

Ganado Unified School District

(Environmental Science/Grade 11th and 12th)

PACING Guide SY 2021 - 2022

ROSA D. BERCASIO

Timeline	AZ Science Standards	Crosscutting Concepts and Background Information	Learning Goals and Topics
Quarter 1	<p>L2: Organisms require a supply of energy and materials for which they often depend on, or compete with, other organisms & L4: The unity and diversity of organisms, living and extinct, is the result of evolution.</p> <p>Essential HS. L2U3.18 Obtain, evaluate, and communicate about the positive and negative ethical, social, economic, and political implications of human activity on the biodiversity of an ecosystem.</p>	<p>Patterns; Cause and Effect; Scale, Proportion and Quantity; Systems and System Models; Energy and Matter; Structure and Function; Stability and Change4</p> <p>Background Information: A complex set of interactions within an ecosystem can keep its numbers and types of organisms relatively constant over long periods of time under stable conditions. The impacts on biodiversity through overpopulation, overexploitation, habitat destruction, pollution, introduction of invasive species, and climate change. These problems have the potential to cause a major wave of biological extinctions—as many species or populations of a given species, unable to survive in changed environments, die</p>	<p>Scientific Skills and Processes and How they apply to Environmental Science</p> <p>The Physical Part of Our World Abiotic, Adaptions, Aquatic, Atmosphere, Biodiversity, Biomes, Biosphere, Biotic, Carbon Cycle, Components, Conservation, Ecosystem, Elements, Energy, Evolution, Extinction Food Chains, Food Webs, Geochemical, Hierarchy Hydrosphere, Interaction, Interrelationship, Law of Conservation, Lithosphere, Matter, Migration, Natural Selection, Nitrogen Cycle Oxygen Cycle.</p>

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		<p>out—and the effects may be harmful to humans and other living things. Thus sustaining biodiversity so that ecosystem functioning and productivity are maintained is essential to supporting and enhancing life on Earth. Sustaining biodiversity also aids humanity by preserving landscapes of recreational or inspirational value. 4 (p. 167)</p>	
<p>Quarter 2</p>	<p>L2: Organisms require a supply of energy and materials for which they often depend on, or compete with, other organisms.</p> <p>L4: The unity and diversity of organisms, living and extinct, is the result of evolution.</p> <p>Plus HS+B.L2U1.1 Develop a model showing the relationship between limiting factors and carrying capacity, and use the model to make predictions</p>	<p>Crosscutting Concepts:</p> <p>Patterns; Cause and Effect; Scale, Proportion and Quantity; System and System Models; Energy and Matter; Structure and Function; Stability and Change</p> <p>Background Information:</p> <p>A complex set of interactions within an ecosystem can keep its numbers and types of organisms relatively constant over long periods of time under stable conditions. The impacts on</p>	<p>The Living World</p> <p>Abiotic, Adaptions, Aquatic, Atmosphere, Biodiversity, Biomes, Biosphere, Biotic, CarbonQ Cycle , Components ,Conservation, Ecosystem, Elements, Energy, Evolution, Extinction Food Chains, Food Webs, Geochemical, Hierarchy Hydrosphere, Interaction, Interrelationship, Law of Conservation, Lithosphere, Matter, Migration, Natural Selection, Nitrogen Cycle Oxygen Cycle.</p>

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	on how environmental changes impact biodiversity.	biodiversity through overpopulation, overexploitation, habitat destruction, pollution, introduction of invasive species, and climate change. These problems have the potential to cause a major wave of biological extinctions—as many species or populations of a given species, unable to survive in changed environments, die out—and the effects may be harmful to humans and other living things. Thus sustaining biodiversity so that ecosystem functioning and productivity are maintained is essential to supporting and enhancing life on Earth. Sustaining biodiversity also aids humanity by preserving landscapes of recreational or inspirational value. 4 (p. 167)	Predator, Prey, Species, Stability Succession, Terrestrial Trophic Levels
Quarter 3	L2: Organisms require a supply of energy and materials for which they often depend on, or compete with, other organisms & L4: The unity and	Crosscutting Concepts: Patterns; Cause and Effect; Scale, Proportion and Quantity; System and System Models; Energy	Resources Agricultural, Availability, Benefits, Biomass Conservation, Consumption, Disadvantage Fossil Fuel, Geothermal, Hydroelectric Power Human impact, global climate change, and civic responsibility

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	<p>diversity of organisms, living and extinct, is the result of evolution.</p> <p>Plus HS+B.L4U1.2 Engage in argument from evidence that changes in environmental conditions or human interventions may change species diversity in an ecosystem.</p>	<p>and Matter; Structure and Function; Stability and Change</p> <p>Background Information:</p> <p>A complex set of interactions within an ecosystem can keep its numbers and types of organisms relatively constant over long periods of time under stable conditions. The impacts on biodiversity through overpopulation, overexploitation, habitat destruction, pollution, introduction of invasive species, and climate change. These problems have the potential to cause a major wave of biological extinctions—as many species or populations of a given species, unable to survive in changed environments, die out—and the effects may be harmful to humans and other living things. Thus sustaining biodiversity so that ecosystem functioning and productivity are maintained is essential to supporting and enhancing life on Earth. Sustaining biodiversity also aids humanity by</p>	<p>Activity, Agriculture, Air Pollution, Balancing Bioaccumulation, Civic Responsibility Climate Change , Conservation</p>

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		preserving landscapes of recreational or inspirational value. 4 (p. 167)	
Quarter 4	<p>L2: Organisms require a supply of energy and materials for which they often depend on, or compete with, other organisms & L4: The unity and diversity of organisms, living and extinct, is the result of evolution.</p> <p>Plus HS+B.L2U1.3</p> <p>Use mathematics and computational thinking to support claims for the cycling of matter and flow of energy through trophic levels in an ecosystem.</p>	<p>Crosscutting Concepts:</p> <p>Patterns; Cause and Effect; Scale, Proportion and Quantity; System and System Models; Energy and Matter; Structure and Function; Stability and Change</p> <p>Background Information:</p> <p>Scientific understanding can help to identify implications of certain applications but decisions about whether certain actions should be taken will require ethical and moral judgements which are not provided by knowledge of science. There is an important difference between the understanding that science provides about, for example, the need to preserve biodiversity, the factors leading to climate change and the adverse effects of harmful substances and lifestyles, and</p>	<p>Depletion, Destruction, Ecology, Erosion, Ecological Effect, Environmental, Habitat, Human Impact, Implication, Ozone, Population Growth, Waste Management.</p>

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Final Testing for students		<p>the actions that may or may not be taken in relation to these issues. Opinions may vary about what action to take but arguments based on scientific evidence should not be a matter of opinion. The total number of neutrons plus protons does not change in any nuclear process. Strong and weak nuclear interactions determine nuclear stability and processes. Spontaneous radioactive decays follow a characteristic exponential decay law. Nuclear lifetimes allow radiometric dating to be used to determine the ages of rocks and other materials from the isotope ratios present.</p>	

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