GEORGIA | PEACH STATE PATHWAYS

Career, Technical, & Agricultural Education

CULINARY ARTS

PATHWAY: Culinary Arts

COURSE: Culinary Arts II

UNIT 8: Nutritional Information

INTRODUCTION

Annotation:

Students will identify and apply basic nutritional information on the effects of the structures and functions of nutrients before, during, and after food preparation and processing.

Grade(s):

X	9th
X	10th
X	11th
X	12th

Time: 10 90-minute class periods

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Reviewer: Amy Bergman

Students with Disabilities:

For students with disabilities, the instructor should refer to the student's IEP to be sure that the accommodations specified are being provided. Instructors should also familiarize themselves with the provisions of Behavior Intervention Plans that may be part of a student's IEP. Frequent consultation with a student's special education instructor will be beneficial in providing appropriate differentiation.

FOCUS STANDARDS

GPS Focus Standards:

CA-CAII-7. Students will identify and apply basic nutritional information on the effects of the structures and functions of nutrients before, during, and after food preparation and processing.

GPS Academic Standards:

SCSh5. Students will demonstrate the computation and estimation skills necessary for analyzing data and developing reasonable scientific explanations.
NFCS-9.3. Evaluate nutrition principles, food plans, preparation techniques, and Specialized dietary plans.

UNDERSTANDINGS & GOALS

Enduring Understandings:

- Good nutrition is extremely important for good growth and development. In many growth stages, lack of nutrients cause permanent developmental deficits. In some stages, these deficits can be repaired later.
- The USDA compiles and releases updated nutritional guidelines every five years. These guidelines are in the form of the Food Pyramid but also have other reports released as well.
- For those working in the culinary arts industry, it is essential to have a working knowledge of the nutritional value of foods, as well as the nutritional information available.

Essential Questions:

- What are dietary reference intakes?
- How can you use the Food Guide Pyramid to plan meals?
- How might an individual use the dietary reference intakes?
- Why is it important to look at food labels when deciding purchases?
- What should you consider when deciding on which nutritional assessment to use?
- How does the nutritional value of food change after it has been cooked and prepared?

Knowledge from this Unit:

- Evaluate Recommended Dietary Allowances (RDAs) and the Food Guide Pyramid to plan meals.
- Analyze the impact food processing and preservation techniques have on the nutritive value of food.

Skills from this Unit:

- Demonstrate food preparation techniques that conserve nutrients and make recipes more healthful.

- Demonstrate food ingredient substitution techniques for various diets such as food allergy, vegetarian, low-sodium, low fat, and reduced calorie.

ASSESSMENT(S)

Assessment Method Type: Select one or more of the following. Please consider the type(s) of differentiated instruction you will be using in the classroom.

____ Pre-test
____ Objective assessment - multiple-choice, true- false, etc.
__ Quizzes/Tests
__ Unit test
_x_ Group project
_x_ Individual project
x Self-assessment - May include practice quizzes, games, simulations,
____ checklists, etc.
__ Self-check rubrics
__ Self-check during writing/planning process
__ Journal reflections on concepts, personal experiences and impact on one's life
__ Reflect on evaluations of work from teachers, business partners, and competition judges
__ Academic prompts
__ Practice quizzes/tests
_x_ Subjective assessment/Informal observations
__ Essay tests
_x_ Observe students working with partners
__ Observe students role playing
____ Peer-assessment
__ Peer editing & commentary of products/projects/presentations using rubrics
__ Peer editing and/or critiquing
_x_ Dialogue and Discussion
__ Student/teacher conferences
_x_ Partner and small group discussions
_x_ Whole group discussions
__ Interaction with/feedback from community members/speakers and business partners
____ Constructed Responses
__ Chart good reading/writing/listening/speaking habits
__ Application of skills to real-life situations/scenarios
____ Post-test

Assessment(s) Title:

Culminating activity

Nutrition Magazine

Assessment(s) Description/Directions:

Culminating activity - Create a nutritional magazine. Each student's magazine should include an article about the importance of parents' role in nutrition, three recipes for healthy snacks, sample of a full days menu that covers the dietary requirements for adults, an article of the importance of one or two essential nutrients and where the body obtains them, an article about one essential nutrient (fat, water, protein, vitamins, minerals & carbohydrates) and from what food sources they may be obtained, an article about one of the nutritional problems (obesity, under nutrition, malnutrition, dehydration, etc) and a 6 frame comic strip. Complete requirements and rubric are attached.

Attachments for Assessment(s):

Rubric and requirements for Magazine project

LEARNING EXPERIENCES

Instructional planning: Include lessons, activities and other learning experiences in this section with a brief description of the activities to ensure student acquisition of the knowledge and skills addressed in the standards. Complete the sequence of instruction for each lesson/task in the unit.

1. Identify the Standards. Standards should be posted in the classroom for each lesson.

2. Review Essential Questions.

3. Identify and review the unit vocabulary.

Lesson 1 Food Guide Pyramid

- Nutrition
- Malnutrition
- Undernutrition
- Dietary Reference Intake
- Dietary Guidelines for Americans
- Essential nutrient
- Food Guide Pyramid

1) With resources available to you, read and review book information covering Nutritional Guidelines. If you have Health, Safety, and Nutrition for the Young Child (7th edition) it will be chapter 13. Notes are attached for class lecture and discussion.

2) View Food Guide pyramid and discuss. There are large amounts of print material you can find at www.mypyramid.gov

3) Food Category Race

- Before class, label boxes or buckets with each of the six sections of the food pyramid. Try to have the box or label reflect the color of its section on the Food Guide Pyramid.
- Group students in even teams of 5-6.

- Give each team plastic foods to separate into the correct box/bucket. You can either get enough plastic foods and boxes for each team to run simultaneous or have each team run separately and time them.
- Teams will need to run one food item down to the boxes (20-30 feet away) and place them in the correct box at a time.
- Team members must take turns.
- Post the times on a board so that each team knows what they need to beat.
- Time (5 or 10 seconds) should be added to the total time for each wrong categorization.
- When the game if over, discuss some of the common mistakes made by students.
- Make sure students realize what type of foods are in each of the Food Guide sections. [If you are unable to obtain plastic food, make note cards with food names and pictures.

4) Food Guide Pyramid Collage - Have students make a collage of the Food Guide Pyramid (blank copy of pyramid is attached). You may require drawn items, words, or magazine or picture cutouts. This can be an in class or homework activity.

5) Review essential questions to ensure students' understanding.

Lesson 2 Energy

- Energy
- calories
- enzymes
- coenzymes
- basal metabolic rate (BMR)
- thermic energy of food
- digestion
- absorption
- metabolism
- Carbohydrates
- Cellulose
- Fats
- Proteins

1) Discuss nutrients that provide energy – carbohydrates, fats, and proteins. If literature is available, read the appropriate sections and discuss. If you have Health, Safety, and Nutrition for the Young Child (7th ed.) by Lynn R. Marotz, information is in Chapter 14. HSN Unit 10 Lesson 2 notes are attached.

2) Watch HSN Unit 10 Dr. Dad video (attached from United Streaming http://streaming.discoveryeducation.com/ It is corny, but explains calories, energy, etc.

3) Review essential questions to ensure students' understanding.

Lesson 3 Vitamins and Minerals

- Enzymes
- Vitamins
- Water
- Iron
- Iron-deficiency anemia
- Hemoglobin
- Fluoride
- Calcium
- Phosphorus
- Minerals
- Growth
- Supplementary proteins
- Incomplete protein
- Complete protein
- amino acids

1) Discuss nutrients that promote growth and regulate body functions.

2) Assign students an essential nutrient (fat, water, protein, vitamins, minerals & carbohydrates)

3) Have students research their topic and create an 8 ½ x 11 size poster/flyer. Their information should include the importance of their topic to proper nutrition, daily recommended amounts, and how to get it. Also include any interesting facts.

4) Once each one is turned in, copies can be made so that each student has a notebook of information. (great to use this information on the magazine project)

5) Have enough food labels for each student to have at least one. You may want to assign students homework to bring in food labels.

6) As a group, look at the food labels. Discuss the importance of knowing what you eat.

7) Compare several labels from same foods (different soup labels, or different breads) and decide which would be best nutritionally.

8) Make sure students are aware that cost sometimes plays a role in food selections. This exercise only addresses nutrition.

9) Review essential questions to ensure students' understanding.

Lesson 4 Menu planning

1) In the last lesson, you discussed ways to improve people's health. Why is it important for those in the culinary arts industry to be aware of nutritional needs?
2) Go to your school system's website and see what nutritional information is available.
3) Discuss with students the importance of cafeteria's offering nutritious meals, especially for students that may not eat otherwise. If there is not much information available to discuss, have students write their own guidelines for serving food in school.
4) If possible, have the nutritionist from your school system speak to the class about what guidelines they follow and how they go about planning meals.
5) Students should decide (with teacher's assistance if needed) the most appropriate snack choice.
6) Remind students that it is often difficult to get children to make healthy choices in their food. This is where it is important as an adult to be familiar with the body's nutritional needs. You are the advocate for the child.
7) A variety of colors, textures, and shapes can add interest to dishes and also ensures that a wide variety of nutritive ingredients are present in the meal.

8) *** Possible community activity*** Have students plan a food drive for your community food bank. Students should list desired foods to be donated based on good health and nutrition criteria.

9) Review essential questions to ensure students' understanding.

Lesson 5 Nutritional Assessments

- Dietary assessment
- Anthropometric assessment
- Clinical assessment
- Biochemical assessment
- Hemoglobin
- Urinalysis

1) Read and review available literature on nutritional assessments.

2) Discuss.
3) With class, discuss sample assessment (attached).
4) In small groups of 3 or 4, have students develop their own nutritional assessments for the commercial kitchen.
5) Once completed, discuss results in class. Did the assessments measure what they wanted? Did the assessments measure useful data or obtain useful information?
6) Review essential questions to ensure students' understanding.

Lesson 6 Nutritional Education

1) As a group, discuss the importance of family to a child's nutrition.
   Who is the most important person concerning a child's health and nutrition? (parents, family)
   Where do children get their eating habits? (home)
   Why is it difficult to teach children good nutritional habits? (family feeds them)
   What are some ways educators can improve student's health?
   Etc.
2) Assign or ask students to get into small groups (4-5).
3) Students will brainstorm ways to inform parents about nutritional guide lines for preschool children and nutritional/health services available. Students should also brainstorm ways to teach or show preschool children healthy habits about nutrition.
4) After groups brainstorm for a while, assign each group an audience (parents or children).
5) Each group will produce a paper product, either a lesson plan or a parent flyer.
6) Groups can then present their lesson to the high school class and their target audience if possible. (You may have each group create lessons for preschool and also for parents.)
7) Review essential questions to ensure students' understanding.

Attachments for Learning Experiences:

- Blank Pyramid
- Magazine Rubric and Requirements
- Sample Nutritional Assessment

Notes & Reflections:

Using **www.unitedstreaming.com** you may download videos related to this unit. A first time user will have to enter a user name and password from the school. Most school systems should have one, check in the media center. Enter "Childhood obesity", or another topic, into the search bar and it will bring up many to choose from. You download it either into a video in whole or a video by segments onto your hard drive then can add them into PowerPoint or whatever as needed.

CULMINATING PERFORMANCE TASK

Culminating Unit Performance Task Title:

Nutritional Magazine

Culminating Unit Performance Task Description/Directions/Differentiated Instruction:

Culminating activity - Create a nutritional magazine. Each student's magazine should include an article about the importance of parents' role in nutrition, three recipes for healthy snacks, sample of a full days menu that covers the dietary requirements for adults, an article of the importance of one or two essential nutrients and where the body obtains them, an article about one essential nutrient (fat, water, protein, vitamins, minerals & carbohydrates) and from what food sources they may be obtained, an article about one of the nutritional problems (obesity, under nutrition, malnutrition, dehydration, etc) and a 6 frame comic strip. Complete requirements and rubric are attached.

Attachments for Culminating Performance Task:

Rubric and requirements

UNIT RESOURCES

Resources:

- Marotz, L. (2009) *Health, Safety, and Nutrition for the Young Child.* (7th ed.). Clifton Park, NY: Thomson Delmar Learning.
- http://www.health.gov/dietaryguidelines

- http://medical-dictionary.thefreedictionary.com/malnutrition
- http://www.nlm.nih.gov/medlineplus/obesity.html
- http://usda.gov
- http://mypyramid.gov
- Videos from United Streaming – http://streaming.discoveryeducation.com/

Web Resources:

- www.mypyramid.gov
- www.dietaryguidelines.gov
- www.mypyramid.gov/preschoolers/index.html
- www.adcouncil.org/files/adc_usda_broccoli.728X90jpg.
- http://foodsafe.ucdavis.edu/html/audio/veggiebeliever
- www.kidshealth.org
    - The food pyramid tailored for kids
- www.5aday.gov/color/index
- www.cnpp.usda.gov/expendituresonchildrenbyfamilies.html
- www.everydayhealth.com
    - videos --free
- www.fns.usda.gov/fsp to get info on nutrition education through the food stamp program

Food Safety websites

- www.eatmedaily.com/2008/12/mind-blowing-food-safety-music-parodies
    - food safety songs
- www.mypyramid.gov
    - food safety advice for everyone
- www.fightbac.org
    - info on food safety education tools & programs, curriculum for all ages-
    - video library
- www.fsis.usda.gov/Food_Safety_Education/index.asp
    - fact sheets, magazines, programs
- www.handwashingforlife.com/
    - videos $ varied prices
- http://foodsafe.ucdavis.edu/#
- http://foodsafe.ucdavis/edu/html/video.html

- http://foodsafe.ucdavis.edu/html/audio
- www.foodsafety.gov/~fsg/vlibrary.html
    - video library

Attachment(s):

Materials & Equipment:

- Plastic fruit,
- 6 boxes/buckets
- attachments

What 21st Century Technology was used in this unit?:

x	Slide Show Software		Graphing Software		Audio File(s)
	Interactive Whiteboard		Calculator		Graphic Organizer
	Student Response System		Desktop Publishing		Image File(s)
	Web Design Software		Blog	x	Video
	Animation Software		Wiki		Electronic Game or Puzzle Maker
	Email	x	Website		