

Kansas Family and Consumer Sciences Education Work and Family Studies Program

Course: **Food Science - 22203**

CIP Code: 19.0000 Course # 22203

Rating Scale: **3 Skilled- Works Independently**
2 Limited Skills- Requires Assistance
1 Skill Undeveloped
0 No exposure- No instruction or training

Student: _____		Grade: _____	
Teacher: _____		School: _____	
Enrolled Date: _____		Completion Date: _____	Graduation Date: _____
_____ Student Signature		_____ Teacher Signature	

Directions: The following competencies are required for full approval of a course in a Family and Consumer Sciences Program. Check the appropriate number to indicate the level of competency reached for student evaluation.

Academic Foundations

Benchmark:	3	2	1	0
0.1 Apply reading and writing, math, and science skills in personal, professional, and community situations. (CC K&S)				
0.1.1 Writes effectively for a variety of audiences, purposes, and contexts. (narrative, expository, technical, persuasive) (W1.4▲)				
0.1.2 Comprehends a variety of texts. (narrative, expository, technical, persuasive) (R1.4▲)				
0.1.3 Determines the meaning of words or phrases using context clues from sentences or paragraphs. (R1.3.1▲)				
0.1.4 Understands the purpose of text features and uses such features to locate information in and to gain meaning from appropriate-level texts. (R1.4.2▲)				
0.1.5 Uses information from the text to make inferences and draw conclusions. (R1.4.5▲)				
0.1.6 Adjusts original rational number estimate of a real-world problem based on additional information. (a frame of reference) (M1.3.A1▲) (\$)				
0.1.7 Generates and/or solves multi-step real-world problems with real numbers and algebraic expressions using computational procedures and mathematical concepts. (M1.4.A1a,b,d▲) (\$)				
0.1.8 Uses data analysis in real-world problems with rational number data sets to compare and contrast two sets of data, to make accurate inferences and predictions, to analyze decisions, and to develop convincing arguments from data displays. (M4.2.A1▲) (\$)				
0.1.9 Research, apply, and evaluate information to accomplish tasks. (CC K&S) (SC CD2.1)				

Communications

Benchmark:	3	2	1	0
0.2 Demonstrate appropriate communication skills that contribute to positive relationships. (*13.3) (21 st)				
0.2.1 Use appropriate communication strategies for most effective outcome. (*13.3.1) (CC K&S) (21 st) (SC P/SD 1.2)				
0.2.2 Use listening and writing skills appropriately to communicate clearly. (*13.3.2) (*13.3.3) (CC K&S) (21 st) (S1.1.5)				
0.2.3 Apply and/or interpret nonverbal communication to fully understand meaning. (CC K&S)				
0.2.4 Communicate respectfully and effectively with people of different cultures and diverse perspectives. (*13.3.5) (CC K&S) (21 st) (SC P/SD 1.2) (SC CD 1.2)				

Problem Solving and Critical Thinking

Benchmark:	3	2	1	0
0.3 Apply thinking and problem-solving processes to personal, professional and community issues. (21 st) (SC AD 1.2)				
0.3.1 Clarify personal and family issues.				
0.3.2 Identify adequate, reliable information, and resources for personal and family problem solving. (CC K&S)				
0.3.3 Critique alternative methods of solving problems and accomplishing tasks. (CC K&S)				
0.3.4 Evaluate potential consequences of alternative choices. (CC K&S)				
0.3.5 Use criteria and standards to make ethical decisions. (21 st)				
0.3.6 Implement an action plan.				
0.3.7 Evaluate outcomes to measure progress. (CC K&S)				

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Information Technology Applications

Benchmark: 0.4 Use technology to access, manage, integrate, and create information. (CC K&S)		3	2	1	0
0.4.1	Use a variety of communication technologies to locate information and manage records for family, work, and community settings. (*13.3.6) (CC K&S) (21 st)				
0.4.2	Use technology to analyze, manipulate, and interpret information. (CC K&S) (21 st) (S5.1.1▲)				
0.4.3	Identify adequate, reliable information, and resources. (CC K&S)				

Safety, Health and Environmental

Benchmark: 0.5 Evaluate potential hazardous situations to defuse them and determine intervention strategies. (CC K&S)		3	2	1	0
0.5.1	Manage the physical and social environment to reduce conflict and promote safety in family, workplace, and community. (CC K&S) (21 st) (SC P/SD 3.1)				
0.5.2	Practice safety techniques to create a safe environment. (CC K&S) (SC P/SD 3.1)				
0.5.3	Understand how to document and report emergency/crisis situations and outcomes to the appropriate authorities. (CC K&S)				
0.5.4	Follow regulations, organizational policies, and procedures to assure a safe and healthy environment. (CC K&S) (Gov1.2▲ A) (SC CD 3.2) (S6.1▲)				

Leadership and Teamwork and Ethics and Legal Responsibilities

Benchmark: 0.6 Demonstrate leadership, citizenship, and teamwork skills required for success in the family, workplace, and community. (*13.5) (21 st)		3	2	1	0
0.6.1	Examine the FCCLA organization and its relationship to the family and consumer sciences curriculum.				
0.6.2	Recognize and model positive leadership and teamwork behaviors to inspire others. (CC K&S) (21 st) (H-G)				
0.6.3	Identify ways to be a responsible citizen in families, career, and communities. (Gov2.2▲ K) (SC CD 1.1)				
0.6.4	Recognize diverse abilities of team members. (21 st) (SC AD 1.2)				
0.6.5	Apply leadership, citizenship, and teamwork skills in authentic experiences. (21 st) (H-G) (SC CD 3.2)				
0.6.6	Demonstrate ethical behavior in personal, workplace, and community context. (21 st) (SC P/SD 1.1) (SC CD 3.2)				

Career Development and Systems

Benchmark: 0.7 Analyze strategies to manage the multiple individual, family, career, and/or community roles and responsibilities. (*1.1) (CC K&S) (21 st)		3	2	1	0
0.7.1	Analyze ways that individual career goals can impact the family's capacity to meet goals for all family members. (*1.1.3) (CC K&S) (\$) (SC AD3.1) SC CD 1.1)				
0.7.2	Analyze the potential impact of career path decisions on balancing work and family. (*1.1.4) (\$) (SC AD 3.1)				
0.7.3	Develop a life plan for achieving individual, family and/or career goals. (*1.1.6) (CC K&S) (21 st) (SC P/SD 2.1)				
0.7.4	Determine skills and knowledge needed for a life plan. (21 st) (SC AD 1.2)				
0.7.5	Demonstrate processes for cooperating, compromising and collaborating to achieve goals. (*13.5.7) (21 st) (SC P/SD 2.1) (SC AD 1.2)				

Technical Skills**COMPREHENSIVE STANDARD: 9.0 Integrate knowledge, skills, and practices required for careers and family in food science. (*9.0)**

Benchmark: 9.1 Analyze career paths within the food science industry.		3	2	1	0
9.1.1	Evaluate jobs and preparation requirements for food science careers within the food science industry. (*9.1.1) (CC K&S)				
9.1.2	Assess personal qualifications, interests, values, and educational food science preparation for employment in the industry and applications for the home. (*9.1.3) (CCK&S)				
Benchmark: 9.2 Analyze the interrelationship of food, nutrition, and science. (*9.3)		3	2	1	0
9.2.1	Define the study of the science of food and nutrition. (CC K&S) (S3.5.3▲)				
9.2.2	Analyze various guidelines for good nutrition that promote the health of individuals at home, work, and community. (*9.3.6) (S6.1)				
9.2.3	Analyze and examine reliable sources of consumer food and nutrition information. (*9.3.2 and *9.3.4)				
Benchmark: 9.3 Examine methods for use of the science laboratory to conduct and report results of food science experiments. (S1.1▲)		3	2	1	0
9.3.1	Apply proper safety techniques for the laboratory. (S1.1.2▲)				

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9.3.2	Practice good personal hygiene procedures. (*9.2.5) (S6.1)				
9.3.3	Identify the location and demonstrate the correct use of emergency equipment in the laboratory. (S1.1.3▲)				
9.3.4	Identify basic laboratory equipment, rules for usage, and performance techniques. (*9.5.4) (CC K&S) (S1.1.3▲)				
9.3.5	Demonstrate how to make accurate and precise laboratory measurements. (CC K&S) (S1.1.3▲)				
9.3.6	Demonstrate the use of the scientific method when participating in food science and consumer experiences. (CC K&S) (S1.1▲)				
Benchmark: 9.4 Evaluate the causes and prevention of food contamination and spoilage in industry and home. (*9.2)		3	2	1	0
9.4.1	Identify sources and symptoms of food borne illness. (*9.2.1) (S6.1)				
9.4.2	Use the Hazard Analysis Critical Control Point during all food handling processes to minimize the risk of food borne illness. (*9.2.4) (CC K&S)				
9.4.3	Use time, temperature, date markings, cross contamination, hand washing, and personal hygiene as criteria for safe food preparation. (*9.6.9)				
9.4.4	Explore the agencies that regulate food quality, protect consumer rights, and handle consumer complaints.				
Benchmark: 9.5 Analyze methods used in food product development and marketing.		3	2	1	0
9.5.1	Examine the sensory factors that make up the sensory characteristics for tasting food. (*9.5.6)				
9.5.2	Demonstrate controlled sensory tasting and rating techniques. (*9.5.7) (S1.1▲)				
9.5.3	Evaluate food label information.				
9.5.4	Calculate food cost and examine price point in food product development and marketing.				
Benchmark: 9.6 Apply knowledge of metabolism and digestion to establish life-long habits of good nutrition.		3	2	1	0
9.6.1	Analyze the relationship between calories, food, and energy. (S3.5.3▲)				
9.6.2	Examine the digestive system and the role of enzymes in digestion and food preparation. (S3.5)				
Benchmark: 9.7 Evaluate a variety of changes, including chemical and physical, that affect food product quality.		3	2	1	0
9.7.1	Relate differences in chemical and physical changes to the state of matter. (S2A.2▲)				
9.7.2	Identify chemical symbols and use these symbols in writing chemical formulas and equations. (S2A.2.2▲)				
9.7.3	Compare the process of heat transfer in cooking and baking processes. (S2A.3) (S2B.2.2▲)				
9.7.4	Demonstrate how the major leavening agents are used in foods and describe the actions observed. (S2A.3▲)				
9.7.5	Demonstrate emulsification in food technology. (S2A.3)				
9.7.6	Demonstrate the process of fermentation and explain the usage in food technology. (S2A.3)				
9.7.7	Demonstrate the process of pasteurization and explain the usage in food technology. (S2A.3)				
Benchmark: 9.8 Apply science process skills when analyzing the structure and composition of food and their relationship to health and wellness. (S6.1)		3	2	1	0
9.8.1	Explain the properties and functions of water. (S3.5)				
9.8.2	Analyze the structure and composition of carbohydrates and fiber. (S3.5)				
9.8.3	Analyze the properties and composition of lipids in relation to their functions in food preparation and the body. (S6.1)				
9.8.4	Describe the chemical nature and molecular structure of protein and the functions of protein in food. (S3.5.2▲)				
9.8.5	Examine the types, functions, sources, and deficiencies of vitamins, minerals, and phytonutrients. (S6.1)				
9.8.6	Describe and analyze the impact of acids and bases in foods. (S2A.3.2)				
Benchmark: 9.9 Analyze methods used and factors involved in the scientific process of food. (CC K&S) (S2A.3)		3	2	1	0
9.9.1	Examine the use of additives in food processing and preservation. (S2A.3.2)				
9.9.2	Explain the process and conduct methods of food dehydration. (S2A.3.2)				
9.9.3	Examine the process of curing. (S2A.3.2)				
9.9.4	Identify and apply the science of freezing foods. (S2A.3.2)				
9.9.5	Explain how irradiation preserves foods. (S2A.3.2)				
9.9.6	Explore the impact of storing conditions on staling, rancidity, and molding. (S2A.3.2)				

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Additional comments: _____

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