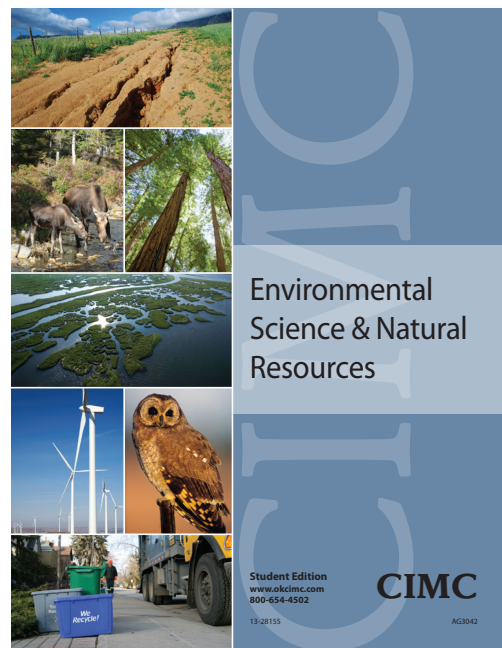


Environmental Science & Natural Resources

Curriculum Crosswalk

- National Agriculture, Food and Natural Resources (AFNR) Career Cluster Content Standards
- Oklahoma Academic Standards



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Unit Objectives	Activity Numbers(s)	Oklahoma Academic Standard(s)	National AFNR Career Cluster Standard(s)
Unit 1 Environmental Safety and Regulations			
Identify safety practices when working in an outdoor environment.	1.1, 1.2, 1.3	Science Process Standard 3.5	NRS.02.01.01.a
Demonstrate the application of fire suppression and fire safety techniques.		Science Process Standard 3.5	NRS.02.01.01.b
Demonstrate appropriate use of techniques and equipment when working with biohazardous materials.	1.4	Science Process Standard 3.5	NRS.02.01.02.a NRS.02.01.02.a
Identify the role of governmental agencies and policies to protect natural resources.	1.5	Enviro Science Standard 5.3.a	NRS.02.05.02.a NRS.02.05.02.b
Identify laws associated with natural resource systems.	1.6	Enviro Science Standard 5.3.a	ESS.02.01.01.a ESS.02.01.01.b NRS.02.05.01.a NRS.02.05.01.b
Discuss issues involving mitigation of natural resources.	1.7	Enviro Science Standard 5.3.a	NRS.02.05.02.a NRS.02.05.02.b
Unit 2 Environmental Resource Management			
Differentiate between renewable and non-renewable natural resources.	2.1	Enviro Science Standard 4.1	NRS.01.01.01.a NRS.01.01.01.b
Describe the interdependence of organisms within an ecosystem.		Enviro Science Standard 2.2	NRS.01.01.02.a NRS.01.01.02.b
Distinguish between conservation and preservation of natural resources.		Enviro Science Standard 4.1	NRS.01.01.01.c
Describe ways in which pollution can be managed and prevented.		Enviro Science Standard 4.2	ESS.04.01.02.a
Discuss practical management options for treating solid waste.	2.2	Enviro Science Standard	ESS.04.02.01.a ESS.04.02.01.b ESS.04.02.02.a
Identify proper methods and materials for recycling.	2.3, 2.4, 2.5, 2.6	Enviro Science Standard	ESS.04.02.04.a ESS.04.01.06.a

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Unit 3 Energy Conservation			
Discuss the forms and usage of energy.	3.1, 3.2	Enviro Science Standard 4.1.c, 4.3	ESS.05.01
Classify energy resources as renewable or nonrenewable.		Enviro Science Standard 4.1	NRS.01.01.01.a NRS.01.01.01.b
Discuss the value energy sources to the economy.	3.3, 3.4, 3.5, 3.6	Enviro Science Standard 4.1.c, 4.3	NRS.03.01.05.a NRS.03.01.06.a NRS.03.01.07.a
Evaluate the impact of conventional and alternative energy sources on the environment.		Enviro Science Standard 4.1.c, 4.3	ESS.05.01.01.a; ESS.05.01.01.b ESS.05.01.01.c; ESS.05.01.02.a ESS.05.01.02.b; ESS.05.01.02.c
Discuss conservation measures to reduce energy consumption.	3.7	Enviro Science Standard 4.1.c, 4.3	ESS.02.01.01.a ESS.02.01.01.b
Unit 4 Soil Conservation and Mgmt			
Distinguish between agricultural and non-agricultural land uses.	4.1	Enviro Science Standard 4.1	
Explore how soils are formed.	4.2	Enviro Science Standard 4.1	ESS.03.02.01.a NRS.01.02.05.a NRS.01.02.05.b
Identify the composition of an average soil.		Enviro Science Standard 4.1	ESS.03.02.02.a
Determine the texture of a soil using the soil textural triangle.	4.3, 4.4	Enviro Science Standard 4.1	ESS.03.02.03.a
Examine the various soil structures.		Enviro Science Standard 4.1	ESS.03.02.03.a
Examine a soil profile to find the horizons.		Enviro Science Standard 4.1	ESS.03.02.03.a
Determine how soil is classified by deposition.		Enviro Science Standard 4.1	ESS.03.02.01.b
Discuss the causes of erosion and its effects.	4.5	Enviro Science Standard 4.1.b	NRS.02.06.08.a NRS.02.06.08.b
Determine the soil nutrients needed for plant growth.	4.6, 4.7	Enviro Science Standard 4.1	ESS.03.02.03.c

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Unit 5 Wetland Management			
Differentiate between the types and functions of wetlands.	5.1	Enviro Science Standard 2.1	ESS.03.04.01.a
Explain the criteria for classifying wetlands.		Enviro Science Standard 2.1	ESS.03.04.01.b
Identify major types of living organisms that inhabit wetlands.	5.2	Enviro Science Standard 2.1, 2.3	ESS.03.04.02.a ESS.03.04.02.a
Explain the importance of wetland creation, management, enhancement and restoration programs.	5.3	Enviro Science Standard 2.1	ESS.03.04.03.a
Explore how to delineate a watershed.	5.4	Enviro Science Standard 2.1	NRS.02.06.02.a NRS.02.06.02.b
Discuss laws that protect water quality.	5.5, 5.6	Enviro Science Standard 2.1	NRS.02.05.01.a NRS.02.05.01.b
Unit 6 Pasture and Rangeland Mgmt			
Identify characteristics of healthy rangeland and methods for improvement.	6.1, 6.2	Enviro Science Standard 2.1, 2.2	NRS.02.04.04.a NRS.02.04.04.b
Match range sites to their descriptions.		Enviro Science Standard 2.1, 2.2	NRS.02.04.04.a NRS.02.04.04.b
Determine the factors affecting pasture management and forage growth.		Enviro Science Standard 2.1, 2.2	NRS.02.04.04.a NRS.02.04.04.b
Outline the characteristics of native grasses.	6.3, 6.4	Enviro Science Standard 2.1, 2.2	NRS.02.04.04.a NRS.02.04.04.b
Name important forage grasses and legumes.		Enviro Science Standard 2.1, 2.2	NRS.02.04.04.a NRS.02.04.04.b
Match degrees of pasture utilization to their description.		Enviro Science Standard 2.1, 2.2	NRS.02.04.04.a NRS.02.04.04.b
List practices that improve grazing.		Enviro Science Standard 2.1, 2.2	NRS.02.04.04.a NRS.02.04.04.b
Discuss ways to prevent overgrazing.	6.5	Enviro Science Standard 2.1, 2.2	NRS.02.04.04.a NRS.02.04.04.b
Describe different grazing systems.	6.6	Enviro Science Standard 2.1, 2.2	NRS.02.04.04.a NRS.02.04.04.b
Identify the advantages of improved pastures.		Enviro Science Standard 2.1, 2.2	NRS.02.04.04.a NRS.02.04.04.b
State the advantages and steps for renovating pasture land.	6.7	Enviro Science Standard 2.1, 2.2	NRS.02.04.04.a NRS.02.04.04.b

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Unit 7 Forest Ecology			
Discuss the principles of forest ecology.	7.1, 7.2	Enviro Science Standard 2.1, 2.2	NRS.02.04.02.a
Identify the parts of a tree.		Enviro Science Standard 2.1, 2.2	NRS.01.02.01.a
Outline how to measure the height and diameter of a tree.	7.3	Enviro Science Standard 2.1, 2.2	NRS.01.02.01.c
Describe morphological characteristics used to identify woody and herbaceous plants.		Enviro Science Standard 2.1, 2.2	NRS.01.02.01.a NRS.01.02.02.a
Discuss the impact of native and invasive tree species.		Enviro Science Standard 2.1, 2.2	NRS.01.02.01.b
Name the forest regions in the United States.		Enviro Science Standard 2.1, 2.2	NRS.02.04.02.a
Identify the characteristics of a healthy forest.	7.4	Enviro Science Standard 2.1, 2.2	NRS.02.04.02.a
Discuss ways in which forest stands may be improved.		Enviro Science Standard 2.1, 2.2	NRS.02.04.02
Describe forest harvesting and processing methods.		Enviro Science Standard 2.1, 2.2	NRS.03.01.01.a
Discuss the effects diseases and insects have on plants.	7.5	Enviro Science Standard 2.1, 2.2	NRS.04.02.01.a
Differentiate between desirable and undesirable fires.	7.6, 7.7	Enviro Science Standard 2.1, 2.2	NRS.04.01.01.a NRS.04.01.01.b

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Unit 8 Wildlife Ecology			
Describe the food chain and food web.	8.1	Enviro Science Standard 2.3	NRS.02.06.05.a NRS.02.06.05.b
Describe morphological characteristics used to identify and categorize wildlife species.	8.2	Enviro Science Standard 2.1	NRS.01.02.03.a
Identify characteristics of a healthy wildlife habitat.		Enviro Science Standard 2.1	NRS.02.04.03.a
Describe ways a habitat can be improved for a specific species.	8.3	Enviro Science Standard 2.1	NRS.02.04.03.b
Discuss the concept of carrying capacity and limiting factors.		Enviro Science Standard 3.1, 3.3	NRS.02.06.06.a
Name wildlife species that can be sustainably harvested.	8.4	Enviro Science Standard 3.3	NRS.03.01.03.a
Identify products obtained from wildlife species.		Enviro Science Standard 2	NRS.03.01.04.a
Name the possible dangers to wildlife populations.	8.5, 8.6, 8.7	Enviro Science Standard 3.2, 3.3	NRS.04.02.02.a NRS.04.03.01.a
Unit 9 Hydrologic Principles			
Discuss the history of the importance of water in the United States.	9.1, 9.2	Enviro Science Standard 1.1.c, 4.1.a	ESS.03.03.01.a
Determine the uses of water and how water is distributed.		Enviro Science Standard 1.1.c, 4.1.a	ESS.03.03.01.a
Diagram the water biogeochemical cycle and explain the process.		Enviro Science Standard 1.1.c, 2.4	ESS.03.03.01.b NRS.02.06.01.a NRS.02.06.01.b
Discuss the relationship between surface water and groundwater.	9.3	Enviro Science Standard 1.1.c	ESS.03.03.02.a ESS.03.03.02.b
Describe sources of point and nonpoint source water pollution.	9.4	Enviro Science Standard 1.1.c, 4.2	ESS.03.03.04.a; ESS.03.03.04.b ESS.04.01.01.a; ESS.04.01.01.b NRS.02.06.08.a; NRS.02.06.08.b
Explain the functions of riparian zones and riparian buffers.	9.5	Enviro Science Standard 4.2	ESS.03.03.04.b NRS.02.06.04.a
Relate the functions and properties of watersheds to natural resources.		Enviro Science Standard 1.1.c	ESS.03.03.04.b NRS.02.06.02.a NRS.02.06.02.b
Discuss water conservation methods and practices.	9.6		

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Unit 10 Aquatic Ecology			
Name the different kinds of streams.	10.1, 10.2	Enviro Science Standard 1.1.c	NRS.02.04.01.a
Identify indicators of the biological health of a stream.	10.3	Enviro Science Standard 1.1.c	NRS.02.04.01.b
Discuss the aquatic food chain.		Enviro Science Standard 2.3	NRS.02.06.05.a NRS.02.06.05.b
Categorize common aquatic organisms as native or invasive.		Enviro Science Standard 3.1	NRS.01.02.04.a NRS.02.06.07.a
Describe the characteristics of water that influence the biosphere and sustain life.		Enviro Science Standard 1.1.c	ESS.03.03.01.b
Locate underwater aquifers and major rivers.	10.4	Enviro Science Standard 1.1.c	ESS.03.03.02.b
Define source water quality.	10.5, 10.6	Enviro Science Standard 1.1.c	ESS.03.03.04.a ESS.03.03.04.b ESS.04.03.02.a
Unit 11 Air Pollution Management			
Identify components and structural layers of the earth's atmosphere.	11.1, 11.2	Enviro Science Standard 1.1.b	ESS.03.01.01.a
Differentiate the types of weather systems and weather patterns.	11.3	Enviro Science Standard 1.1.b	ESS.03.01.01.b
Explain how meteorological conditions influence air quality.		Enviro Science Standard 1.1.b	ESS.03.01.02.a ESS.03.01.02.b
Explain climate change and recognize the signs of climate change.		Enviro Science Standard 1.1.b	ESS.03.01.03.a
Discuss air pollutants and their effects on the environment and human health.	11.4, 11.5, 11.6	Enviro Science Standard 1.1.b, 4.2	NRS.02.06.08.b
Explain the basics of the greenhouse effect and describe how the greenhouse effect alters the earth's balance of energy.	11.7	Enviro Science Standard 1.1.b	ESS.03.01.04.a ESS.03.01.02.b
Discuss pollution control measures.		Enviro Science Standard 4.2, 5.1, 5.3	NRS.02.06.08.b
Discuss trends for improving air quality.	11.8, 11.9, 11.10, 11.11	Enviro Science Standard 5.1, 5.3	ESS.02.01.01.a

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Unit 12 Recreational Resources			
Identify natural resource characteristics desirable for recreational purposes.	12.1, 12.2, 12.3	Enviro Science Standard 5	NRS.02.04.05.a
Discuss the recreational activities which use natural resources.	12.4	Enviro Science Standard 5	NRS.03.01.08.a
Identify the public recreational areas established by the government.	12.5	Enviro Science Standard 5	NRS.02.05.01.a
Identify natural resource management techniques for improving recreating opportunities.	12.6, 12.7, 12.8, 12.9	Enviro Science Standard 5	NRS.02.04.05.b
Discuss personal safety as it relates to land and water recreation vehicles.		Enviro Science Standard 5	NRS.02.01.01.a
Determine the impact hunting and fishing have on the economy.		Enviro Science Standard 5	NRS.03.01.04.a
Discuss the principles of hunting safety.	12.10, 12.11	Enviro Science Standard 5	NRS.02.01.01.b
Identify the rules and regulations for hunting and fishing.	12.12	Enviro Science Standard 5	NRS.02.05.01.a