

**Union County Educational Services Commission  
High School Course Syllabus**

**Title:** Environmental Science

**Timeline:** Full Year; 5 Credits

**Course Description:**

The Big Bang Theory; weather; climate change - all heady subjects, all integral to our study of humanity's place in the universe. Environmental science students will explore the Earth's place in the universe and human interaction. Further, they will study the impact on Earth through a unique combination of multimedia and hands-on activities designed to put students' experiences into perspective with regards to the long history of everything around them. By the end of the course, students will have practical knowledge of such varied topics as planetary motion and earthquakes.

**Scope and Sequence:**

- I. Big Bang Theory
- II. Star Life Cycle
- III. Planets
- IV. Moon Phases and Tides
- V. Plate Tectonics
- VI. Earthquakes
- VII. Volcanoes
- VIII. Rock Cycle
- IX. Weather Patterns
- X. Layers of the Atmosphere
- XI. Carbon Cycle
- XII. Water Cycle
- XIII. The Climate
- XIV. Natural Resources

Refer to the attached curriculum map for a detailed outline of course objectives.

**Curriculum Alignment:**

New Jersey Student Learning Standards/Next Generation Science Standards - Earth and Space Sciences

**Grading Procedures:**

Do Now	10%
Participation	20%
Class Assignments	50%
Assessments	20%

**Adoption Date:**

Union County Educational Services Commission  
Curriculum Mapping Format: Environmental Science

Unit	Unit 1	Unit 2	Unit 3
Length of Unit	13 Weeks	13 Weeks	13 Weeks
Topic	Earth's Place in the Universe	Earth's Systems	Earth and Human Activity
Standards	<p><b>HS-ESS3-2</b> - Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.</p> <p><b>HS-ESS3-3</b> - Communicate scientific ideas about the way stars, over their life cycle, produce elements.</p> <p><b>HS-ESS3-4</b> - Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.</p> <p><b>HS-ESS3-6</b> - Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.</p>	<p><b>HS-ESS3-1</b> - Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.</p> <p><b>HS-ESS3-5</b> - Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.</p>	<p><b>HS-ESS3-1</b> - Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy that eventually reaches Earth in the form of radiation.</p> <p><b>HS-ESS3-5</b> - Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.</p> <p><b>HS-ESS3-6</b> - Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.</p>
Content/ Disciplinary Core Ideas	Big Bang Theory Star Life Cycle Planets Moon Phases Moon/Tides Plate Tectonics Earthquakes Volcanoes Natural Resources Developing Possible Solutions Human Impacts on Earth Systems Weather and Climate Global Climate Change	Weather Patterns Layers of Atmosphere Carbon Cycle Water Cycle Global Climate Patterns Population Impact on Climate Natural Resources Natural Hazards Global Climate Change	Types of Natural Resources Managing Natural Resources Human Impacts on Natural Resources Natural Hazards Global Climate Change Weather and Climate
Skills/ Science and Engineering	Constructing Explanations and Designing Solutions	Constructing Explanations and Designing Solutions	Constructing Explanations and Designing Solutions

Practices	Using Mathematical and Computational Thinking Engaging in Argument from Evidence	Analyzing and Interpreting Data	Using Mathematical and Computational Thinking Analyzing and Interpreting Data
Crosscutting Concepts	Stability and Change Systems and System Models	Stability and Change Cause and Effect	Stability and Change Cause and Effect Systems and System Models