

Terrestrial Environmental Science Scope & Sequence

Days	Unit	Standard(s)/Outcome(s)	Essential/Guiding Questions
5	Introduction to Terrestrial Ecology	<p>Define fundamental ecology terminology.</p> <p>Develop and implement a scientifically based ecology project that benefits the local community.</p>	<p>How can an ecology project benefit the local community?</p>
22	Terrestrial Ecosystems <ul style="list-style-type: none"> ■ Biomes ■ Succession ■ Energy transfer ■ Population dynamics ■ Community interactions ■ Human influence on terrestrial ecosystems 	<p>Analyze how various abiotic factors delineate terrestrial biomes.</p> <p>Distinguish different biomes based upon their characteristics.</p> <p>Describe plant and animal adaptations for living in various environments.</p> <p>Analyze the effect of altering the abiotic factors of a biome.</p> <p>Describe the patterns of succession.</p> <p>Analyze the effect of succession on an ecosystem</p> <p>Describe how energy is transferred</p>	<p>What abiotic and biotic factors distinguish one biome from another?</p> <p>What patterns can be found in ecological succession?</p> <p>How is energy transferred through an ecological community?</p> <p>What cause/effect relationships influence a population?</p> <p>What are the characteristics of an ecological community?</p> <p>How do humans influence ecosystems?</p>

		<p>in the environment.</p> <p>Construct food chains and food webs.</p> <p>Analyze human influence on food chains and food webs.</p> <p>Define the characteristics of a population.</p> <p>Explain the dynamics of population change</p> <p>Describe how abiotic factors play a role in the terrestrial biotic community.</p> <p>Analyze the importance of predator-prey relationships.</p> <p>Evaluate the role of other community relationships.</p> <p>Identify and solve problems causing habitat destruction.</p>	
5	<p>Land Use</p> <ul style="list-style-type: none"> ● Urban ● Agricultural 	<p>Describe different ways that land is used</p> <p>Explain how different type of land</p>	<p>How does land use change ecosystems?</p>

		<p>use affects local ecosystems (deforestation)</p> <p>Create a farming plan that utilizes environmentally sound practices</p> <p>Explain the effect of fertilizer use on the environment</p>	
5	<p>Waste Management</p> <ul style="list-style-type: none"> ● Land pollution ● Air pollution 	<p>Identify the sources and types of land pollution</p> <p>Explain the effects of pollution the terrestrial ecosystems</p> <p>Describe the goals and structure of a landfill</p> <p>Classify recyclable material</p> <p>Identify ways to reduce the amount of trash reaching the land fill</p> <p>Identify the sources and types of air pollution</p> <p>Discuss the effects of air pollution on the environment</p>	<p>What are sources of land pollution?</p> <p>What are sources of air pollution?</p>
4	<p>Energy</p> <ul style="list-style-type: none"> ● Climate change ● Alternative 	<p>Identify the causes of climate change</p>	<p>What effect does climate change have on the ecosystem?</p>

	energy	<p>Explain the effects of climates change on the environment</p> <p>Explain how the carbon cycle functions and its role in climate change</p> <p>Define and calculate the carbon footprint for the average person</p> <p>Identify the current sources of energy and what type of pollution they cause</p> <p>Design an alternative energy plan for your home</p> <p>Evaluate the pros and cons of using this alternative energy source</p>	<p>What are several types of alternative energy sources?</p>
4	Chestnut Ecology	<p>Introduce the importance of the Carroll County Chestnut Project</p> <p>Identify and describe the ecological importance of the American Chestnut</p> <p>Identify and describe the life cycle of the American Chestnut</p> <p>Discuss the current status of the</p>	<p>What is the ecological importance of the American Chestnut tree?</p>

		<p>American Chestnut</p> <p>Describe the role of invasive species in the destruction of the chestnut tree</p> <p>Describe the major characteristics of the American Chestnut tree</p> <p>Compare the leaves, bark, twigs, nuts of the American Chestnut to other common deciduous trees</p> <p>Analyze the use of backcrossing in the restoration of the Chestnut tree</p>	
--	--	---	--