Environmental Science Subject Group Overview

Unit Name	Planet Earth and Earth's Cycles	Energy Resources	Climate Change	Impacts of the Human Population
Time Frame	18 weeks	6 weeks	6 weeks	6 weeks
Standards	SEV1.a, b, d, e, SEV2.c, d, SEV4.a, b, c	SEV1. c, SEV3.a, b, c, d	SEV2.a, b, SEV4.a, b	SEV5.a, b, c, d, SEV4.a, c
Approaches To Learning Instructional Strategies	**SEP** ● Developing and Using Models ● Engaging in Argument from evidence ● Obtaining, evaluating, and communicating information ● Collect and analyze data identify solutions and make informed decisions **ATL** Research Skills Thinking Skills Collaboration Skills Communication Skills	**SEP** ● Develop and Using Models ● Constructing explanations and designing solutions ● Collect and analyze data identify solutions and make informed decisions ● Obtaining, evaluating, and communicating information **ATL** Research Skills Thinking Skills Collaboration Skills Communication Skills	**SEP** ● Develop and Using Models ● Obtaining, evaluating, and communicating information ● Analyzing and interpreting data ● Asking questions and defining problems **ATL** Research Skills Thinking Skills Collaboration Skills Communication Skills	**SEP** ● Engaging in Argument from evidence ● Develop and Using Models ● Obtaining, evaluating, and communicating information ● Analyzing and interpreting data ● Asking questions and defining problems **ATL** Research Skills Thinking Skills Collaboration Skills Communication Skills
Statement of Inquiry	Ecosystems describe the web or network of relations among organisms at different scales of organization. **Phenomenon:** An ecosystem is a group of organisms and nonliving components linked by processes of energy transfer and cycling of components. Unless we understand the links, we cannot limit damage, conserve or restore. EarthRise Picture from the Apollo 8 mission on Christmas Eve. Historical fluctuations in climate. Photosynthesis seen from ISS.	A renewable energy source, such as biomass, is sometimes regarded as a good alternative to providing heat and electricity with fossil fuels. Biofuels are not inherently ecologically friendly for this purpose, while burning biomass is carbon-neutral, air pollution is still produced. **Phenomenon:** Nonrenewable energy sources include fossil fuels that come from beneath the ground and take millions of years to form.	Climate change is caused by factors such as biotic processes, variations in solar radiation received by Earth, plate tectonics, and volcanic eruptions. Certain human activities have been identified as primary causes of ongoing climate change, often referred to as global warming. **Phenomenon:** If emissions continue to rise at the present rate, the global average surface temperature will rise between two and six degrees by the end of this century due to the amplification of the greenhouse effect.	Unchecked human population growth could be a recipe for doom for the planet and its inhabitants. The human population has reached staggering levels in recent years—the number of people on the planet has doubled from 3.5 billion to seven billion in just a half century. **Phenomenon:** Human overpopulation is a major driving force behind the loss of ecosystems, such as rainforests, coral reefs, wetlands, Arctic ice, etc.

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Resources, materials, assessments not linked to SGO or unit planner will be reviewed at the local school level.

MCS Science Resources

Environmental Science Subject Group Overview

	Global Context	Scientific and Technical Innovation	Fairness and Development	Scientific and Technical Innovation	Globalization and Sustainability
	Key Concepts	Cause & Effect (CC) Stability & Change (CC & MYP) Patterns (CC) Matter & Energy (CC) Scale, Proportion & Quantity (CC) Structure & Function (CC)	Matter & Energy (CC) Structure & Function (CC) Stability & Change (CC & MYP) Systems & System Models (CC & MYP)	Patterns (CC) Cause & Effect (CC) Systems & System Models (CC & MYP) Stability & Change (CC & MYP)	Structure & Function (CC) Systems & System Models (CC & MYP) Matter & Energy (CC) Scale, Proportion & Quantity (CC) Patterns (CC)
	Related Concepts	Environment & Movement	Energy & Environment	Patterns & Environment	Form & Models
	Design Cycle Trans-disciplinary	**CORE IDEAS** ● Levels of biological organization ● Complexity within ecosystems ● Aquatic biomes in Georgia ● Adaptations ● Terrestrial biomes ● Biodiversity ● Energy	**CORE IDEAS** ● Energy Resources ● Renewable Resources ● Nonrenewable Resources ● Energy Consumption ● Alternative Resources	**CORE IDEAS** ● Short term Natural Cyclic fluctuations ● Long term Natural Cyclic fluctuations ● Atmospheric Chemistry ● Greenhouse Effect ● Human Impact on Natural Resources	**CORE IDEAS** ● Global Patterns of population growth ● Demographic transitions in developing and developed countries ● Demographic Diagrams ● Ecological Footprints
	MYP Assessments / Performance Tasks	Unit 1 Common Assessment Criterion A & D	Unit 2 Common Summative Assessment Criterion B & C	Unit 3 Common Summative Assessment Criterion A & D	Unit 4 Common Summative Assessment Criterion B & C
	Differentiation For Tiered Learners	Marietta City Schools teachers provide specific differentiation of learning experiences for all students. Details for differentiation for learning experiences are included on the district unit planners.			
	Course Levels	**Marietta City Schools offers Enhanced, Honors, Accelerated, and AP classes to provide differentiated learning experiences for students.**			

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