

Obesity in the Middle School: An Active Plan

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Overview

The goal of this unit is to introduce an at risk group of students to information about obesity and its health risks. After taking an informal survey of middle school students, it appears that there is great interest in weight and health issues. Therefore, the unit will focus on obesity.

At the Penn Alexander Middle School students are currently getting their Body Mass Index measured by the school nurse. Once the measurements are calculated, students are given a paper that tells them their BMI percentage. It is not enough to just give students this information and expect them to know what to do to change the situation. That is why it is important for the students who at or above the 90th percentile to have a place to go and discuss the problems they are facing with weight gain and where they can go for support.

At Penn Alexander students are given a unique opportunity to select one course a semester. This course is taught twice a week for one hour. This unit will be presented only to students who choose the course. Once these students are aware of the problem, the next logical step is to teach them appropriate skills to combat weight gain. Students will learn about nutrition, the food pyramid, physical activity, counting calories, and portion control. Middle school students are at a pivotal point in their life, this is a time when they can choose to make a difference in their future.

Rationale

This curriculum unit will be taught to sixth, seventh and eighth grade students. The unit will be taught to any student who feels they could benefit from an introduction to a healthy lifestyle. Students who are currently struggling with their weight will be given priority, because only ten students will be in the class. Keeping the number of students small will allow for intimate discussions and community building.

Considering the fact that obesity is twice as prevalent as it was thirty years ago (Merck Manuals, 2007), it is important that students are being taught about nutrition in school. Also, students who are obese are likely to get type 2 diabetes and high blood pressure (Merck Manuals, 2007). As educators we need to protect our students, and our society. On average obesity costs over \$100 billion dollars a year (American Academy of child and Adolescent Psychiatry). Therefore, the problem is not only a question of personal health, but also public health.

There are many factors that can lead to childhood obesity including but not limited to family history, high blood pressure and smoking(AOA Diagnosis). Students should be aware of these health issues that can lead them down the path to obesity. Most young people are not aware of the eating recommendations, and therefore, are not following the nutrition guidelines(Us Department of Agriculture).

Not only do students need to know what might place them at a greater risk for obesity, but they also need to know ways of treating obesity. There are treatments for obesity available to anyone interested in making a change. The first and foremost treatment is improving eating habits. After adjusting their eating styles, adolescents can receive counseling to help them understand why they are eating in unhealthy ways.

Obesity is much more prevalent in low-income families. When doctors looked at Body Mass Index (BMI) in relation to socioeconomic status (SES), they found that they lower the SES the higher the BMI (Vieweg, 2007). This should concern teachers and administrators in schools where students come from low SES background. We as educators need to become informed and educated about what we can do to make a difference in our student's lives. "One in three children born in 2000 are expected to develop type 2 diabetes, with the risk of blindness, loss of kidney function and early death associated with it. This is the first generation in American history whose life expectancy may actually decrease." (Latimore, 2006). This statistic is truly frightening, and again we need to make positive changes in our student's lives.

There are several changes that students can make to improve their overall health. One small change that can positively change a child's life is to cut back on soda. It has been found to be true that if you reduce a child's intake of carbonated beverages, you can decrease their chances of becoming obese (James, 2004). Students can pick healthy snacks like apples instead of chips, or select baked potato chips instead of regular potato chips. This unit will introduce students to the idea of leading a healthier life and specific tactics to obtain this new lifestyle.

Objective

The objective of this unit is to have students increase their awareness of their nutritional choices. Students will learn about the risks associated with obesity, and the long-term effects it can have on their lives. When students complete this unit they will have a firm understanding of appropriate portion size, and fat intake. Students will learn how to reduce their daily caloric intake, and how to measure the calories they burn in a day. They will have a firm understanding of the food pyramid and how it relates to their lives. Students will leave the class having the skills to take charge of their eating.

Strategies

This unit will be a hands on activity-based unit. Students will be required to keep a daily food diary, and write their feelings in a journal as the unit progresses. Students will be utilizing the Internet to do their own personal research on obesity. Speakers from the community will be brought in to discuss difficult issues with the class. Social workers will be readily available for students to talk with on an individual basis.

Classroom Activities

Day 1

Objective: Students will have an understanding of what obesity is and how it affects health.

To begin the unit, students will complete a brief web-based study on obesity and what it means to be obese. This will give everyone a working vocabulary to start classroom discussions.

Each student will start with a paper web with the word Obesity in the middle. Coming off the circle will be ten lines. Students will use the Internet to find a working definition of obesity. They will write down this definition in their own words in the circle with the word. After coming up with a written definition, they will search for disease caused by obesity. They will write down one disease at the end of each line.

After writing the diseases, students will do research the individual diseases. They will write down what the diseases are and how they affect obese people. These webs will be

the springboards for starting a conversation with students about issues that revolve around obesity.

Sites that students could use for their search:

Teen Health: <http://www.kidshealth.org/teen/>

Wikipedia: http://en.wikipedia.org/wiki/Childhood_obesity

Day 2

Objective: A basic understanding of public health.

After students are made aware of what obesity is, the group will begin to research health difficulties that coincide with obesity. This is the time that the idea of public health will be introduced to the class.

Students will do a web search for public health. They will also search public health and obesity. Students will be required to take notes on the information they find. We will come back together as a class and make a list of all the information. Students will organize the information under appropriate headings. This will lead to the whole class having the same background information on the importance of public health in their lives.

Students will get into groups of four and generate a list of problems they believe are public health issues. We will discuss whether their ideas are public health related or not. This is an important activity, because it will get students thinking about the impact that their personal decisions can have on the community.

Day 3

Objective: What is the food pyramid and what does it mean.

Students will be learning about the food pyramid, and what it means in real life. We will talk about the fact that they have learned about the pyramid many times, but have not taken it to heart. We will review several different pyramids and compare them to each other. Students will then create their own personal food pyramid, based on their present food intake. We will discuss the importance of honesty at this step in the program. Students need to feel comfortable in the group in order to get the most out of the class.

Day 4

Objective: What you really eat.

Once student have a personal pyramid, they will study the food they are presently eating. This will take us into the nutrition portion of the unit. Students will bring in

wrappers from some of their favorite foods. We will look at the nutritional value of the food they are eating. We will discuss what the total caloric intake should be for a person their age, and then see how much of that total their food is taking up. Students will begin to make a food diary at this time. They will write down the foods they are eating, the calories, and the sodium in each item. We will be making totals each day, so students can see how far above the recommended daily amount they are going.

This website contains information about nutrition and reading labels:
<http://www.agr.state.nc.us/cyber/kidswrld/nutrition/Labels.htm>

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Breakfast Food							
Calories							
Sodium							
Lunch Foods							
Calories							
Sodium							
Dinner Foods							
calories							
Sodium							
Snacks							

Calories							
Sodium							

Day 5

Objective: Appropriate portion control

Today a nutritionist will come in to talk with the class about portion control. Our school has a nutritionist who is available to come in to the school for a certain number of hours per year. I want students to see what the average person actually eats, and what the average person should eat. Prior to the class, meet with the nutritionist, to discuss average calorie intake. Also, we will discuss the specific students that are in the class. This class needs to relate directly to adolescent needs.

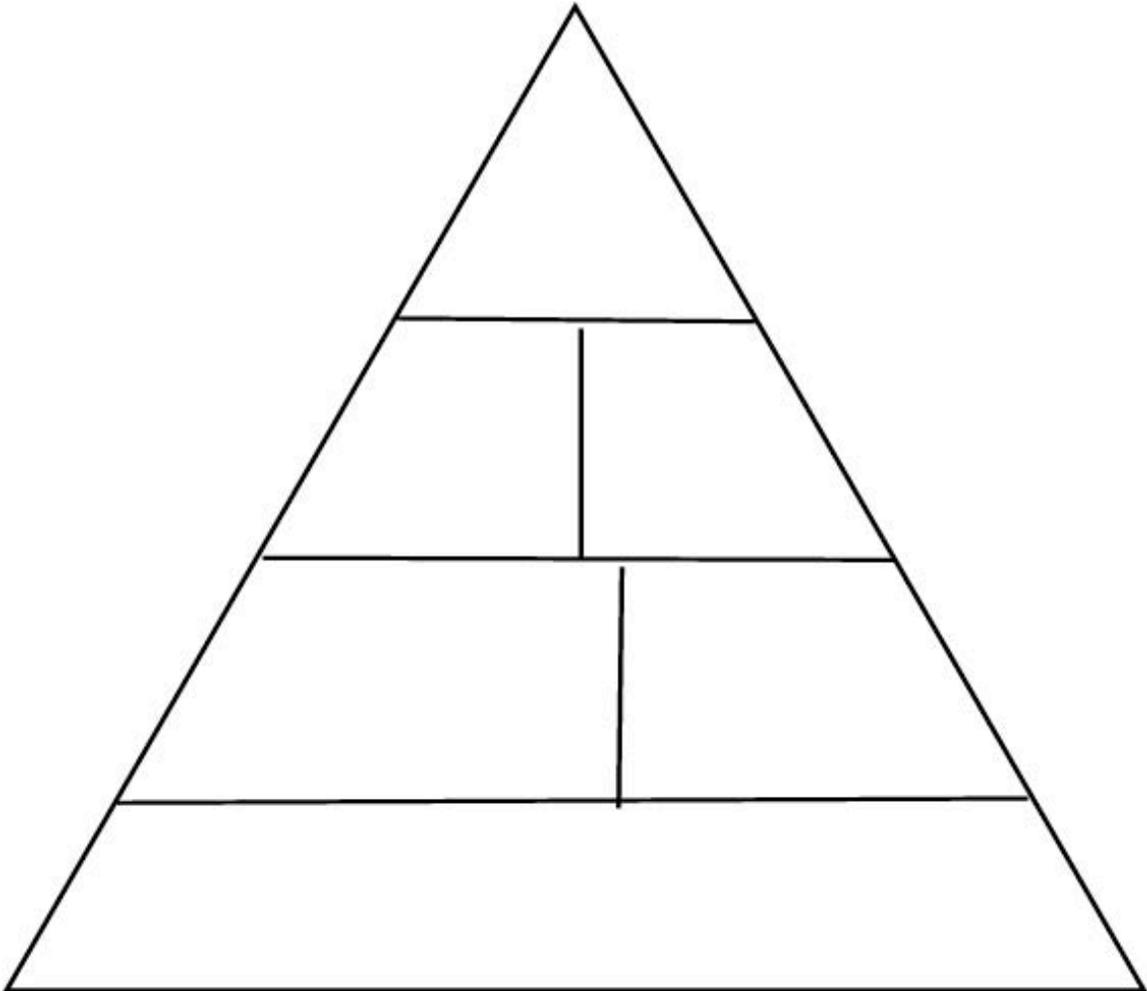
Actual food items will be brought in to show regular portions and American portions. I would like the nutritionist to answer any questions the class may have and lead them through activities for healthier living. Students will discuss what their typical dinner meal might look like, and the amount of food that they are eating. The nutritionist will discuss with students how they can measure out the correct amount of food. Each student will get a small plate to take with him or her to use for one week. This plate will help students understand portion control. Students will keep a journal on their feelings about using the small plate for dinner.

Day 6

Objective: Create a food pyramid for life.

Students will make a new pyramid for themselves. They will add in the things that they feel they can change about their diet. Students will also begin to make menus for themselves that come under the average caloric intake.

Students will take a look at their food diary. They need to make realistic goals for themselves. It will not do any good for long-term gains if students can't obtain them.



Day 7

Objective: To teach students how to read nutrition labels. **(The nutritionist should be available for this discussion.)**

Students will bring in labels from their favorite foods. Students should save as many labels from a weeks worth of food, so they can get a full understanding of what they are actually putting into their bodies.

As a class we will look at the items that have been brought in as a class. The students will get together in groups of three. From their own knowledge they will divide their food into what they consider healthy food and unhealthy food. We will begin our look at nutritional value with calories. Time needs to be given for students to look at the calories that are listed and the **servicing size**. It is imperative that students begin to look at an actual serving size, before they eat a whole bag of chips or cookies. Students will be encouraged to do the math to figure out how many calories are in a whole bag.

Next students will look at the amount of sodium in each item. In order for students to truly understand what they are eating, as a class we will pick the top five items with the most sodium. We will measure out the amount of salt that is in the item. The class will have a discussion about the effects of sodium on the body.

Students will be given an opportunity to get on the Internet and go to the nutrition label site: www.arg.state.nc.us/cyber/kidswrld/nutrition/Labels.htm -Students will learn about nutrition labels in student terms. The class will end with a whole group discussion on what the students have learned, what skills are they taking away with them from the class, and what can they teach their families about reading labels.

Day 8:

Objective: Food Pyramid Continued

Today students will be using the Internet to create a menu for a restaurant that fits the food pyramid. Students will pair up and go to education.nmsu.edu/webquest/wq/food/NutritionWebquest.html

Groups that correctly create a menu will be rewarded with a healthy snack of an apple or carrot sticks. It is important that students realize that rewards do not always have to be candy.

Day 9

Objective: Making healthy snack choices. (**Check for food allergies prior to this lesson**).

Today will focus completely on snacking. Students need healthy alternatives to chips and soda. This class will give them a number of different snack options, along with recipes. As a class, we will make a list of all the foods that students feel are snacks. This list should include the items that students eat when they come home from school before dinner. This list will also include the items purchased at the store on the way to and from school. The class will then make a list of snacks that they feel might be healthy choices.

Students will break up into groups of four. Each group will have a different recipe and all of the ingredients needed to make the healthy snack. Students will make enough for each person in the class to have a small taste of the snack.

Snack 1:

Peanut Butter Bananas

Ingredients:

Peanut Butter

Bananas

Butter knives

Snack 2:

Trail Mix

A variety of nuts

Dried fruit

Granola

Mix ingredients in a plastic resalable bag.

Snack 3:

Pita Pizza

Mini pita

Shredded low fat mozzarella

Pizza sauce

This snack can be microwaved. Spread the sauce on the pita and sprinkle with cheese.

Microwave on high for 1 minute.

Snack 4:

Caramel Covered Apples

Apples

Caramel squares

Crock-pot

4 tablespoons of water for every bag of caramel

Combine Carmel and water in a crock-pot for 45 minutes- stirring occasionally.

Day 10

Objective: Having a firm understanding of eating right

This will be the second visit for the nutritionist. She will bring in sample vials to show the students how much sugar and fat certain items contain. For example, she will hold up a donut and ask the students how many tablespoons of sugar donuts contain. Then she will hold up a pre-measured test tube filled with sugar.

Then students will choose a McDonald's meal that they normally eat. We will look up the amount of fact in those items on the Internet. Students will then calculate how many tablespoons of fat are in the whole meal. We will then measure that much shortening into a clear zip bag. Students will get a visual representation of what they are putting into their body.

Day 11

Objective: Research Healthy Eating

Students will be looking into the food that they want to eat on a regular basis for snacks, and what food they want to bring for the celebration. Students will be using the Internet to do their research. Foods should be made or bought along with the another family member. This will facilitate for discussion about healthy choices.

Snack Smart for Healthy Teeth:

<http://www.nidcr.nih.gov/HealthInformation/DiseasesAndConditions/ChildrensOralHealth/SnackSmart/>

Day 12

Objective: What have you learned

Preparing for the celebration. Students will select a topic they have learned about during the unit to present at the celebration. When writing their speech, students must include:

Why the topic is important to them

What they learned about the topic from this unit

What they can do themselves to help solve the problem

What help they need from family members to help solve the problem

Students may use any of the resources from the course to help them collect information for their presentation. They should also create one visual to include in their presentation. If this unit is taught for a grade, the presentation should be graded using the following rubric.

	1	2	3
Knowledge	Student wasn't very knowledgeable about the subject, and was not able to answer questions from the audience.	Student wasn't comfortable enough with the information to discuss the topic and answer questions	Student was knowledgeable about the topic and easily carried on a question and answer session with the class.
Presentation	Student read everything straight from the paper, and never made eye contact with the audience	Student mostly read from the paper, and only made eye contact three to five times during the presentation	Student made notes about the topic and only referred to them as reminders. Student made steady eye contact with the audience
Visual	The visual had nothing to do with the topic and people in the back of the room could not read the words.	The visual did have to do with the topic, but was too small to be seen from the back of the room.	Visual was clearly added to the presentation, and everyone could read the details.
Mechanics	Student did not use complete sentences, and there were too many grammar errors to understand the presentation.	Student used complete sentences, but the grammar made the presentation hard to follow.	Student used complete sentences and there were not grammar errors present in the presentation.

Day 13

Objective: Review important information

Discussion and practice for the celebration. We will go over what everyone is bringing to the celebration. Students will use this time to type up a card saying what their food is, and why it is a healthy food choice.

Day 14

Objective: Celebration

To celebrate the ending of this unit, students will have a healthy celebration. Each student will come to class with a healthy snack to share. Students must bring a snack that contains less than 200 calories per serving size. Also, the snack must be cut into single serving sizes, so that everyone in the class knows how much to eat. As a class we will discuss what they have learned during the class. We will also talk in depth about what their future plans are to keep nutrition a healthy part of their life.

Due to the fact that families have an impact on the food choices in the house, parents will be invited to the celebration. Each student will present his or her 2-3 minutes food information piece. Hopefully when the families hear the concern their child has, and they get the information they need to make healthy choices, food shopping will take on new meaning.

Students will take a survey about the class to use for future planning. Students will present their likes and dislikes from the unit. They will advise the teacher about issues they would have liked to discuss in class. This is very important if this unit is to be successful in the future.

Annotated Bibliography

Teacher's Reading List

Works Cited

*"Campaign for School Wellness." Action for Healthy Kids. 25 May 2007. 11 Feb. 2007 <http://www.actionforhealthykids.org/special_CswGameon.php>. This website gives information about local, state and national programs on disease control. This site would help a teacher that is interested in the programs available to schools to improve the health of the students

Duncan, Scott J. "Pedometer-Determined Physical Activity and Body Consumption in New Zealand." Medicine & Science in Sports and Exercise 38 (2006): 1402-1409. This article talks about the correlation between the number of steps that students take during the day, and their food intake.

*Gottesman, Mary. "Healthy Eating and Activity Together." American Journal of Nursing 107 (2007): 49-50. This article is a good starting place for teachers looking for information on nutrition and activities.

Hazell, Alastair. "Parents' and Teachers' Views on the Middle School Food Environment, USA." Medical News 29 Jan. 2005. 8 Mar. 2007 <<http://www.medicalnewstoday.com/medicalnews.php?newsid=19384>>. This is a good article to read for background information on adolescence and food.

"Healthy Meals Resource Systems." The United States Department of Agriculture. 31 May 2007. USDA. 2 Feb. 2007 <http://healthymeals.nal.usda.gov/nal_display/index.php?info_center=14&tax_level=1>. This site has an amazing variety of information on nutrition. There is information from food safety to food pyramids. It is a great source to refer back to as you investigate your unit

"Healthy You." National Center for Chronic Disease Prevention and Health Promotion. 25 May 2007. 12 Jan. 2007 <<http://www.cdc.gov/HealthyYouth/nutrition/index.htm>>. This website gives information about local, state and national programs on disease control. This site would help a teacher that is interested in the programs available to schools to improve the health of the students.

"Laws Won't Do Much to Stop Obesity in Kids." American Council on Science and

Health. 22 Sept. 2005. 5 Mar. 2007 <<http://www.acsh.org/>>. This is a website that has general health information. It would be a good place to go and see what is happening currently in the health sciences.

*Loecher, Barbara. "How to Raise Fit Kids in a Fattening World." 25 May 2007. Prevention Magazine. 23 Feb. 2007 <<http://www.prevention.com/article/0,5778,s1-6-73-164-2114-1-P,00.html>>. This is an article that discusses what can happen when a school gets involved what some might call private matters. A school district sent out letters to parents of obese children.

"Measuring Fat and Sodium Intake of Middle School Students." Nutrition Research Newsletter July 2001. 14 Apr. 2007 <http://findarticles.com/p/articles/mi_m0887/is_7_20/ai_76751104->. This is a research study carried out to assess the amount of fat eaten by middle school students. This article would help a teacher who is interested in running a study at their school.

Merchant, Anwar T., Mahshid Dehghan, Deanna Behnke-Cook, and Sonia S. Anand. "Diet, Physical Activity, and Adiposity in Children in Poor and Rich Neighborhoods: a Cross-Sectional Comparison." Nutrition Journal 6 (2007): 1475-2891. This study looks at a child's neighborhood and their risk of becoming obese. The study gives several suggestions ideas for ways children can reduce their risk of becoming obese.

*"Obesity." Merck Manuals. Feb. 2003. 23 Mar. 2007 <<http://www.merck.com/mmhe/sec23/ch271/ch271d.html>>. This article contains the basic facts concerning obesity on adolescence.

Sharron, Dalton. "Our Vulnerable Children: Poor and Overweight." Southern Medical Journal 100 (2007): 1-2. This article discusses the correlation between obesity and low income. This article would be of particular interest to teachers working in low-income schools.

*Walt, Latimore. "Super Sized Kids." Parent Guide Jan. 2007. 17 Apr. 2007 <<http://www.parentguidenews.com/articles/january06/SuperSizedKids.php>>. The article discusses the increase in obesity. The article includes a list of twenty things that parents can do to increase the likelihood that their child will be obese.

*- Articles and websites that teachers should read prior to implementing the curriculum unit.

All other articles and websites were used researching the topic of obesity for the curriculum unit.

Student Reading List

Works Cited

- "5 a Day." Dole. 2004. 49 Jan. 2007 <<http://www.dole5aday.com/Kids/>>. On this website students will learn about eating 5 fruits and vegetables every day. Students can play different games that require the student to get all the healthy foods.
- "Childhood Obesity." Wikipedia. 1 June 2007. Wikipedia, The Free Encyclopedia. 15 Feb. 2007 <http://en.wikipedia.org/w/index.php?title=Childhood_obesity&oldid=135032226>. A working definition for obesity. A good starting point for a search on obesity.
- "Eat Smart." Dairy Council. 2007. 23 Apr. 2007 <<http://www.eatsmart.org/>>. This website will give students more information about nutrition. They can answer questions to see if they are getting enough calcium in their diet.
- Hines, Jake, and Kathy Croxall. "Pyramid Power." New Mexico State University. 2007. 25 Feb. 2007 <<http://education.nmsu.edu/webquest/wq/food/NutritionWebquest.html>>. This is a website where students become part of a committee that is in charge of creating the menu for a new fast food restaurant.
- "Kid's World Nutrition Information." North Carolina Department of Agriculture & Consumer Services. 22 May 2007. 16 Mar. 2007 <<http://www.agr.state.nc.us/cyber/kidswrld/nutrition/Labels.htm>>. This website breaks down the mystery of nutrition labels into words that kids can understand. It is a great starting point for a unit on nutrition.
- "Kidnetic." Kidnetic.Com. 2007. International Food Information Council Foundation. 22 Feb. 2007 <<http://www.kidnetic.com/>>. This is a website designed to get kids moving. They have fitness challenges, and music that kids can create dance moves and then get moving!
- "Learning About Proteins." Kids Health. 2007. Nemours Foundation. 13 Mar. 2007 <<http://kidshealth.org/kid/nutrition/food/protein.html>>. This site is about kids and protein. Kids can learn about good protein, and how much protein they should be consuming.

"Snack Smart for Healthy Teeth." National Institute of Dental and Craniofacial Research. Feb. 2000. National Institute of Health. 1 Mar. 2007
<<http://www.nidcr.nih.gov/HealthInformation/DiseasesAndConditions/ChildrensOralHealth/SnackSmart/>>. Even though this site talks about healthy teeth, the snack suggestions are great for students looking to eat healthier.

"Snack Smart for Healthy Teeth." National Institute of Dental and Craniofacial Research. National. 1 Mar. 2007
<<http://www.nidcr.nih.gov/HealthInformation/DiseasesAndConditions/ChildrensOralHealth/SnackSmart/>>.

"Teens Health." Teens Health. 25 May 2007. Nemours Foundation. 23 Mar. 2007
<<http://www.kidshealth.org/teen/>>. This is a website where students can go and get answers to important health issues. There are exercises students can do to find out what weight they should be, how much sleep they should be getting, and how much food they should be eating.

Appendices- Standards

- 10.1.6 A- Describe growth and development changes that occur between childhood and adolescence and identify factors that can influence these changes.
- 10.1.6 C- Analyze nutritional concepts that impact health: Caloric content of foods, relationship of food intake and physical activity (energy output), nutrient requirements, label reading, healthful food selection.
- 10.1.6 E- Identify health problems that can occur throughout life and describe ways to prevent them.
- 10.2.6 A- Explain the relationship between personal health-related information and individual well-being.
- 10.6.2 B- Explain the relationship between health –related information and consumer choices: Dietary guidelines and food selection.
- 10.6.2 D- Describe and apply the steps of a decision-making process to health and safety issues.
- 10.4.6 A- Identify and engage in moderate to vigorous physical activities that contribute to physical fitness and health.