

**Maine Department of Education
Career and Technical Education**

**Culinary Arts/Chef Training; Food Preparation (CIP: 12.0503; 12.0505)
American Culinary Federation Education Foundation (ACFEF)**

**Intersections with
Maine College and Career Readiness-Mathematics Standards**

American Culinary Federation Education Foundation (ACFEF) Duties, Skills, and Tasks	Mathematics Content Standards and The Eight Mathematical Practices (CCSS)	Demonstration of Proficiency (Possible evidence, project, performance assessment, etc.)	Maine Learning Results-Guiding Principles & Career and Education Development (optional)
1. Introduction to the Hospitality and Foodservice Industry			
a. Define hospitality and the importance of quality customer service within the hospitality industry.			
b. Trace growth and development of the hospitality and tourism industry.	Math.HSS-IC Understand and evaluate random processes underlying statistical experiments Math.HSS-ID Interpret linear models Math Practice 2 Reason abstractly and quantitatively.	Looking at data to help determine the growth of the hospitality industry and make inferences as to future growth. Using bar graphs to determine how many times you travel >50 miles and the reasons you travel/how you travel and use the information to make future	

American Culinary Federation Education Foundation (ACFEF) Duties, Skills, and Tasks	Mathematics Content Standards and The Eight Mathematical Practices (CCSS)	Demonstration of Proficiency (Possible evidence, project, performance assessment, etc.)	Maine Learning Results- Guiding Principles & Career and Education Development <i>(optional)</i>
	<p>Math Practice 3 Construct viable arguments and critique the reasoning of others.</p> <p>Math Practice 4 Model with mathematics.</p> <p>Math Practice 5 Use appropriate tools strategically.</p>	<p>decisions.</p> <p>Attach values to factors that help determine ratings of food service establishments and use them to determine the rating</p>	
<p>c. Describe the various cuisines and their relationship to history and cultural development.</p>	<p>Look at geography standards</p>		
<p>d. Outline the organization, structure and functional areas in various organizations.</p>			
<p>e. Identify career opportunities and the personal traits for a variety of jobs in the industry.</p>			
<p>f. Identify professional organizations and explain their purposes and benefits to the industry.</p>			
<p>g. Compare and contrast industry</p>			

American Culinary Federation Education Foundation (ACFEF) Duties, Skills, and Tasks	Mathematics Content Standards and The Eight Mathematical Practices (CCSS)	Demonstration of Proficiency (Possible evidence, project, performance assessment, etc.)	Maine Learning Results- Guiding Principles & Career and Education Development (optional)
trade periodicals and other industry resources.			
2. Sanitation & Safety			
<p>a. Identify microorganisms which are related to food spoilage and food-borne illnesses; describe their requirements and methods for growth.</p> <p>b. Describe symptoms common to food borne illnesses and how these illnesses can be prevented.</p> <p>c. Describe cross contamination and use of acceptable procedures when preparing and storing potentially hazardous foods.</p> <p>d. Demonstrate good hygiene and health habits.</p> <p>e. List the major reasons for and recognize signs of food spoilage and contamination.</p> <p>f. Outline the requirements for proper receiving and storage of both raw and prepared foods.</p> <p>g. Describe disposal and storage</p>			

<p>American Culinary Federation Education Foundation (ACFEF)</p> <p>Duties, Skills, and Tasks</p>	<p>Mathematics Content Standards and The Eight Mathematical Practices (CCSS)</p>	<p>Demonstration of Proficiency (Possible evidence, project, performance assessment, etc.)</p>	<p>Maine Learning Results- Guiding Principles & Career and Education Development <i>(optional)</i></p>
<p>of types of cleaners and sanitizers and their proper use.</p> <p>h. Develop cleaning and sanitizing schedule and procedures for equipment and facilities.</p> <p>i. Identify proper methods of waste disposal and recycling.</p> <p>j. Describe appropriate measures for insects, rodents and pest control.</p> <p>k. Recognize sanitary and safety design and construction features of food production equipment and facilities (i.e. NSF, UL, OSHA, ADA, etc).</p> <p>l. Review Material Safety Data Sheets (MSDS) and explain their requirements in handling hazardous materials.</p> <p>m. Conduct a sanitation self-inspection and identify modifications necessary for compliance with standards.</p> <p>n. Identify the critical control points during all food handling</p>			

American Culinary Federation Education Foundation (ACFEF) Duties, Skills, and Tasks	Mathematics Content Standards and The Eight Mathematical Practices (CCSS)	Demonstration of Proficiency (Possible evidence, project, performance assessment, etc.)	Maine Learning Results- Guiding Principles & Career and Education Development <i>(optional)</i>
<p>processes as a method for minimizing the risk of food borne illness (HACCP system).</p> <p>o. List common causes of typical accidents and injuries in the foodservice industry and outline a safety management program.</p> <p>p. Discuss appropriate emergency policies for kitchen and dining room injuries.</p> <p>q. Describe appropriate types and use of fire extinguishers used in the foodservice area.</p> <p>r. Describe the role of the regulatory agencies governing sanitation and safety and protecting food safety.</p>			
3. Business & Math Skills			
<p>a. Perform basic math functions used in foodservice operations.</p>	<p>Middle School standards</p>		
<p>b. Calculate food, beverage and labor costs and percentages.</p>	<p>Math.HSF-IF.C Analyze functions using different representations</p>	<p>Cost vs profit determinations Calculating portion cost/</p>	

American Culinary Federation Education Foundation (ACFEF) Duties, Skills, and Tasks	Mathematics Content Standards and The Eight Mathematical Practices (CCSS)	Demonstration of Proficiency (Possible evidence, project, performance assessment, etc.)	Maine Learning Results- Guiding Principles & Career and Education Development (optional)
	Math.HSF-BF.A Build a function that models a relationship between two quantities Math Practice 8 Look for and express regularity in repeated reasoning. Math.HSA-CED Create equations that describe numbers or relationships	creating a menu/Revenue	
c. Demonstrate the process of costing for recipes.	Math Practice 4 Model with mathematics.	Weight/measure usable amounts of materials and using cost of the materials find the cost of the recipe.	
d. Demonstrate the process of costing for recipe yield adjustment.	Math.HSA-CED.A.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or nonviable options in a modeling context.	Determine how much a recipe costs – looking at where you buy something and what it costs working from known costs. Taking in account waste and usable product. Using this to determine pricing of the final product.	
e. Determine selling price of menu items.	Math.HSA-CED.A.3 Represent constraints by equations or inequalities, and by systems of equations and/or inequalities,	Looking at the variables that go into the selling price (constraints on recipe/waste/cost of raw goods/etc)	

American Culinary Federation Education Foundation (ACFEF) Duties, Skills, and Tasks	Mathematics Content Standards and The Eight Mathematical Practices (CCSS)	Demonstration of Proficiency (Possible evidence, project, performance assessment, etc.)	Maine Learning Results- Guiding Principles & Career and Education Development <i>(optional)</i>
	and interpret solutions as viable or nonviable options in a modeling context. Math Practice 3 Construct viable arguments and critique the reasoning of others.		
f. Describe the preparation of a guest check using current technology (i.e. computers, calculators, POS, etc.)			
4. Food Preparation			
a. Demonstrate knife skills and proper cuts (i.e. Julienne, Batonette, Brunoise, Paysanne, Small Dice, Large Dice, etc.) emphasizing proper safety techniques. b. Identify and demonstrate proper and safe use of food processing and cooking equipment. c. Demonstrate how to read and follow a standard recipe. d. Utilize standard weights and			

American Culinary Federation Education Foundation (ACFEF) Duties, Skills, and Tasks	Mathematics Content Standards and The Eight Mathematical Practices (CCSS)	Demonstration of Proficiency (Possible evidence, project, performance assessment, etc.)	Maine Learning Results- Guiding Principles & Career and Education Development <i>(optional)</i>
<p>measures to demonstrate proper scaling and measurement techniques.</p> <p>e. Demonstrate a variety of cooking methods including roasting, baking, broiling, grilling, griddling, sautéing, frying, deep frying, braising, stewing, boiling, blanching, poaching and steaming.</p> <p>f. Identify and use herbs, spices, oils and vinegar's.</p> <p>g. Identify and prepare various meats, seafood, poultry.</p> <p>h. Identify and prepare various stocks, soups and sauces.</p> <p>i. Identify and prepare fruits, vegetables and starches.</p> <p>j. Identify and prepare salads, dressings and marinades.</p> <p>k. Identify and prepare a variety of sandwiches.</p> <p>l. Identify and prepare a variety of types of appetizers.</p>			

American Culinary Federation Education Foundation (ACFEF) Duties, Skills, and Tasks	Mathematics Content Standards and The Eight Mathematical Practices (CCSS)	Demonstration of Proficiency (Possible evidence, project, performance assessment, etc.)	Maine Learning Results- Guiding Principles & Career and Education Development <i>(optional)</i>
<p>m. Identify and prepare breakfast batters, meats, eggs, and cereals.</p> <p>n. Demonstrate food presentation techniques.</p> <p>o. Discuss the applicability of convenience, value added, further processed or par-cooked food items.</p> <p>p. Write written food requisitions for production requirements.</p> <p>q. Prepare standardized recipes for menu production.</p>	<p>n. Math.HSG-MG.A.3 Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).</p> <p>Math Practice 1 Make sense of problems and persevere in solving them.</p> <p>Math Practice 6 Attend to precision.</p> <p>o. Math Practice 1 Make sense of problems and persevere in solving them.</p> <p>Math Practice 3 Construct viable arguments and critique the reasoning of others.</p>	<p>n. determining the amount of frosting needed to cover a cake/layered cake given the dimensions of the cake using surface area/volume</p> <p>o. cost analysis of Betty Crocker premade frosting vs making own frosting</p>	

Look at financial/economical literacy from Social Studies for some of the standards.
Math Practice 5 is evident throughout the Culinary Arts in choosing what devices to use for measuring.
Math Practice 6 is also evident throughout.

DRAFT