

PROJECT BASED LEARNING IN CAREER PATHWAY COURSES

Project Title: Dietary Dilemma		
Teacher(s): Kathy Overholt	Email: koverholt@elkhart.k12.in.us	Date: 10/6/16
Course(s): Intro to Health Careers/Health and Wellness	Level(s): Junior/Senior	
Project Days: 10-14	Instructional Time:	
PROJECT DESCRIPTION		
<p>Challenging Problem or Driving Question: How do you demonstrate to a patient that their favorite dish (which is unhealthy) can be changed to be cost effective, healthier and just as flavorful?</p>		
<p>You are a <i>(insert real-workplace role)</i>. A team of a dietician/nutritionist and a nurse that are meeting with a newly diagnosed diabetic with congestive heart failure. You are working at a large clinic with a physician's office and are coordinating the care of a low income patient that just was discharged from the hospital. He comes to you today for his follow-up appointment and brought his food diary with him. You will be required to work as a team to make sure all of the dietary needs of this patient are met and help him access what he needs to be successful in meeting those needs.</p> <p>You are faced with <i>(insert a problem)</i>. The physician has ordered a low sugar, low fat, low salt diet for this patient. This patient is on a low income and presents a food diary that shows a high fat, high cholesterol diet with foods that are high in sugar. The food diary reflects poor food choices by this patient. You are charged to help this patient find a favorite recipe and make it cost effective, healthy and fall within the guidelines of the physician's orders. You must <i>(insert what must be done to solve the problem)</i>.</p> <ul style="list-style-type: none"> ● CTE Technical Prompt: (List students' required actions) - Research a recipe with the intention of modifying the recipe to a healthier version given the diagnosis ● Literacy Prompt: (List students' required actions) - Research disease process, research recipe, prepare oral presentation, prepare patient handout in easy to understand language ● Math Prompt: (List students' required actions) - Calculate change in calories for fat, protein and carbohydrates between the old and new recipes, calculate cost for the new recipe for single serving, weekly, monthly, and yearly cost - The students will need to prepare the healthy recipe in quantity sufficient to feed the classroom. ● Science Prompt: (List students' required actions) - The student must provide how the difference in the caloric intake and balancing of the meal helps the body function more efficiently. The student will also explain how lowering blood sugar and maintaining a healthy cholesterol helps a patient achieve a longer life. ● 21st Century Prompt: (List students' required actions) - Students will work in teams, collaborate, problem solve, think critically and provide written communication. 		
ESSENTIAL STANDARDS		
<p>CTE Technical Standards:</p> <p>Literacy Standards:</p> <p>EL.11.1 2006 - Reading: Word Recognition, Fluency, and Vocabulary Development - Students apply their knowledge of word origins (words from other languages, history or literature, and other fields) to determine the meaning of new words encountered in reading and use those words accurately.</p> <p>EL.11.4 2006 - Writing: Processes and Features - Students will write coherent and focused texts that show a well-defined point of view and tightly reasoned argument. The writing demonstrates students' progression through the stages of the writing process (prewriting, writing, editing, and revising)</p> <p>EL.11.6 2006 Writing: English Language Conventions - Students write using Standard English conventions</p>		

EL.11.6.1 2006 Demonstrate control of grammar, diction, paragraph and sentence structure, and an understanding of English usage.

EL.11.7 2006 - Listening and speaking: Skills, strategies, and applications - Students formulate thoughtful judgments about oral communication. They deliver focused and coherent presentations that convey clear and distinct perspectives and demonstrate solid reasoning. Students deliver polished formal and extemporaneous presentations that combine traditional speech strategies of narration, exposition, persuasion, and description. They use gestures, tone and vocabulary appropriate to the audience and purpose. Students use the same Standard English conventions for oral speech that they use in their writing.

EL.11.7.8 2006 Evaluate when to use different kinds of effects (including visuals, music, sound, and graphics) to create effective productions

Math Standards:

CCSS.Math.PRactice.MP6: Attend to precision

MA.8.2 2000 - Computation - Students compute with rational numbers expressed in a variety of forms. They solve problems involving ratios, proportions, and percentages

MA.8.5 2000 - Measurement - Students convert between units of measure and use rates and scale factors to solve problems. They compute the perimeter, area, and volume of geometric objects. They investigate how perimeter, area, and volume are affected by changes of scale.

MA.8.5.1 2000 Convert common measurements for length, area, volume, weight, capacity, and time to equivalent measurements within the same system.

MA.8.7 2000 - Problem solving - Students make decisions about how to approach problems and communicate their ideas.

MA.A1.9 2000 - Mathematical reasoning and problem solving - Students use a variety of strategies to solve problems. Students develop and evaluate mathematical arguments and proofs.

MA.A1.9.1 2000 - Use a variety of problem solving strategies, such as drawing a diagram, making a chart, guess-and-check, solving a simpler problem, writing an equation, and working backwards.

MA.A1.9.2 2000 - Decide whether a solution is reasonable in the context of the original situation.

Science Standards:

SCI.AP.2 2010 - Levels of organization in the human body:tissues and organs - Examine the role of adhesion molecules and how these contribute to tissue formation. (AP.2.1) Analyze the relationships among and the histology and physiological functions of tissues and their cellular and biochemical composition. (AP.2.2, AP.2.3, AP.2.4, AP.2.5)

SCI.AP.12 2010 - Absorption and Excretion in the human body: the digestive system - Identify and locate major and accessory organs of the digestive system and discuss their functions. Analyze the digestive processes from ingestion to defecation.

21st Century Standards: Critical thinking/Problem solving - Students will exercise sound reasoning and analytical thinking; use knowledge, facts, and data to solve workplace problems; apply math and science concepts to problem solving.

Teams will write a more nutritious recipe based upon an unhealthy recipe that the team agrees upon.

Oral Communications - Articulate thoughts and ideas clearly and effectively; have public speaking skills.

Written Communications - Write memos, letters and complex technical reports clearly and effectively.

DESIGN PROCESS

Step 1: Ask/Inquire

Entry Event and Project Launch - Students will watch the following video: Raw Food on a Budget Meals under \$5 http://m.youtube.com/watch?v=pDpSveNjG_c

What will you do during this phase of the process? During the video the students must note what are positives and negatives of this style of menu planning and will discuss how to make it better.

Menu planning books (binders) for the project will be distributed at this point to track the student progress during the course of the project.

At the end of this phase of the project: Students will have used their project journals and project planners to begin to brainstorm the menu evaluation and planning process. They have documented their ideas as well as their colleagues. Students have the opportunity to clarify the project requirements and discuss any misconceptions regarding expectations.

Formatively assess students on their communication, listening, and note-taking skills during the activities. Students must get a teacher signature here verifying they have received the project planner with the opportunity to ask clarifying questions.

Step 2: Imagine

What will my students do during this phase of the process? List student work & its assessment.

The students will conduct a Think-Pair-Share to lead students to a whole class discussion orchestrated by the instructor. Have students watch the video individually and take notes. Next, have them share their notes to a partner and document any differences. As students collaborate, strategically ask pairs to present their ideas to the whole class. The goal is to model collaboration among students.

Step 3: Plan

What will my students do during this phase of the process? List student work & its assessment.

Students will collaborate in their teams to define roles and responsibilities (nutritionist/dietician/nurse). All occupations investigated at the Bureau of Labor Statistics <http://www.bls.gov/ooh>. These are all middle-skill occupations that require less than an associate's degree.

Based on the reflections and discussions during the research and development phase, teams can begin to organize their ideas through the roles they are assuming. From this phase, students can begin to draft out a scope and sequence to complete the project. Teams must have an interview with the instructor to share their plan and obtain constructive feedback.

Once approved, teams will need to build specific timeline with due dates (check points) for the group prior to the dates that the actual project steps are due.

Teams submit their timelines for constructive feedback as well as summative grade based on a rubric. Teams will have an opportunity to resubmit for full credit. Each team member must be able to demonstrate the ability to design a timeline with checkpoints.

Step 4: Create

What will my students do during this phase of the process? List student work & its assessment.

Teams will create the following in preparation for recipe preparation.

1. Original recipe written out
2. Caloric breakdown of original recipe with cost of preparation
3. Find comparable more nutritious recipe
4. Caloric breakdown for patient outlining and comparing the two recipes
5. Prepare handout for patient outlining and comparing the two recipes

Using their timelines, teams will design the menus while documenting all evidence in their project binders.

Teams will complete a recipe card for both recipes with caloric breakdown and cost of preparation. Also, teams will need to prepare a pie graph to compare the two recipes

Step 5: Experiment/Evaluate

What will my students do during this phase of the process? List student work & its assessment.

Teams will ask classmates to review the two recipes and evaluate them on taste, cost, and nutrition value.

Teams will analyze results to see how they can improve their recipes.

Teams will produce a grade relevant hand out to education the patient on the difference in the two recipes.

Teams will do an oral presentation to the class about the patient handout and promote their recipe to convince the need for change.

The teams will prepare the original and modified recipes to have the class taste, evaluate, and provide feedback. This is done through an evaluation sheet and/or Survey Monkey with room for student comments.

Step 6: Improve

What will my students do during this phase of the process? List student work & its assessment.

Teams will revisit any portion of their process to make necessary modifications. Teams must document changes to evaluate the impact of their decisions.

Teams must have another team provide a cross check of their work. Teams must sign off on their cross check to verify computations, measurements and the presentation.

Teams may re-submit any portion of the project for constructive feedback with the teacher. The team must carve out time to meet with teacher to review corrections/feedback changes.

Step 7: Communicate

What will my students do during this phase of the process? List student work & its assessment.

Teams will present their recipes and handouts to a business and/or industry partner from a local hospital/clinic for evaluation. Classmates will also provide constructive feedback to all presentations through verbal conversations and via written rubric based on 1-5 scale with room for additional comments.

STUDENT EVALUATION

Rubric(s) See attached

Assessment(s) See attached

INSTRUCTOR REFLECTION

What went well?

What could be improved?

How will you modify this project for next time?

SUPPORTING MATERIALS

Equipment/Technology - Chromebooks**Materials** - Pens, pencils, planning book, markers, colored pencils, paper**Human Resources** - Team members**Other****ADDITIONAL COMMENTS**

(Next, the students will be charged to complete a daily menu for the patient that meet the requirements for the needs ordered by the physician. This will include a breakfast, lunch and dinner menu. If the daily menu is completed then the students will be challenged to complete a week long menu including costs, nutrition evaluation and being within the physician requirements.)

Thinking like a Professional: The Professional Notebook (optional)**What are the essential components of the Professional Notebook students will keep for this project?**

The students will have binders that will contain all of the worksheets, rubrics and information needed for this project. All worksheets can be easily transferred to a portfolio to show to future employers.

How will you use the Professional Notebook to assess the work on this project?

Students have to meet with the instructor to discuss various stages of the project with the notebook and worksheets.

Dietary Dilemma Worksheets

Nurse: _____

Dietitian: _____

Nutritionist: _____

Step 1: (1-2 days)

Food diary examples listed from team members: (As a team think of a favorite dish that you each really enjoy. List how much it costs on average and the basic ingredients in your dish and how many servings it provides. You will then collaborate to choose one of the dishes to pick as your modification dish.)

Example 1: _____

Example 2: _____

Example 3: _____

Step 2: (2-3 days)

Collaborate with your team to formulate which dish is going to be modified to become a healthier version. Once you have chosen your dish to modify you will schedule a time to meet with the physician (Instructor) to make sure you are meeting the patient's dietary needs, fall within the patient's budget, and get approval for your chosen dish. Please use the form below for breaking down the recipe and cost of your chosen recipe. Make sure you have all of the necessary information prior to meeting with the physician. Failure to do so will result in you falling behind due to having to go to the bottom of the list for meeting with the physician.

Title of recipe: _____

Ingredients and measurements of each ingredient of the original recipe:

Cost of each ingredient for the original recipe (Think about the cost of the whole package that you will take a portion out of that package for this recipe (ie. a gallon of milk and you only need one cup of milk for your recipe.). You will then break down the cost per unit needed from the cost of the whole package for each ingredient for your recipe. Then figure the total cost of the recipe.)

Nutritional breakdown of recipe per serving:

Calories Fat : _____

Calories Carbohydrates : _____

Calories Protein : _____

Calories Total : _____

Title of modified recipe: _____

Ingredients and measurements of modified recipe: _____

Cost of each ingredient for the modified recipe (Think about the cost of the whole package that you will take a portion out of that package for this recipe. You will then break down the cost per unit needed from the cost of the whole package for each ingredient for your recipe. Then figure the total cost of the recipe.)

Nutritional breakdown of recipe per serving:

Calories Fat : _____

Calories Carbohydrates : _____

Calories Protein : _____

Calories Total : _____

Situation update #2: (2 days) The patient has come to you again for follow-up and is asking for information regarding a recipe that will help him/her meet the goals set by the physician. You are now to develop a handout to be given to a patient with a Grade 6 level of education. This handout should contain a shopping list of ingredients, measurements, and directions for preparation that this patient can understand. (Make sure you have another team review your information and have them sign below)

This page intentionally left blank for showing computations

This page intentionally left blank for computations

This page intentionally left blank for computations

This page intentionally left blank for sketches or rough drafts

This page intentionally left blank for sketches or rough drafts

This page intentionally left blank for sketches or rough drafts

Team Evaluation Rubric:

Please name your team members below. You will not put your name at the top and will evaluate your team on the following scale (1=poorly 5=great). Please leave your comments about your team members after each rubric.

Name: _____

This team member had equal input on the project. 1 2 3 4 5

This team member did an equal share of work. 1 2 3 4 5

This team member was a team player. 1 2 3 4 5

This team member communicated well. 1 2 3 4 5

This team member was present for the whole project. 1 2 3 4 5

This team member showed initiative. 1 2 3 4 5

This team member had a good attitude. 1 2 3 4 5

Comments: _____

Name: _____

This team member had equal input on the project. 1 2 3 4 5

This team member did an equal share of work. 1 2 3 4 5

This team member was a team player. 1 2 3 4 5

This team member communicated well. 1 2 3 4 5

This team member was present for the whole project. 1 2 3 4 5

This team member showed initiative. 1 2 3 4 5

This team member had a good attitude. 1 2 3 4 5

Comments: _____

Name: _____

This team member had equal input on the project. 1 2 3 4 5

This team member did an equal share of work. 1 2 3 4 5

This team member was a team player. 1 2 3 4 5

This team member communicated well. 1 2 3 4 5

This team member was present for the whole project. 1 2 3 4 5

This team member showed initiative. 1 2 3 4 5

This team member had a good attitude. 1 2 3 4 5

Comments: _____

Grading Rubric is as follows:

First deadline met (STEP 1) = 35 points, Late 1 day = 17.5 points, Late 2 days = 8.75 points, Late 3 days = 0

Second deadline met (STEP 2) = 35 points, Late 1 day = 17.5 points, Late 2 days = 8.75 points, Late 3 days = 0

Situation Update #1 deadline met = 35 points, Late 1 day = 17.5 points, Late 2 days = 8.75 points, Late 3 days = 0

Situation Update #2 deadline met = 35 points, Late 1 day = 17.5 points, Late 2 days = 8.75 points, Late 3 days = 0

Step 3 deadline met = 35 points, Late 1 day = 17.5 points, Late 2 days = 8.75 points, Late 3 days = 0 points

Step 4 deadline met = 35 points, Late 1 day = 17.5 points, Late 2 days = 8.75 points, Late 3 days = 0 points

Computations turned in complete = 35 points, $\frac{1}{2}$ work shown = 17.5 points, No work shown = 0 points

Rough drafts turned in complete = 35 points, $\frac{1}{2}$ rough drafts turned in = 17.5 points, No rough drafts = 0 points

Informational sheet turned in complete = 35 points, $\frac{1}{2}$ finished = 17.5 points, Not complete = 0 points

Modified Recipe complete = 35 points, $\frac{1}{2}$ finished = 17.5 points, Not complete = 0 points

Peer reviews completed and signed = 35 points, $\frac{1}{2}$ signed = 17.5 points, no signatures = 0 points

TOTAL POINTS AVAILABLE = 385 + 115 point team evals = 500 POINTS TOTAL

Team evaluations will count for 115 points toward the total 500 points