

**Goodheart-Willcox Publisher**  
**Correlation of Principles of Food Science (2022)**  
**to South Carolina Department of Education**  
**Science, Technology, Engineering and Mathematics**  
**Food Science I**  
**Course: 5757 (Grades 10–12)**



Standards	Correlating Text Pages
<b>Program Learning Outcomes: Workplace Readiness Skills</b>	
<b>Personal Qualities and People Skills</b>	
1. <b>Positive Work Ethic:</b> Comes to work every day on time, is willing to take direction, and is motivated to accomplish the task at hand	544
2. <b>Integrity:</b> Abides by workplace policies and laws and demonstrates honesty and reliability	544
3. <b>Teamwork :</b> Contributes to the success of the team, assists others, and requests help when needed	546, 546 (Figure26 – 21 Teamwork)
4. <b>Self-Representation :</b> Dresses appropriately and uses language and manners suitable for the workplace	544, 544 (Figure 26-19 Work Habits)
5. <b>Diversity Awareness:</b> Works well with all customers and coworkers	544
6. <b>Conflict Resolution:</b> Negotiates diplomatic solutions to interpersonal and workplace issues	545-546, 545 (Figure 26 – 20 Effective Communication)
7. <b>Creativity And Resourcefulness:</b> Contributes new ideas and works with initiative	544
<b>Professional Knowledge and Skills</b>	
8. <b>Speaking And Listening:</b> Follows directions and communicates effectively with customers and fellow employees	545, 545 (Figure 26 – 20 Effective Communication)
9. <b>Reading And Writing:</b> Reads and interprets workplace documents and writes clearly	545, 545 (Figure 26 – 20 Effective Communication)
10. <b>Critical Thinking And Problem Solving:</b> Analyzes and resolves problems that arise in completing assigned tasks	544-545
11. <b>Health And Safety:</b> Follows safety guidelines and manages personal health	9-12, 10 (Figure 1-5 USDA Inspectors), 309-310, 366-367, 366 (Figure 18 – 15 Developing a HACCP System) , 445
12. <b>Organizations, Systems, and Climates:</b> Identifies "big picture" issues and his or her role in fulfilling the mission of the workplace	526
13. <b>Lifelong Learning:</b> Continually acquires new industry-related information and improves professional skills	547



Standards	Correlating Text Pages
14. <b>Job Acquisition And Advancement:</b> Prepares to apply for a job and to seek promotion	536-543, 536 (Figure 26-12 Resources for Locating Jobs), 538 (Figure 26-14 Drafting, Revising, Editing, and Proofreading Your Resume), 539 (Figure 26-15 Choose a Resume format)
15. <b>Time, Task, And Resource Management:</b> Organizes and implements a productive plan of work	544
16. <b>Mathematics:</b> Uses mathematical reasoning to accomplish tasks	552-553
17. <b>Customer Service:</b> Identifies and addresses the needs of all customers, providing helpful, courteous, and knowledgeable service	544
<b>Technology Knowledge and Skills</b>	
18. <b>Job-Specific Technologies:</b> Selects and safely uses technological resources to accomplish work responsibilities in a productive manner	10, 13
19. <b>Information Technology:</b> Uses computers, file management techniques, and software/programs effectively	518
20. <b>Internet Use And Security:</b> Uses the Internet appropriately for work	518
Standards	Correlating Text Pages
<b>B. INTRODUCTION TO FOOD SCIENCE</b>	
<b>1B1. Explain how changes in society have impacted food science and related careers.</b>	
1. Identify major historical events that changed the role of food science in society.	6, 27-28, 343 Historical Highlight
2. Illustrate how historical events changed how food is prepared, packaged, and processed.	6, 27-28, 343 (Historical Highlight)
3. Identify new foods developed to solve consumer problems/issues.	375-389, 377 (Historical Highlight) 378 Figure (19-3 Input and Output Examples of Genetic Engineering), 505-519
4. Contrast techniques developed to prepare foods. (cryogenic, freeze drying)	423 431, 424 (Figure 21-2 Home Food Dehydrators), 427 (Figure 21-4 Tray Dryer)
5. Examine careers that developed as a result of changes in food science.	527-536, 528 (Food Features), 531 (Food Features) 536 (Figure 26-12 Resources for Locating Jobs)
6. Analyze trends to determine future changes in food science.	527-536, 528 (Food Features), 531 (Food Features) 536 (Figure 26-12 Resources for Locating Jobs)
<b>C. SAFETY AND SANITATION</b>	
<b>1C1. Explain safe and sanitary measures used to test food products in a laboratory setting.</b>	
1. Identify the three major types of food contaminants: biological, chemical and physical.	11-12 , 11 (Food Fact)
2. Differentiate between food-borne illness, food spoilage and food sanitation.	352, 366-369, 367(Figure 18-16 HACCP Principles), 367 (Food Features), 368 (Farm Futures)



Standards	Correlating Text Pages
3. Identify microbial organisms that can cause food-borne illness to include toxins, pathogens, and parasites.	327-330, 330 (Historical Highlight)
4. Examine procedures for safety and sanitation in a food science laboratory.	366-369, 367 (Figure 18-16 HACCP Principles), 367 (Food Features), 368 (Farm Features)
5. Compare and contrast government agencies in the United States and abroad that regulate food products. (OSHA, FDA, DHEC, WHO)	8-10, 9 (Figure 1-4 Milestones in Government Food Regulation), 309, 535
6. Model appropriate safe and sanitary behaviors in the food laboratory.	366-369, 367 (Figure 18-16 HACCP Principles), 367 (Food Featured)
<b>D. THE SCIENTIFIC METHOD</b>	
<b>1D1. Explain the scientific method, including the processes and skills of scientific inquiry, to develop understanding of science content.</b>	
1. Define the scientific method.	27
2. Outline the steps in the scientific method.	27-33, 29 (STEM Matters)
3. Apply the scientific method in a designed experiment.	27-33, 29 (STEM Matters)
4. Analyze the collected data.	31-32
5. Evaluate the hypothesis.	33-34
6. Write a group conclusion.	33-34
<b>E. CHEMISTRY</b>	
<b>1E1. Explore the basic chemistry of food science.</b>	
1. Define chemistry as it applies to food science.	59
2. Explain the nature of acids and bases.	93-94
3. List the properties of water and the relationship to acids and bases.	93-94
4. Identify sources and forms of energy.	76-81, 76 (Figure 5-2 Types of Forms of Energy), 78(Figure 5-4 Heat For in Chemical Reactions), 79 (Figure 5-6 Anabolic and Catabolic Reactions)
5. Differentiate how heat is transferred in cooking and preservation processes.	84-86, 398-399, 399 (Figure 20-2 Time Versus Temperature)
6. Compose a list of the differences between pure substances and mixtures.	66-67, 66 (Figure 4-9 The Classification of Matter)
<b>F. ORGANIC CHEMISTRY</b>	
<b>1F1. Examine the elements of organic chemistry as it applies to food products.</b>	
1. Define organic chemistry.	59, 66



Standards	Correlating Text Pages
2. Identify the macronutrients.	113
3. Compare and contrast the classes of organic compounds.	66, 136, 263 (Figure 14-3 Chemistry Shorthand for Organic Compounds)
4. Examine food labels to determine specific organic molecules.	452-453, 453 (Figure 22-12 Nutrition Facts)
5. Explain the functions of organic molecules in preparation of food products.	143-147, 143, (Figure 8 – 8 Relative Sweetness of Sugars)
6. Create a list of foods that incorporate the different processes that change organic molecules when variances are applied.	143-147, 143, (Figure 8 – 8 Relative Sweetness of Sugars)
<b>G. FOOD PRODUCTS: PROCESSING, PRESERVATION, &amp; PACKAGING</b>	
<b>1G1. Explain the processing, preservation, and packaging of food products.</b>	
1. Define processing, preservation, and packaging.	250-252, 251 (Figure 13-9 Enrichment and Fortification), 440- 443, 440 (Figure 22-2 Testing Packaging Material)
2. Identify methods used to process, preserve, and package food.	250-252, 251 (Figure 13-9 Enrichment and Fortification), 440- 443, 440 (Figure 22-2 Testing Packaging Material)
3. Develop a Hazard Analysis Critical Control Point (HACCP) plan to process, preserve, and package a selected food item.	366-367, 367 (Figure 18-16 HACCP Principles)
4. Describe the relationship between processing, preservation, and packaging of food products.	250-252, 251 (Figure 13-9 Enrichment and Fortification), 440- 443, 440 (Figure 22-2 Testing Packaging Material)
5. Explain how to solve problems in the processing, preservation, and packaging of food items.	250-252, 251 (Figure 13-9 Enrichment and Fortification), 440- 443, 440 (Figure 22-2 Testing Packaging Material)
6. Recommend the appropriate method when processing, preserving, and packaging food.	250-252, 251 (Figure 13-9 Enrichment and Fortification), 440- 443, 440 (Figure 22-2 Testing Packaging Material)