



Course Title: Environmental Science		
Description: In environmental science we will provide students with the scientific principles, concepts, and methodologies required to understand the interrelationships of the natural world, to identify and analyze environmental problems both natural and human-made, to evaluate the relative risks associated with these problems, and to examine alternative solutions for resolving or preventing them. Some topics investigated include Earth systems and resources, the living world, population, land and water use, energy resources and consumption, pollution, and global change.		
<u>Reporting Topic</u>	<u>Course Level Standards</u>	<u>Competency Statement</u>
<u>Sustainability</u>	<ul style="list-style-type: none">● HS-ESS 3-3. Create a computational simulation to illustrate the relationships among management of natural resources, the sustainability of human populations, and biodiversity.● HS-LS2-6. Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.	Students will be able to determine what causes their ecological footprint and how to decrease it.
<u>Earth Systems</u>	<ul style="list-style-type: none">● HS-LS2-6. Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.● HS-ESS 3-6. Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity.	Students will be able to describe how life on earth is affected by the interactions of the geosphere, hydrosphere, atmosphere and biosphere.
<u>Cycling of Matter and Energy</u>	<ul style="list-style-type: none">● HS-LS2-1. Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales.● HS-LS2-4 Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.	Students will be able to explain how energy and matter cycles through organisms living within an ecosystem.
<u>Ecosystem Dynamics and Species</u>	<ul style="list-style-type: none">● HS-LS2-6. Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.	Students will be able to explain how ecological succession results in the continuous changing of



<u>Interactions</u>		an ecosystem and its organisms.
<u>Populations</u>	<ul style="list-style-type: none"> • HS-LS2-1. Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity of ecosystems at different scales. • HS-LS2-2. Use mathematical representations to support and revise explanations based on evidence about factors affecting biodiversity and populations in ecosystems of different scales. 	Students will be able to calculate population totals and determine how those totals affect an ecosystem.
<u>Biodiversity</u>	HS-LS 2-6. Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.	Students will be able to explain the need for high biodiversity in order to have healthy ecosystems.
<u>Water and Pollution</u>	HS-ESS 3-6. Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity. HS-LS 2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.*	Students will be able to evaluate human activities and their effects on the hydrosphere.
<u>Air and Pollution</u>	HS-ESS 3-4. Evaluate or refine a technological solution that reduces impacts of human activities on natural systems.* HS-ESS 3-6. Use a computational representation to illustrate the relationships among Earth systems and how those relationships are being modified due to human activity. HS-LS 2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.	Students will be able to evaluate human activities and their effects on the atmosphere.
<u>Energy and Natural Resources</u>	HS-ESS 3-1. Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity HS-LS 2-7. Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.*	Students will be able to evaluate the influence of renewable and nonrenewable resources on the environment.