Oklahoma CTE

Environmental Science and Natural Resources (2014)

Adopted 2014

Environmental Safety and Regulations	**a.** Handle chemicals and equipment in a safe and appropriate manner. - fire extinguishers - biohazard waste/trash CS.07.04.02.A
	a. Identify laws associated with environmental service systems. ESS.02.01.01.A
	b. Identify the purposes of laws associated with environmental service systems. ESS.02.01.01.B
	a. Identify hazards associated with the outdoor environment. NRS.02.01.01.A
	a. Recognize biohazards associated with natural resources. NRS.02.01.02.A
	a. Identify laws associated with natural resource systems. NRS.02.05.01.A
	b. Identify the purposes of laws associated with natural resource systems. NRS.02.05.01.B
	a. Define mitigation. NRS.02.05.02.A
	b. Identify issues involving mitigation of natural resources. NRS.02.05.02.B
Environmental Resource Management	**a.** Describe different types of solid waste. ESS.04.02.01.A
	b. Evaluate environmental hazards created by different types of solid waste, solid waste accumulation and solid waste disposal. ESS.04.02.01.B
	a. Discuss practical management options for treating solid waste. ESS.04.02.02.A
	a. Define compost and composting. ESS.04.02.04.A
	a. Explain the importance of recycling. ESS.04.02.06.A
	a. Identify natural resources. NRS.01.01.01.A
	b. Differentiate between renewable and nonrenewable natural resources. NRS.01.01.01.B
	Define ecosystem and related terms. NRS.01.01.02.A

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	b. Describe the interdependence of organisms within an ecosystem. NRS.01.01.02.B
Energy Conservation	**a.** Identify conventional energy sources and list conservation measures to reduce energy consumption. ESS.05.01.01.A
	b. Identify advantages and disadvantages to conventional energy sources. ESS.05.01.01.B
	c. Evaluate the impact the burning of fossil fuels has on the environment. ESS.05.01.01.C
	a. Identify alternative energy sources. ESS.05.01.02.A
	b. Identify advantages and disadvantages to alternative energy sources. ESS.05.01.02.B
	c. Evaluate the impact of alternative energy sources on the environment. ESS.05.01.02.C
	a. Describe the value of minerals and ores to the economy. NRS.03.01.05.A
	a. Describe the value of fossil fuels to the economy. NRS.03.01.06.A
	a. Describe the benefits of hydroelectric generation. NRS.03.01.07.A
Soil Conservation and Management	**a.** Explain the process of soil formation through weathering. ESS.03.02.01.A
	b. Differentiate rock types and relate the chemical composition of mineral matter in soils to the parent material. ESS.03.02.01.B
	a. Describe the biodiversity found in soil and the contribution of biodiversity to the physical and chemical characteristics of soil. ESS.03.02.02.A
	a. Explain how the physical qualities of the soil influence the infiltration and percolation of water. ESS.03.02.03.A
	c. Conduct tests of soil to determine its use for environmental service systems. ESS.03.02.03.C
Wetland Management	**a.** Describe the functions of wetlands and differentiate types of wetlands. ESS.03.04.01.A
	b. Explain the criteria for classifying wetlands. ESS.03.04.01.B
	a. Identify the major types of living organisms that inhabit wetlands. ESS.03.04.02.A
	Explain the importance of wetland management, creation, enhancement and *r*estoration programs. ESS.03.04.03.A

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Pasture and Rangeland Management	**a.** Describe morphological characteristics used to identify herbaceous plants. NRS.01.02.02.A
	a. Identify characteristics of healthy rangeland. NRS.02.04.04.A
	b. Identify methods of rangeland improvement. NRS.02.04.04.B
	a. Define invasive species. NRS.02.06.07.A
Forest Ecology	**a.** Describe morphological characteristics used to identify trees and other woody plants. NRS.01.02.01.A
	b. Identify trees and other woody plants. NRS.01.02.01.B
	a. Identify characteristics of a healthy forest. NRS.02.04.02.A
	a. Define invasive species. NRS.02.06.07.A
	a. Describe forest harvesting methods. NRS.03.01.01.A
	a. Differentiate between desirable and undesirable fires and prepare a report on the role fire plays in a healthy ecosystem. NRS.04.01.01.A
	a. Identify causes of diseases in plants. NRS.04.02.01.A
	a. Identify harmful and beneficial insects and signs of insect damage to natural resources. NRS.04.03.01.A
Wildlife Ecology	**a.** Describe morphological characteristics used to identify wildlife species. NRS.01.02.03.A
	a. Identify characteristics of a healthy wildlife habitat. NRS.02.04.03.A
	b. Identify methods of wildlife habitat improvement. NRS.02.04.03.B
	a. Explain population ecology, population density and population dispersion. NRS.02.06.06.A
	a. Define invasive species. NRS.02.06.07.A
	a. Identify wildlife species that can be sustainably harvested. NRS.03.01.03.A
	a. Identify products obtained from wildlife species. NRS.03.01.04.A
	a. Identify causes of diseases in wildlife. NRS.04.02.02.A
Hy	Describe the world's water supplies and discuss the many uses of water. ESS.03.03.01.A

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	b. Describe characteristics of water that influence the biosphere and sustain life. ESS.03.03.01.B
	a. Demonstrate knowledge of hydrogeology by differentiating between groundwater and surface water. ESS.03.03.02.A
	b. Describe interactions between groundwater and surface water. ESS.03.03.02.B
	a. Identify environmental hazards associated with groundwater supplies. ESS.03.03.04.A
	b. Describe precautions taken to prevent/reduce contamination of groundwater supplies. ESS.03.03.04.B
	a. Identify types of pollution and distinguish between point source and nonpoint source pollution. ESS.04.01.01.A
	b. Give examples of how industrial and nonindustrial pollution has damaged the environment. ESS.04.01.01.B
	a. Describe ways in which pollution can be managed and prevented. ESS.04.01.02.A
	a. Identify biogeochemical cycles. NRS.02.06.01.A
	b. Diagram biogeochemical cycles and explain the processes. NRS.02.06.01.B
	a. Describe properties of watersheds and identify the boundaries of local watersheds. NRS.02.06.02.A
	b. Relate the function of watersheds to natural resources. NRS.02.06.02.B
	a. Define riparian zones and riparian buffers, and explain their functions. NRS.02.06.04.A
	a. Describe sources of pollution and delineate between point and nonpoint source pollution. NRS.02.06.08.A
	b. Describe the impact of pollution on natural resources. NRS.02.06.08.B
Aquatic Ecology	**a.** Describe morphological characteristics used to identify aquatic species. NRS.01.02.04.A
	a. Identify the different kinds of streams. NRS.02.04.01.A
	b. Identify indicators of the biological health of a stream. NRS.02.04.01.B
	a. Define invasive species. NRS.02.06.07.A
	Define source water quality. ESS.04.03.02.A

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Air Pollution Management	**a.** Identify components and structural layers of the earth's atmosphere. ESS.03.01.01.A
	b. Differentiate the types of weather systems and weather patterns. ESS.03.01.01.B
	a. Explain how meteorological conditions influence air quality. ESS.03.01.02.A
	b. Illustrate the formation of acid precipitation and explain its impact on the environment. ESS.03.01.02.B
	a. Explain climate change and recognize signs of climate change. ESS.03.01.03.A
	a. Describe ways in which pollution can be managed and prevented. ESS.04.01.02.A
Recreational Resources	**a.** Identify natural resource characteristics desirable for recreational purposes. NRS.02.04.05.A
	b. Identify natural resource management techniques for improving recreation opportunities. NRS.02.04.05.B
	a. Describe the processes associated with ecological succession. NRS.02.06.05.A
	a. Identify recreational uses of natural resources. NRS.03.01.08.A