PARSIPPANY-TROY HILLS TOWNSHIP PUBLIC SCHOOL DISTRICT

Nutrition for An Active Lifestyle

HIGH SCHOOL ELECTIVE

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Approval Date: July 25th, 2019

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I. OVERVIEW

Nutrition for an active lifestyle is a semester elective course offered for students at the High School level. Nutrition for an Active Lifestyle investigates the connection between food choice and its influence on physical performance and health. Students will analyze the basic nutrients through hands-on activities and labs. Each individual will analyze his/her diet with the use of food analysis tools and activities, and create alterations to his/her eating plan based on a personal health and fitness assessment. The class will explore facts and fallacies associated with food consumption, dietary plans, and the use of supplements as they pertain to enhancing physical performance. Students will gain the knowledge and tools necessary for a healthy diet.

II. RATIONALE

Nutrition for an Active Lifestyle provides strong interdisciplinary connections to areas of science, health, and technology. Students will consistently be afforded the opportunity to make real-world connections to the allied health professions and students will gain a deeper understanding of how nutrients work in their own bodies during growth and physical activity.

The Nutrition for an Active Lifestyle curriculum is aligned with the New Jersey Student Learning Standards for Health and Physical Education, Science, 21st Century Life and Careers, English Language, Technical Subjects and Technology.

III. STUDENT OUTCOMES (Link to New Jersey Student Learning Standards)

In accordance with district policy as mandated by the New Jersey Administrative Code and the New Student Learning Standards, the following are proficiencies required for the successful completion of the above named course.

The student will:

1. Investigate recognized nutritional guidelines and how this contributes to their wellness.
2. Examine the connection between fitness and peak performance.
3. In-depth analysis of the 6 basic nutrients for peak health and physical performance.
4. Evaluate the connection between eating breakfast and top performance.
5. Analyze, complete and evaluate food intake three times during the semester.
6. Examine the impact of a fast food diet and evaluate the nutrition outcome.
7. Plan, teach and evaluate a nutrition program for student body.
8. Conduct a vitamin and mineral campaign and present it to the class.
9. Compare various sports drinks, soda and other beverages and rank in order of the amount of sugar.
10. Evaluate the use of supplements and share this information with others.
11. Complete a fun walk on the school track within a 45 minute period.

Link to NEW JERSEY STUDENT LEARNING STANDARDS

- 2 - Health and Physical Education
- 3 - English Language Arts

- 4 - Mathematics
- 5 - Science
- 8 - Technology
- 9 - 21st Century Life and Careers

Modifications/Differentiation and Adaptations: For guidelines on how to modify and adapt curricula to best meet the needs of all students, instructional staff should refer to the https://goo.gl/an7Zab included as an Appendix in this curriculum. Instructional staff of students with Individualized Education Plans (IEPs) must adhere to the recommended modifications outlined in each individual plan.

IV. ESSENTIAL QUESTIONS

- How do personal performance expectations and nutrition relate to health and wellness?
- How is safety a personal and societal responsibility?
- Why is it important to know the different types of carbohydrates and to adjust your selections and intake to match your activity level?
- Why is it important to know the different types of proteins and to adjust your selections and intake to match your activity level?
- Why is it important to know the different types of vitamins/minerals and to adjust your selections for optimal health?
- Why are adequate hydration and consumption of healthy fats important components of optimal health?
- Why is it important to plan pre/during/post event meals for a workout?

V. STRATEGIES

- Student projects
- Group discussion
- Cooking Lab Experience
- Teacher presentations/lectures/demonstrations

VI. EVALUATION

Forms of Assessment: For details regarding the various forms of assessments that may be used in this course please refer to https://goo.gl/LMqjoQ. The link includes formative, summative, alternative and benchmark assessments associated with this course. The student's grades are based on the following:

Food Laboratory Experiences -40%
- Planning and Preparations
- Recognition of problems
- Quality of work
- Cleanliness of workstation
- Accurate assessment of a product
- Recognition of techniques learned

Research/Projects- 30%
- Conduct research to complete various projects throughout semester

Assessments - 10%
- Performance tasks while in the lab based on the various group jobs (i.e. cook, assistant cook, washer, dryer)
- In-class performance, formative, and summative

Classwork/Participation - 20%

- On-task performance
- Contributions to class discussions
- Completion of assigned tasks

VII. SUGGESTED RESOURCES

FDA.gov
https://www.choosemyplate.gov/
https://www.myfitnesspal.com/account/create?c=0
https://www.eleatnutrition.com/recipes
https://www.cookinglight.com/healthy-living/fitness/food-for-fitness
https://ndb.nal.usda.gov
www.presidentschallenge.org
https://www.eatright.org/
https://www.allrecipes.com/
Nutrition for Kids http://www.nutritionforkids.com/kidactivities.htm
Pinterest www.pinterest.com
Eating Rules https://eatingrules.com/cooking-oil-comparison-chart/
Olive Oil Source http://www.oliveoilsource.com/page/olive-oil-tasting-sheets
Skinny Taste www.skinnytaste.com
The Village Journal http://thevillagejournal.com/lifestyle-diets/
My Plate http://ChooseMyPlate.g

Interdisciplinary Connections
ELA

- Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

Technology

- Students learn how to research, acquire, and present information using acceptable and appropriate internet etiquette standards when using a variety of websites, databases, Google apps and extension for various writing, research, and multimedia presentations.

Career Ready Practices

- Communicate effectively and with reason
- Apply appropriate academic and technical skills
- Demonstrate creativity and innovation
- Use technology to enhance productivity
- Work productively in teams while using cultural global competence
- Utilize critical thinking to make sense of problems and persevere in solving them
- Work productively in teams while using cultural global competence
- Apply appropriate academic and technical skills
- Employ valid and reliable research strategies
- Applicable career skills will be the focus within each unit and students will apply these skills in their class discussions, readings, research, and presentations.

VIII. SCOPE AND SEQUENCE

Unit 1 - Framework for Healthy Living **2 weeks**

EQ - Framework for Healthy Living

1. What are the essential components of wellness?
2. How do lifestyle and nutrition relate to health and wellness?
3. What components and strategies should be considered when creating a diet and wellness plan that can help you to achieve performance goals? (daily, weekly, long term plan)

Standards covered

21st Century Life and Career Standards: 9.2.8.A, 9.2.8.B.1, 9.3.8.B.2, 7.G.6, CRP2, CRP3, CRP9

Health and Physical Education: 2.1.8.D.1, 2.1.8.D.4, 9.2.8.B.D,

Technology Standards: 8.1.8.A.5, 0.4.

Suggested Activities:

a. Analyze personal nutrition, lifestyle habits and recommended daily allowances using available resources and technology
b. Create a diet and wellness plan to improve students' nutritional status and fitness level
c. Practice reading food labels to compare food products when shopping for healthier options
d. Maintain an activity and food log
e. Taste-testing healthy food options
f. Visit local grocery store to explore healthy food options

Teachers' notes:

- Guided tour of supermarket may be available
- Utilize nutrition apps that track food intake and use FDA.gov website to analyze nutrients
- Friendly competition encouraged for increasing movement throughout the day

Unit 2 - Food Labs and Safety **1 week**

EQ - Foods Labs and Safety

1. Why are rules necessary to promote safety?
2. How does my personal responsibility/the way I conduct myself affect the working environment and the safety of others around me?
3. How do I react in an emergency situation?

Standards covered:

21st Century Life and Career Standards: 9.2.8.A, 9.2.8.B.1, 9.3.8.B.2, 7.G.6, CRP6, CRP9, CRP12

Health and Physical Education Standards: 2.1.8.D.1, 2.1.8.D.4, 9.2.8.B.D

Technology Standards: 8.1.8.A.5, 0.4.MD.01

Mathematics Standards: N-Q3, 6.RP.3.D

ELA Standards: RST.9-10.3 RST.9-10.5

Suggested Activities:

a. Create a safety video demonstrating common hazards in the kitchen and solutions to prevent injury
b. Set up an "unsafe" kitchen area for students to analyze and correct
c. Slideshow presentation of common injuries that occur in a kitchen setting
d. View *Safety in the Kitchen* dvd
e. Watch episode of Kitchen Nightmares showing unsanitary kitchen environments
f. Complete safety test

Teachers' notes:

- Students may use phone, Ipad, chromebook or media center computers to edit video
- Introduce Spark (video editing)
- Form groups to identify hazards in the unsafe kitchen. Suggest: sharp knives in the sink, cords in the sink, open drawers and cabinets, towels on the floor, paper on the stove top.

Unit 3 - Carbohydrates **4 weeks**

EQ - Carbohydrates

1. Why are carbohydrates an essential nutrient in order for your body to function properly?
2. How does fiber play a role in a healthy diet?
3. What is the impact on the body when consuming refined vs. whole grain carbohydrates?
4. What are food sources of simple, complex and empty carbohydrates?
5. Why is it important to match your carbohydrate intake (specific food choices and amounts) to your activity level (in your plan)?
6. What culinary skills and techniques are used to prepare carbohydrate rich foods? (breads, pasta, refined flour, whole grain) baking, boiling, sauteing?

Standards covered

Health and Physical Education Standards: 2.1.12.B.3, 2.6.8.A.4, 2.1.12.B.1

21st Century Life and Career Standards: 9.1.12.F.2, 9.4.12.1.19, 9.4.12.1.56, 9.4.12.1.57, 9.4.12.1.58,

CRP8, CRP12

Technology Standards: 8.1.8.A.5, 0.4.

*Math Standards:*N-Q3, 6.RP.3.D

ELA Standards - RST.9-10.3 F

Science Standards: HS-LS1-6, HS-LS1-2, HS-LS1-7

Suggested Activities:

a. Demonstration and notes on correct techniques and tools
b. Notes on sugar and its effects on the body. Practice measuring using the *Rethink Your Drink* activity.
c. Carbohydrate powerpoint to exemplify different types of carbohydrates and their roles in the body Activity/ worksheet to follow notes for review
d. Utilize carbohydrate identification kit
e. Group work to create a recipe that optimizes knowledge of carbohydrates
f. Use food log to identify specific types of carbohydrates consumed. Students will reflect on and analyze the nutritional quality of their food choices and suggest healthier additions.
g. Discuss carbohydrates' bad reputation and debunk the myth that they are "fattening".

Teachers' Notes:

- Use nutrient kits if available
- Students can also acquire sugary drink bottles to bring to class. Teach how to calculate grams of sugar converted into teaspoons.
- Students can count the amount of teaspoons of sugar in their drink. Class comparison.
- Health conditions related to excess sugar https://www.cdc.gov/healthyweight/healthy_eating/drinks.html **Rethink your Drink**

Unit 4 - Protein - Recovery Foods **4 weeks**

EQ -Protein- Recovery Foods

1. Why are proteins an essential nutrient in order for your body to function properly?
2. What are the food sources of complete and incomplete proteins?

3. How can you combine incomplete proteins to get complete proteins?
4. Why is it important to match your protein intake (specific food choices and amounts) to your activity level (in your plan)?
5. What culinary skills and techniques are used to prepare protein-rich foods?

Standards Covered:

Health and Physical Education Standards: 2.1.12.B.3, 2.6.8.A.4, 2.1.12.B.1

21st Century Life and Career Standards: 9.1.12.F.2, 9.4.12.1.19, 9.4.12.1.56, 9.4.12.1.57, 9.4.12.1.58, CRP7, CRP8, CRP12

Technology Standards: 8.1.8.A.5, 0.4.

Math Standards: N-Q3, 6.RP.3.D

ELA Standards - RST.9-10.3

Science Standards: HS-ETS1-1, HS-LS1-2

Suggested Activities:

a. Notes on proteins and their effect on the body. Worksheet practice on identifying complete and incomplete sources.
b. Using technology platform to determine individual protein requirements based on lifestyle
c. Group lab work to create a recipe that results in complete protein meal
d. Use food log to identify specific types of proteins consumed. Students will reflect on and analyze the nutritional quality of their food choices and suggest healthier additions.
e. Experiment: find a way to turn a "yuck" into a "yum". Make a recipe using an undesirable protein food, and try to make it tasty.
f. Make a list of food combinations that result in complete proteins
g. Teach the connection between protein intake, requirements, and physical activity
h. Design simple high-protein snacks for high school students to eat after athletic games/practices

Teachers' Notes:

- Use beans (commonly not liked) and modify recipe until beans are accepted
- Bring in protein shake powders
- Protein bar taste test
- Dangers of excess protein should be emphasized

Unit 5 - Vitamins and Minerals - Optimizing food intake **4 weeks**

EQ - Vitamins and Minerals: Optimizing Your Food Intake

1. Why are vitamins/minerals considered essential nutrients for your body to function properly?
2. How can different fruits and vegetables provide the body with all of the essential vitamins and minerals to combat disease and optimize physical output?
3. Why is it important to match your vitamin/mineral intake to your individual plan?
4. What culinary skills and techniques are used to prepare vitamin/mineral rich foods?
5. Compare food sources of vitamins/minerals to supplementation options?
6. Analyze current diet to determine a need for supplementation.

Standards covered:

Health and Physical Education Standards: 2.1.12.B.3, 2.6.8.A.4, 2.1.12.B.1

21st Century Life and Career Standards: 9.1.12.F.2, 9.4.12.1.19, 9.4.12.1.56, 9.4.12.1.57, 9.4.12.1.58, CRP8, CRP12

Technology Standards: 8.1.8.A.5, 0.4.

*Math Standards:*N-Q3, 6.RP.3.D

Science Standards: HS-LS1-2

Suggested Activities:

a. Powerpoint on vitamins/minerals and their effect on the body. Guided reading and worksheets.
b. Students may use a nutrition app in conjunction with food log to determine any vitamin or mineral deficiencies within their diet
c. Class discussion regarding health problems related to vitamin/mineral deficiencies or excess intake
d. Group lab work to create a recipe that optimizes knowledge of vitamins and minerals
e. Preparation and research for student debate on the necessity and safety of supplementation. Student reflection detailing and supporting individual perspective.

Teachers' Notes:

- Each lab group may choose 1 vitamin and then 1 mineral to include in recipe. Share completed recipe with class in addition to printed out recipe. Highlight the ingredient that corresponds with the nutrient.
- Discuss cooking/heat and the destruction of vitamins/ minerals- do a comparison
- Suggestions on best way to maintain vitamins and minerals
- Class discussion on calories supplied by vitamins and minerals (none)- how they only *support* energy use and body system maintenance. More is not necessarily better.

Unit 6 - FATS — 3 weeks

EQ - Fats

1. Why is adequate hydration necessary for proper body function?
2. Why is fat an essential nutrient?
3. What are the different types of fats and in what food sources can they be found?
4. How can the body use healthy fats to improve performance and overall health?

Standards Covered:

Health and Physical Education Standards: 2.1.12.B.3, 2.6.8.A.4, 2.1.12.B.1

21st Century Life and Career Standards: 9.1.12.F.2, 9.4.12.1.19, 9.4.12.1.56, 9.4.12.1.57, 9.4.12.1.58, CRP7, CRP12

Technology Standards: 8.1.8.A.5, 0.4.

Math Standards: N-Q3, 6.RP.3.D

Science Standards: HS-LS1-2

Suggested Activities:

a. Notes on fat and its effect on the body
b. Differentiate between saturated, unsaturated (poly and monounsaturated), and trans fatty acids
c. Discuss and show (slides) of fat cells. Discuss how they enlarge and divide and can only be shrunk during weight loss, but only removed through medical procedures.
d. Show video on how a heart attack occurs and how to prevent one by eating healthy fats and maintaining an active lifestyle
e. Design a healthy fat recipe and complete in the lab. Calculate amount of fat and type of fat used in the ingredients.
f. Show what it means to "burn" fat and encourage the term "oxidize" fat through cardiovascular activity. Can not "burn" fat.

Teachers' Notes:

- YouTube video: heart attack: https://www.youtube.com/watch?v=H_VsHmoRQKk
- Have food examples displayed for each type of fat. Suggest: nuts/ seeds, peanut butter, bacon, shortening, olive and canola oil, butter, margarine.
- Use 5 lb. fat model if available
- Discuss the downfall of using only "low fat" in food preparation/ diet. (healthy fat and fat as a vitamin assistant)

Unit 7 - Pre/During/Post Competition **2 weeks**

EQ - Pre/During/Post Competition Meal Planning

1. Why is it important to plan pre/during/post event meals for an athlete?
2. How do the nutritional needs of your body change before, during, and after an athletic event?
3. What nutrients should be emphasized before, during, and after an athletic event?
4. Why is it important to consume the correct amount of each nutrient at the correct time?
5. Why does lactic acid build up in muscles during exercise, and how can this be prevented or treated?
6. How does metabolism convert food into energy?

Standards Covered

Health and Physical Education: 2.6.4.A.2, 2.6.4.A.4, 2.6.8.A.4

21st Century Life and Career Standards: 9.4.12.1.19, 9.1.12.B.3, 9.1.12.F.2, 9.4.12.1.54, 9.4.12.55, 9.4.12.1.56, 9.4.12.1.57, 9.4.12.1.58, CRP7, CRP9, CPR12

Technology Standards: 8.1.8.A.5, 0.4.

Math Standards:N-Q3, 6.RP.3.D

Science Standards: HS-LS1-7, HS-LS1-2

Suggested Activities:

a. Powerpoint notes on meal planning options. Group discussion about current eating habits before, during and after a workout. Students will make modifications to their workout plan incorporating their intake goal.
b. Complete meal planning worksheet and create a schedule for each workout meal
c. Lab work designing and preparing recipes that reflect healthy pre/during/post workout meals and snacks. Example: Pre= High Carbohydrate, low-moderate protein and low fat recipe. During= Complex carbohydrates and drinks recipe. Post= Water, fruit, complex carbohydrates and moderate protein.
d. Metabolism and energy powerpoint. Class discussion on the metabolism process and why it is important to consume the right foods to provide the body with the energy.
e. Create a PSA that will enlighten their peers about (above) process
f. Reflect in food log about modifications they can make to their diet which will enhance their athletic performance
g. Field trip to the school cafeteria to review options for healthy eating
h. Create a shopping list for parents. Suggest snacks they can pack and take to school to keep fueled.
i. Fad diets- review, comparison, critical examination.

Teachers' Notes

- Spend time emphasizing why diets/low intake aren't healthy for a growing, developing, active teenager.
- Listen to students' concerns and preconceived ideas about diet and health (many get their nutrition information from non-academic sources, misinformed family members, and internet)
- Encourage balance and moderation rather than elimination of foods/ nutrients.