

## Foods and Nutrition 1 – Grades 9-12

Short description of course: This course is designed for students who are interested in understanding the principles of nutrition and in maintaining a healthy lifestyle. Attention will be given to the selection and preparation of food and personal health and well-being.

Concurrent enrollment: not available for this course

Pathway(s): Foundation course for 5 pathways – Child Development; Family & Human Services; Food Science, Dietetics, & Nutrition; Food Services & Culinary Arts; Hospitality Services

COURSE STANDARDS / OBJECTIVES	INTEGRATED MATH CONCEPTS	INTEGRATED LITERACY CONCEPTS	INTEGRATED SCIENCE CONCEPTS
<p><b>S-1 Students will apply the skills of kitchen equipment and management</b></p> <p><b>O-1:</b> Identify types, use and care of selected kitchen equipment</p> <p><b>O-2:</b> Explain the basic principles of cooking in a microwave</p> <p><b>O-3:</b> Identify appropriate abbreviation, food measurement terminology, techniques, equivalents, and calculate recipe-size adjustments and demonstrate proper measuring techniques</p> <p><b>PO #1</b> Consistently demonstrate proper measuring and preparation techniques</p> <p><b>O-4:</b> Explain basic food-preparation terminology</p>	<p><b>O-3 - Number System Gr. 6</b> – “6.NS.1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions.... <i>How many 1/4-cup servings are in 2/3 of a cup of yogurt?</i> ... “</p> <p><i>Ratios and Proportional Relationships Gr. 6</i> – “6.RP.3. Use ratio and rate reasoning to solve real-world and mathematical problems, ... Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.</p> <p><i>Number system Gr. 7</i> – 7.NS.3. “Solve real-world and mathematical problems involving the four operations with rational numbers.”</p> <p><i>Expressions and Equations Gr. 6</i> - 6.EE.4. Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them).</p> <p><i>Expressions and Equations Gr. 7</i>– “Use properties of operations to</p>	<p><b>O1, O-2, O-3, O-4</b> – <i>Reading Standards for Literacy in Technical Subjects Gr. 9-12 – Craft and Structure #4</i> – “Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific ... technical context...”</p> <p>*food measurement terminology, food-preparation terminology, ID kitchen equipment</p> <p><b>O-3 - Reading Standards for Literacy in Technical Subjects Gr. 9-10 – Integration of Knowledge and Ideas #7</b> – “Translate quantitative or technical information expressed in words in a text into visual form and translate information expressed visually or mathematically into words.</p> <p>*demonstrate proper measuring techniques</p>	<p><b>O-2</b> –<i>Physics Core - Standard 5 Objective 2.b.</i> – “Distinguish between the different parts of the electromagnetic spectrum (e.g., radio waves and x-rays or visible light and microwaves).”</p> <p><i>Physics Core – Standard 5 Objective 2.e.</i> – “Provide examples of the use of electromagnetic radiation in everyday life (e.g., communications, lasers, microwaves, cellular phones, satellite dishes, visible light). “</p> <p>*microwave cooking</p>

	<p>generate equivalent expressions – Solve real-life and mathematical problems using numerical and algebraic expressions and equations.”</p> <p><i>Mathematics 1 Gr.9 – Relationships between Quantities – “N.Q.2. “Define appropriate quantities for the purpose of descriptive modeling.</i></p> <p>*doubling a recipe is multiplying rational numbers, cutting down a recipe is dividing rational numbers</p> <p>*equivalent measures – 3 t. = 1 T., 16 T. = 1 c., 16 c. = 1 gal., 2 pt. = 1 qt., 2 c. = 1 pt., 4 qt. = 1 gal.</p>		
<p><b>S-2 Students will consistently demonstrate kitchen safety procedures and sanitation techniques</b></p> <p><b>O-1:</b> Apply established safety rules and guidelines to maintain a safe working environment</p> <p><b>PO #2</b> Consistently demonstrate kitchen safety procedures</p> <p><b>O-2:</b> Identify proper first-aid procedures for cuts, burns, and electrical shock</p> <p><b>O-3:</b> Identify and apply sanitation rules and guidelines</p> <p><b>PO #3</b> Consistently demonstrate sanitation techniques</p> <p><b>O-4:</b> Identify methods that prevent food-borne illnesses and contamination</p>		<p><b>O-2, O-3, O-4 - Reading Standards for Literacy in Technical Subjects Gr. 9-12 - Craft and Structure #4 – “Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific ... technical context...”</b></p> <p>*first aide, chemical contamination, sanitation rules, types of food-borne illnesses, danger zone</p>	<p><b>O-2- First Aid – Health Education Core Standard 4 - Students will demonstrate the ability to apply prevention and intervention knowledge, skills, and processes to promote safety in the home, school, and community.</b></p>
<p><b>S-3 Students will explore the dietary guidelines and ChooseMyPlate.gov</b></p> <p><b>O-1:</b> Identify the six Dietary Guidelines and the key recommendations for each. The guidelines are listed</p> <p><b>O-2:</b> Demonstrate knowledge of</p>	<p><b>O-2, O-3, PO-4 - Ratios and Proportional Relationships Gr. 6 – “6.RP.3.b. Use ratio and rate reasoning to solve real-world and</b></p>	<p><b>O-1 – Writing Standards for Literacy in Technical Subjects Gr. 9-12 - Research to Build Present Knowledge #7 – “Conduct short as well as more</b></p>	

<p>MyPlate. (See ChooseMyPlate.gov)  <b>O-3:</b> Demonstrate knowledge of healthy eating patterns. (see ChoseMyPlate.gov)  <b>PO #4</b> Evaluate a personal dietary intake of one or more days, according to the dietary guidelines and MyPlate</p>	<p>mathematical problems, ... Solve unit rate problems including those involving unit pricing and constant speed. (calories/lb. calories related to activity level)”  *servicing size, calories per serving, caloric intake for activity level</p> <p><i>Ratios and Proportional Relationships Gr. 6 – “6.RP.3.c. Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.”</i>  *% of nutrients provided in foods eaten</p> <p><i>Relationships Between Quantities Gr. 9 – A.CED.3 “represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.”</i>  *Evaluate personal dietary intake and compare to dietary guideline</p>	<p>sustained research projects to answer a question (including a self-generated question) or solve a problem; ...”  <i>Writing Standards for Literacy in Technical Subjects Gr. 9-12 – Text Types and Purposes #2d – “Use precise language and domain-specific vocabulary...”</i>  *research MyPlate to determine recommendations for a balanced diet</p> <p><b>PO #4 – Writing Standards for Literacy in Technical Subjects Gr. 9-12 – Research to Build and Present Knowledge #7, #8, #9 – “Conduct short as well as more sustained research projects ... Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively ... Draw evidence from informational texts to support analysis, reflection, and research”</b>  *evaluate personal dietary intake for one or more days</p>	
<p><b>S-4 Students will identify the sources and function of carbohydrates and fiber and apply appropriate food preparation techniques</b>  <b>O-1:</b> Identify carbohydrates, their sources and functions, and the importance of whole grains in the body  <b>O-2:</b> Identify fiber, its sources and functions</p>	<p><b>O-3 – See Standard 1 – Objective 3 for related math concepts</b>  *Give students a copy of the full recipe – Have students use either multiplication or division of rational numbers to adjust the measurements</p>	<p><b>O-1, O-2 – Writing Standards for Literacy in Technical Subjects Gr.9-12 – Text Types and Purposes #2a-f – “Write informative/explanatory texts...introduce a topic...develop the topic ... used transitions and sentence</b></p>	<p><b>O-1 , O-2 – Biology Core Standard 2 Objective 1.b. “Identify the function of the four major macromolecules (i.e., carbohydrates, proteins, lipids, nucleic acids).”</b>  <i>MaP 02.11 “Describe the structures</i></p>

<p><b>O-3:</b> Apply food selection and preparation guidelines related to quick breads, rice, grains, and pasta  <b>PO #5</b> Complex CHO food products</p>	<p>to give the desired yield</p>	<p>structures ... use precise language and domain/specific vocabulary ...a formal style and objective tone... provide a concluding statement..."</p> <p><i>Writing Standards for Literacy in Technical Subjects Gr. 9-12 – Research to Build and Present Knowledge #7, #8, #9 – “Conduct short as well as more sustained research projects ... Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively ... Draw evidence from informational texts to support analysis, reflection, and research”</i></p> <p>*CHO and fiber sources and functions</p>	<p>and functions of carbohydrates, proteins, lipids, and nucleic acids.”</p> <p>* chemical form and function of CHO</p> <p><b>O-3 – Chemistry Core Standard 4 Objective 1.f.</b> “Investigate everyday chemical reactions that occur in a student's home (e.g., baking, rusting, bleaching, cleaning).”</p> <p><i>Chemistry Core Standard 6 Objective 3.a.</i> “Relate hydrogen ion concentration to pH values and to the terms acidic, basic or neutral.”</p> <p><i>Chemistry Core Standard 6 Objective 1.b.</i> “Using an indicator, measure the pH of common household solutions and standard laboratory solutions, and identify them as acids or bases.”</p> <p>* gluten formation, acid-base reactions</p>
<p><b>S-5 Students will identify the sources and functions of proteins and fats and apply appropriate food preparation techniques</b></p> <p><b>O-1:</b> Identify proteins (complete and incomplete), their sources, and functions in the body</p> <p><b>O-2:</b> Apply food selection and preparation guidelines related to egg products – <b>PO #6</b></p> <p><b>O-3:</b> Apply food selections and preparation guidelines related to milk and milk products – <b>PO #6</b></p> <p><b>O-4:</b> Identify fats, their sources, function, and related health concerns.</p>	<p><b>O-2, O-3, PO-6 - See Standard 1 – Objective 3 for related math concepts</b></p> <p>*Give students a copy of the full recipe – Have students use either multiplication or division of rational numbers to adjust the measurements to give the desired yield</p>	<p><b>O-1 and O-4 – Writing Standards for Literacy in Technical Subjects Gr.9-12 – Text Types and Purposes #2a-f –</b> “Write informative/explanatory texts ...introduce a topic...develop the topic ... used transitions and sentence structures ... use precise language and domain/specific vocabulary ...a formal style and objective tone... provide a concluding statement..."</p> <p><i>Writing Standards for Literacy in Technical Subjects Gr. 9-12 – Research to Build and Present Knowledge #7, #8, #9 – “Conduct short as well as</i></p>	<p><b>O-1, O-4 – Biology Core Standard 2 Objective 1.b.</b> “Identify the function of the four major macromolecules (i.e., carbohydrates, proteins, lipids, nucleic acids).”</p> <p><i>MaP 02.11</i> “Describe the structures and functions of carbohydrates, proteins, lipids, and nucleic acids.”</p> <p>* function of protein in the body - digestion, absorption, and body’s use of fat</p> <p><b>O-2, O-3 –Chemistry Core Standard 4 Objective 1.b -</b> “Compare the</p>

		<p>more sustained research projects ... Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively ... Draw evidence from informational texts to support analysis, reflection, and research”</p> <p>*sources and functions of protein and fats</p>	<p>properties of reactants to the properties of products in a chemical reaction.”</p> <p><i>Chemistry Core Standard 4 Objective 1.f</i> – “Investigate everyday chemical reactions that occur in a student's home (e.g., baking, rusting, bleaching, cleaning).”</p> <p>*chemical reactions in the preparation of protein based foods - protein coagulation, the effect of heat on protein, the effect of acid on protein– the effect of heat on milk proteins, explain that milk is a colloid</p>
<p><b>S-6 Students will identify the sources and functions of vitamins, minerals and water and apply appropriate food preparation techniques</b></p> <p><b>O-1:</b> Identify vitamins, their food sources, functions, and deficiencies in the body</p> <p><b>O-2:</b> Identify minerals, their sources, functions, and deficiencies in the body</p> <p><b>O-3:</b> Identify the functions of water in the body</p> <p><b>O-4:</b> Apply food selection and preparation guidelines related to fruits and vegetables. – <b>PO #7</b></p>	<p><b>O-4, PO-7 - See Standard 1 – Objective 3 for related math concepts</b></p> <p>*Give students a copy of the full recipe – Have students use either multiplication or division of rational numbers to adjust the measurements to give the desired yield</p>	<p><b>O-1, O-2, O-3 – Writing Standards for Literacy in Technical Subjects Gr.9-12 – Text Types and Purposes #2a-f</b> – “Write informative/explanatory texts...introduce a topic...develop the topic ... used transitions and sentence structures ... use precise language and domain/specific vocabulary ...a formal style and objective tone... provide a concluding statement...”</p> <p><i>Writing Standards for Literacy in Technical Subjects Gr. 9-12 – Research to Build and Present Knowledge #7, #8, #9</i> – “Conduct short as well as more sustained research projects ... Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively ... Draw evidence from informational texts to support analysis, reflection, and research”</p> <p><i>Language Standard Gr. 9-10 -</i></p>	<p><b>O-1, O-2, O-3, O-4 – Chemistry, Biology, AP Biology</b> – chemical make-up of vitamins and minerals and their function in the body; functions of water in the body</p> <p><i>Chemistry</i> – chemical reactions that occur to nutrients and pigments during preparation</p> <p><b>O-3 - MaP 02.09</b> “Describe the properties of water and how it is utilized in the human body. (universal solvent, transport, lubricant, heat capacity, chemical reactions)”</p> <p><i>Chemistry Core Standard 6 Objective 1.a.</i> “Use the terms solute and solvent in describing a solution.”</p>

		<i>Vocabulary Acquisition and Use #4 -</i> “Determine or clarify the meaning of unknown and multiple-meaning words...”	
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