

*Correlation  
of  
Natural Resources Systems*  
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to

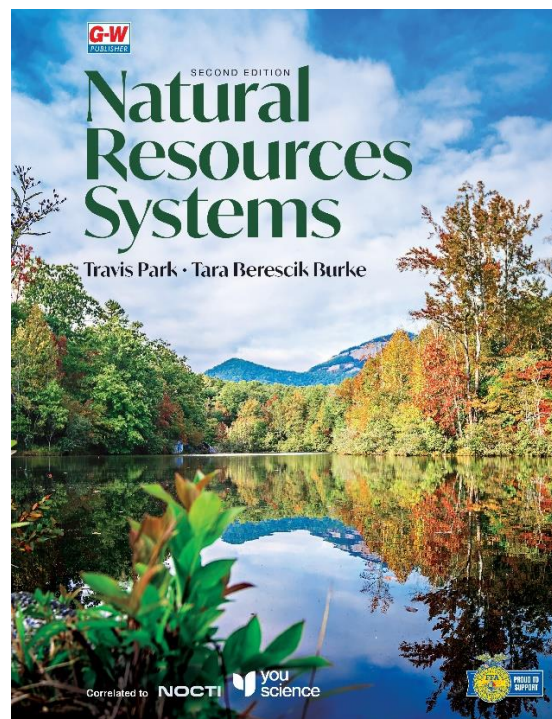
**YouScience® Industry Certification: Natural Resource Science–IA  
Exam 175.18 2021**

Goodheart-Willcox is pleased to partner with YouScience® by correlating *Natural Resources Systems* to their Natural Resource Science standards. YouScience® Industry Certifications, part of the YouScience® Brightpath academic and career guidance platform, offer students entry- to mid-level certifications that act as tangible proof of their skills and knowledge.

The correlation chart below lists the Standards, Objectives, and Indicators for the Natural Resource Science I exam in the left column. Corresponding content from *Natural Resources Systems* that can be used by a student to help achieve the standard, objective, or indicator is listed in the right column.

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**NOTE:** End-of-Chapter questions and activities correlating to standards have been included in this chart. Abbreviations for these are **TC:** Thinking Critically; **ST:** STEM and Academic Activities; **FS:** FFA/SAE projects and ideas; **CA:** Communicating about Natural Resources (reading, writing, speaking)



Standards/Objectives/Indicators	Text Locations
<b>STANDARD 1</b>	
<b>Students will explain the role of student organizations in agricultural education</b>	
<b>NOTE:</b> Refer to FFA and SAE Opportunities at the end of each chapter for SAE ideas and FFA participation opportunities	
<b>Objective 1</b> Discuss the history and organization of student organizations as they relate to the complete program of agricultural education.	The National FFA Organization pp765-770 Time Line of FFA Historical Events p774

Standards/Objectives/Indicators	Text Locations
1. Explain the interrelationship of classroom and laboratory instruction, supervised agricultural experience, and student organizations.	Agricultural Education p765 SAEs and Agricultural Education p773
2. Describe how, when, and why student organizations were organized.	The National FFA Organization pp765-770 Time Line of FFA Historical Events p774
3. Identify key historical events within student organizations.	The National FFA Organization pp765-770
4. Identify the mission and strategies, colors, motto, emblem and parts of the emblem, and organizational structure of student organizations.	The FFA Mission Statement pp765-766 Organizational Structure p765 The FFA Motto p767 The FFA Emblem p767 The FFA Creed p767
5. Recite and explain the meaning of a student organization’s creed.	The FFA Creed p767
6. Discuss the meaning and purpose of a program of activities and its committee structure.	Program of Activities p768 Planning a POA p768
7. List student organizations’ officers and discuss the role of each.	Chapter Officers pp768-769
<b>Objective 2</b> Identify opportunities in student organizations.	
1. Describe student organizations’ opportunities that develop leadership skills, personal growth, and career success.	Opportunities in FFA pp771-773 Local, State, and National Activities pp769-770
2. Summarize major state and national activities available to student organization members.	Local, State, and National Activities pp769-770
<b>Objective 3</b> Describe student organizations’ degrees, awards, and career development events (CDEs).	
1. List and explain student organizations’ degree areas.	FFA Degrees pp771-772
2. Identify student organizations’ proficiency awards.	Agricultural Proficiency Awards p772 Star Awards p776
3. List and discuss various team and individual CDEs.	Career Development Events and Leadership Development Events pp769-770
<b>STANDARD 2</b>	
<b>Students will explain the role of supervised agricultural experience programs in agricultural education</b>	
<b>Objective 1</b> Examine the responsibilities and benefits associated with an agricultural experience program.	
1. Explain the meaning and benefits of a supervised agricultural experience.	Responsibilities and Benefits p773

Standards/Objectives/Indicators	Text Locations
2. Explain the characteristics of an effective agricultural experience program and the responsibilities of those involved.	SAEs and Agricultural Education p773 Types of SAE Projects pp773-776 Responsibilities and Benefits p773
<b>Objective 2</b> Determine the types of agricultural experience programs.	
1. Compare entrepreneurship agricultural experiences and placement agricultural experiences.	Ownership/Entrepreneurship SAE pp773-774 Placement/Internship SAE p773
2. Describe research/experimentation agricultural experiences.	Research: Experimental, Analysis, or Invention SAE p775
3. Describe exploratory agricultural experiences.	Career Exploration p771
<b>Objective 3</b> Plan an agricultural experience program.	
1. Identify the steps in planning an agricultural experience program.	Planning Your SAE pp775-776
2. Describe the function of a business/training plan and/or agreement in an SAE program.	Planning Your SAE pp775-776 Student Resources Inventory p775
3. Develop a short-range plan and a long-range plan in an agricultural experience program.	Planning Your SAE pp775-776 Setting Goals p775
4. Relate classroom and laboratory instruction to an agricultural experience program.	Agricultural Education p765 SAEs and Agricultural Education p773
<b>Objective 4</b> Maintain and use agricultural experience records.	
1. Explain the importance of keeping records on an agricultural experience program.	Keeping Records p775 ST#7 p595
2. Explain how agricultural experience records are organized.	Keeping Records p775
3. Follow approved procedures to make entries in agricultural experience records	Keeping Records p775 FS#1 p197 ST#2 p134 FS#2 p329 ST#1 p644

Standards/Objectives/Indicators	Text Locations
<b>STANDARD 3</b>	
<b><i>Students will examine natural resource science and management</i></b>	
<b>Objective 1</b> Discuss the basics of natural resource science and management.	
1. Identify types of natural resources.	Chapter 1 Introduction to Natural Resources pp2-19 Renewable or Nonrenewable? pp4-9 Nonrenewable Natural Resources pp9-11 Biotic and Abiotic Natural Resources pp11-12
2. Distinguish between renewable and nonrenewable resources.	Renewable or Nonrenewable? pp4-9 Nonrenewable Natural Resources pp9-11 ST#1 p18 ST#3 p18
3. Explain the difference between inexhaustible and exhaustible resources.	Renewable or Nonrenewable? pp4-9 Nonrenewable Natural Resources pp9-11
4. Explain the concept of interdependent relationships.	Biotic and Abiotic Natural Resources pp11-12
<b>Objective 2</b> Examine the relationship between natural resources and society, including conflict management.	
1. Define natural resource management.	Why Are Natural Resources Important? p14
2. Identify and compare major natural resource management agencies and companies.	Environmental Protection Agency pp127f, 128, 166, 336, 424, 505, 506 National Marine Fisheries Service p70 National Oceanic and Atmospheric Administration pp70, 156, 157, 493, 497, 510, 695 Natural Resources Conservation Service (NRCS) pp55, 71, 215, 217, 240, 265, 322, 659 US Army Corps of Engineers p376 US Bureau of Land Management pp72, 156, 657, 695, 708 US Department of Agriculture pp70-71, 141, 635 US Department of Commerce p497 US Department of Defense p695 (continued)
2. Identify and compare major natural resource management agencies and companies.	(continued) US Department of the Interior pp54, 71, 695 US Fish and Wildlife Service pp72, 449-450, 497, 695 US Forest Service pp71, 695, 697 US Geological Survey p282 US National Park Service pp71, 156, 695
3. Describe human demands on natural resources.	CH 1 Introduction to Natural Resources pp2-19

Standards/Objectives/Indicators	Text Locations
4. Compare and contrast conservation and preservation.	Conservation and Preservation pp13-14 Environmental Stewardship p13 Perceptions of the Environment over Time pp112-113
5. Provide examples of multiple uses of natural resources. (e.g., recreation, mining, agriculture, forestry, etc.)	CH 12 Mining of Natural Resources pp280-305 CH 13 Water Supply pp306-329 CH 15 Wetlands pp356-381 CH 20 Fisheries pp490-529 CH 21 Game Species pp530-559 CH 22 Forests pp560-595 CH 25 Grasslands and Rangelands pp646-6677 CH 26 Outdoor Recreation pp668-691 CH 27 National Protected Areas pp692-717
6. Explore and describe societal issues related to natural resource management.	Water Hoarding p162 Water Rationing pp161-162 Water Rights pp161, 323-324 Social Pressures pp162-163 Economic Value of Resources pp163-164 Water Regulation p313 FS#1 p153 TC#7 p174 TC#3 p328
<b>Objective 3</b> Identify career opportunities in natural resource science.	
1. Identify and describe the major areas of natural resource science.	Careers in Natural Resources p11
2. Identify career opportunities in natural resource science and determine the education and training they entail.	Level of Education or Training required pp26-27 Internships and Job Shadowing p27 Career Connections Careers in Natural Resources p11 Ecologist p24 Federal Government Careers in Natural Resources p72 Sustainability Project Manager p121 Lance Wealing, Entrepreneur p129 Conservation Advocate p157 Population Biologist p182 Soil Scientist p205 Matt Lohr, Chief of National Resources Conservation Service p242 Clayton Zimmerman, Project Earthwork and Grading Supervisor p261 Soil Conservation Technician p265 (continued)

Standards/Objectives/Indicators	Text Locations
<p>2. Identify career opportunities in natural resource science and determine the education and training they entail.</p>	<p>(continued)                      Matthew Olson, Soil Conservationist p284                      Hydrologist p319                      Water Quality Technician p335                      Thunder View Farms, Coombe Family p340                      Wetlands Tour Guide p362                      Meteorologist p393                      Dr. Hailey Wilmer, Rangeland and Social Scientist p421                      Jessica Heitt, Wildlife Education Coordinator p438                      Wildlife Photographer p454                      Paleobiologist p466                      Shawn Sanders, US Fish and Wildlife Service p496                      Andy King, Fish and Wildlife Biologist p543                      Ty Bowgren, Head of Procurement, Wagner Lumber p566                      Matt Spalding, Education and Volunteer Manager p605                      Fraser Smith, Forestry Consultant p622                      Major Waltman, Project Director, Olmsted Parks Conservancy p652                      Jacob Zuniga, Assistant Director, Parks and Recreation p673                      Jim Barborak, Colorado State University p703                      Evan Patrick, Natural Areas Manager p726</p>
<b>STANDARD 4</b>	
<b><i>Students will explain waste management</i></b>	
<p><b>Objective 1</b> Investigate waste generation, waste reduction, and disposal.</p>	<p>Point Source Pollution p343                      Nonpoint Source Pollution p344</p>
<p>1. Describe different types of solid waste.</p>	<p>STEM Connection: The Waste We Make p123                      Solid Waste p125                      Types of Waste pp125-127</p>
<p>2. Evaluate environmental hazards created by different types of solid waste, solid waste accumulation, and solid waste disposal.</p>	<p>Landfills p124                      Types of Waste pp125-127                      Hazardous Waste pp126-127                      ST#6 p135</p>
<p>3. Explain practical management options for treating solid waste.</p>	<p>Waste Management pp123-129                      ST#3 p134                      ST#6, #7 p135</p>
<p>4. Explain the importance of reducing, reusing, and recycling.</p>	<p>Composting p127                      Recycling and Upcycling pp127-128                      Reduce, Reuse, Recycle p128                      ST#2 p174                      ST#8 p135</p>

Standards/Objectives/Indicators	Text Locations
5. Describe recycling methods and identify materials that can be recycled.	Composting p127 Recycling and Upcycling pp127-128 Reduce, Reuse, Recycle p128 ST#7, #8 p135
6. Define wastewater.	Wastewater pp125-126
7. Diagram the steps in wastewater treatment.	Figure 5-14 Wastewater Treatment Facility p126 Wastewater Control and Treatment pp359-360 Figure 14-17 Sewer System and Wastewater p360
8. Assess agriculture’s impact on the environment through waste generation. (e.g., animal waste, pesticide residue, fertilizer runoff, sedimentation/erosion, and odors/dust)	Agriculture pp115-117 What Are Sustainable Agriculture Practices? pp116-117 Soil Erosion pp236-241 STEM Connection: Plants and Erosion Control p241 ST#2 p174
9. Discuss the meaning and use of nutrient management plans.	Agriculture pp115-117 What Are Sustainable Agriculture Practices? pp116-117