

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT



Farm to Fork with STEAM (1 Semester)

Board Approval Date: June 17, 2021	Course Length: 1 Semester
Grading: A-F	Credits: N/A
Proposed Grade Level(s): 6	Subject Area: Elective Elective Area (if applicable): Exploratory Wheel
Prerequisite(s): N/A	Corequisite(s): N/A
CTE Sector/Pathway:	
Intent to Pursue 'A-G' College Prep Status: No	
A-G Course Identifier:	
Graduation Requirement: No	
Course Intent: District Course Program (if applicable):	
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COURSE DESCRIPTION:

The course aims to connect personal choices in food to the micro and macro outcomes, as well as develop the STEAM knowledge and skills to make those choices. The three main themes to be addressed will be how choices in food affect the individual, the local community, and the planet. The curriculum will utilize Science, Culinary Arts, Agriscience and the school garden as a vehicle for STEAM (Science, Technology, Engineering, Arts, Math) learning, as well as promote healthy choices in food and lifestyle.

DETAILED UNITS OF INSTRUCTION:

Unit Number/Title	Unit Essential Questions	Examples of Formative Assessments	Examples of Summative Assessment
1. Introduction to Nutrition	What are the six types of nutrients? What are the five food groups that are the building blocks of a healthy diet? What does a healthy diet look like and why is it important? How does advertising affect choices in nutrition?	*Student Journal - essential nutrients, components of a healthy diet, compare home cooked meat to fast food meals (calories, nutrition, taste), compare serving size to estimated personal consumption *Deciphering the food label *My plate activity *Study a food advertisement *Nutrients we need *Daily exit ticket	*Nutrients and food groups quiz. Personal micro- and macro-nutrient profile and meal plans *Student cookbook entry *Design a cereal and its packaging *Ditch the fizz
2. Math in Nutrition	What units of measurement are used in nutrition? How do you convert metric to standard? How do you measure dry and wet ingredients? Why are they different? How do you change measurement amounts for recipes?	*Student Journal - cup and ounce equivalents, identify portion sizes through visual cues, dry and wet measurements, adjusting recipes. *Daily exit ticket	*Measurement and unit conversion quiz *Measurement labs *Multiple labs
3. Engineering in Nutrition	How do you use the Design Process for nutrition? How can solar energy be used to prepare food? How can engineering improve water quality? Why is clean water important to health and nutrition?	*Student Journal - engineering design process, solar energy, function of water in nutrition, water filtration. *Daily exit ticket.	*Engineering design process quiz *Creating a solar oven project *Solar oven baking challenge *Creating a better water filter project
4. Chemistry in Nutrition	What are the effects of heat? What are leavening agents and how are they used in food? What is emulsion and how does it change properties in food?	*Student Journal - measuring the energy in food, pH scale and acid/based reactions, emulsification, chemical reactions in food. *Daily exit ticket.	*Chemical reactions and calorimetry quiz *Calorimetry Lab, Emulsification, pH, and Leavening Lab *Exercise/calorimetry demands/expenditure lab

<p>5. Food Production in Nutrition (Garden)</p>	<p>What is Farm to Fork? How does it affect food production? What is indoor growing? What are the structures for growing? What is the environmental effect of food packaging? What is the environmental impact of food production? What is composting? How would you construct a compost bin? What careers are related to food development, production, and nutrition?</p>	<p>*Student Journal - food supply chain, food production (plant and animal), plant and soil science, environmental impact of food *Daily exit ticket</p>	<p>*Food production quiz. Hydroponic Lettuce Project *Composting Project *Our Food’s Journey Class Debate *Vermicomposting Project *Class magazine of food development, production, and nutrition career project</p>
<p>6. Global Connections in Nutrition</p>	<p>Why is food so important to cultures? What are some foods from cultures around the world? What ingredients are used in different cultures? What are the similarities and differences in foods throughout the world? How do climate and seasons affect local foods? How do food issues like scarce resources and hunger impact the world?</p>	<p>*Student Journal - food traditions around the world, global food supply, climate and weather, food shortages and solutions. Data collection worksheet and write up for hydroponic lettuce growth *Survey of food distances *Daily exit ticket</p>	<p>*Global nutrition quiz *Global nutrition issues and solutions art poster project *Final student cookbook production *Oral presentation on a world culture and their food cultivation and preparation *Global food project</p>
<p>7. Agriculture</p>	<p>What are the different sectors of modern agriculture? Where does commercially produced food come from? What is the journey of an apple from tree to plate?</p>	<p>*Student Journal -virtual and in-person farm tours, commercial agriculture practices, agriculture supply chain and environmental impacts, food processing best practices.</p>	<p>*Agriculture and food production quiz. *Design a farm project. *From seed to harvest lab.</p>

ESSENTIAL STANDARDS:

Middle School NGSS Science Standards:

MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impact on people and the natural environment that may limit possible solutions.

MS-ETS1-2. Evaluate competing design solutions using a systematic process to determine how well they met the criteria and constraints of the problem.

MS-ETS1-3. Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success.

MS-ETS1-4. Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved.

MS-ESS3-3. Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

MS-ESS2-4. Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.

MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.

MS-LS1-4. Use arguments based on empirical evidence and scientific reasoning to support an explanation for how specialized plant structures affect the probability of successful reproduction of plants.

RELEVANT STANDARDS AND FRAMEWORKS, CONTENT/PROGRAM SPECIFIC STANDARDS:

Link to Common Core Standards (if applicable):

Educational standards describe what students should know and be able to do in each subject in each grade. In California, the State Board of Education decides on the standards for all students, from kindergarten through high school.

<https://www.cde.ca.gov/be/st/ss/documents/finalelaccsstandards.pdf>

Link to Framework (if applicable):

Curriculum frameworks provide guidance for implementing the content standards adopted by the State Board of Education (SBE). Frameworks are developed by the Instructional Quality Commission, formerly known as the Curriculum Development and Supplemental Materials Commission, which also reviews and recommends textbooks and other instructional materials to be adopted by the SBE.

<https://www.cde.ca.gov/ci/sc/cf/cascienceframework2016.asp>

<https://www.cde.ca.gov/ci/sc/cf/documents/scifwchapter5.pdf>

Link to Subject Area Content Standards (if applicable):

Content standards were designed to encourage the highest achievement of every student, by defining the knowledge, concepts, and skills that students should acquire at each grade level.

<https://www.cde.ca.gov/ci/ct/sf/documents/agnatural.pdf>

<https://www.cde.ca.gov/ci/ct/sf/documents/hosptourrec.pdf>

Link to Program Content Area Standards (if applicable):

Program Content Area Standards apply to programs such as International Baccalaureate, Advanced Placement, Career and Technical Education, etc.

Food Service and Hospitality Standards: B1.0 Demonstrate an understanding of major aspects of the foodservice and hospitality industry and the role of the industry in local, state, national, and global economies. B3.0 Interpret the basic principles of sanitation and safe food handling. B6.0 Illustrate and apply the basics of food preparation and safety and sanitation in professional and institutional kitchens. B9.0 Apply the basic procedures and skills needed for food and beverage service. B10.0 Demonstrate and apply basic nutritional concepts in meal planning and food preparation. B12.0 Describe the fundamentals of successful sales and marketing methods. Agriscience Standards: C1.0 Evaluate the role of agriculture in the California economy. C2.0 Examine the interrelationship between agriculture and the environment. C3.0 Analyze the effects of technology on agriculture. C4.0 Determine the importance of animals, the domestication of animals, and the role of animals in modern society. C5.0 Compare the structure and function of plants, animals, bacteria, and

viruses. C6.0 Explore animal anatomy and systems. C8.0 Understand fundamental animal nutrition and feeding. C9.0 Evaluate basic animal health. C10.0 Explain soil science principles. C11.0 Analyze plant growth and development. C12.0 Understand fundamental pest management. C13.0 Design agricultural experiments using the scientific method.

TEXTBOOKS AND RESOURCE MATERIALS:

Textbooks

Board Approved	Pilot Completion Date (If applicable)	Textbook Title	Author(s)	Publisher	Edition	Date
	<i>N/A</i>					

Other Resource Materials

FFA and FCCLA Leadership Guides

Supplemental Materials

Board approved supplemental materials (Including but not limited to: Film Clips, Digital Resources, Supplemental texts, DVDs, Programs (Pebble Creek, DBQ, etc.):

N/A