

Baking and Pastry

UNIT 1: Safety and Sanitation

(2 weeks and throughout the course)



ESSENTIAL QUESTION

BIG IDEAS

Why is kitchen safety, food safety, and sanitation important?

Students will:

- Identify common foodborne illnesses and allergens.
- Apply kitchen safety, food safety, and sanitation standards.
- Understand the components of HACCP.
- Understand first aid and bloodborne pathogens procedures.

GUIDING QUESTIONS

● Content

- What is PPE (personal protective equipment)?
- What are biological, physical, and chemical hazards to food?
- What are the sources, symptoms, and preventions for foodborne illnesses (Big 6- Norovirus, Nontyphoidal Salmonella, Salmonella Typhi, E. coli, Shigella, and Hepatitis A)?
- What is FAT-TOM?
- What is time and temperature abuse?
- What is cross-contamination?
- What is cross-contact?
- What is an allergen?
- What are SDS (Safety Data Sheets) guidelines?
- What is FIFO (First In-First Out)?
- What is HACCP (Hazard Analysis and Critical Control Points)?
- What are bloodborne pathogens?
- What basic safety procedures should be followed to avoid accidents in the kitchen?

● Process

- What are the proper handwashing and glove usage procedures?
- How does cleaning and sanitizing utensils ensure to prevent cross-contamination and cross-contact?
- What safety procedures are used to prevent foodborne illnesses?
- How are biological, physical, and chemical hazards prevented?
- What is the process for date marking foods to ensure FIFO?
- How are ingredients and supplies stored to ensure food safety and prevent cross-contamination?
- What measures are taken to prevent insects, rodents, and pests?

- How do you read nutrition labels and ingredient labels to verify safety of food allergens?
- How are common injuries prevented in the kitchen?
- How are common injuries treated in the kitchen?
- **Reflective**
 - How is food monitored through the flow of food (purchasing, receiving, storage, preparation, cooking, holding, serving, cooling, storage, reheating) to keep food safe?
 - How can PPE ensure personal safety and prevent injury in a culinary kitchen?
 - How do food safety protocols help to prevent illness, allergic reactions, and anaphylactic shock?
 - How can labeling baked goods prepared in a bakeshop help to ensure health and safety of customers?

FOCUS STANDARDS

- **Benchmark 1.0: Demonstrate industry-based food safety and sanitation procedures.**
 - 1.1: Demonstrate industry standard hand washing and professional standards for personal hygiene.
 - 1.2: Identify proper use of gloves (e: ready to eat foods).
 - 1.3: Identify the Big 6 (Norovirus, Nontyphoidal Salmonella, Salmonella Typhi, E. coli, Shigella, and Hepatitis A) sources, symptoms and prevention measures.
 - 1.4: Demonstrate an understanding of the importance of food safety and sanitation to include: how foods become unsafe, controlling time and temperature, preventing cross contamination, cleaning and sanitizing, shipping and receiving, and how to safely prepare food for others.
 - 1.5: Identify first-in, first-out (FIFO) and date marking.
 - 1.6: Identify proper chemical handling and storage procedures (maintain and follow SDS guidelines).
 - 1.7: Identify common food allergens and common symptoms (common allergens: Milk/dairy, eggs/egg products, fish/shellfish, wheat/gluten, soy/soy products, and peanuts/tree nuts).
 - 1.8: Understand the components and need for HACCP in the food industry.
 - 1.9 Describe appropriate measures for prevention of insects, rodents, and pests.
 - 1.10: Understand emergency and first-aid procedures, bloodborne pathogens applicable to the workplace.
- **Benchmark 2.0: Demonstrate correct use and maintenance of food production equipment and tools.**
 - 2.2: Identify and demonstrate procedures for cleaning, sanitizing, and storage of equipment and food contact surfaces.
 - 2.3: Recognize sanitary and safety design and construction features of food production equipment and facilities (i.e. NSF, UL, OSHA, ADA, etc..).
- **Benchmark 3.0: Analyze common ingredients used in pastry/baking products.**
 - 3.1: Identify a nutrition label and ingredient label for a baked product with use of proper allergen warnings.

Baking and Pastry

UNIT 2: The Pastry Chef

(2 weeks and applied throughout course)



ESSENTIAL QUESTION

What are the necessary skills when preparing baked goods and desserts?

BIG IDEAS

Students will:

- Apply basic principles of baking and pastry to produce a quality product.
- Apply effective mise en place skills and measuring techniques.
- Understand proper use, operation, and application of basic culinary equipment.
- Analyze common ingredients used in baking and pastry.
- Prepare an electronic portfolio.

GUIDING QUESTIONS

• Content

- What volumetric tools are used in measuring (dry measuring cup, liquid measuring cup, measuring spoons)?
- What are common bakeshop tools and equipment?
- What is mise en place?
- What is the proper way to read a recipe?
- What are common bakeshop ingredients (flour, sugars, fats, leaveners, thickeners, flavorings, liquids)?
- What is a leavening agent?
- What are the different types of leavening agents (chemical, biological [yeasts], air/steam)?
- What are common flavorings in baked goods?
- What is gluten?

• Process

- How do you properly prepare and set up for a baking lab?
- How can you use a daily prep list and time management skills to meet production goals?
- How do you properly measure different types of ingredients using volumetric tools and scales?
- How do you determine the appropriate equipment to use in a recipe?
- How are kitchen math skills, such as measurement conversions, applied?
- How do different ingredients create the texture and structure of baked goods (flour, sugars, eggs, starches, leaveners, dairy, fats/oil)?
- How do chemical reactions between ingredients affect the outcome of baked goods?
- How is gluten formed?

- **Reflective**

- Why is accurately measuring ingredients especially important when preparing baked goods and pastries?
- Why is it important to use the correct tool for the correct job?
- How can you use your knowledge of the function of ingredients to determine what went wrong in a “failed product”?
- How can you ensure equipment meets industry standards for sanitation and safety? (i.e. NSF, UL, OSHA, ADA, etc.)
- How does a pastry chef use a daily prep list and principles of mise en place to ensure production goals are met?
- How are social skills, manners, and etiquette used by a pastry chef to ensure teamwork and professionalism in the kitchen?

FOCUS STANDARDS

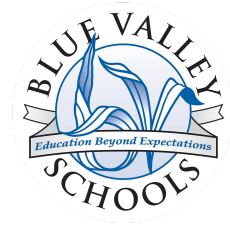
- **Benchmark 2.0: Demonstrate correct use and maintenance of food production equipment and tools.**
 - 2.1: Operate tools and equipment following safety procedures and OSHA age restrictions and requirements.
 - 2.3: Recognize sanitary and safety design and construction features of food production equipment and facilities (i.e. NSF, UL, OSHA, ADA, etc..).
- **Benchmark 3.0: Analyze common ingredients used in pastry/baking products.**
 - 3.2: Apply the knowledge of chemical and yeast leavening agents in producing carbon dioxide to raise baked products.
 - 3.3: Identify the functions of the bake shop ingredients (flour, sugar, eggs, dairy, fat).
 - 3.4: Analyze scientific reactions during the production of baked products.
 - 3.5: Demonstrate basic flavoring techniques (nuts, spices, extracts, salt, fruits).
- **Benchmark 4.0: Practice the principles of quality production management.**
 - 4.1: Demonstrate mise en place of baker and pastry products.
 - 4.2: Analyze and practice proper scaling and measurement techniques (volume v. weight).
 - 4.3: Apply/Demonstrate effective forms of time management.
 - 4.4: Apply a daily prep list to meet production goals.
 - 4.5: Apply the basic principles of baking and pastry including knowledge of ingredient functions and procedures to produce a quality product.
- **Benchmark 5.0: Demonstrate ability to successfully produce a variety of food products.**
 - 5.11: Analyze product failure to determine cause and needed modifications to ensure a successful product.
- **Benchmark 6.0: Enhance career readiness through practicing appropriate skills in the classroom and work like culinary situations.**
 - 6.1: Demonstrate appropriate communication skills (verbal, listening, writing).
 - 6.2: Understand and practice appropriate social skills, manners, and etiquette, including use of social media.
 - 6.3: Use leadership and teamwork skills in collaborating with others to accomplish food

- production goals and objectives.
- 6.4: Solve problems using creativity, innovation and critical thinking skills independently and in teams.
 - 6.6: Understand and demonstrate employability skills according to industry standards (timeliness, responsibility, work ethic, cooperation, appropriate use of technology).
 - 6.7: Review and enhance an electronic career portfolio to document knowledge, skills and experiences, and individual plan of study.

Baking and Pastry

UNIT 3: Dessert Enhancement & Plating

(2 weeks and applied throughout course)



ESSENTIAL QUESTION

BIG IDEAS

How does food become art?

Students will:

- Apply principles of design to plating and presentation.
- Use flavoring agents and garnishes to enhance flavor and presentation.
- Analyze types and uses of chocolate.

GUIDING QUESTIONS

- **Content**
 - What are the basic flavoring techniques in baking and pastry creation (nuts, spices, extracts, salt, fruits)?
 - What are the different types of chocolate?
 - What are the properties of chocolate?
 - What are the elements and principles of design?
 - What are common garnishes?
 - What is sugar art?
 - What are the different stages of cooked sugar?
- **Process**
 - How do basic flavoring techniques alter a product?
 - How is chocolate used to enhance a baked good?
 - What are the proper handling procedures for chocolate?
 - How can elements and principles of design be used in plating?
 - How can a garnish compliment a plated dessert?
 - How do you temper chocolate?
- **Reflective:**
 - Why is it important to match flavors when garnishing and plating?
 - How can chocolate and cooked sugar be used in plating?

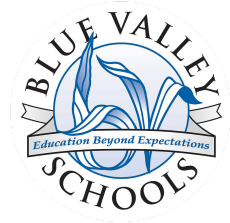
FOCUS STANDARDS

- **Benchmark 3.0: Analyze common ingredients used in pastry/baking products.**
 - 3.5: Demonstrate basic flavoring techniques (nuts, spices, extracts, salt, fruits).
 - 3.6: Analyze the use of different types of chocolate.
- **Benchmark 4.0: Practice the principles of quality production management.**
 - 4.1: Demonstrate mise en place of baker and pastry products.
 - 4.2: Analyze and practice proper scaling and measurement techniques (volume v. weight).
 - 4.3: Apply/Demonstrate effective forms of time management.
 - 4.5: Apply the basic principles of baking and pastry including knowledge of ingredient functions and procedures to produce a quality product.
- **Benchmark 5.0: Demonstrate ability to successfully produce a variety of food products.**
 - 5.9: Identify various types of pastry garnishes and presentation techniques.
 - 5.10: Demonstrate skill related to garnishing and presenting baked products in a variety of settings.

Baking and Pastry

UNIT 4: Cookies

(2 weeks)



ESSENTIAL QUESTION

BIG IDEAS

What impacts cookie preparation?

Students will:

- Produce a variety of cookies.
- Demonstrate the creaming method for mixing.
- Understand and predict the impact of variables on product outcomes.

GUIDING QUESTIONS

- **Content:**

- What are the different types of cookies (drop, bar, press, rolled, refrigerator, cut out, wafer)?
- What is the creaming method?
- What are the properties of cookies (crumb, moisture content, tenderness, etc.)?
- What are the functions of ingredients in cookies (structure, leavening agents, tenderizers, moisteners, flavor, etc)?
- What is carryover cooking/baking?
- What is caramelization?
- What is the Maillard reaction?

- **Process:**

- How do you test the doneness of a cookie?
- How is the creaming method used to produce various types of cookies?
- How are cookies portioned to ensure even cooking and consistent product?
- How does carryover cooking impact the final product?
- What impacts the spread, chewiness, crispness, and softness of cookies?

- **Reflective:**

- How can improper creaming techniques affect a product?
- How can the temperature of ingredients impact the final product?
- How can oven temperature affect the final product?

FOCUS STANDARDS

- **Benchmark 4.0: Practice the principles of quality production management.**
 - 4.1: Demonstrate mise en place of baker and pastry products.
 - 4.2: Analyze and practice proper scaling and measurement techniques (volume v. weight).
 - 4.3: Apply/Demonstrate effective forms of time management.
 - 4.5: Apply the basic principles of baking and pastry including knowledge of ingredient functions and procedures to produce a quality product.
- **Benchmark 5.0: Demonstrate ability to successfully produce a variety of food products.**
 - 5.3: Produce various types of cookies (drop, bar, press, rolled, refrigerator, cut out, wafer).
- **Benchmark 6.0: Enhance career readiness through practicing appropriate skills in the classroom and work like culinary situations.**
 - 6.1: Demonstrate appropriate communication skills (verbal, listening, writing).
 - 6.3: Use leadership and teamwork skills in collaborating with others to accomplish food production goals and objectives.
 - 6.4: Solve problems using creativity, innovation and critical thinking skills independently and in teams.
 - 6.6: Understand and demonstrate employability skills according to industry standards (timeliness, responsibility, work ethic, cooperation, appropriate use of technology).

Baking and Pastry

UNIT 5: Quick Breads

(2 weeks)



ESSENTIAL QUESTION

BIG IDEAS

What impacts quick bread preparation?

Students will:

- Understand different mixing methods for quick breads.
- Produce a variety of quick breads.
- Understand and predict the impact of variables on product outcomes.

GUIDING QUESTIONS

- **Content**

- What is a quick bread?
- What is the muffin mixing method?
- What is the biscuit mixing method?
- What are the properties of quick breads?
- What is a batter?
- What are the different types of batters in quick breads (drop, pour)?
- What is tunneling?
- What is cut-in?
- What is kneading?

- **Process**

- What is the proper amount of gluten development for quick breads?
- What are the functions of ingredients in quick breads? (structure, leavening, tenderizers, flavors, etc)
- How do chemical leaveners affect the outcome of a quick bread?
- How does the muffin method differ from the creaming method?
- What are different methods for cutting in fat?
- How do you test the doneness of quickbreads?

- **Reflective:**

- How can over-mixing affect a product?
- How are principles and elements of design used when plating quick breads?
- How can flavorings affect quick breads?
- How can oven temperature affect the final product?

FOCUS STANDARDS

- **Benchmark 4.0: Practice the principles of quality production management.**
 - 4.1: Demonstrate mise en place of baker and pastry products.
 - 4.2: Analyze and practice proper scaling and measurement techniques (volume v. weight).
 - 4.3: Apply/Demonstrate effective forms of time management.
 - 4.5: Apply the basic principles of baking and pastry including knowledge of ingredient functions and procedures to produce a quality product.
- **Benchmark 5.0: Demonstrate ability to successfully produce a variety of food products.**
 - 5.1: Produce a variety of quick bread batter products (muffins, scones, biscuits, shortbread, pancake/crepe).
- **Benchmark 6.0: Enhance career readiness through practicing appropriate skills in the classroom and work like culinary situations.**
 - 6.1: Demonstrate appropriate communication skills (verbal, listening, writing).
 - 6.3: Use leadership and teamwork skills in collaborating with others to accomplish food production goals and objectives.
 - 6.4: Solve problems using creativity, innovation and critical thinking skills independently and in teams.
 - 6.6: Understand and demonstrate employability skills according to industry standards (timeliness, responsibility, work ethic, cooperation, appropriate use of technology).

Baking and Pastry

UNIT 6: Yeast Breads

(2 weeks)



ESSENTIAL QUESTION

BIG IDEAS

What impacts yeast bread preparation?

Students will:

- Explore the various stages of the yeast bread process.
- Produce yeast breads.
- Understand and predict the impact of variables on product outcomes.

GUIDING QUESTIONS

● Content

- What is yeast?
- What is a yeast bread?
- What is enriched dough?
- What is lean dough?
- What are the different methods for using yeast?
- What are the properties of yeast breads?
- What does yeast need to grow (activate)?
- How can yeast die (water temperature, excess salt/sugar, etc)?
- What are the functions of ingredients in breads (structure, leavening, tenderizers, flavors, etc)?
- What is kneading?
- What is proofing?
- What is fermentation?
- What is an egg wash?
- What is scoring?
- What is oven spring?

● Process

- What are the production stages for yeast bread?
- How can temperature affect yeast?
- How does pH affect the outcome of yeast breads?
- How can the addition of flour change the temperature requirement of water for yeast?
- How can the addition of fats, sugars, and other liquids impact the outcome of a yeast bread?
- How can over/under kneading affect the properties of a bread?
- How can you assess gluten development and proof?
- What are a variety of ways that yeast breads and rolls can be shaped?

- How does egg wash affect the appearance of a baked good?
- How do you determine the doneness of yeast breads?
- **Reflective:**
 - How does improper yeast activation affect a product?
 - How can over- or under-production of gluten affect a product?
 - How can oven temperature affect the final product?
 - How are principles and elements of design used when plating yeast breads?

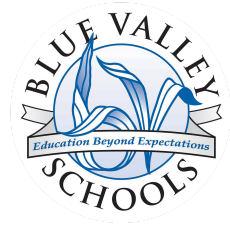
FOCUS STANDARDS

- **Benchmark 4.0: Practice the principles of quality production management.**
 - 4.1: Demonstrate mise en place of baker and pastry products.
 - 4.2: Analyze and practice proper scaling and measurement techniques (volume v. weight).
 - 4.3: Apply/Demonstrate effective forms of time management.
 - 4.5: Apply the basic principles of baking and pastry including knowledge of ingredient functions and procedures to produce a quality product.
- **Benchmark 5.0: Demonstrate ability to successfully produce a variety of food products.**
 - 5.2: Produce yeast bread or rolls.
- **Benchmark 6.0: Enhance career readiness through practicing appropriate skills in the classroom and work like culinary situations.**
 - 6.1: Demonstrate appropriate communication skills (verbal, listening, writing).
 - 6.3: Use leadership and teamwork skills in collaborating with others to accomplish food production goals and objectives.
 - 6.4: Solve problems using creativity, innovation and critical thinking skills independently and in teams.
 - 6.6: Understand and demonstrate employability skills according to industry standards (timeliness, responsibility, work ethic, cooperation, appropriate use of technology).

Baking and Pastry

UNIT 7: Pies & Pastries

(2 weeks)



ESSENTIAL QUESTION

BIG IDEAS

What impacts pastry preparation?

Students will:

- Explore the different types of pastry dough.
- Demonstrate various pastry products including cheesecakes and pies.
- Produce a custard and a pudding.

● Content

- What is pâte brisée?
- What is pâte à choux?
- What is puff pastry?
- What is phyllo dough?
- What is blind baking?
- What is the roll-in method?
- What is laminated dough?
- What is a crumb crust?
- What is a bain-marie?
- What is the difference between a custard and a pudding?
- What is scalding?
- What is nappe?
- What is coagulation?

● Process

- How is a water bath used in custard preparation?
- How do you prepare a pastry cream?
- How do you temper custards?
- When do you blind bake a crust?
- What is the process for blind baking?
- How do you safely cool and store a custard?
- How are the different types of puddings prepared (boiled, baked, steamed, chilled)?
- What thickening agents are used in custard preparation?
- What are the various types of pie fillings?

- **Reflective**
 - Why do you temper custards?
 - How can oven temperature affect the final product?
 - How are principles and elements of design used when plating pies and pastries?
 - How can flavorings affect custards, puddings, pies, and cheesecakes?
 - How does filling affect the cooking process for pies?

FOCUS STANDARDS

- **Benchmark 4.0: Practice the principles of quality production management.**
 - 4.1: Demonstrate mise en place of baker and pastry products.
 - 4.2: Analyze and practice proper scaling and measurement techniques (volume v. weight).
 - 4.3: Apply/Demonstrate effective forms of time management.
 - 4.5: Apply the basic principles of baking and pastry including knowledge of ingredient functions and procedures to produce a quality product.
- **Benchmark 5.0: Demonstrate ability to successfully produce a variety of food products.**
 - 5.6: Produce a basic cheesecake.
 - 5.7: Produce a basic pie crust and filling.
 - 5.8: Produce custard and pudding.
- **Benchmark 6.0: Enhance career readiness through practicing appropriate skills in the classroom and work like culinary situations.**
 - 6.1: Demonstrate appropriate communication skills (verbal, listening, writing).
 - 6.3: Use leadership and teamwork skills in collaborating with others to accomplish food production goals and objectives.
 - 6.4: Solve problems using creativity, innovation and critical thinking skills independently and in teams.
 - 6.6: Understand and demonstrate employability skills according to industry standards (timeliness, responsibility, work ethic, cooperation, appropriate use of technology).

Baking and Pastry

UNIT 8: Cakes

(2 weeks)



ESSENTIAL QUESTION

BIG IDEAS

What impacts the preparation and presentation of cakes?

Students will:

- Explore properties of cakes and buttercream frosting.
- Produce cakes using the creaming method.
- Produce buttercream frosting.
- Apply piping and decorating techniques to cakes.

GUIDING QUESTIONS

- **Content:**

- What is the creaming method?
- What is the foaming method?
- What are shortened cakes?
- What cakes are produced by the creaming method?
- What cakes are produced by the foaming method?
- What are the properties of cakes?
- What are the functions of ingredients in cakes (structure, leavening agents, tenderizers, moisteners, flavor, etc)?
- What is buttercream frosting?
- What are piping techniques?
- What is a crumb coat?
- What are other kinds of icings and frostings?

- **Process:**

- What are the characteristics of quality buttercream?
- What are the piping techniques used for buttercream?
- How do you determine the doneness of cakes?
- What tools and equipment are necessary at a cake decorating station?

- **Reflective:**

- How can improper creaming techniques affect a product?
- How can the temperature of ingredients impact the final product?

- How is buttercream frosting used to decorate a cake?
- How are principles and elements of design used when decorating cakes?

FOCUS STANDARDS

- **Benchmark 4.0: Practice the principles of quality production management.**
 - 4.1: Demonstrate mise en place of baker and pastry products.
 - 4.2: Analyze and practice proper scaling and measurement techniques (volume v. weight).
 - 4.3: Apply/Demonstrate effective forms of time management.
 - 4.5: Apply the basic principles of baking and pastry including knowledge of ingredient functions and procedures to produce a quality product.
- **Benchmark 5.0: Demonstrate ability to successfully produce a variety of food products.**
 - 5.4: Produce cakes using the creaming method.
 - 5.5: Produce a basic buttercream frosting.
- **Benchmark 6.0: Enhance career readiness through practicing appropriate skills in the classroom and work like culinary situations.**
 - 6.1: Demonstrate appropriate communication skills (verbal, listening, writing).
 - 6.3: Use leadership and teamwork skills in collaborating with others to accomplish food production goals and objectives.
 - 6.4: Solve problems using creativity, innovation and critical thinking skills independently and in teams.
 - 6.6: Understand and demonstrate employability skills according to industry standards (timeliness, responsibility, work ethic, cooperation, appropriate use of technology).