

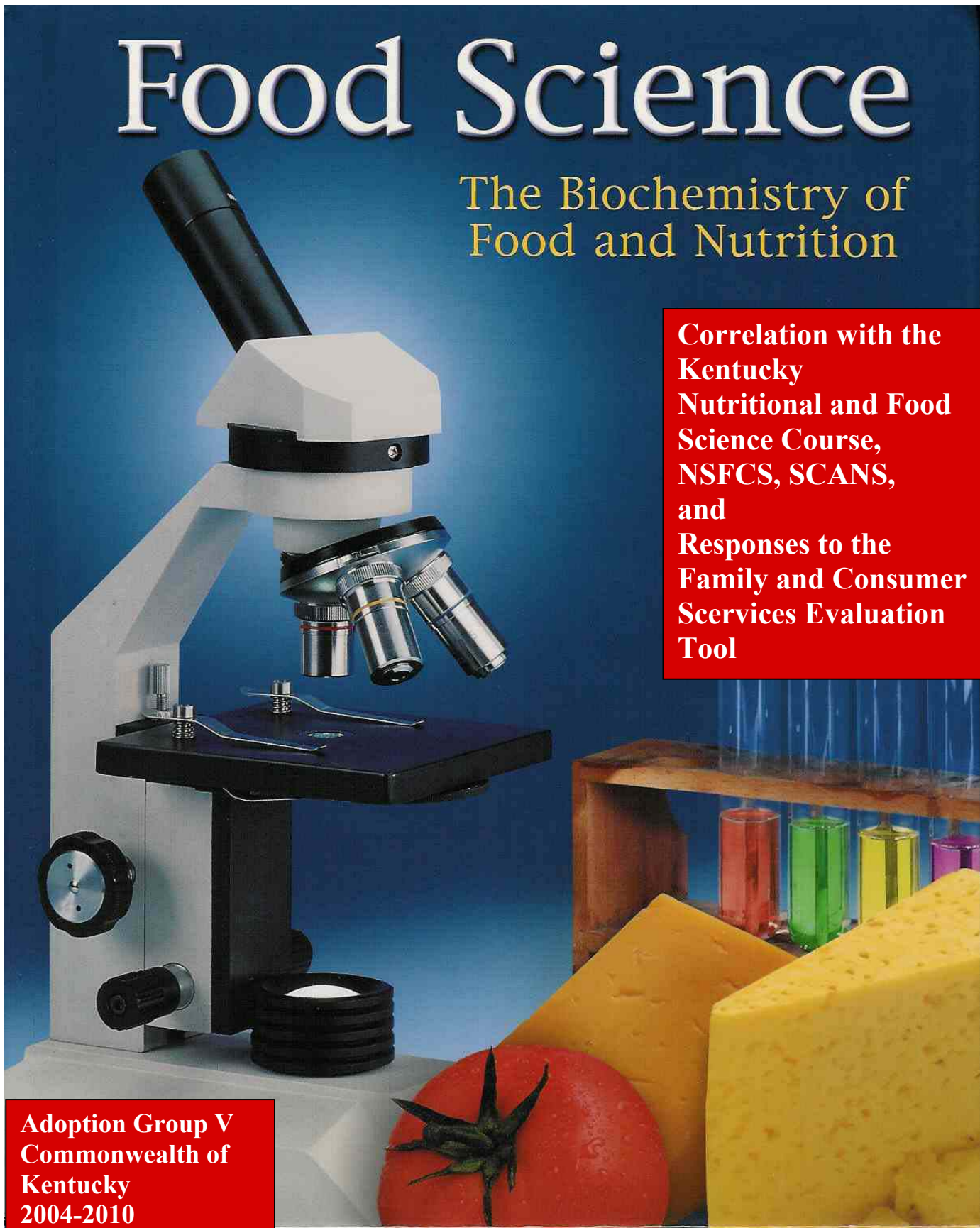
KENTUCKY

Food Science

The Biochemistry of
Food and Nutrition

**Correlation with the
Kentucky
Nutritional and Food
Science Course,
NSFCS, SCANS,
and
Responses to the
Family and Consumer
Services Evaluation
Tool**

**Adoption Group V
Commonwealth of
Kentucky
2004-2010**



Nutritional and Food Science

Guiding Questions

QUESTIONS	PAGE REFERENCES
<ul style="list-style-type: none"> • What knowledge and skills are necessary to conduct scientific investigations in food science? 	<p>SE: 49-57, 61-69, 75-82</p> <p>TRG: 43-44, 45-46, 47-48, 351, 352, 353, 354, 355</p>
<ul style="list-style-type: none"> • How are nutrients used by the body? 	<p>SE: 193-200</p> <p>TRG: 63-64</p>
<ul style="list-style-type: none"> • How is food energy used and stored in the body? 	<p>SE: 165-168, 206, 226</p> <p>TRG: 59-60</p>
<ul style="list-style-type: none"> • What factors do microorganisms play in food preparation and decomposition? 	<p>SE: 343-354, 402-403</p> <p>TRG: 81-82, 87-88, 383</p>
<ul style="list-style-type: none"> • What careers are related to food science? 	<p>SE: 36-37</p> <p><i>Food Science Careers:</i> 29, 40, 55, 66, 81, 94, 109, 119, 132, 154, 166, 181, 198, 210, 229, 246, 266, 282, 300, 316, 329, 345, 371, 391, 412, 431, 441, 460</p> <p><i>Thinking Lab:</i> 45</p> <p>TRG: 227-228</p>

Nutritional and Food Science	
Academic Expectations–Science	
EXPECTATIONS	PAGE REFERENCES
<p>2.1 Students understand scientific ways of thinking and working and use those methods to solve real-life problems.</p>	<p>SE: 49-57, 61-69, 75-82 TRG: 43-44, 45-46, 47-48, 355</p>
<p>2.2 Students identify, analyze, and use patterns such as cycles and trends to understand past and present events and predict possible future events.</p>	<p>SE: 75-85 TRG: 47-48</p>
<p>2.3 Students identify and analyze systems and the ways their components work together or affect each other.</p>	<p>SE: 75-85, 159 TRG: 47-48</p>
<p>2.4 Students use the concept of scale and scientific models to explain the organization and functioning of living and nonliving things and predict other characteristics that might be observed.</p>	<p>SE: 31, 39-41 <i>Real-World Impact:</i> 32 TRG: 41-42</p>
<p>2.5 Students understand that under certain conditions nature tends to remain the same or move toward a balance.</p>	<p>SE: 39, 159 TRG: 219</p>
<p>2.6 Students understand how living and nonliving things change over time and the factors that influence the changes.</p>	<p>SE: 39, 159 TRG: 219</p>

Nutritional and Food Science	
Program of Studies: Physical Science	
CONTENT/PROCESS	PAGE REFERENCES
Students will: S-HS-PS-1 analyze atomic structure and electric forces.	SE: 105-106, 116-117, 160-161 TRG: 51-52, 53-54, 59-60, 359
S-HS-PS-4 investigate structure and physical properties of matter.	SE: 103-107, 160-161 TRG: 51-52, 59-60, 356
S-HS-PS-5 investigate chemical reactions and energy.	SE: 115-127, 159-171 TRG: 53-54, 59-60
S-HS-PS-4 examine the transfer of electrons or hydrogen ions between ions, molecules, or atoms.	SE: 116-117, 130, 131, 247-248, 259 TRG: 53-54, 55-56, 69-70, 232, 357, 359, 366

Nutritional and Food Science	
Program of Studies: Life Science	
CONTENT/PROCESS	PAGE REFERENCES
<p>Students will:</p> <p>S-HS-LS-7 examine diversity and classification.</p>	<p>SE: 39</p> <p>TRG: 219</p>
<p>S-HS-LS-7 investigate the cycle of atoms and molecules within the biosphere.</p>	<p>SE: 105-106, 116-117, 118, 120, 129-130, 408</p> <p>TRG: 51-52, 53-54, 55-56, 357, 358, 359, 366</p>
<p>S-HS-LS-8 analyze energy flow through ecosystems.</p>	<p>SE: 159</p> <p>TRG: N/A</p>
<p>S-HS-LS-11 recognize that living systems require energy.</p>	<p>SE: 159, 165, 167-168, 171</p> <p>TRG: N/A</p>
<p>S-HS-LS-13 analyze the flow of matter and energy.</p>	<p>SE: 103-107, 159, 160-161, 165, 167-168 <i>Thinking Lab:</i> 171</p> <p>TRG: 51-52, 59-60, 356</p>

Nutritional and Food Science

Program of Studies: Scientific Inquiry

CONTENT/PROCESS	PAGE REFERENCES
<p>Students will:</p> <p>S-HS-SI-1 identify and refine questions and identify scientific concepts.</p>	<p>SE: 75-82</p> <p>TRG: 47-48</p>
<p>S-HS-SI-2 design and conduct different kinds of scientific investigations.</p>	<p>SE: <i>Experiment:</i> 43, 57, 70, 83, 97, 110, 124, 141, 155, 169, 188, 201, 214, 234, 253, 271, 289, 305, 320, 336, 355, 375, 395, 418, 432, 448, 465</p> <p>TRG: 41, 43, 45, 47, 48, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93</p>
<p>S-HS-SI-3 use equipment, tools, techniques, technology, and mathematics.</p>	<p>SE: 49-57, 69 <i>Food Science Careers:</i> 109 <i>Skill-Building Activities:</i> 73, 127, 157, 171, 217, 255, 273, 323, 339, 397, 435</p> <p>TRG: 43-44, 280-281, 282, 286, 292, 296, 299, 303, 304, 306, 307, 308, 313, 316, 328, 351, 352, 353, 354, 365</p>
<p>S-HS-SI-4 use evidence, logic, and scientific knowledge.</p>	<p>SE: 75-82 <i>Real-World Impact:</i> 33, 45, 59, 73, 85, 99, 113, 127, 143, 157, 171, 191, 203, 217, 227, 255, 273, 291, 307, 323, 339, 357, 376, 397, 421, 435, 451 <i>Thinking Lab:</i> 33, 45, 59, 73, 85, 99, 113, 127, 143, 157, 171, 191, 203, 217, 227, 255, 273, 291, 307, 323, 339, 357, 376, 397, 421, 435, 451</p> <p>TRG: 47-48</p>

Nutritional and Food Science	
Program of Studies: Scientific Inquiry	
CONTENT/PROCESS	PAGE REFERENCES
<p>S-HS-SI-5 communicate designs, procedures, and results.</p>	<p>SE: 75-82 <i>Experiment:</i> 43, 57, 70, 83, 97, 110, 124, 141, 155, 169, 188, 201, 214, 234, 253, 271, 289, 305, 320, 336, 355, 375, 395, 418, 432, 448, 465</p> <p>TRG: 41, 43, 45, 47-48, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93</p>
<p>S-HS-SI-6 review and analyze scientific investigations.</p>	<p>SE: 75-82 <i>Experiment:</i> 43, 57, 70, 83, 97, 110, 124, 141, 155, 169, 188, 201, 214, 234, 253, 271, 289, 305, 320, 336, 355, 375, 395, 418, 432, 448, 465</p> <p>TRG: 41, 43, 45, 47-48, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93</p>

Nutritional and Food Science

Program of Studies: Applications/Connections

CONTENT/PROCESS	PAGE REFERENCES
<p>Students will:</p> <p>S-HS-AC-2 examine the interactions between science and technology.</p>	<p>SE: 26-27, 90 <i>Food Technologist:</i> 109</p> <p>TRG: 41-42, 222, 224-225</p>
<p>S-HS-AC-3 explore the impact of science on personal and community health.</p>	<p>SE: 35-39 <i>Real-World Impact:</i> 44</p> <p>TRG: 41-42</p>
<p>S-HS-AC-4 recognize how science influences human population growth.</p>	<p>SE: 35-59 <i>Real-World Impact:</i> 44</p> <p>TRG: 41-42</p>
<p>S-HS-AC-6 use science to analyze the use of natural resources.</p>	<p>SE: 39, 41</p> <p>TRG: N/A</p>
<p>S-HS-AC-7 use science to investigate hazards.</p>	<p>SE: 53-54, 56, 411</p> <p>TRG: 265</p>
<p>S-HS-AC-8 analyze how science and technology are necessary for solving issues.</p>	<p>SE: 35-45, 90 <i>Food Science Careers:</i> 109</p> <p>TRG: 41-42, 222, 224-225</p>

Nutritional and Food Science

Program of Studies: Applications/Connections

CONTENT/PROCESS	PAGE REFERENCES
<p>S-HS-AC-9 analyze the role science plays in every day life and compare different careers in science.</p>	<p>SE: 35-39 <i>Food Science Careers:</i> 29, 40, 55, 66, 81, 94, 109, 119, 132, 154, 166, 181, 198, 210, 229, 246, 266, 282, 300, 316, 329, 345, 371, 391, 412, 431, 441, 460 <i>Thinking Lab:</i> 45</p> <p>TRG: 227-228</p>
<p>S-HS-AC-10 recognize that scientific knowledge is subject to change.</p>	<p>SE: 75-82</p> <p>TRG: 47-48</p>
<p>S-HS-AC-11 investigate advances that have effects on science and society.</p>	<p>SE: 28, 30-31, 35-39, 41</p> <p>TRG: 39-40, 222-223, 269</p>

Nutritional and Food Science

Program of Studies: Nutritional Science Content Chart

CONTENT/PROCESS	PAGE REFERENCES
<p>Students will:</p> <ul style="list-style-type: none"> formulate procedures for food science experiments. 	<p>SE: 49-57, 61-69, 75-82</p> <p>TRG: 43-44, 45-46, 47-48</p>
<ul style="list-style-type: none"> conduct scientific evaluations of food. 	<p>SE: <i>Experiment:</i> 43, 57, 70, 83, 97, 110, 124, 141, 155, 169, 188, 201, 214, 234, 253, 271, 289, 305, 320, 336, 355, 375, 395, 418, 432, 448, 465</p> <p>TRG: 41, 43, 45, 47-48, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91, 93</p>
<ul style="list-style-type: none"> identify chemical symbols most often seen in food science. 	<p>SE: 107-108</p> <p>TRG: 51-52</p>
<ul style="list-style-type: none"> interpret basic science such as composition of matter, atomic structures, chemical formulas and equations, and chemical and physical changes in food. 	<p>SE: 103-113, 115-127</p> <p>TRG: 51-52, 53-54, 356, 359</p>
<ul style="list-style-type: none"> identify properties of acids and bases. 	<p>SE: 145-157 <i>Experiment:</i> 271</p> <p>TRG: 57-58, 372, 376</p>
<ul style="list-style-type: none"> test pH of common foods and food ingredients. 	<p>SE: 148-149, 302, 347</p> <p>TRG: 57-58</p>

Nutritional and Food Science

Program of Studies: Nutritional Science Content Chart

CONTENT/PROCESS	PAGE REFERENCES
<ul style="list-style-type: none"> determine function of water in the human body and food preparation. 	<p>SE: 128-143, 200, 424</p> <p>TRG: 55-56, 238, 361</p>
<ul style="list-style-type: none"> identify properties and composition of lipids, carbohydrates, proteins, vitamins, and minerals and how the body uses each. 	<p>SE: 178-179, 195, 219-237, 239-255, 257-273, 275-291</p> <p>TRG: 67-78, 69-70, 71-72, 73-74, 239, 240-241, 253-256, 371, 378, 379</p>
<ul style="list-style-type: none"> analyze functions of enzymes. 	<p>SE: 295-306</p> <p>TRG: 75-76, 258, 259</p>
<ul style="list-style-type: none"> analyze breakdown of food molecules. 	<p>SE: 152-153, 193-203, 228</p> <p>TRG: 63-64, 357, 366, 370</p>
<ul style="list-style-type: none"> examine chemical bonds of leavening agents. 	<p>SE: 325-339</p> <p>TRG: 79-80</p>
<ul style="list-style-type: none"> analyze roles and interrelationships of microorganisms and food and analyze benefits and disadvantages of microbial action. 	<p>SE: 341-357, 402-403</p> <p>TRG: 81-82, 383</p>

Nutritional and Food Science

Program of Studies: Nutritional Science Content Chart

CONTENT/PROCESS	PAGE REFERENCES
<ul style="list-style-type: none"> investigate uses of food additives. 	<p>SE: 379-397</p> <p>TRG: 85-86</p>
<ul style="list-style-type: none"> explore career paths in nutritional science. 	<p>SE: 35-39</p> <p><i>Food Science Careers:</i> 29, 40, 55, 66, 81, 94, 109, 119, 132, 154, 166, 181, 198, 210, 229, 246, 266, 282, 300, 316, 329, 345, 371, 391, 412, 431, 441, 460</p> <p><i>Thinking Lab</i> 45</p> <p>TRG: 227-228</p>
<ul style="list-style-type: none"> integrate activities of Family, Career, and Community Leaders of America (FCCLA) as an integral component of course content and leadership development. 	<p>This content is not covered in <i>Food Science: The Biochemistry of Food and Nutrition</i>.</p>
<ul style="list-style-type: none"> apply math, science, and communication skills within technical content. 	<p>SE: 31, 61-69, 74-82</p> <p><i>Skill-Building Activities:</i> 33, 45, 59, 73, 85, 99, 113, 127, 143, 157, 171, 191, 203, 217, 237, 255, 273, 291, 307, 323, 339, 357, 377, 397, 421, 435, 451</p> <p>TRG: 45-46, 279, 280-281, 282, 283, 284-285, 286, 287, 288-289, 290, 291, 292, 293, 294-295, 296, 297, 298, 299, 300, 301-302, 303, 304, 305, 306, 307, 308, 309-310, 311-312, 313, 314, 315, 316, 317, 318, 319-320, 321-322, 323, 324-325, 326, 327, 328, 329, 330, 331, 332-333, 334, 335, 336, 337, 338-339</p>

Nutritional and Food Science

Program of Studies: Nutritional Science Content Chart

CONTENT/PROCESS	PAGE REFERENCES
<ul style="list-style-type: none">demonstrate employability and social skills relevant to the career choice.	<p>SE: 36-37 <i>Skill-Building Activities:</i> 33, 45, 59, 73, 85, 99, 113, 127, 143, 157, 171, 191, 203, 217, 237, 255, 273, 291, 307, 323, 339, 357, 377, 397, 421, 435, 451</p> <p>TRG: 227-228</p>

National Standards for Family and Consumer Sciences Education

9. FOOD SCIENCE, DIETETICS, AND NUTRITION

STANDARDS	PAGE REFERENCES
<p>9.0 Integrate knowledge, skills, and practices required for careers in food science, dietetics, and nutrition.</p> <p>9.1 Analyze career paths within the food science, dietetics, and nutrition industries.</p>	<p>SE: 36-37 <i>Food Science Careers:</i> 29, 40, 55, 66, 81, 94, 109, 119, 132, 154, 166, 181, 198, 210, 229, 246, 266, 282, 300, 316, 329, 345, 371, 391, 412, 431, 441, 460 <i>Thinking Lab:</i> 45</p> <p>TRG: 227-228</p>
<p>9.2 Apply risk management procedures to food safety, food testing, and sanitation.</p>	<p>SE: 36, 39, 401-421, 447-449, 461, 463 <i>Real-World Impact:</i> 396 <i>Skill-Building Activities:</i> 59</p> <p>TRG: 87-88, 91-92, 266-267</p>
<p>9.3 Evaluate nutrition principles, food plans, preparation techniques, and specialized dietary plans.</p>	<p>SE: 89-90, 175-191, 213, 228, 249-251, 269, 393-394 <i>Nutrition Link:</i> 42, 263, 349, 446 <i>Real-World Impact:</i> 216 <i>Thinking Lab:</i> 237</p> <p>TRG: 49-50, 61-62, 69-70, 238, 239, 240-241, 246, 247-248, 249-250, 251-252, 253-254, 255, 256, 257</p>
<p>9.4 Demonstrate basic concepts of nutritional therapy.</p>	<p>SE: 30-31, 174-191</p> <p>TRG: 61-62, 238, 239, 240-241, 246, 247-248, 249-250, 251-252, 253-254, 255, 256, 257</p>

Nutritional and Food Science

Program of Studies: Nutritional Science Content Chart

CONTENT/PROCESS	PAGE REFERENCES
<p>9.5 Demonstrate use of current technology in food product development and marketing.</p>	<p>SE: 122, 296 <i>Food Science Careers:</i> 154, 300</p> <p>TRG: 215-216, 224-225, 226, 271</p>
<p>9.6 Demonstrate food science, dietetic, and nutrition management principles and practices.</p>	<p>SE: 25-33, 35-45, 179-180, 182-187, 213, 228, 248-251, 269, 301-303 <i>Food Science Careers:</i> 246 <i>Real-World Impact:</i> 216 <i>Thinking Lab:</i> 237</p> <p>TRG: 39-40, 41-42, 61-62, 69-70, 232-233, 237, 238, 239, 240-241, 243, 246, 247-248, 249-250, 251-252, 253-256, 257,</p>

SCANS	
A Three-Part Foundation	
Basic Skills	PAGE REFERENCES
<p>Reads, writes, performs arithmetic and mathematical operations, listens and speaks</p> <ul style="list-style-type: none"> • A. <u>Reading</u>—locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules 	<p>SE: <i>Skill-Building Activities:</i> 33, 45, 73</p>
<ul style="list-style-type: none"> • B. <u>Writing</u>—communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts 	<p>SE: <i>Food Science Careers:</i> 66, 371, 412, 441 <i>Skill-Building Activities:</i> 59, 73, 99, 191, 357, 451</p>
<ul style="list-style-type: none"> • C. <u>Arithmetic/Mathematics</u>—performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques 	<p>SE: <i>Food Science Careers:</i> 55, 198, 229, 345, 371, 441, 460 <i>Skill-Building Activities:</i> 73, 127, 157, 171, 217, 255, 273, 323, 339, 397, 435</p> <p>TRG: 280-281, 282, 286, 292, 296, 299, 303, 304, 306, 307, 308, 313, 316, 328, 351, 352, 353, 354, 365</p>
<ul style="list-style-type: none"> • D. <u>Listening</u>—receives, attends to, interprets, and responds to verbal messages and other cues 	<p>SE: <i>Skill-Building Activities:</i> 171, 323</p>
<ul style="list-style-type: none"> • E. <u>Speaking</u>—organizes ideas and communicates orally 	<p>SE: <i>Food Science Careers:</i> 29, 55, 94, 109, 119, 132, 154, 166, 210, 246, 282, 316, 329, 391, 412, 431 <i>Skill-Building Activities:</i> 99, 171, 203, 217, 237, 273, 291, 421</p>

SCANS	
A Three-Part Foundation	
Thinking Skills	PAGE REFERENCES
<p>Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons</p> <ul style="list-style-type: none"> • A. <u>Creative Thinking</u>—generates new ideas 	<p>SE: <i>Food Science Careers:</i> 29, 154, 181, 198, 210, 282 <i>Skill-Building Activities:</i> 45, 73, 99, 127, 157, 171, 203, 217, 237, 255, 273, 291, 339, 357, 377, 451 <i>Real-World Impact:</i> 33, 45, 59, 73, 85, 99, 113, 127, 143, 157, 171, 191, 203, 217, 227, 255, 273, 291, 307, 323, 339, 357, 376, 397, 421, 435, 451 <i>Thinking Lab:</i> 33, 45, 59, 73, 85, 99, 113, 127, 143, 157, 171, 191, 203, 217, 227, 255, 273, 291, 307, 323, 339, 357, 376, 397, 421, 435, 451</p>
<ul style="list-style-type: none"> • B. <u>Decision Making</u>—specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative 	<p>SE: <i>Food Science Careers:</i> 29, 109, 391 <i>Skill-Building Activities:</i> 99, 191 <i>Your Challenge:</i> 29, 40, 55, 66, 81, 94, 109, 119, 132, 154, 166, 181, 198, 210, 229, 246, 266, 282, 300, 316, 329, 345, 371, 391, 412, 431, 441, 460</p>
<ul style="list-style-type: none"> • C. <u>Problem Solving</u>—recognizes problems and devises and implements plan of action 	<p>SE: <i>Food Science Careers:</i> 29, 109, 181, 229, 246, 266, 282, 412, 431 <i>Skill-Building Activities:</i> 59, 73, 191, 217, 307, 323, 339, 377, 467</p>
<ul style="list-style-type: none"> • D. <u>Seeing Things in the Mind’s Eye</u>—organizes, and processes symbols, pictures, graphs, objects, and other information 	<p>SE: <i>Food Science Careers:</i> 81, 132 <i>Skill-Building Activities:</i> 59, 143, 203, 237, 255, 307, 357, 377</p>

SCANS	
A Three-Part Foundation	
Thinking Skills	PAGE REFERENCES
<ul style="list-style-type: none"> E. <u>Knowing How to Learn</u>—uses efficient learning techniques to acquire and apply new knowledge and skills 	SE: <i>Skill-Building Activities:</i> 33, 45, 73, 85, 99, 113, 127, 143, 171, 191, 203, 217, 255, 291, 307, 323, 397, 421, 435, 451, 467
<ul style="list-style-type: none"> F. <u>Reasoning</u>—discovers a rule or principle underlying the relationship between two or objects and applies it when solving a problem 	SE: 76 <i>Real-World Impact:</i> 72

SCANS	
A Three-Part Foundation	
Personal Qualities	PAGE REFERENCES
Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty <ul style="list-style-type: none"> A. <u>Responsibility</u>—exerts a high level of effort and perseveres towards goal attainment 	SE: <i>Food Science Careers:</i> 81, 316
<ul style="list-style-type: none"> B. <u>Self-Esteem</u>—believes in own self-worth and maintains a positive view of self 	SE: <i>Real-World Impact:</i> 72
<ul style="list-style-type: none"> C. <u>Sociability</u>—demonstrates understanding, friendliness, adaptability, empathy, and politeness in new and on-going group settings 	SE: <i>Food Science Careers:</i> 40, 119, 132, 166, 210, 282, 391

SCANS	
A Three-Part Foundation	
<ul style="list-style-type: none"> • D. <u>Self-Management</u>—assesses self accurately, sets personal goals, monitors progress, and exhibits self-control 	SE: <i>Food Science Careers</i> 40, 81, 132, 229, 316, 431, 460 <i>Skill-Building Activities</i> 273
<ul style="list-style-type: none"> • E. <u>Integrity/Honesty</u>—chooses ethical courses of action 	SE: <i>Skill-Building Activities</i> 99

SCANS	
Five Workplace Competencies	
Resources	PAGE REFERENCES
Identifies, organizes, plans, and allocates resources <ul style="list-style-type: none"> • A. <i>Time</i>—Selects goal-relevant activities, ranks them, allocates time, and prepares and follows schedules 	SE: <i>Food Science Careers:</i> 29, 40, 412
<ul style="list-style-type: none"> • B. <i>Money</i>—Uses or prepares budgets, makes forecasts, keeps records, and makes adjustments to meet objectives 	SE: <i>Food Science Careers:</i> 329, 391
<ul style="list-style-type: none"> • C. <i>Material and Facilities</i>—Acquires, stores, allocates, and uses materials or space efficiently 	SE: <i>Food Science Careers:</i> 329
<ul style="list-style-type: none"> • D. <i>Human Resources</i>—Assesses skills and distributes work accordingly, evaluates performance and provides feedback 	SE: <i>Food Science Careers:</i> 329

SCANS	
A Three-Part Foundation	
Interpersonal	PAGE REFERENCES
<ul style="list-style-type: none"> • <i>A. Participates as Member of a Team</i>—contributes to group effort 	SE: <i>Food Science Careers:</i> 66, 94, 154, 198, 210, 229, 246, 329 <i>Skill-Building Activities:</i> 33, 45, 73, 113, 171, 191, 255, 291, 307, 323, 357, 421, 435, 451
<ul style="list-style-type: none"> • <i>B. Teaches Others New Skills</i> 	SE: <i>Food Science Careers:</i> 94, 119, 246, 329 <i>Skill-Building Activities:</i> 113, 127
<ul style="list-style-type: none"> • <i>C. Serves Clients/Customers</i>—works to satisfy customers’ expectations 	SE: <i>Food Science Careers:</i> 166, 282
<ul style="list-style-type: none"> • <i>D. Exercises Leadership</i>—communicates ideas to justify position, persuades and convinces others, responsibly challenges existing procedures and policies 	SE: <i>Food Science Careers:</i> 94, 119, 154, 181, 229, 282, 329, 371, 431
<ul style="list-style-type: none"> • <i>E. Negotiates</i>—works toward agreements involving exchange of resources, resolves divergent interests 	SE: <i>Skill-Building Activities:</i> 99
<ul style="list-style-type: none"> • <i>F. Works with Diversity</i>—works well with men and women from diverse backgrounds 	SE: <i>Food Science Careers:</i> 40, 154 TRG: 229-230

SCANS	
A Three-Part Foundation	
Information	PAGE REFERENCES
<p>Acquires and uses information</p> <ul style="list-style-type: none"> • <i>A. Acquires and Evaluates Information</i> 	<p>SE: <i>Food Science Careers:</i> 81, 109, 154, 266, 282, 316, 345, 371, 412, 441 <i>Skill-Building Activities:</i> 33, 45, 73, 85, 99, 113, 127, 143, 171, 191, 203, 217, 255, 291, 307, 323, 397, 421, 435, 451, 467</p>
<ul style="list-style-type: none"> • <i>B. Organizes and Maintains Information</i> 	<p>SE: <i>Food Science Careers:</i> 109, 154, 266, 282, 316, 345, 371, 412, 441 <i>Skill-Building Activities:</i> 33, 45, 73, 85, 99, 113, 127, 143, 171, 191, 203, 217, 255, 291, 307, 323, 397, 421, 435, 451, 467</p>
<ul style="list-style-type: none"> • <i>C. Interprets and Communicates Information</i> 	<p>SE: <i>Food Science Careers:</i> 154, 266, 282, 316, 345, 371, 412, 441 <i>Skill-Building Activities:</i> 33, 45, 73, 85, 99, 113, 127, 143, 171, 191, 203, 217, 255, 291, 307, 323, 397, 421, 435, 451, 467</p>
<ul style="list-style-type: none"> • <i>D. Uses Computers to Process Information</i> 	<p>SE: <i>Food Science Careers:</i> 166 <i>Skill-Building Activities:</i> 99, 113, 143, 203, 217, 255, 291, 397, 435</p>

SCANS	
A Three-Part Foundation	
Systems	PAGE REFERENCES
<p>Understands complex inter-relationships</p> <ul style="list-style-type: none"> • <i>A. Understands Systems</i>—knows how social, organizational, and technological systems work and operates effectively with them 	<p>SE: <i>Food Science Careers:</i> 66, 316 <i>Skill-Building Activities:</i> 45</p>
<ul style="list-style-type: none"> • <i>B. Monitors and Corrects Performance</i>—distinguishes trends, predicts impacts on systems operations, diagnoses deviations in systems' performance and corrects malfunctions 	<p>SE: <i>Food Science Careers:</i> 66, 282, 316 <i>Skill-Building Activities:</i> 45</p>
<ul style="list-style-type: none"> • <i>C. Improves or Designs Systems</i>—suggests modifications to existing systems and develops new or alternative systems to improve performance 	<p>SE: <i>Food Science Careers:</i> 109, 132, 181, 282, 316</p>

SCANS	
A Three-Part Foundation	
Technology	PAGE REFERENCES
<p>Works with a variety of technologies</p> <ul style="list-style-type: none"> • <i>A. Selects Technology</i>—chooses procedures, tools or equipment including computers and related technologies 	<p>SE: <i>Food Science Careers:</i> 66, 282</p>

SCANS	
A Three-Part Foundation	
<ul style="list-style-type: none"> • <i>B. Applies Technology</i>—Understands overall intent and proper procedures for setup and operation of equipment 	SE: <i>Food Science Careers:</i> 66, 282
<ul style="list-style-type: none"> • <i>C. Maintains and Troubleshoots Equipment</i>—Prevents, identifies, or solves problems with equipment, including computers and other technologies 	SE: <i>Food Science Careers:</i> 282

Family and Consumer Services Evaluation Tool

Content–Family & Consumer Science	Comments
Family	This content is not covered in <i>Food Science: The Biochemistry of Food and Nutrition</i> .
Childcare/Parenting	This content is not covered in <i>Food Science: The Biochemistry of Food and Nutrition</i> .
Child/Adolescent/Human Development	This content is not covered in <i>Food Science: The Biochemistry of Food and Nutrition</i> .
Interpersonal Relationships	This content is not covered in <i>Food Science: The Biochemistry of Food and Nutrition</i> .
Goal Setting/Decision Making	This content is not covered in <i>Food Science: The Biochemistry of Food and Nutrition</i> .
Consumerism	References to consumerism related topics can be found throughout the Student Edition. For examples, see pages 73-74 and 84.
Foods/Nutrition	<i>Food Science: The Biochemistry of Food</i> program provides you with a complete set of food science teaching materials.

Content-Family & Consumer Science (continued)	Comments
Apparel/Textiles	This content is not covered in <i>Food Science: The Biochemistry of Food and Nutrition</i> .
Housing Interiors	This content is not covered in <i>Food Science: The Biochemistry of Food and Nutrition</i> .
Hospitality Careers	This content is not covered in <i>Food Science: The Biochemistry of Food and Nutrition</i> .
FCCLA; Family, Careers, Community Leaders of America	This content is not covered in <i>Food Science: The Biochemistry of Food and Nutrition</i> .

Instruction and Assessment	Comments
Identifies a Sense of Purpose	Each chapter in the Student Edition begins with elements designed to quickly launch a student's focus and interest on the chapter's topic. The learning objectives found at the beginning of each chapter help students preview what they will learn.

Instruction and Assessment (continued)	Comments
Builds on Student Ideals	Many of the <i>Skill-Building Activities</i> features found throughout the Student Edition help students build on their ideals.
Engages Students	Each chapter in the Student Edition begins with elements designed to quickly launch a student's focus and interest on the chapter's topic. The learning objectives found at the beginning of each chapter help students preview what they will learn.
Develops Family & Consumer Science Ideas	In <i>Food Science: The Biochemistry of Food and Nutrition</i> new learning is based on previous knowledge, with each new concept building on a prior experience. The program provides you with a complete set of food science teaching materials.

Instruction and Assessment (continued)	Comments
Promotes Student Thinking	<p><i>Food Science: The Biochemistry of Food and Nutrition</i> contains a variety of practice materials to help students transfer textbook learning to practical applications. Features such as <i>Real-World Impact</i> and <i>Thinking Lab</i> found at the end of each chapter in the Student Edition help students to apply their critical thinking and decision-making skills based on chapter concepts.</p>

Instruction and Assessment (continued)	Comments
Assesses Student Progress	Each chapter in the Student Edition ends with <i>Chapter Review and Activities</i> which includes a chapter summary and review questions. The <i>Testing Program</i> found in the Teacher's Resource Guide (TRG) includes <i>Vocabulary Quizzes</i> for Chapters 3-28 and <i>Chapter Tests</i> for all 28 chapters. The <i>ExamView® Pro Test Generator for Windows®</i> found on the <i>Effective Instruction CD-ROM</i> enables you to create your own questions and rearrange existing questions to make new tests to match your teaching.
Enhances The Learning Environment	<i>Food Science: The Biochemistry of Food and Nutrition</i> has all of the right elements for your high school program. The Student Edition is packed with great charts, illustrations, and features. The direct, yet descriptive writing style is easy to understand and full of need-to-know information.
Reading level is appropriate for interest and ability level of intended student group: level remains consistent throughout.	<i>Food Science: The Biochemistry of Food and Nutrition</i> offers engaging, relevant, and appropriate content written at the correct reading level for your high school program. The terms listed at the beginning of each chapter in <i>Terms to remember</i> are highlighted in the chapter and have pronunciation guides.

Instruction and Assessment (continued)	Comments
Commonwealth Accountability Testing System (CATS) “like” Assessment is provided	The <i>ExamView® Pro Test Generator for Windows®</i> found on the <i>Effective Instruction CD-ROM</i> enables you to create your own questions and rearrange existing questions to make new tests to match Commonwealth Accountability Testing System.
Variety of Assessments (diagnostic, formative, summative, open response, multiple choice, individual, small group, oral, demonstrations, presentations, self and peer performance, portfolio prompts) is included.	Each chapter in the Student Edition ends with <i>Chapter Review and Activities</i> which includes a chapter summary and review questions. The <i>Testing Program</i> found in the Teacher’s Resource Guide (TRG) includes <i>Vocabulary Quizzes</i> for Chapters 3-28 and <i>Chapter Tests</i> for all 28 chapters. The <i>ExamView® Pro Test Generator for Windows®</i> found on the <i>Effective Instruction CD-ROM</i> enables you to create your own questions and rearrange existing questions to make new tests to match your teaching.

Instruction and Assessment (continued)	Comments
Includes activities and opportunities for integration of technology.	A multitude of activities and opportunities for integration of technology can be found in <i>Food Science: The Biochemistry of Food and Nutrition</i> . In the <i>Food Science Experiment Video</i> , the authors present a close-up look at the five experiments from the <i>Lab Manual</i> . The <i>Effective Instruction CD-ROM</i> contains all of the transparencies from the TRG in color and ready to use in slide format. <i>Internet Web Sites on TRG</i> pages 29-31 and <i>Agencies and Organizations on TRG</i> pages 33-35 provide various Web site resources for you and your students.

<p style="text-align: center;">Instruction and Assessment (continued)</p>	<p style="text-align: center;">Comments</p>
<p>Reflects researched-based practices (e.g. hands-on activities, technology, problem-solving situations)</p>	<p><i>Food Science: The Biochemistry of Food and Nutrition</i> has all of the right elements for your high school program. The Student Edition is packed with great charts, illustrations, and features. The direct, yet descriptive writing style is easy to understand and full of need-to-know information. Hands-on activities, technology, and problem-solving situations are integrated throughout the program.</p>
<p>Differentiation techniques and activities suggested.</p>	<p><i>Food Science: The Biochemistry of Food and Nutrition</i> offers engaging, relevant, and appropriate content for the widest range of learners – from young scholars and athletes to visual learners and low achievers. The research-based content is presented in a visually dynamic style that will engage and motivate your students. The program has been designed to offer a variety of lesson plan options and embedded assessment that develop the knowledge, food science skills, behaviors, and problem-solving skills of all your students – regardless of their learning styles and ability levels.</p>

Organization and Structure	Comments
<p>Organization is logical and allows for spiraling of content.</p>	<p><i>Food Science: The Biochemistry of Food and Nutrition</i> is composed of 28 chapters organized into 6 units. Each chapter follows a straight forward format, beginning with <i>Objectives</i> and <i>Terms to remember</i>. Each chapter closes with a two-page <i>Chapter Review and Activities</i> which includes a <i>Chapter Summary</i>, <i>Using Your Knowledge</i>, <i>Skill-Building Activities</i>, <i>Understanding Vocabulary</i>, <i>Thinking Lab</i>, and <i>Real-World Impact</i>.</p>
<p>Vocabulary and key terms are clearly defined and easily accessible within each lesson.</p>	<p>Each chapter begins with a list of <i>Terms to remember</i>. These terms are highlighted in the chapter and have pronunciation guides.</p>

<p style="text-align: center;">Organization and Structure (continued)</p>	<p style="text-align: center;">Comments</p>
<p>Visual illustrations (e.g. graphs, charts, models) and examples are clearly presented and content-related</p>	<p>Graphs, charts, and models are used throughout the book to illustrate concepts. Examples are related to the content of the section.</p>
<p>Illustrations and language reflect diversity (e.g. racial, ethnic, cultural, age, gender, disabilities).</p>	<p>A variety of situations that reflect diversity are presented throughout the text.</p>
<p>Legible type, length of lines, spacing, and page layout and widths of margins contribute to overall appearance and use.</p>	<p><i>Food Science: The Biochemistry of Food and Nutrition</i> has achieved the highest degree of accuracy through rigorous scientifically-based research. This edition is the product of the most recent research studies, teacher feedback, and detailed editorial development. The result is an up-to-date, solid foundation for an engaging, stimulating, and high-quality course for your students.</p>
<p>Student materials seem durable and conducive to daily use.</p>	<p>The very best materials are used in all Glencoe products. The materials are easy for students to use, both in school and at home.</p>
<p>Includes sufficient glossary, index and appendices.</p>	<p>The <i>Glossary</i> can be found on pages 468-478. The <i>Index</i> can be found on pages 479-496.</p>

Organization and Structure (continued)	Comments
<p>Employs accurate grammar and spelling.</p>	<p><i>Food Science: The Biochemistry of Food and Nutrition</i> has achieved the highest degree of accuracy through rigorous scientifically-based research. This edition is the product of the most recent research studies, teacher feedback, and detailed editorial development.</p>
<p>Organization of material can be effectively used with Standards Based Units, Core Content and Program of Studies.</p>	<p>The correlation between <i>Food Science: The Biochemistry of Food and Nutrition</i> and the Kentucky Nutritional and Food Science course is strong.</p>

Resource Materials	Comments
<p>Teacher materials coordinate easily with student materials (e.g. additional resources included at point of need, student pages shown, integration of technology indicated).</p>	<p>Two-page <i>Lesson Plans</i> can be found in the TRG for each chapter. They list resources for each chapter and offer activity and discussion ideas to help focus, teach, assess, and close the chapter. Integration of technology can be found throughout the TRG.</p>

Resource Materials (continued)	Comments
Activities are included that adapt to the various learning styles, intelligences, and interest/ability levels.	<i>Food Science: The Biochemistry of Food and Nutrition</i> offers engaging, relevant, and appropriate content for the widest range of learners – from young scholars and athletes to visual learners and low achievers. The research-based content is presented in a visually dynamic style that will engage and motivate your students. The program has been designed to offer a variety of lesson plan options and embedded assessment that develop the knowledge, food science skills, behaviors, and problem-solving skills of all your students – regardless of their learning styles and ability levels.
Extension activities including adaptations and accommodations for students with special needs.	The <i>Working with Special Needs Students</i> section on TRG page 22 provides suggestions and activities for working with students with special needs.
Resources provide objectives, background information, common student errors, hints, advice for lesson implementation and real-world connections, connections with career and/or technology and references (e.g. solution manuals, study guides).	Each chapter in the Student Edition begins with a list of learning objectives for the chapter. Common student errors, hints, and advice for lesson implementation can be found throughout the TRG. Real-world connections and connections with career and/or technology can be found throughout the Student Edition and the TRG. A multitude of references are available.

Resource Materials (continued)	Comments
Suggestions are made for integration of themes and/or interdisciplinary instruction.	Suggestions for integration of themes and/or interdisciplinary instruction can be found throughout the Student Edition and the TRG.
Integration opportunities suggested and examples given.	Integration opportunities are suggested and examples are given throughout the Student Edition and the TRG.
Teacher resources are available online.	<i>Internet Web Sites</i> on TRG pages 29-31 and <i>Agencies and Organizations</i> on TRG pages 33-35 provide various Web site resources for you and your students.
Online resources available – Repeat of information in text.	<i>Internet Web Sites</i> on TRG pages 29-31 and <i>Agencies and Organizations</i> on TRG pages 33-35 provide various Web site resources for you and your students. The lesson plans in Word for Windows® on the <i>Effective Instruction CD-ROM</i> allows you to take existing lesson plans and tailor them to your own classroom schedule and activities.
Online resources available – Practice skills only.	<i>Internet Web Sites</i> on TRG pages 29-31 and <i>Agencies and Organizations</i> on TRG pages 33-35 provide various Web site resources for you and your students. The lesson plans in Word for Windows® on the <i>Effective Instruction CD-ROM</i> allows you to take existing lesson plans and tailor them to your own classroom schedule and activities.

Resource Materials (continued)	Comments
Online resources available – New application materials.	<i>Internet Web Sites</i> on TRG pages 29-31 and <i>Agencies and Organizations</i> on TRG pages 33-35 provide various Web site resources for you and your students. The lesson plans in <i>Word for Windows</i> ® on the <i>Effective Instruction CD-ROM</i> allows you to take existing lesson plans and tailor them to your own classroom schedule and activities.



Glencoe
McGraw-Hill

Marcia L. Rieder

Kentucky Sales Representative

2005 Crooked Creek Court

Crestwood, Kentucky 40014

Tel 502 241 6701

Fax 502 243 9769

marcia_rieder@mcgraw-hill.com

South Central Region

6510 Jimmy Carter Boulevard

Norcross, GA 30071

Tel 770 613 0281

Toll Free 800 731 2365