



Goodheart-Willcox Correlation of Natural Resources Systems ©2021 to Oklahoma Academic Standards for Agricultural Education Course: Introduction to Natural Resources & Environmental Science – Grades 9-12	
Standard	Correlating Textbook Pages
Students will explain the role of FFA in agricultural education.	
Discuss the history and organization of FFA as it relates to the complete program of agricultural education.	
Explain the interrelationship of classroom and laboratory instruction, supervised agricultural experience, and FFA.	765-766, 768
Describe how, when, and why FFA was organized.	765
Identify key FFA historical events.	774
Identify the mission and strategies, colors, motto, emblem and parts of the emblem, and organizational structure of FFA.	765-767
Recite and explain the meaning of the FFA Creed.	767
Discuss the meaning and purpose of a program of activities and its committee structure.	768
List FFA chapter officers, and discuss the role of each.	768-769
Identify opportunities in FFA.	
Describe FFA opportunities that develop leadership skills, personal growth, and career success.	771-772
Summarize major state and national activities available to FFA members.	769-770
Describe FFA degrees, awards, and career development events (CDEs).	
List and explain the FFA degree areas.	771-772
Identify FFA proficiency awards.	772
List and discuss various team and individual CDEs.	759-770, 772-773
Students will explain the role of supervised agricultural experience (SAE) programs in agricultural education.	



Examine the responsibilities and benefits associated with an SAE	
Explain the meaning and benefits of supervised agricultural experience.	773
Explain the characteristics of an effective SAE program and the responsibilities of those involved.	773, 775-776
Determine the types of SAE programs.	
Compare entrepreneurship SAEs and placement SAEs.	773
Describe research/experimentation SAEs.	775
Describe exploratory SAEs.	773
Plan an SAE program.	
Identify the steps in planning an SAE program.	775
Describe the function of a business/training plan and/or agreement in an SAE program.	773, 775
Develop a short-range plan and a long-range plan for an SAE program.	773, 775
Relate classroom and laboratory instruction to an SAE program.	773, 775
Maintain and use SAE records.	
Explain the importance of keeping records on an SAE program.	775
Explain how SAE records are organized.	775
Follow approved procedures to make entries in SAE records.	775
Students will examine natural resource science and management.	
Discuss the basics of natural resource science and management.	
Identify types of natural resources.	4-12
Distinguish between renewable and nonrenewable resources.	4-11
Explain the difference between inexhaustible and exhaustible resources.	4
Explain the concept of interdependent relationships.	4
Examine the relationship between natural resources and society, including conflict management.	
Define natural resource management.	13-14
Identify and compare major natural resource management agencies and companies.	70-74



Describe human demands on natural resources.	140-124 157-163, 165-166 170
Compare and contrast conservation and preservation.	13-14
Provide examples of multiple uses of natural resources (e.g., recreation, mining, agriculture, forestry, etc.).	258, 282, 492, 523, 562, 670
Explore and describe societal issues related to natural resource management.	13, 162-163
Identify career opportunities in natural resource science.	
Identify and describe the major areas of natural resource science.	22-23
Identify career opportunities in natural resource science, and determine the education and training they entail.	24, 90, 121, 157, 182, 205, 261, 319, 335, 340, 362, 393, 438, 454, 466, 496, 543, 605, 622, 673, 726
Students will investigate ecological concepts and science principles related to natural resource systems.	
Examine ecology.	
Define ecosystem and related terms, e.g. climate, precipitation, weather, etc.	82-83
Describe the interdependence of organisms within an ecosystem.	88-98, 100-102
Describe the processes associated with ecological succession.	598-601
Explain population ecology, population density, and population dispersion.	182-189
Explain the importance of biodiversity.	12, 296-297, 435, 474
Explain the process of natural selection.	439
Use taxonomy keys to identify common plants and animals.	534
Identify and classify game birds and other local birds.	542-546, 661, 671
Identify and classify game animals and other local animals.	535-541
Define invasive species, and discuss factors that influence the establishment and spread of invasive species.	88-97
Describe biological, physical, and chemical properties of soil.	
Explain the importance of soil as a life-supporting layer.	200



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Explain the roles of parent material, topography, organisms, time, weathering, and climate in soil formation.	206-210
Describe the physical characteristics of soil.	211-215
Describe the biodiversity found in soil and the contribution of biodiversity to the physical and chemical characteristics of soil.	200-201
Describe the chemical properties of soil.	217-219
Explain the characteristics of soil water.	203, 215-217
Examine hydrology principles.	
Describe the movement of water through the water cycle.	84-85
Compare and contrast ground-water and surface-water flow.	84-85, 311, 316-317
Discriminate between point and nonpoint pollution sources.	343- 344, 724
Survey the local area for pollution sources.	343, 721
Calculate water distribution for an irrigation district.	336-340
Compare and contrast water usage in flood irrigation systems and sprinkler irrigation systems.	340
Identify local drinking water sources and measures that may be taken to protect the quality of the drinking water.	336-339
Discuss current regulations associated with water quality and water pollution.	338-339
Compare and contrast the differences between fresh water and salt/saline water.	336-339, 367
Investigate air resources	
Identify components and structural layers of the earth's atmosphere.	384-388
Identify sources of air pollution.	406-418, 639
Describe the effects of air pollution on people and their environment.	406-418
Illustrate the formation of acid precipitation, and explain its impact on the environment.	335, 412-413



Students will relate range resources and management to natural resources.	
Analyze the interrelationships between range management and other natural resource activities.	
Identify characteristics of healthy rangeland.	654-656
Identify methods of rangeland improvement, e.g. facilities, wells, springs, reseeding, chaining, etc.	656-661
Evaluate a rangeland, and develop a management plan for improvement.	656-661
Discuss livestock use of rangeland, e.g. Animal Unit Month (AUM) carrying capacity.	656-658
Discuss wildlife use of rangeland.	660-661
Discuss additional uses of rangeland (e.g., recreation, mining, watershed, etc.).	648-662
Compare and contrast the effect of various uses of rangelands.	648-662
Describe plant environment interactions.	648-654
Explain range transects and their use in evaluating a specific location.	478
Students will examine waste management.	
Investigate waste generation, waste reduction, and disposal.	
Describe different types of solid waste.	125
Evaluate environmental hazards created by different types of solid waste, solid waste accumulation, and solid waste disposal.	125
Explain practical management options for treating solid waste.	123-126
Explain the importance of reducing, reusing, and recycling.	127 – 128
Describe recycling methods, and identify materials that can be recycled, e.g. biogas generation, green waste composting, animal waste recycling, etc.	127-128
Define wastewater (effluent).	125-126
Discuss the general steps in wastewater treatment.	125-126
Assess agriculture's impact on the environment through waste generation (e.g., animal waste, pesticide residue, fertilizer runoff, sedimentation/erosion, and odors/dust).	125-127



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Discuss the meaning and use of nutrient management plans.	125-127
Students will explain land classification, resource inventories, and monitoring methods.	
Discuss land-use management planning.	
Describe the interrelationships between land-use planning and natural resources.	156-160
Identify land uses, capability factors, and land capability classes.	156-160
Demonstrate how GIS/GPS applies to land-use planning.	747
Use a soil survey to determine the land capability classes for different parcels of land in an area.	219
Discuss monitoring of land use.	
Identify the components of a monitoring plan.	156-160
Discuss the procedures for conducting resource inventories and population studies.	156-160
List and describe the required components of an Environmental Impact Statement.	13
Develop and implement a basic plan for monitoring a natural resource project.	156-160
Participate in public involvement processes in land-use planning.	156-60