust Fund, 1 May 2001. Web. 26 Oct. 2013. <<http://www.eatsmartmovemorenc.com/Energizers/Texts/K-5-Energizers.pdf>>.

⁴ "Common Core navigator." *Common Core Navigator, Math4*. N.p., n.d. Web. 29 Oct. 2013. <http://learnzillion.com/common_core/math/4>.

⁵ Carol Hannaford. *Smart Moves: Why Learning Is Not All in Your Head*. Salt Lake City : Great River Books, 2005. Print.

⁶ Heath Morrison. " Strategic Plan 2018 Presentation." *Charlotte-Mecklenburg Schools*. N.p., 10 Oct. 2013. Web.Oct2013.<<http://www.cms.k12.nc.us/mediaroom/strategicplan2018/Pages/StrategicPlan2018Presentation.aspx>>.

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