Healthy Home Cooking

Jessica Langholtz
High School of the Future

Overview: Childhood obesity has emerged as an increasingly ubiquitous problem across our country, which has led to major health concerns. Obesity is strongly associated with the development of multiple health problems, including diabetes and cardiovascular disease. Although the government has recently modified its traditional food pyramid to give a more flexible approach to healthy eating, many children and young adults, particularly in poorer urban areas, continue to make unhealthy food choices. This unit will explore the health issues associated with overconsumption of fast food, providing lessons and activities to promote family cooking and the development of healthy eating habits.

Rationale: Childhood obesity poses an increased risk for a multitude of health problems. However, by the time students reach high school, recess time is no longer offered and physical education classes are often given only one year out of four. Some students in poorer urban schools choose to eat chips, candy, and other junk foods rather than the school lunch; in some instances, students choose to not eat lunch at all. For many of these students, the traditional family dinner is nonexistent, and dinner frequently consists of fast food and other unhealthy options. By learning how to develop and prepare recipes for affordable healthy eating alternatives, students will have the opportunity to lead healthier lives.

The lessons in this unit will provide students with the knowledge and skills to make healthy eating decisions. Students will learn to analyze nutrition information provided on food labels, which is especially critical since many of the given daily values may not be appropriate for them to follow. Students will also learn the importance of selecting nutrient-dense foods, rather than energy-dense foods, and they will discuss how to build a daily menu from the five core food groups. Students will be able to explain the

association between unhealthy eating and elevated risk for Type II diabetes. They will also understand techniques for eating healthy on a low budget.

At the culmination of the unit, students will be able to develop and prepare recipes for healthy, affordable meals.

Objectives: This unit is intended for high school students in an after-school cooking program. The cooking program is held once a week for an hour.
The objectives of the unit will include the following:

- Compare and contrast the concepts of energy-density and nutrient-density.
- Interpret nutrition information supplied on food labels.
- Analyze the amounts of carbohydrates, sodium, and fat in foods that the students regularly eat.
- Examine current student choices for breakfast, lunch, dinner, and snacks.
- Design a seven-day food menu that follows the U.S. Department of Agriculture guidelines for food groups.
- Explain the association between unhealthy eating habits and health issues such as type II diabetes.
- Discuss possible modifications to existing recipes for individuals at high risk for diabetes.
- Identify several strategies for eating and cooking healthy foods at an affordable price.
- Develop a healthy dinner recipe that may be easily prepared by high school students and their families

Standards: The Core Curriculum of the School District of Philadelphia is aligned to the Pennsylvania Academic Standards for Health, Safety, and Physical Education. These standards include instruction on the following topics: Concepts of Health, Physical Activity, Healthy Living, Principles and Strategies of Movement, and Safety and Injury Prevention.

10.1.12 B: Evaluate factors that impact the body systems and apply protective/ preventive strategies.

- Fitness level
- Environment (e.g., pollutants, available health care)
- Health status (e.g., physical, mental, social)
- Nutrition

10.1.12 C. Analyze factors that impact nutritional choices of adults.

- Cost
- Food preparation (e.g., time, skills)
- Consumer skills (e.g., understanding food labels, evaluating fads)

- Nutritional knowledge
- Changes in nutritional requirements (e.g., age, physical activity level)

10.1.12 E Identify and analyze factors that influence the prevention and control of health problems.

- Research
- Medical advances
- Technology
- Government policies/regulations

Strategies: This unit will include using websites to gather information about healthy eating habits and recipes. Students will compare the nutrition information between junk food that they regularly eat and healthier alternatives listed on the suggested reading list.

Students will engage in a variety of activities to develop healthier eating habits:

- Read and understand food labels
- Analyze nutritional content of foods eaten in school and at home
- Apply the USDA "Choose My Plate" to illustrate the breakdown of daily food consumption
- Develop and prepare a daily menu consisting of three meals and a small snack for an individual with diabetes and for an individual with high sodium levels

Activities: The students in the cooking program will work as a group for a culminating activity:

- Students will develop a healthy recipe for dinner that may be easily prepared by high school students and their families. They will prepare a bag of ingredients and a nutritional packet that will be sold at an affordable price to students at the school.

Bibliography

Reading List:

Harvard School of Public. *The Nutrition Source*. Harvard University, 2012. <http://www.hsph.harvard.edu/nutritionsource/index.html>

Mayo Clinic. *Childhood Obesity.* Mayo Clinic, 2010. <http://www.mayoclinic.com/health/childhood-obesity/DS00698 >

"Replacing Saturated Fat with Polyunsaturated Fat May Cut Heart Disease Risk." Harvard School of Public. *Press Release*s. Harvard University, 2010.

<http://www.hsph.harvard.edu/news/press-releases/2010-releases/saturated-fat-polyunsaturated-fat-cut-heart-disease-risk.html>

Teacher Resources

A.D.A.M. Medical Encyclopedia. *Diabetes*. PubMed Health, 2011.
<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002194>

Agatston Urban Nutrition Intitiative. *Eat Right Now*. Urban Nutrition Initiative, 2012.
< http://www.urbannutrition.org/programs/eat-right-now/>

"Food Smarts: Understanding Food Labels." PBS Kids, 2005.
<http://pbskids.org/itsmylife/body/foodsmarts/article4.html>

"Eating Well on the Cheap." HelpGuide.org, 2012.
<http://helpguide.org/life/healthy_eating_on_budget.htm>

Mayo Clinic. *Weight Loss.* Mayo Clinic, 2011.
< http://www.mayoclinic.com/health/weight-loss/NU00195>

"Type 2 Diabetes: What Is It?" Kids Health, 2012.
<http://kidshealth.org/parent/medical/endocrine/type2.html>

U.S. Department of Agriculture. *Food Groups*. Washington, D.C., 2012.
< http://www.choosemyplate.gov/food-groups/>

U.S. Department of Agriculture. *Empty Calories*. Washington, D.C., 2012.
<http://www.choosemyplate.gov/food-groups/emptycalories_count_table.html>

Student Resources

U.S. Department of Agriculture. *Sample Menus and Recipes*. Washington, D.C., 2012.
< http://www.choosemyplate.gov/healthy-eating-tips/sample-menus-recipes.html>

Kids Health. *Recipes*. The Nemours Foundation, 2012.
< http://kidshealth.org/kid/recipes/index.html#cat20240>

Lesson 1: Energy Density versus Nutrient Density

Objective: Students will be able to:

- Compare and contrast the concepts of energy-density and nutrient-density.

Teacher Resources:

- Mayo Clinic. *Weight Loss.* Mayo Clinic, 2011. < http://www.mayoclinic.com/health/weight-loss/NU00195>

Lesson: *Teachers should discuss the following information with students prior to the activity. It will be helpful to present the following chart, which lists the total number of calories and the number of empty calories for popular items in all five food groups: http://www.choosemyplate.gov/food-groups/emptycalories_count_table.html. Estimated time: 20 minutes*

One key to healthy eating habits is selecting foods that are rich in nutrients but not in calories. Eating a larger portion size with fewer calories may help you feel satisfied and lose weight at the same time.

Energy density describes the number of calories (energy) in a specific portion of food. Foods with high energy density contain many calories in a small portion. Foods with low energy density contain few calories in a large portion. Nutrient density describes the amount of nutrients, such as vitamins, minerals, and protein, in a specific portion of food.

In order to lose weight or simply maintain a healthy weight, it is recommended to eat foods with low energy density and high nutrient density. There are three key factors that determine a food's energy density:

- **Water:** Foods that contain significant water contain will provide volume and weight but not calories. They will make you feel full without consuming extra calories. For example, half a grapefruit (90 percent water) is only 39 calories. Likewise, half a cup of raw carrots (88 percent water) is only 25 calories.

- **Fiber:** High-fiber foods take longer to digest, which will make you feel full for longer on fewer calories. Examples of high-fiber foods include fruits, vegetables, and whole grains.

- **Fat:** Foods that contain a lot of fat are high in energy density. Many foods that naturally contain food have leaner options that contain fewer calories (i.e. skim milk, lean meat).

Calories from processed sugars and solid fats generally do not contain nutritional value. They are commonly referred to as "empty calories".

Activity: *Students will modify a lunch menu that is high in energy density and low in nutrient density. They will then prepare the items on the new, healthy menu. Estimated time: 40 minutes*

It is possible to complete this activity with any energy-dense meal. One example is listed below:

Current Lunch Menu:

- **Turkey club sandwich:** 2 slices white bread, 5 ounces turkey breast, 4 slices bacon, 2 tomato slices, 1 lettuce leaf, 2 slices mozzarella cheese, 2 teaspoons mayonnaise
- **Chocolate chip cookies:** 1 package of chocolate chip cookies
- **Soda:** 1 can of soda (regular)

As a group, discuss possible ways to modify this meal to make it healthier. Possible discussion points include:

- Substitution of leaner alternatives for energy-dense ingredients (cheese, meat)
- Include more foods that are high in fiber, such as whole grains or fruits and vegetables
- Replace sugary snacks with fruits or vegetables that are high in water content

Lesson 2: Understanding Food Labels

Objective: Students will be able to:

- Interpret nutrition information supplied on food labels.
- Analyze the amounts of carbohydrates, sodium, and fat in foods that the students regularly eat.

Teacher Resources:

- "Food Smarts: Understanding Food Labels." PBS Kids, 2005. <http://pbskids.org/itsmylife/body/foodsmarts/article4.html>

Lesson: *Teachers should discuss the following information with students prior to the activity. During the lesson, provide students with a sample food label to view. Discuss whether the daily values based on a 2000-calorie diet are appropriate for them to follow. Estimated time: 30 minutes*

Food companies are required by law to provide nutritional information for consumers. However, many people do not understand how to read and interpret the provided information in order to make healthy eating choices.

In order to prepare your students for a healthier lifestyle, it is critical for them to understand the nutritional facts provided on food labels.

All food labels provide the following nutritional facts:

- **Serving Size:** This tells you the recommended portion for one serving. It is also used to calculate all of the other values on the label.

- **Servings Per Container:** This tells you the amount of servings in the package.

- **Calories:** A calorie is a unit of energy. The recommended daily intake for the average person is 2000 calories, which is used to calculate the percent daily value of fat, carbohydrates, sodium, protein, vitamins, and minerals. Extra calories are stored as body fat and may be used for energy at a later time.

    - **Calories From Fat:** This tells you the amount of the food calories that come from fat. It is recommended that only about 30 percent of one's daily calories come from fat.

For the remaining sections on the food label, it is recommended to pay closer attention to the daily percent values than to the grams. However, it is critical to consider that the percentages are based on a 2,000 calorie diet for the average person. If a food has at least 10 percent of the daily recommended amount of a nutrient, it is considered to be a good source of that nutrient.

- **Total Fat:** This tells you the total amount of fat in the food. Although too much fat can lead to unhealthy weight gain and associated complications, it is necessary to consume a certain amount of fat to maintain healthy organs and energy reserves.

    - **Saturated Fat and Trans Fat:** Food labels list the amounts of these fats separately, but they are both considered to be "bad" fats. They may lead to multiple health problems, including heart disease and clogged arteries. It is best to consume food with minimal amounts of these fats.

- **Cholesterol:** This represents the amount of cholesterol in the food. Cholesterol is a key component of cell membranes and is needed to produce certain hormones and vitamin D. However, it is not necessary to consume cholesterol since our

bodies can make cholesterol. Excessive consumption of cholesterol has been linked to heart disease and other health complications. Please note that the daily value for cholesterol is the recommended maximum intake, and there is no minimum requirement for daily intake of cholesterol.

- **Sodium:** This often represents the amount of salt used to prepare the food. Although we need a small amount of sodium in our diets, we often consume too much sodium because it is frequently added to foods.

- **Total Carbohydrates:** Carbohydrates may be broken down in the body to produce energy.

    - **Dietary Fiber:** This represents the amount of indigestible material in plant foods. Consumption of dietary fiber helps to alleviate constipation and may lower the risk of heart disease, diabetes, and certain types of cancer.

    - **Sugars:** This value represents the amount of sugars in the food. It is best to minimize the amount of processed sugars in one's diet because they contain many calories and offer little nutritional value.

- **Protein:** Protein is used to build and maintain tissues in the body. It is also an excellent energy source. It is recommended that 10 to 20 percent of one's daily calories come from protein.

- **Vitamins and Minerals:** The bottom section of a food labels provide the daily percent values for many important vitamins and minerals.

Activity: *Students will compare and contrast food labels from two snacks:* CHEETOS® *Crunchy* FLAMIN' *HOT® Cheese Flavored Snacks and Popchips Original Potato Chips. Estimated time: 30 minutes*

The educator should first have the students carefully read the nutrition facts for both snacks. They should then compare and contrast the nutritional content of the snacks by going line-by-line down the food label. After analyzing the amount of each nutrient, the group should decide on which snack represents the healthier option.

Nutrition Facts
Serving Size 1 oz (28g/About 21 pieces)

Amount Per Serving	
Calories 170	Calories from Fat 100
	% Daily Value*
Total Fat 11g	**17%**
Saturated Fat 1.5g	**8%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 250mg	**10%**
Total Carbohydrate 15g	**5%**
Dietary Fiber less than 1g	**2%**
Sugars 0g	
Protein 1g	

Vitamin A 0%	•	Vitamin C 0%
Calcium 0%	•	Iron 2%
Thiamin 6%	•	Riboflavin 2%
Niacin 4%	•	Vitamin B_6 2%

single serve (.8 oz.)
nutrition facts.
serving size 1bag (23g/19 chips)
amount per serving

calories 100	calories from fat 30
	% daily value
total fat 3g	5%
saturated fat 0g	0%
trans fat 0g	
polyunsaturated fat 0.5g	
monounsaturated fat 2g	
cholesterol 0mg	0%
sodium 160mg	7%
potassium 220mg	6%
total carbohydrate 15g	5%
dietary fiber 1g	4%
sugars 0g	
protein 1g	

Example discussion:

Nutrition Facts	Cheetos	Popchips	Which Is the Healthier Option?
Calories	**170 calories in 1 oz** This bag of chips represents 17 percent of all calories you should consume in one day (according to a 2000 calorie diet).	**100 calories in 0.8 oz** This bag of chips represents 10 percent of all calories you should consume in one day (according to a 2000 calorie diet).	**Popchips** contain fewer calories for nearly the same amount of ounces. It is less calorie-dense and therefore the healthier choice.

Lesson 3: Food Groups

Objective: Students will be able to:

- Examine current student choices for breakfast, lunch, dinner, and snacks.
- Design a seven-day food menu that follows the U.S. Department of Agriculture guidelines for food groups.

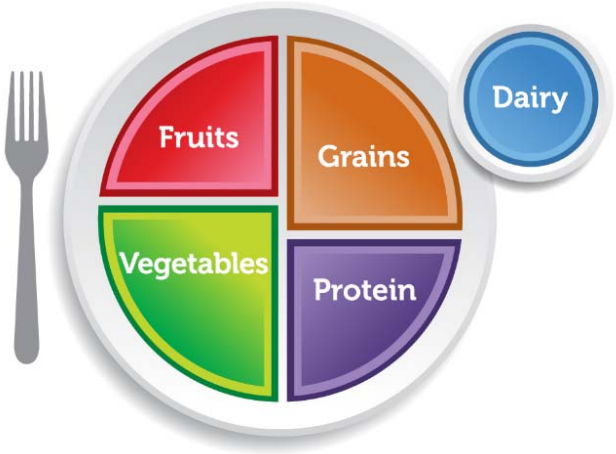
Teacher Resources:

- U.S. Department of Agriculture. *Food Groups*. Washington, D.C., 2012. < http://www.choosemyplate.gov/food-groups/>
- U.S. Department of Agriculture. *Empty Calories*. Washington, D.C., 2012. <http://www.choosemyplate.gov/food-groups/emptycalories_count_table.html>

Lesson: *Teachers should discuss the following information with students prior to the activity. It will be helpful to present the following chart, which lists the total number of calories and the number of empty calories for popular items in all five food groups: http://www.choosemyplate.gov/food-groups/emptycalories_count_table.html. Estimated time: 30 minutes*

Foods that share common nutritional properties are often grouped together. Most foods may be classified into one of the five basic food groups: fruits, vegetables, grains, protein, or dairy.

In order to maintain healthy eating habits, it is important to properly balance consumption of foods in all five groups. The U.S. Department of Agriculture currently recommends that individuals adhere to the following breakdown of the food groups:



Fruits and Vegetables: It is recommended that half of your plate is made of fruits and vegetables.

- Any fruit or 100% fruit juice is considered to be part of the fruit group.
- Any vegetable or 100% vegetable juice is considered to be part of the vegetable group.
- Eating fruits and vegetables may reduce the risk for heart disease, certain types of cancers, obesity, and Type II diabetes.
- Fruits and vegetables are high in many essential nutrients and low in fat, sodium, and calories.

Grains: It is recommended that half of your grains are whole grains.

- Any food made from wheat, rice, oats, cornmeal, barley or another cereal grain is part of the grains group.
- Eating whole grains may reduce the risk for heart disease, reduce constipation, and help with weight management. Grain products that are fortified with folate may prevent neural defects during pregnancy.

Proteins: It is recommended that you choose lean or low-fat meat and poultry.

- All foods made from meat, poultry, seafood, beans and peas, eggs, processed soy products, nuts, and seeds are part of the proteins group.
- Protein-rich foods provide many nutrients that are critical to human health.
- Proteins serve as the building blocks to bones, muscles, cartilage, skin, blood, enzymes, hormones, and vitamins.

Dairy: It is recommended that most dairy choices be low-fat or fat-free.

- All milk products are part of the dairy group.

- Dairy products are rich in calcium, which is necessary for strong bones and teeth. Dairy consumption may reduce the risk of osteoporosis and other bone diseases.

Activity: *Prior to this lesson, ask the students to keep a food journal for one week. They should write down every food that they eat, including beverages and snacks. At the beginning of class, the students should reflect on their eating habits over the past week.*

As a group, design a seven-day food menu that includes breakfast, lunch, dinner, and snack. Afterwards, discuss possible modifications to the menu to make it more nutrient-dense. Estimated time: 30 minutes

A sample menu is provided below. More ideas are available at the following website: http://www.choosemyplate.gov/food-groups/downloads/Sample_Menus-2000Cals-DG2010.pdf

Breakfast:

- Breakfast burrito: 1 whole-wheat 8-inch flour tortilla, 1 scrambled egg (whites only), 1 cup black beans (low-sodium), 2 tablespoons salsa
- ½ large grapefruit
- Beverage: 1 cup fat-free milk, water, or coffee

Lunch:

- Turkey sandwich: 2 slices of multigrain bread, 3 ounces roasted turkey (sliced), 1 slice part-skim mozzarella cheese, 2 slices tomato, lettuce, 1 teaspoon mustard
- Baked potato wedges: 1 cup potato wedges, 1 tsp canola oil (to cook potato), 1 tablespoon ketchup
- Beverage: 1 cup water or tea

Dinner:

- Rigatoni with meat sauce: 1 cup whole-wheat rigatoni, 2 ounces cooked ground beef (95% lean), 2 teaspoon canola oil (to cook beef), ½ cup tomato sauce, 3 tablespoons grated Parmesan cheese
- Spinach salad: 1 cup raw spinach leaves, ½ cup tangerine sections, ½ ounce chopped walnuts, 4 teaspoons oil/vinegar dressing
- Beverage: 1 cup water, coffee, or tea

Snack:

- 3 tablespoons hummus, 5 whole-wheat crackers (reduced sodium)

Lesson 4: Health Complications Associated With Unhealthy Eating Habits

Objective: Students will be able to:

- Explain the association between unhealthy eating habits and health issues such as Type II diabetes.
- Discuss possible modifications to existing recipes for individuals at high risk for diabetes.

Teacher Resources:

- "Type 2 Diabetes: What Is It?" Kids Health, 2012. <http://kidshealth.org/parent/medical/endocrine/type2.html>
- A.D.A.M. Medical Encyclopedia. *Diabetes*. PubMed Health, 2011. <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002194>

Lesson: *Teachers should discuss the following information with students prior to the activity. Estimated time: 20 minutes*

Diabetes is a chronic disease that is characterized by high blood sugar levels. There are two main forms of the disease: Type 1 and Type 2.

Type 1 diabetes is commonly referred to as juvenile onset diabetes because it is most frequently diagnosed in children and young adults. Individuals with type 1 diabetes produce little to no insulin, which is needed to regulate the level of sugar in the blood.

Type 2 diabetes is more common than type 1 diabetes. Although individuals with type 2 diabetes produce insulin, their cells do not respond correctly to the insulin. As a result, the cells cannot take up the blood sugar to produce energy, and sugar instead builds up in the blood, leading to high blood sugar levels (hyperglycemia).

Obesity is strongly associated with diagnosis of type 2 diabetes because increased fat prevents the body's cells from properly responding to insulin. For many years, type 2 diabetes had traditionally been referred to as adult onset diabetes because it primarily affected overweight adults. However, that name is no longer used because more children and teenagers are overweight and are being diagnosed with type 2 diabetes.

Children with type 2 diabetes may experience symptoms such as increased thirst, frequent urination, and fatigue. They are also more likely to develop high blood pressure and high levels of blood fats. Children with type 2 diabetes are also more likely to later develop heart disease, stroke, vision impairment, and kidney damage.

Activity: *Student will modify and prepare a recipe for individuals at high risk for diabetes. Have students discuss why substituted items are more nutritious than the original items in the recipe. Estimated time: 40 minutes*

It is possible to complete this activity with multiple recipes. One example is listed below:

Current Breakfast:

- **Fast-food breakfast sandwich:** 2 eggs, 3 bacon strips, bagel
- **Fast-food hash browns**
- **Chocolate milk**

As a group, discuss possible ways to modify this meal to make it healthier. Possible discussion points include:

- Substitution of egg whites for eggs or turkey bacon for pork bacon
- Eliminate bagel to make the sandwich into an omelet or use multigrain bread in lieu of the bagel.
- Replace chocolate milk with skim or low-fat milk
- Substitute hash browns for fruit

Lesson 5: Healthy Eating at an Affordable Price

Objective: Students will be able to:

- Identify several strategies for eating and cooking healthy foods at an affordable price.

Teacher Resources:

- "Eating Well on the Cheap." HelpGuide.org, 2012. <http://helpguide.org/life/healthy_eating_on_budget.htm>

Lesson: *Teachers should discuss the following information with students prior to the activity. Estimated time: 20 minutes*

Business at fast food restaurants is booming because they provide food that is both quick and cheap. Maintaining a healthy diet may often cost more money and more time, but there are several easy techniques that may be used to eat healthy at an affordable price.

- **Compare Prices:** Many grocery stores offer competitive pricing, so it is to your advantage to seek out the store with the lowest prices. Most stores publish their weekly deals in the newspaper or online, so you may determine the store with the best prices before you even leave your house. Discount stores allow you to

purchase large quantities of food at reduced prices. Purchasing generic or store brands also allows you to save money without sacrificing quality.

- **Use Inexpensive Proteins:** Protein should comprise a key part of a healthy diet, but meat may sometimes be rather expensive. Add vegetarian sources of protein to your meals, such as beans, nuts, seeds, and eggs. Canned meat, such as chicken or fish, is also sometimes inexpensive and easy to prepare.
- **Buy in Bulk:** Buy frozen vegetables or meats in larger quantities, since they are easy to prepare and easy to store for later use. It is also sometimes cheaper to buy fresh produce, such as apples, in bags rather than by pieces.
- **Stretch Food over Multiple Meals:** If time is a major factor affected your diet, you may cook nearly all of your week's meals in just one night and store it for later use in the week. Use leftovers in stews, soups, and stir-fries. One-pot dishes, such as casseroles, are very easy to prepare, and clean-up takes no time at all.

Activity: *Students will design a meal that may be prepared for a family of four for under $10. They will then prepare the meal as a group. Estimated time: 30-40 minutes*

There are unlimited possibilities for the meals that may be prepared in this activity. Have students research the prices of items by using printed advertisements from grocery stores or by using pricing online. After students select a meal to prepare, have them discuss the nutritional benefits of the meal.

Lesson 6: Final Project

As a culminating activity, the students will develop a healthy dinner recipe that may be easily prepared by high school students and their families. They will prepare a bag of ingredients and a nutritional packet that will be sold at an affordable price to students at the school.

Part I: Develop Healthy Dinner Recipe

It is critical to select a dinner recipe that is healthy, affordable, and easy to prepare.

Example: Spaghetti with Meat Sauce

Ingredients:

- 1 pound whole-wheat spaghetti
- 1 pound lean ground turkey (95% lean)
- 1 28-ounce can crushed tomatoes
- 1 large onion
- 1 large carrot
- 1 celery stalk

- 4 garlic cloves
- 2 teaspoons extra-virgin olive oil
- ½ tablespoon salt

Recipe:

- Pasta:
    - Boil a pot of water. Add ½ tablespoon of salt.
    - When the water boils, add the pasta and reduce to a simmer.
    - After a minute, stir the pasta.
    - Check the pasta's cooking time on the box.
    - Do not overcook the pasta! It should be firm to the tooth (al dente)
    - Drain the pasta.

- Meat Sauce:
    - Heat oil in a large pan over medium heat.
    - Meanwhile, finely chop the onion, carrot, and celery.
    - Add vegetables to the pan and cook. Stir occasionally for 5 to 8 minutes until the onion begins to brown.
    - Stir in the garlic and cook for 30 more seconds.
    - Add turkey and cook until it is no longer pink (3 to 5 minutes).
    - Increase the heat to high and stir in the tomatoes. Cook until the sauce has thickened (4 to 6 minutes).
    - Serve the sauce over the pasta.

Part II: Develop Educational Nutrition Packet

Have the students prepare a brochure or packet that describes the nutritional content of the meal.

- Use the food labels on the ingredients' packaging to estimate the total amount of calories, carbohydrates, fat, protein, sodium, and cholesterol.
- Briefly describe how this meal is a healthy alternative to its traditional version.

Part II: Advertising and Marketing

Ingredients for the selected meal should be purchased and packaged. They should then be sold to students at the school at an affordable price.

In order to advertise this project, students should prepare a print and video campaign and offer samples to students in the school.

- *Print advertisements:* Students should create flyers that may be easily distributed to the school community. The flyers should include a description of the meal, its price, the ingredients, and where and when it can be purchased.

- *Video advertisements:* Students should use a video camera and a movie-maker application to create a 3-5 minute video that describes the project and includes a short demonstration on how to prepare the meal. This video should then be distributed to students, possibly through e-mail, the school website, or the school TV news.

- *Samples:* Students should prepare the meal before or during school. They will then offer samples of the meal to students, perhaps during lunch time, to promote interest in purchasing the ingredients.