

Environmental A (Master)

Teacher: Logan Olesen
2020

March

Content	Skills	Learning Targets	Standards	Assessment	Resources & Technology
<p>CEQ</p> <ol style="list-style-type: none"> How do living and nonliving parts of the Earth interact and affect the survival of organisms? What factors contribute to changes in populations? How have human activities shaped local and global ecology? Can humans use informed decision making to maintain a sustainable lifestyle? 	<p>Biodiversity</p> <ol style="list-style-type: none"> Describe the six kingdoms of living things. Explain the types of biodiversity and how they are related. List the benefits of biodiversity. Explain how human activities can threaten biodiversity. Compare and contrast global efforts to preserve biodiversity. Describe how selective pressures favor different adaptations in a changing environment. 	<ol style="list-style-type: none"> I can describe the six kingdoms of living things. I can explain the types of biodiversity and how they are related. I can list the benefits of biodiversity. I can explain how human activities can threaten biodiversity. I can compare and contrast global efforts to preserve biodiversity. I can describe how selective pressures favor different adaptations in a changing environment. 	<p>9.1.3.1.2 9.1.3.1.3 9.4.2.1.1 9.4.2.4.2 9.4.2.2.1 9.4.2.2.2 9.4.4.1.2 9.4.4.1.3</p> <p>9.1.3.2.1 9.1.3.3.3 9.3.2.2.1 9.3.2.2.2 9.3.2.3.1 9.3.4.1.1 9.3.4.1.2</p>	<p>Unit test Chapter 10 & Ch. 4.2 Evolution Biodiversity Hotspot presentation</p> <p>Wolf Activities</p>	<p>http://www.enviroliteracy.org/...</p> <p>Web of Life Exploring Biodiversity video Lorax video Lorax Sequel Activity Golden Toad Article Clams of Mn Poster Hotspot Project/Maps What is Biodiversity Article Endangered Species Act / Book Biozones: Loss of Biodiversity Tropical Deforestation Impact of Alien Species Endangered Species Nature Reserves Conservation of Elephants</p> <p>Exotic Species: Asian Carp Videos on</p>

<p>Biodiversity UEQ</p> <ul style="list-style-type: none"> • <i>What is biodiversity and why is it important?</i> • <i>How do human activities affect biodiversity?</i> • <i>What efforts are being made to conserve biodiversity?</i> • <i>How does the process of evolution by natural selection increase biodiversity?</i> <p>Types of biodiversity</p> <p>Kingdoms</p> <p>Benefits of biodiversity</p> <p>Threats to biodiversity</p> <p>Hotspots in biodiversity</p>					<p>Youtube Cane Toad DVD Bad Bad Birds: Brood Parasitism article and DVD MN exotics pamphlets: loosestrife, Eurasian milfoil, Buckthorn removal, zebra mussels</p> <p>Wolf to Dog game Holt Environmental Science Karen Arms Copyright 2006 Chapters 4.2, 4.3 and 10 Wildlife Science Center (Forest Lake, MN) Dogs and More Dogs (NOVA video) True Story of the 3 Little Pigs DVD Fortunate Wilderness Isle Royale Wolf Study 1/5/11 Sand County Almanac; Thinking Like a Mountain Wolf to Dog Activity Wolf Body Language and Behavior Wolf to Woof Article</p>
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Conservation strategies					
Evolution					
Exotic Species					

April

Content	Skills	Learning Targets	Standards	Assessment	Resources & Technology
<p>Ecology</p> <p>UEQ</p> <ul style="list-style-type: none"> • <i>What are the levels of organization from an individual to the entire biosphere.</i> • <i>How does energy flow through ecosystems?</i> • <i>How do nutrients cycle through ecosystems?</i> • <i>What effect do humans have on the</i> 	<p>ECOLOGY</p> <ol style="list-style-type: none"> 1. Distinguish between biotic and abiotic factors in an ecosystem. 2. List and define levels of organization in the biosphere. 3. Explain the difference between the movement of energy and the movement of 	<ol style="list-style-type: none"> 1. I can distinguish between biotic and abiotic factors in an ecosystem. 2.I can list and define levels of organization in the biosphere. 3. I can explain the difference between the movement of energy and the movement of matter through the ecosystems. 4. I can explain how food webs are useful in predicting how 	<p>9.1.3.1.2</p> <p>9.1.3.1.3</p> <p>9.4.2.1.1</p> <p>9.4.2.4.2</p> <p>9.4.2.2.1</p> <p>9.4.2.2.2</p> <p>9.4.4.1.2</p> <p>9.4.4.1.3</p> <p>9.1.3.2.1</p> <p>9.1.3.3.3</p> <p>9.3.2.2.1</p> <p>9.3.2.2.2</p> <p>9.3.2.3.1</p> <p>9.3.4.1.1</p> <p>9.3.4.1.2</p>	<p>Chapter test 4: The Organization of Life Section 1 Everything is Connected Section 3 Diversity of Living Things</p> <p>Chapter Test 5: How Ecosystems Work Section 1 Energy Flow in Ecosystems Section 2 Cycling of</p>	<p>Chapter 4 Sections 4.1 & 4.3 Chapter 5 Sections 5.1, 5.2 and 5.3 Environmental Science Holt, Rinehart and Winston 2006 Karen Arms</p> <p>Water Cycle Dice/Journey Hydrological Cycle web activity Trophic Levels web activity Nutrient Cycles web activity Traveling Nitrogen Game Understanding Phosphorus</p>

<p><i>cycling of nutrients in the biosphere?</i></p> <ul style="list-style-type: none"> • <i>How do ecosystems change over time?</i> <p>Levels of Organization Food chains and Food webs Trophic levels and energy flow Nutrient cycles Eutrophication Climate Change Succession</p>	<p>matter through the ecosystems.</p> <p>4. Explain how food webs are useful in predicting how populations influence each other.</p> <p>5. Describe how nutrients cycles can be altered by human activity.</p> <p>6. Predict how an ecosystem may change over time.</p>	<p>populations influence each other.</p> <p>5.I can describe how nutrients cycles can be altered by human activity.</p> <p>6. I can predict how an ecosystem may change over time.</p>		<p>Materials Section 3 How Ecosystems Change</p>	
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DID NOT Do this Unit in 2019

Content	Skills	Learning Targets	Standards	Assessment	Resources & Technology
<p>Populations</p> <p>UEQ</p> <p>1. <i>What factors affect the growth of a population?</i></p> <p>2. <i>How do interactions between species affect population size?</i></p> <p>3. <i>What data is used to describe and predict</i></p>	<p>Populations</p> <p>1. Describe a population in terms of its size, density and dispersion patterns.</p> <p>2. Explain how population sizes in nature are regulated.</p>	<p>1. I can describe a population in terms of its size, density and dispersion patterns.</p> <p>2. I can explain how population sizes in nature are regulated.</p> <p>3. I can describe the five major types of interactions</p>	<p>9.1.3.1.2</p> <p>9.1.3.1.3</p> <p>9.4.2.1.1</p> <p>9.4.2.4.2</p> <p>9.4.2.2.1</p> <p>9.4.2.2.2</p> <p>9.4.4.1.2</p> <p>9.4.4.1.3</p> <p>9.1.3.2.1</p> <p>9.1.3.3.3</p>	<p>Population project Unit Test</p>	<p>Chapters 8 and 9 World in the Balance Oh Deer game Good Buddies Symbiosis Activity Turkey Trouble Activity Rabbit Situation Deer Predation/Starvation</p>

<p><i>human population growth?</i> <i>4. How does population growth contribute to increased environmental problems?</i></p> <p>Population Characteristics</p> <p>Exponential Growth</p> <p>Carrying capacity</p> <p>Species interactions/Symbiosis</p> <p>Demography and statistics</p> <p>Demographic transition</p> <p>Resource use and waste production</p>	<p>3. Describe the five major types of interactions between species and their effects on population size.</p> <p>4. Use data and graphs to explain and predict human population trends.</p> <p>5. Compare and contrast population trends in highly developed and least developed countries.</p> <p>6. Explain how population growth contributes to increased demand on local resources.</p>	<p>between species and their effects on population size.</p> <p>4. I can use data and graphs to explain and predict human population trends.</p> <p>5. I can compare and contrast population trends in highly developed and least developed countries.</p> <p>6. I can explain how population growth contributes to increased demand on local resources.</p>	<p>9.3.2.2.1 9.3.2.2.2 9.3.2.3.1 9.3.4.1.1 9.3.4.1.2</p>		<p>Checks and Balances Game</p>
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May

Content	Skills	Learning Targets	Standards	Assessment	Resources & Technology
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<p>Current Environmental Issues (Energy and Water) 2016 Focused entirely on water issues</p> <p><i>UEQ</i></p> <p><i>1. How do nations around the world work together to address environmental issues?</i></p> <p><i>2. How do humans affect other species through land use, and pollution?</i></p> <p>Bias</p> <p>Data interpretation</p> <p>Scientific Method</p>	<p>Current Environmental Issues</p> <p>1. Identify sources of bias, and explain how bias might influence the direction of research and interpretation of data.</p> <p>2. Determine if an argument is scientifically valid.</p> <p>3. Address the challenges of solving a global environmental issue.</p> <p>4. Explain how social, economic, cultural and political backgrounds influence perspectives.</p>	<p>1. I can identify sources of bias, and explain how bias might influence the direction of research and interpretation of data.</p> <p>2. I can determine if an argument is scientifically valid.</p> <p>3. I can address the challenges of solving a global environmental issue.</p> <p>4. I can explain how social, economic, cultural and political backgrounds influence perspectives.</p>	<p>9.1.3.1.2</p> <p>9.1.3.1.3</p> <p>9.4.2.1.1</p> <p>9.4.2.4.2</p> <p>9.4.2.2.1</p> <p>9.4.2.2.2</p> <p>9.4.4.1.2</p> <p>9.4.4.1.3</p> <p>9.1.3.2.1</p> <p>9.1.3.3.3</p> <p>9.3.2.2.1</p> <p>9.3.2.2.2</p> <p>9.3.2.3.1</p> <p>9.3.4.1.1</p> <p>9.3.4.1.2</p>	<p>Comprehensive Final Project</p> <p>Assessment and resources will vary depending on topic, time of year, current events, etc...</p> <p>Possible Chapter Tests based on Current Issue:</p> <p>Chapter 11 Water</p> <p>Chapter 12 Air</p> <p>Chapter 13 Atmosphere and Climate Change</p> <p>Chapter 14 Land</p> <p>Chapter 15 Food and Agriculture</p>	<p>Holt Environmental Science</p> <p>Karen Arms</p> <p>Copyright 2006</p> <p>Chapter 11 Water</p> <p>Chapter 12 Air</p> <p>Chapter 13 Atmosphere and Climate Change</p> <p>Chapter 14 Land</p> <p>Chapter 15 Food and Agriculture</p> <p>Water Resources</p> <p>Troubled Water Books</p> <p>Chemical Parameters of Water</p> <p>7 Ways to Save the Seas article</p> <p>Desalination article</p> <p>Newsweek: Liquid Asset Article</p> <p>Storm Ponds</p> <p>Yard Runoff</p> <p>Pervious Concrete</p> <p>Sample</p> <p>Nonpoint Source Pollution</p> <p>Wetlands</p> <p>Vernal Pool article</p> <p>Fowl Waters Article</p>
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					<p>Living in the Landscape VHS</p> <p>Secrets of Yellowstone: Ecology, Fire, Predation VHS</p> <p>Prairie Chickens of MN DVD</p> <p>Cry of the Marsh DVD</p> <p>Mn Tree Poster Wright County Native Vegetation Poster Mn Tree Keying guide Tree Height determination gauge</p> <p>Dirt the Movie Soil Ecology DVD Classroom Composting Rapid Test Soil Kits Soil Boring tool National Geographic Where Food Begins Geology of MN</p>
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