

# VoCATS Course Blueprint

## AGRICULTURAL EDUCATION

### *6851 Environmental and Natural Resources I*

*Public Schools of North Carolina  
State Board of Education • Department of Public Instruction  
Curriculum and School Reform Services  
Division of Instructional Services*

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*This blueprint has been reviewed by business and  
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## VoCATS Course Blueprint

A course blueprint is a document laying out the framework of the curriculum for a given course.

Shown on the blueprint are the units of instruction, the core competencies in each unit, and the specific objectives for each competency. The blueprint illustrates the recommended sequence of units and competencies and the cognitive and performance weight of the objective within the course.

The blueprint should be used by teachers to plan the course of work for the year, prepare daily lesson plans, construct instructionally valid interim assessments. Statewide assessments are aligned directly with the course blueprint.

For additional information about this blueprint, contact program area staff. For additional information about VoCATS, contact program area staff or VoCATS, Career-Technical Education, Division of Instructional Services, North Carolina Department of Public Instruction, 6358 Mail Service Center, Raleigh, North Carolina 27699-5358, 919/807-3876, email: [rwelfare@dpi.state.nc.us](mailto:rwelfare@dpi.state.nc.us).

### Interpretation of Columns on VoCATS Course Blueprints

No.	Heading	Column information
1	Comp# Obj.#	Comp=Competency number (two digits); Obj.=Objective number (unique course identifier plus competency number and two-digit objective number).
2	Unit Titles/Competency and Objective Statements	Statements of unit titles, competencies per unit, and specific objectives per competency. Each competency statement or specific objective begins with an action verb and makes a complete sentence when combined with the stem "The learner will be able to. . ." (The stem appears once in Column 2.) Outcome behavior in each competency/objective statement is denoted by the verb plus its object.
3	Time Hrs	Space for teachers to calculate time to be spent on each objective based on the course blueprint, their individual school schedule, and analysis of students' previous knowledge on the topic.
4&5	<u>Course Weight</u>  Cognitive  Performance	Shows the relative importance of each objective, competency, and unit. Weight is broken down into two components: cognitive and performance. Add the cognitive and performance weights shown for an objective in columns 4 and 5 to determine its total course weight. Course weight is used to help determine the percentage of total class time that is spent on each objective. The breakdown in columns 4 and 5 indicates the relative amount of class time that should be devoted to cognitive and performance activities as part of the instruction and assessment of each objective. Objectives with performance weight should include performance activities as part of instruction and/or assessment.
6	Type Behavior	Classification of outcome behavior in competency and objective statements. (C=Cognitive; P=Performance)
7	Integrated Skill Area	Shows links to other academic areas. Integrated skills codes: A=Arts; E=English Language Arts; CD=Career Development; CS=Information/Computer Skills; H=Healthful Living; M=Math; SC=Science; SS=Social Studies.
8	Core Supp	Designation of the competencies and objectives as Core or Supplemental. Competencies and objectives designated "Core" must be included in the Annual Planning Calendar and are assessed on the statewide assessments..

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AGRICULTURAL EDUCATION  
**COURSE BLUEPRINT FOR 6851 – ENVIRONMENTAL & NAT RESOURCES I**  
 (Recommended hours of instruction: 135-180)

Comp# Obj.#	Unit Titles/Competency and Objective Statements (The student will be able to:)	Time Hours	Course Weight		Type Behavior	Integrated Skill Area	Core Supp
			Cognitive	Performance			
1	2	3	4	5	6	7	8
			<b>100%</b>				
	<b>Total Course Weight</b>		<b>86%</b>	<b>14%</b>			
<b>A</b>	<b>LEADERSHIP DEVELOPMENT</b>		<b>5%</b>	<b>2%</b>			
<b>EN01.00</b>	<b>Investigate organizations related to the environmental and natural resources industry.</b>		<b>2%</b>		<b>C3</b>	<b>NC/SC/SS</b>	<b>Core</b>
<i>EN01.01</i>	<i>Describe opportunities for leadership development in environmental and natural resources industry organizations.</i>		1%		C1	C/SS	Core
<i>EN01.02</i>	<i>Examine youth activities provided by organizations in the environmental and natural resources industry.</i>		1%		C3	A/C/SC/SS	Core
<b>EN02.00</b>	<b>Demonstrate the process used in conducting business meetings in environmental and natural resource industry organizations.</b>		<b>3%</b>	<b>2%</b>	<b>C3P</b>	<b>C/SS/M</b>	<b>Core</b>
<i>EN02.01</i>	<i>Explain the role of parliamentary procedure in conducting business meetings.</i>		3%		C2	C/SS	Core
<i>EN02.02</i>	<i>Demonstrate key parliamentary procedure abilities used in a business meeting.</i>			2%	C3P	C/M/SS	Core
<b>EN03.00</b>	<b>Research aspects of public speaking and their importance to environmental and natural resources businesses.</b>				<b>C3P</b>	<b>C/M/SC</b>	<b>Supp</b>
<i>EN03.01</i>	<i>Compare techniques of public speaking.</i>				C3	C	Supp
<i>EN03.02</i>	<i>Demonstrate a conversational knowledge of environment and natural resources by delivering a prepared speech.</i>				C3P	C/M/SC	Supp
<b>B</b>	<b>EMPLOYABILITY SKILLS</b>		<b>8%</b>	<b>3%</b>			
<b>EN04.00</b>	<b>Discuss the environmental and natural resources industry and its importance to the national, state, and local economy.</b>		<b>4%</b>		<b>C2</b>	<b>A/C/SC</b>	<b>Core</b>
<i>EN04.01</i>	<i>Describe careers in the environmental and natural resources industry.</i>		2%		C1	A/C/SC	Core
<i>EN04.02</i>	<i>Discuss the environmental and natural resources profession and its importance to the economy.</i>		2%		C2	A/C/SC	Core

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<b>EN05.00</b>	<b>Explore the common career paths in environmental and natural resources.</b>				<b>C3</b>	<b>SC</b>	<b>Supp</b>
EN05.01	Analyze environmental and natural resource industry careers and related employment opportunities.				C3	SC	Supp
EN05.02	Compare characteristics, preparation and credentials needed for employment in environmental and natural resources industry careers.				C3	SC	Supp
<b>EN06.00</b>	<b>Examine opportunities for work-based learning experiences related to the environmental and natural resources industry.</b>				<b>C3P</b>	<b>C/M/ SC</b>	<b>Supp</b>
EN06.01	Revise career development plans to reflect environmental and natural resources career opportunities.				C3P	C/M/ SC	Supp
EN06.02	Research opportunities for career development in environmental and natural resources.				C3	C/SS	Supp
<b>EN07.00</b>	<b>Examine the Supervised Agricultural Experience component of environmental and natural resources.</b>		<b>2%</b>	<b>2%</b>	<b>C3P</b>	<b>C/M/SC</b>	<b>Core</b>
EN07.01	Identify Supervised Agricultural Experiences in environmental and natural resources.		2%		C1	C/M/SC	Core
EN07.02	Correctly record entries in the SAE Record.			2%	C3P	M/SC	Core
<b>EN08.00</b>	<b>Explore methods of financial record keeping in an environmental and natural resources business.</b>		<b>2%</b>	<b>1%</b>	<b>C3P</b>	<b>C/M/SC</b>	<b>Core</b>
EN08.01	Define the terminology used in financial record keeping systems.		2%		C1	C/M/SC	Core
EN08.02	Correctly record entries in a financial record system.			1%	C3P	C/M	Core
<b>EN09.00</b>	<b>Research alternative methods of record keeping.</b>				<b>C3P</b>	<b>C/M/SC</b>	<b>Supp</b>
EN09.01	Compare computer software programs designed to aid record keeping.				C3P	C/M/SC	Supp
EN09.02	Examine the Internet for methods of record keeping.				C3	SC	Supp
<b>EN10.00</b>	<b>Research customer relation techniques for working in an environmental and natural resources business.</b>				<b>C3P</b>	<b>C</b>	<b>Supp</b>
EN10.01	Apply customer relation techniques in an environmental and natural resources business situation.				C3P	C	Supp
EN10.02	Compare various markets, marketing methods, and salesmanship techniques in the environmental and natural resources industry.				C3	C	

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<b>EN11.00</b>	<b>Investigate techniques for marketing environmental and natural resource products.</b>				<b>C3P</b>	<b>C</b>	<b>Supp</b>
EN11.01	<i>Design advertisements and arrange displays of environmental and natural resource products.</i>				C3P	C	Supp
EN11.02	<i>Explain the principles of supply and demand.</i>				C3	C/SS	Supp
<b>C</b>	<b>INTRODUCTION TO ENVIRONMENTAL SCIENCE, NATURAL RESOURCES AND CONSERVATION STUDIES</b>		<b>10%</b>				
<b>EN12.00</b>	<b>Summarize information related to environmental science, natural resources and conservation studies.</b>		<b>4%</b>		<b>C2</b>	<b>E/H/SC/SS</b>	<b>Core</b>
EN12.01	<i>Define terms related to Environmental Science, Natural Resources, and Conservation Studies.</i>		2%		C1	E/H/SC/SS	Core
EN12.02	<i>Describe the interaction and interdependence of the environment and natural resources.</i>		2%		C1	E/H/SC/SS	Core
<b>EN13.00</b>	<b>Discuss the relationship between natural resources management and humans.</b>		<b>6%</b>		<b>C2</b>	<b>E/H/SC/SS</b>	<b>Core</b>
EN13.01	<i>Discuss the importance of sustainability and conservation in relation to humans.</i>		4%		C2	E/H/SC/SS	Core
EN13.02	<i>Interpret human population growth and the demands it places on the environment and natural resources.</i>		2%		C2	E/H/SC/SS	Core
<b>D</b>	<b>SCIENCE AND TECHNOLOGY IN THE ENVIRONMENT</b>		<b>23%</b>	<b>2%</b>			
<b>EN14.00</b>	<b>Analyze the relationship between science and technology and environmental science, natural resources, and conservation.</b>		<b>8%</b>		<b>C3</b>	<b>E/H/M SC/SS</b>	<b>Core</b>
EN14.01	<i>Define terms relating to science &amp; technology and environmental science, natural resources and conservation.</i>		2%		C1	E/M/SC	Core
EN14.02	<i>Describe basic life processes in relation to structures of living organisms.</i>		2%		C1	E/SC	Core
EN14.03	<i>Classify living things by their scientific name and environmental role.</i>		2%		C3	E/M/S	Core
EN14.04	<i>Discuss earth science and its relation to the environment.</i>		2%		C2	E/SC/SS	Core

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<b>EN15.00</b>	<b>Examine the relationships between chemistry and environmental science, natural resources and conservation.</b>		<b>6%</b>	<b>2%</b>	<b>C3P</b>	<b>E/H/M/SC ISS</b>	<b>Core</b>
EN15.01	<i>Define terms and the states, properties, and classifications of matter related to chemistry and the environment.</i>		3%		C1	E/SC	Core
EN15.02	<i>Discuss chemical elements, compounds, reactions, formulas and equations.</i>		2%		C2	E/M/SC	Core
EN15.03	<i>Demonstrate the ability to determine the pH and salts of a material and relate it to environmental conditions.</i>			2%	C3P	E/H/M SC	Core
EN15.04	<i>Discuss chemical sources of environmental hazards.</i>		1%		C2	E/H/SC SS	Core
<b>EN16.00</b>	<b>Interpret ecological concepts for environmental science, natural resources and conservation.</b>		<b>5%</b>		<b>C2</b>	<b>E/H/SC SS</b>	<b>Core</b>
EN16.01	<i>Summarize how ecology and the environment affect an organism's ability to adapt and change.</i>		2%		C2	E/H/SC/ SS	Core
EN16.02	<i>Discuss population ecology as it relates to living communities, population, ecology, food chains, and biomes.</i>		3%		C2	E/H/SC SS	Core
<b>EN17.00</b>	<b>Examine the effects of weather and climate on environmental science, natural resources, and conservation.</b>		<b>4%</b>		<b>C3P</b>	<b>A/E/SC SS</b>	<b>Core</b>
EN17.01	<i>Define terms related to weather and climate.</i>		2%		C1	E/SC	Core
EN17.02	<i>Relate weather information as to the effects on the environment, natural resources and conservation.</i>		2%		C2	A/E/SC SS	Core
EN17.03	<i>Examine the formation and measurement of precipitation.</i>				C3P	E/M/SC	Supp
<b>E</b>	<b>NATURAL RESOURCES AND THE ENVIRONMENT</b>		<b>16%</b>	<b>5%</b>			
<b>EN18.00</b>	<b>Demonstrate an understanding of formation, contents, classification and use of soils.</b>		<b>2%</b>	<b>4%</b>	<b>C3P</b>	<b>E/M/SC</b>	<b>Core</b>
EN18.01	<i>Describe the contents of soil and soil formation processes.</i>		2%		C1	E/SC	Core
EN18.02	<i>Demonstrate the ability to properly evaluate soil properties and classify soils.</i>			4%	C3P	E/M/SC	Core
EN18.03	<i>Apply soil sampling skills utilizing soil sampling instructions from the North Carolina Department of Agriculture and Consumer Services.</i>				C3P	E/M/SC	Supp
EN18.04	<i>Interpret a computerized soil report from NCDA&amp;CS.</i>				C2	E/M/SC	Supp

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<b>EN19.00</b>	<b>Discuss soil erosion and conservation.</b>		<b>4%</b>		<b>C2</b>	<b>E/M/SC SS</b>	<b>Core</b>
EN19.01	<i>Explain the causes and effects of soil erosion.</i>		2%		C2	E/M/SC SS	Core
EN19.02	<i>Describe proper soil conservation practices.</i>		2%		C1	E/M/SC SS	Core
<b>EN20.00</b>	<b>Evaluate the concepts of water supply and management.</b>		<b>4%</b>	<b>1%</b>	<b>C3P</b>	<b>CD/E/H SC/SS</b>	<b>Core</b>
EN20.01	<i>Discuss the nature, importance and sources of water.</i>		2%		C2	E/H/SC SS	Core
EN20.02	<i>Summarize water storage, distribution and management.</i>		2%		C2	E/H/SC SS	Core
EN20.03	<i>Check water samples for quality.</i>			1%	C3P	CD/H/SC	Core
EN20.04	<i>Identify methods of determining volume of water in a river or stream.</i>				C1	E/M/SC	Supp
EN20.05	<i>Discuss the important characteristics and classifications of wetlands.</i>				C2	E/M/SC	Supp
EN20.06	<i>Identify federal, state, and local legislation or regulations that govern water resource management.</i>				C1	E/H/SS	Supp
<b>EN21.00</b>	<b>Discuss the concepts of air that determine air quality.</b>		<b>4%</b>		<b>C2</b>	<b>E/H/M/SC SS</b>	<b>Core</b>
EN21.01	<i>Summarize the sources of air pollution and the importance of air quality relative to plant and animal life.</i>		2%		C2	E/H/M/SC SS	Core
EN21.02	<i>Summarize how air pollution is detected and controlled.</i>		2%		C2	E/H/M/SC SS	Core
EN21.03	<i>Describe the history of air quality management from the Industrial Revolution to present time.</i>				C1	E/H/SC/S S	Supp
<b>EN22.00</b>	<b>Examine methods of solid and toxic waste management used to protect the environment.</b>		<b>2%</b>		<b>C3</b>	<b>E/H/SC SS</b>	<b>Core</b>
EN22.01	<i>Discuss sources and types of waste.</i>		1%		C2	E/H/SC SS	Core
EN22.02	<i>Evaluate methods of waste management and disposal.</i>		1%		C3	E/H/SC SS	Core

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<b>F</b>	<b>THE MANAGEMENT OF FISH ENVIRONMENTS</b>		<b>7%</b>				
<b>EN23.00</b>	<b>Explore the concepts of freshwater fishery management.</b>		<b>4%</b>		<b>C3P</b>	<b>E/SC</b>	<b>Core</b>
<i>EN23.01</i>	<i>Discuss the lake habitat to include basic fishery management techniques.</i>		2%		C2	E/SC	Core
<i>EN23.02</i>	<i>Differentiate among freshwater fish common to North Carolina.</i>		2%		C3	E/SC	Core
<i>EN23.03</i>	<i>Produce fish in an aquaculture system.</i>				C3P	M/SC	Supp
<b>EN24.00</b>	<b>Summarize the concepts of marine fishery management.</b>		<b>3%</b>		<b>C2</b>	<b>E/SC</b>	<b>Core</b>
<i>EN24.01</i>	<i>Describe characteristics of the ocean and estuarine ecosystem.</i>		2%		C1	E/SC	Core
<i>EN24.02</i>	<i>Discuss ocean cultivation as related to regulations and laws.</i>		1%		C2	E/SC	Core
<b>G</b>	<b>THE MANAGEMENT OF WILDLIFE</b>		<b>11%</b>				
<b>EN25.00</b>	<b>Discuss wildlife habitats, game management practices, and factors that have affected wildlife species in North Carolina.</b>		<b>5%</b>		<b>C2</b>	<b>E/SC/SS</b>	<b>Core</b>
<i>EN25.01</i>	<i>Describe wildlife habitat requirements and game management practices.</i>		3%		C1	E/SC	Core
<i>EN25.02</i>	<i>Discuss factors that have affected wildlife species in North Carolina.</i>		2%		C2	E/SC/SS	Core
<b>EN26.00</b>	<b>Compare wildlife and bird species that are native to North Carolina.</b>		<b>6%</b>		<b>C3</b>	<b>E/SC</b>	<b>Core</b>
<i>EN26.01</i>	<i>Classify North Carolina migratory birds, game birds, raptors, and wildlife mammals in relation to their habitats.</i>		3%		C3	E/SC	Core
<i>EN26.02</i>	<i>Discuss North Carolina migratory birds, game birds, raptors and wildlife mammals as related to agricultural production.</i>		3%		C2	E/SC	Core
<b>EN27.00</b>	<b>Apply safe practices in managing and harvesting wildlife species.</b>				<b>C3P</b>	<b>H/E SC/SS</b>	<b>Supp</b>
<i>EN27.01</i>	<i>Explain the responsibilities of a hunter for the purpose of developing safe and efficient wildlife management practices.</i>				C2	E/SC/SS	Supp
<i>EN27.02</i>	<i>Demonstrate the safe use of firearms and hunting paraphernalia.</i>				C3P	E/H/SC	Supp
<i>EN27.03</i>	<i>Assess the impact of local legislation as it relates to the management &amp; utilization of wildlife resources.</i>				C2	SC	Supp
<i>EN27.04</i>	<i>Distinguish between livestock and wildlife species using commonly accepted recognition techniques.</i>				C3	SC	Supp

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<b>H</b>	<b>THE ROLE OF FORESTS IN THE ENVIRONMENT</b>		<b>6%</b>	<b>2%</b>			
<b>EN28.00</b>	<b>Describe the role of forests and their growth in the environment and society.</b>		<b>2%</b>		<b>C1</b>	<b>E/SC/SS</b>	<b>Core</b>
<i>EN28.01</i>	<i>Describe the impact of forests, their products, and processing on our environment, economy and society.</i>		1%		C1	E/SC	Core
<i>EN28.02</i>	<i>Describe the parts of a tree and their functions.</i>		1%		C1	E/SC	Core
<b>EN29.00</b>	<b>Demonstrate proper forest management techniques.</b>		<b>4%</b>	<b>2%</b>	<b>C3P</b>	<b>E/SC</b>	<b>Core</b>
<i>EN29.01</i>	<i>Identify common North Carolina trees based on physical characteristics.</i>		2%		C1	E/SC	Core
<i>EN29.02</i>	<i>Apply tree measurement techniques and skills that are used by professional foresters.</i>			2%	C3P	SC	Core
<i>EN29.03</i>	<i>Describe cutting and reproducing techniques used in the forestry industry to improve forest quality.</i>		2%		C1	E/SC	Core