

## Food Science (#6201)

**Description** The Food Science course gives students a hands-on, lab-based, experimental background in basic food science as it relates to aspects of the food industry. Emphasis will be on the relationships among food science, food preparation, and consumers' concerns about nutritional quality. Students will relate their learning to positions in test kitchens, food product formulation, recipe development, food promotion, and consumer services.

**Credits** 0.5 Elective  
0.5 Science Elective

**Prerequisites** Physical and Earth Science 4000 plus Biology 4110 or Life Science 4110;  
or Biophysical Science 4050

**Textbooks/Resources** Mehas, Kay L. and Rodgers, Sharon L., *Food Science*, Glencoe/McGraw, 2006,  
ISBN # 0-07-869081-1  
This textbook is required.

**Required Assessments** District-wide, standards-based assessments identified

**Board Approved** April 2008

**Revised**

### AASD Family and Consumer Education Goals for K-12 Students

- *Become problem solvers.*
- *Learn skills in communication.*
- *Learn to achieve quality.*
- *Make connections with the community.*

## AASD Family and Consumer Education Standards for Students in Food Science

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| <b>I. Continuing Concerns of the Family</b>   | <ul style="list-style-type: none"><li>A. Investigate the personal and social significance of the family in meeting family members' needs.</li><li>B. Describe several significant, broad, continuing concerns of the family.</li><li>C. Explain why it is important to learn about continuing concerns of the family and examine the significance of family-related concerns.</li></ul>  |
| <b>II. Practical Reasoning</b>                | <ul style="list-style-type: none"><li>A. Analyze the parts of the practical reasoning process. Explain how each part works.</li><li>B. Apply practical reasoning to a current family concern regarding work, career, home or community.</li><li>C. Construct a model to show how the practical reasoning process works in a specific situation.</li></ul>  |
| <b>III. Family Action</b>                     | <ul style="list-style-type: none"><li>A. Understand and use communicative actions within the family, home, workplace, and community. For example: Understand and demonstrate effective and ineffective communication.</li><li>B. Understand and use reflective actions within the family, home, workplace, and community. For example: Identify different perspectives about common assumptions.</li><li>C. Understand and use technical actions within the family, home, workplace, and community. For example: Demonstrate and compare types of technology used by families in the home, workplace, and community.</li></ul> |
| <b>IV. Personal and Social Responsibility</b> | <ul style="list-style-type: none"><li>A. Identify issues or concerns of the school, neighborhood, and community.</li><li>B. Use practical reasoning to investigate community issues or concerns related to personal or social responsibility and identify possible courses of action.</li><li>C. Evaluate alternative courses of action related to community issues by applying citizenship values.</li></ul>  |

## **AASD Family and Consumer Education Standards for Students in Food Science (continued)**

- V. Work-of-the-Family**
- A. Give examples that show the meaning and significance of family work.
  - B. Summarize current understanding of family work goals and the relationships between family work and other social settings that affect the family.
  - C. Describe how family work has changed over time and identify cultural similarities and differences.
  - D. Describe factors and conditions that enhance and inhibit the individual, family, and society.
  - E. Identify ways the family can nurture individual development.
  - F. Research sources of information about human growth and development.
- VI. Careers**
- A. Research the relationship between education, careers, and the job market.
  - B. Define employability.
  - C. Formulate short and long range career goals.
- VII. Consumerism**
- A. Demonstrate the application of practical reasoning to consumer decisions.
  - B. Develop critical awareness to identify and respond to consumer decisions.
  - C. Recognize the relationship between wages, income, lifestyle, and goals.
  - D. Identify and evaluate financial resources.
  - E. Understand consumer risks, rights, and responsibilities.

## **AASD Science Goals for K-12 Students**

- *Students will know about science themes and connect and integrate them into what they know about themselves and the world around them.*
- *Students will realize that scientific knowledge is public, replicable, and continually undergoing revision and refinement based on new experiments and data.*
- *Students will realize that science includes questioning, forming hypotheses, collecting and analyzing data, reaching conclusions, evaluating results, and communicating procedures and findings to others.*
- *Students will use science to explain and predict changes that occur around them.*
- *Students will use science to evaluate consequences in order to make responsible choices.*
- *Students will use their knowledge of science concepts and processes in making informed choices regarding their lifestyles and the impact they have on their environment, and enhance their natural curiosity about their environment.*
- *Students will understand that science and technology affect the Earth's systems and provide solutions to human problems.*
- *Students will use science to analyze topics related to personal health, environment, and management of resources; they will help evaluate the merits of alternative courses of action.*

## AASD Science Standards for Grades 9-12 Students

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| I. Science Connections                          | A. Understand unifying themes among scientific disciplines: systems, order, organization and interactions.  |
|   | B. Understand unifying themes among scientific disciplines: evidence, models and explanations.  |
|   | C. Understand unifying themes among scientific disciplines: constancy, change and measurement.  |
|   | D. Understand unifying themes among scientific disciplines: evolution, equilibrium and energy.  |
|   | E. Understand unifying themes among scientific disciplines: form and function.  |
| II. Nature of Science                           | A. Understand science is ongoing and inventive.   |
|   | B. Understand scientific understandings have changed over time as new evidence is found.  |
| III. Science Inquiry                            | A. Investigate questions using scientific methods and tools.  |
|   | B. Revise personal understanding to accommodate knowledge.  |
|   | C. Communicate understandings to others.  |
| IV. Physical Science                            | A. Demonstrate an understanding of the physical and chemical properties of matter.  |
|   | B. Demonstrate an understanding of the forms and properties of energy.  |
|   | C. Demonstrate an understanding of the ways in which matter and energy interact.  |
| V. Earth & Space Science                        | A. Demonstrate an understanding of the structure and systems of Earth.  |
|   | B. Demonstrate an understanding of the structure and systems of other bodies in the universe.   |
|   | C. Demonstrate an understanding of the interactions of Earth and other bodies in the universe.  |
| VI. Life & Environmental Science                | A. Demonstrate an understanding of the characteristics and structures of living things.   |
|   | B. Demonstrate an understanding of the processes of life.   |
|   | C. Demonstrate an understanding of how living things interact with one another and their environment.   |
| VII. Science Applications                       | A. Demonstrate an understanding of the relationship between science and technology and the ways in which that relationship influences human activities. |
| VIII. Science in Social & Personal Perspectives | A. Use scientific information and skills to make decision about themselves.   |
|   | B. Use scientific information and skills to make decision about Wisconsin.  |
|   | C. Use scientific information and skills to make decision about the world in which they live.   |

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<b>1. Explore food science and why we study it.</b>	<b>Performance will be satisfactory when the student:</b> <ol style="list-style-type: none"> <li>traces the development of the scientific study of food.</li> <li>describes areas included in the field of food science.</li> <li>identifies different types of work that food scientists do.</li> <li>describes personal benefits of studying topics in food science.</li> <li>describes contributions of food science to increasing food supplies.</li> <li>explains the role of food science in preserving the environment.</li> <li>explains the contributions of food science to nutrition and food safety.</li> <li>relates food science to social change and technological advances.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<b>Objectives are linked to the following AASD standards:</b> <b>Family and Consumer Education:</b> I. Continuing Concerns of the Family; II. Practical Reasoning; VI. Careers <b>Science:</b> I. Science Connections; II. Nature of Science		
<b>2. Understand lab equipment and measuring.</b>	<b>Performance will be satisfactory when the student:</b> <ol style="list-style-type: none"> <li>chooses laboratory equipment that is suited for specific tasks.</li> <li>demonstrates proper use and maintenance of equipment.</li> <li>demonstrates safety techniques.</li> <li>demonstrates how to make accurate and precise lab measurements.</li> <li>distinguishes between metric units of length, mass, and volume, and the prefixes used with them.</li> <li>compares Celsius and Fahrenheit.</li> <li>demonstrates techniques for taking length, volume, mass, and temperature readings.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<b>Objectives are linked to the following AASD standards:</b> <b>Family and Consumer Education:</b> II. Practical Reasoning; IV. Personal and Social Responsibility; <b>Science:</b> III. Science Inquiry; VII. Science Applications		

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<p><b>3. Explain the scientific method.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. describes in order the steps in the scientific method.</li> <li>b. explains the role of reasoning skills in forming a hypothesis.</li> <li>c. identifies variables in a food science experiment and explains how they may effect the results.</li> <li>d. demonstrates completing a data table and report form for a food science experiment.</li> <li>e. distinguishes between a hypothesis and a scientific theory.</li> <li>f. suggests guidelines for doing a food science research project.</li> </ul>	<ul style="list-style-type: none"> <li>• Project</li> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<p><b>Objectives are linked to the following AASD standards:</b>  <b>Family and Consumer Education:</b> II. Practical Reasoning; IV. Personal and Social Responsibility  <b>Science:</b> IV. Physical Science; I. Science Connections</p>		
<p><b>4. Explore sensory evaluation of food.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. explains how various influences affect food choices.</li> <li>b. describes sensory characteristics that affect food preference.</li> <li>c. plans a setting for successful sensory evaluation.</li> <li>d. explains the role of sensory evaluation in the food industry.</li> <li>e. explains the relationship between sensory characteristics and nutrition.</li> </ul>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<p><b>Objectives are linked to the following AASD standards:</b>  <b>Family and Consumer Education:</b> I. Continuing Concerns of the Family; II. Practical Reasoning  <b>Science:</b> VII. Science Applications; VIII. Science in Social and Personal Perspectives</p>		

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<p><b>5. Explain elements, compounds, mixtures, and solutions.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ol style="list-style-type: none"> <li>explains the difference between physical and chemical properties.</li> <li>compares the physical phases of matter.</li> <li>distinguishes between pure substances and mixtures.</li> <li>explains the relationship between elements and compounds.</li> <li>compares heterogeneous and homogeneous mixtures.</li> <li>identifies chemical symbols and formulas.</li> <li>describes the properties of solutions.</li> <li>calculates the concentration of a solution, using a mass percent.</li> <li>describes the properties of colloidal dispersions.</li> <li>identifies and describe three types of colloidal dispersions.</li> <li>uses examples to explain how solutions and colloidal dispersions exist as foods.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<p><b>Objectives are linked to the following AASD standards:</b>  <b>Family and Consumer Education:</b> II. Practical Reasoning  <b>Science:</b> I. Science Connections; IV. Physical Science</p>		
<p><b>6. Discuss chemical reactions and physical changes.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ol style="list-style-type: none"> <li>compares chemical reactions to physical changes.</li> <li>compares the parts of an atom.</li> <li>explains how ionic and covalent bonds are formed.</li> <li>identifies the parts of chemical equations.</li> <li>distinguishes between reversible and irreversible reactions and changes.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<p><b>Objectives are linked to the following AASD standards:</b>  <b>Family and Consumer Education:</b> IV. Personal and Social Responsibilities  <b>Science:</b> I. Science Connections; IV. Physical Science</p>		

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<b>7. Explore properties of water.</b>	<b>Performance will be satisfactory when the student:</b> <ol style="list-style-type: none"> <li>relates water's composition and structure to its properties.</li> <li>compares bonds in water.</li> <li>explains the functions of heat of fusion and heat of vaporization.</li> <li>explains the effect of air pressure changes on boiling point.</li> <li>explains sublimation and surface tension.</li> <li>explains the functions of water in food preparation.</li> <li>describes hard and soft water.</li> <li>describes how the body uses water.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<b>Objectives are linked to the following AASD standards:</b> <b>Family and Consumer Education:</b> II. Practical Reasoning <b>Science:</b> II. Nature of Science; VI. Life and Environmental Science		
<b>8. Understand acids and bases.</b>	<b>Performance will be satisfactory when the student:</b> <ol style="list-style-type: none"> <li>relates the process of ionization to the formation of acids and bases.</li> <li>explains qualities of acids and bases.</li> <li>compares the acidity of substances, using the pH scale and pH indicators.</li> <li>contrasts the concepts of strength and concentration in acids and bases.</li> <li>compares general qualities of acids and bases in food.</li> <li>explains the importance of pH to physical health.</li> <li>explains the purpose of leavening agents in baked goods.</li> <li>identifies natural leavening agents and describes how they work.</li> <li>explains the chemical process by which baking soda and baking powder leaven baked goods.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<b>Objectives are linked to the following AASD standards:</b> <b>Family and Consumer Education:</b> I. Continuing Concerns of the Family; II. Practical Reasoning <b>Science:</b> I. Science Connections; IV. Physical Science		

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<b>9. Explore different types of energy.</b>	<b>Performance will be satisfactory when the student:</b> a. compares units of heat measure. b. describes the relationship between molecular motion and temperature. c. compares processes of heat transfer. d. explains what affects rates of chemical reaction in food. e. analyzes the relationship between food intake and body weight.	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<b>Objectives are linked to the following AASD standards:</b> <b>Family and Consumer Education:</b> I. Continuing Concerns of the Family; II. Practical Reasoning <b>Science:</b> III. Science Inquiry; II. Nature of Science		
<b>10. Explore nutrition and digestions.</b>	<b>Performance will be satisfactory when the student:</b> a. explains the role of respiration and oxidation in nutrition. b. identifies and briefly describes essential nutrients. c. explains how different nutritional guidelines are formulated and used. d. chooses healthful foods according to the Dietary Guidelines. e. demonstrates how to use food labels to compare nutrients in foods. f. plans healthful meals using the Food Guide Pyramid. g. relates the understanding of nutrition to physical well-being. h. identifies in order the parts of the alimentary canal. i. describes the processes that take place in each part of the digestive tract. j. explains the function of enzymes in digestion. k. explains how nutrients are absorbed.	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<b>Objectives are linked to the following AASD standards:</b> <b>Family and Consumer Education:</b> I. Continuing Concerns of the Family; II. Practical Reasoning; III. Family Action <b>Science:</b> VI. Life and Environmental Science		

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<b>11. Explain the basics of carbohydrates.</b>	<b>Performance will be satisfactory when the student:</b> <ol style="list-style-type: none"> <li>explains the chemical reaction by which plants produce carbohydrates.</li> <li>describes the molecular structure of simple and complex carbohydrates.</li> <li>describes properties of sugars.</li> <li>summarizes how glucose is made available to the body.</li> <li>discusses caramelization.</li> <li>compares the structures of amylose and amylopectin and how these structures affect cooking properties.</li> <li>contrasts healthy blood glucose regulation to complications of diabetes.</li> <li>defines the terms gelatinization, paste, retrogradation, and syneresis as used in starch cookery.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<b>Objectives are linked to the following AASD standards:</b> <b>Family and Consumer Education:</b> II. Practical Reasoning; VI. Careers <b>Science:</b> VIII. Science in Social and Personal Perspectives		
<b>12. Explain the basics of lipids.</b>	<b>Performance will be satisfactory when the student:</b> <ol style="list-style-type: none"> <li>explains the three categories of lipids.</li> <li>describes how fatty acids form triglycerides.</li> <li>compares the structures of saturated and unsaturated fat.</li> <li>describes the properties of triglycerides.</li> <li>relates the composition of lipids to their functions in foods and in the body.</li> <li>explains the relationship between cholesterol and heart disease.</li> <li>develops an eating plan that keeps dietary lipids within the healthful level.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<b>Objectives are linked to the following AASD standards:</b> <b>Family and Consumer Education:</b> II. Practical Reasoning <b>Science:</b> VIII. Science in Social and Personal Perspectives		

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<p><b>13. Explain the basics of protein and enzymes.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ol style="list-style-type: none"> <li>describes the chemical structure of protein.</li> <li>explains how amino acids link to form polypeptide bonds.</li> <li>relates the processes of denaturation and coagulation to use the proteins in cooking.</li> <li>compares proteins found in different foods.</li> <li>explains the relationship between egg proteins and storage.</li> <li>describes different functions of protein in the body.</li> <li>explains the significance of essential amino acids and complete protein.</li> <li>evaluates foods as sources of dietary protein.</li> <li>explains the function of enzymes as catalysts in chemical reactions.</li> <li>describes the relationship between an enzyme and a substrate.</li> <li>compares the functions and activities of enzymes and coenzymes.</li> <li>explains how enzymes are used in digestion.</li> <li>explains how enzyme reactions are involved in food preparation.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<p><b>Objectives are linked to the following AASD standards:</b>  <b>Family and Consumer Education:</b> II. Practical Reasoning  <b>Science:</b> VIII. Science in Social and Personal Perspectives</p>		
<p><b>14. Explain the basics of vitamins and minerals.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ol style="list-style-type: none"> <li>explains in general how vitamins and minerals function in the body.</li> <li>describes the basic structure of vitamin molecules.</li> <li>explains specific contributions of different vitamins and minerals.</li> <li>evaluates foods as sources of various vitamins and minerals.</li> <li>relates vitamin and mineral deficiencies to the diseases that result.</li> <li>explains some interrelationships among vitamins and minerals.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<p><b>Objectives are linked to the following AASD standards:</b>  <b>Family and Consumer Education:</b> II. Practical Reasoning  <b>Science:</b> VIII. Science in Social and Personal Perspectives</p>		

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<p><b>15. Explain the functions and influences of metabolism.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ol style="list-style-type: none"> <li>explains the purpose of metabolism and the conditions needed for it to occur.</li> <li>explains the role of energy in metabolism.</li> <li>explains the process that stores and transfers energy in the body.</li> <li>explains how cells maintain chemical balance.</li> <li>relates the influence of various factors to metabolic rate.</li> <li>relates basal metabolism and voluntary activity to energy needs.</li> <li>evaluates weight-loss diets and exercise habits in relation to metabolism and health.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<p><b>Objectives are linked to the following AASD standards:</b>  <b>Family and Consumer Education:</b> II. Practical Reasoning; III. Family Action  <b>Science:</b> III. Science Inquiry; VIII. Science in Social and Personal Perspectives</p>		
<p><b>16. Explain the basics of fermentation and yeast.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ol style="list-style-type: none"> <li>describes the role of yeast in leavening.</li> <li>explains how quick breads are different from other baked products.</li> <li>compares the leavening agents used in different types of cakes.</li> <li>evaluates the nutritional value of specific wheat products.</li> <li>explains why food is fermented and what causes it.</li> <li>compares respiration in human metabolism to anaerobic respiration in food science.</li> <li>summarizes information on bacterial fermentation.</li> <li>explains the value of molds and enzymes in food production.</li> <li>describes how various fermented beverages are made.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<p><b>Objectives are linked to the following AASD standards:</b>  <b>Family and Consumer Education:</b> II. Practical Reasoning  <b>Science:</b> II. Nature of Science; VI. Life and Environmental Science</p>		

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<b>17. Explain the biochemistry of milk.</b>	<b>Performance will be satisfactory when the student:</b> <ol style="list-style-type: none"> <li>identifies the components of milk and describes how they are dispersed in milk.</li> <li>explains what happens when milk protein is coagulated.</li> <li>describes how milk is processed and the effects of pasteurizing, homogenizing, and fortifying milk.</li> <li>distinguishes the characteristics of various milk products.</li> <li>describes how cultured milk products are produced and gives examples.</li> <li>explains how milk and milk products should be stored.</li> <li>describes reactions that may occur when milk is heated.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<b>Objectives are linked to the following AASD standards:</b> <b>Family and Consumer Education:</b> II. Practical Reasoning <b>Science:</b> IV. Physical Science; VII. Science Applications		
<b>18. Explore food additives.</b>	<b>Performance will be satisfactory when the student:</b> <ol style="list-style-type: none"> <li>identifies common food additives and their uses.</li> <li>compares natural and synthetic additives.</li> <li>explains how additives are regulated.</li> <li>identifies general and specific uses of preservatives.</li> <li>compares methods for adding nutrients to foods.</li> <li>describes how additives make foods more appealing.</li> <li>describes how additives aid food processing.</li> <li>evaluates the pros and cons of using food additives.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<b>Objectives are linked to the following AASD standards:</b> <b>Family and Consumer Education:</b> II. Practical Reasoning; VI. Careers <b>Science:</b> VII. Science Applications		

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<p><b>19. Explain how to keep food safe.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. names and describes the microorganisms that cause food spoilage.</li> <li>b. differentiates between food intoxication and food infection.</li> <li>c. identifies sources and symptoms of food borne illnesses.</li> <li>d. explains the role of various government agencies that keep the food supply safe.</li> <li>e. demonstrates steps to prevent the spread of food borne illnesses.</li> <li>f. assesses the safety of food preparation methods.</li> </ul>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<p><b>Objectives are linked to the following AASD standards:</b>  <b>Family and Consumer Education:</b> II. Practical Reasoning; IV. Personal and Social Responsibility; VI. Careers  <b>Science:</b> IV. Physical Science</p>		

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<p><b>20. Explain dehydration, canning, and food preservation.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ol style="list-style-type: none"> <li>a. lists benefits of dehydrated and canned food.</li> <li>b. describes the role of air temperature and circulation in dehydration.</li> <li>c. explains how pre-treating foods improves dehydration.</li> <li>d. compares different pre-treatment methods.</li> <li>e. describes different methods of dehydration.</li> <li>f. compares different methods of rehydrating food.</li> <li>g. explains the different equipment used for canning.</li> <li>h. compares the two processing methods for home canning food.</li> <li>i. explains why different foods need different methods of processing.</li> <li>j. describes the role of conduction and convection canning.</li> <li>k. describes the effect of freezing on food.</li> <li>l. explains the role of sublimation in freeze-drying.</li> <li>m. explains how irradiation preserves food.</li> <li>n. evaluates the suitability of containers for commercial food packaging.</li> </ol>	<ul style="list-style-type: none"> <li>• Food Lab Assessment</li> <li>• Lab Activities</li> <li>• Classroom Handouts</li> <li>• Unit Test</li> </ul>
<p><b>Objectives are linked to the following AASD standards:</b>  <b>Family and Consumer Education:</b> II. Practical Reasoning; III. Family Action; IV. Personal and Social Responsibility; VI. Careers  <b>Science:</b> II. Nature of Science; VIII. Science in Social and Personal Perspectives</p>		

Essential Learning Objectives	Performance Indicators	Classroom Assessments
<p><b>21. Examine various food service and biotechnology related careers.</b></p>	<p><b>Performance will be satisfactory when the student:</b></p> <ul style="list-style-type: none"> <li>a. investigates various food service and biotechnology career opportunities.</li> <li>b. recognizes qualifications and schooling needed for all various food service and biotechnology careers.</li> <li>c. develops a career plan and pathway to pursue their career goals.</li> </ul>	<ul style="list-style-type: none"> <li>• Wis Careers Assessments</li> <li>• Research Paper</li> <li>• Career Pathway Plan</li> </ul>
<p><b>Objectives are linked to the following AASD standards:</b>  <b>Family and Consumer Education:</b> II. Practical Reasoning; IV. Personal and Social Responsibility; VII. Consumerism  <b>Science:</b> VIII. Science in Social and Personal Perspectives</p>		

**Resources and learning activities that address course objectives:**