

Southern York County School District Instructional Plan

Name:	Dates: 1 st Marking Period – August through October
Course/Subject: AP Environmental Science	Unit Plan 1: Foundations of Environmental Science
Stage 1 – Desired Results	
<p>PA Standard(s)/Assessment Anchors Addressed:</p> <p>S11.B.3.2.3: Explain how natural processes (hurricanes) impact the environment over time.</p> <p>S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.</p> <p>S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.</p> <p>S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.</p> <p>S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.</p> <p>S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.</p> <p>S11.A.3.2 Compare observations of the real world to observations of a constructed model.</p>	
<p>Understanding(s): <i>Students will understand . . .</i></p> <ol style="list-style-type: none"> Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world. 	<p>Essential Question(s):</p> <ul style="list-style-type: none"> ▪ How are environmental issues currently affecting real people around the world? ▪ How do scientists use data to explain the science behind environmental issues? ▪ How do decisions and actions impact the environment? ▪ How do culture and world view impact environmental decision?
<p>Learning Objectives: <i>Students will know . . .</i></p> <ul style="list-style-type: none"> ▪ How to apply concepts of models as a method to predict and understand science and technology. ▪ How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life. ▪ The influences of culture and worldview on the choices people make. ▪ The nature, evolution and expansion of environmental ethics in Western cultures. ▪ The precepts of classical and neoclassical economic theory and summarize their implications for the environment. ▪ Comparisons for the concepts of economic growth, economic health and sustainability. ▪ The explanation for the fundamentals of environmental economics and ecological economics. 	<p><i>Students will be able to:</i></p> <ul style="list-style-type: none"> ▪ Apply concepts of models as a method to predict and understand the science and technology involved in hurricane tracking. ▪ Assess and apply science and technology patterns to predict the movement and impact of hurricanes. ▪ Analyze the international implications of environmental occurrences.
Name:	Dates: 2nd Marking Period – November
Course/Subject: AP Environmental Science	Unit Plan 2: Environmental Issues: Population

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.B.3.2.3: Explain how natural processes (hurricanes) impact the environment over time.

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

1. Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world.

Essential Question(s):

- How are environmental issues currently affecting real people around the world?
- How do scientists use data to explain the science behind environmental issues?
- How do decisions and actions impact the environment?
- How do culture and world view impact environmental decision?

Learning Objectives:

Students will know . . .

- How to apply concepts of models as a method to predict and understand science and technology.
- How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- The influences of culture and worldview on the choices people make.
- The nature, evolution and expansion of environmental ethics in Western cultures.
- The precepts of classical and neoclassical economic theory and summarize their implications for the environment.
- Comparisons for the concepts of economic growth, economic health and sustainability.
- The explanation for the fundamentals of environmental economics and ecological economics.

Students will be able to:

- Apply concepts of models as a method to predict and understand the science and technology involved in hurricane tracking.
- Assess and apply science and technology patterns to predict human population growth.
- Analyze the international implications of environmental occurrences.

Name:

Dates: 2nd Marking Period – November

Course/Subject: AP Environmental Science

Unit Plan 3: Environmental Issues: Agriculture and Food

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.B.3.2.3: Explain how natural processes (hurricanes) impact the environment over time.

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

1. Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world.

Essential Question(s):

- How are environmental issues currently affecting real people around the world?
- How do scientists use data to explain the science behind environmental issues?
- How do decisions and actions impact the environment?
- How do culture and world view impact environmental decision?

Learning Objectives:

Students will know . . .

- How to apply concepts of models as a method to predict and understand science and technology.
- How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- The influences of culture and worldview on the choices people make.
- The nature, evolution and expansion of environmental ethics in Western cultures.
- The precepts of classical and neoclassical economic theory and summarize their implications for the environment.
- Comparisons for the concepts of economic growth, economic health and sustainability.
- The explanation for the fundamentals of environmental economics and ecological economics.

Students will be able to:

- Apply concepts of models as a method to predict and understand the science and technology involved in hurricane tracking.
- Assess and apply science and technology patterns to increase food production.
- Analyze the international implications of environmental occurrences.

Name:

Dates: 2nd Marking Period – December

Course/Subject: AP Environmental Science

Unit Plan 4: Environmental Issues: Biodiversity

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.B.3.2.3: Explain how natural processes impact the environment over time.

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

1. Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world.

Essential Question(s):

- How are environmental issues currently affecting real people around the world?
- How do scientists use data to explain the science behind environmental issues?
- How do decisions and actions impact the environment?
- How do culture and world view impact environmental decision?

Learning Objectives:

Students will know . . .

- How to apply concepts of models as a method to predict and understand science and technology.
- How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- The influences of culture and worldview on the choices people make.
- The nature, evolution and expansion of environmental ethics in Western cultures.
- The precepts of classical and neoclassical economic theory and summarize their implications for the environment.
- Comparisons for the concepts of economic growth, economic health and sustainability.
- The explanation for the fundamentals of environmental economics and ecological economics.

Students will be able to:

- Apply concepts of models as a method to predict and understand the science and technology involved in hurricane tracking.
- Assess and apply science and technology patterns to maintain biodiversity.
- Analyze the international implications of environmental occurrences.

Name:

Dates: 2nd Marking Period – January

Course/Subject: AP Environmental Science

Unit Plan 6: Resource Management: Land Use and Urbanization

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.B.3.2.3: Explain how natural processes impact the environment over time.

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

1. Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world.

Essential Question(s):

- How are environmental issues currently affecting real people around the world?
- How do scientists use data to explain the science behind environmental issues?
- How do decisions and actions impact the environment?
- How do culture and world view impact environmental decision?

Learning Objectives:

Students will know . . .

- How to apply concepts of models as a method to predict and understand science and technology.
- How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- The influences of culture and worldview on the choices people make.
- The nature, evolution and expansion of environmental ethics in Western cultures.
- The precepts of classical and neoclassical economic theory and summarize their implications for the environment.
- Comparisons for the concepts of economic growth, economic health and sustainability.
- The explanation for the fundamentals of environmental economics and ecological economics.

Students will be able to:

- Apply concepts of models as a method to predict and understand the science and technology involved in hurricane tracking.
- Assess and apply science and technology patterns to manage land use.
- Analyze the international implications of environmental occurrences.

Name:

Dates: 2nd Marking Period – December

Course/Subject: AP Environmental Science

Unit Plan 5: Environmental Health and Pollution

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.B.3.2.3: Explain how natural processes impact the environment over time.

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

1. Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world.

Essential Question(s):

- How are environmental issues currently affecting real people around the world?
- How do scientists use data to explain the science behind environmental issues?
- How do decisions and actions impact the environment?
- How do culture and world view impact environmental decision?

Learning Objectives:

Students will know . . .

- How to apply concepts of models as a method to predict and understand science and technology.
- How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- The influences of culture and worldview on the choices people make.
- The nature, evolution and expansion of environmental ethics in Western cultures.
- The precepts of classical and neoclassical economic theory and summarize their implications for the environment.
- Comparisons for the concepts of economic growth, economic health and sustainability.
- The explanation for the fundamentals of environmental economics and ecological economics.

Students will be able to:

- Apply concepts of models as a method to predict and understand the science and technology involved in hurricane tracking.
- Assess and apply science and technology patterns to manage environmental health and pollution.
- Analyze the international implications of environmental occurrences.

Name:

Dates: 3rd Marking Period – February

Course/Subject: AP Environmental Science

Unit Plan 7: Natural Resources: Water

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.B.3.2.3: Explain how natural processes impact the environment over time.

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

- Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world.

Essential Question(s):

- How are environmental issues currently affecting real people around the world?
- How do scientists use data to explain the science behind environmental issues?
- How do decisions and actions impact the environment?
- How do culture and world view impact environmental decision?

Learning Objectives:

Students will know . . .

- How to apply concepts of models as a method to predict and understand science and technology.
- How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- The influences of culture and worldview on the choices people make.
- The nature, evolution and expansion of environmental ethics in Western cultures.
- The precepts of classical and neoclassical economic theory and summarize their implications for the environment.
- Comparisons for the concepts of economic growth, economic health and sustainability.
- The explanation for the fundamentals of environmental economics and ecological economics.

Students will be able to:

- Apply concepts of models as a method to predict and understand the science and technology involved managing water resources.
- Assess and apply science and technology patterns to manage water resources.
- Analyze the international implications of environmental occurrences.

Name:

Dates: 3rd Marking Period – March

Course/Subject: AP Environmental Science

Unit Plan 8: Natural Resources: Air

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.B.3.2.3: Explain how natural processes impact the environment over time.

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

- Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world.

Essential Question(s):

- How are environmental issues currently affecting real people around the world?
- How do scientists use data to explain the science behind environmental issues?
- How do decisions and actions impact the environment?
- How do culture and world view impact environmental decision?

Learning Objectives:

Students will know . . .

- How to apply concepts of models as a method to predict and understand science and technology.
- How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- The influences of culture and worldview on the choices people make.
- The nature, evolution and expansion of environmental ethics in Western cultures.
- The precepts of classical and neoclassical economic theory and summarize their implications for the environment.
- Comparisons for the concepts of economic growth, economic health and sustainability.
- The explanation for the fundamentals of environmental economics and ecological economics.

Students will be able to:

- Apply concepts of models as a method to predict and understand the science and technology involved managing the air around us.
- Assess and apply science and technology patterns to manage the air around us.
- Analyze the international implications of environmental occurrences.

Name:

Dates: 3rd Marking Period – March

Course/Subject: AP Environmental Science

Unit Plan 9: Global Climate Change

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.B.3.2.3: Explain how natural processes impact the environment over time.

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

1. Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world.

Essential Question(s):

- How are environmental issues currently affecting real people around the world?
- How do scientists use data to explain the science behind environmental issues?
- How do decisions and actions impact the environment?
- How do culture and world view impact environmental decision?

Learning Objectives:

Students will know . . .

- How to apply concepts of models as a method to predict and understand science and technology.
- How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- The influences of culture and worldview on the choices people make.
- The nature, evolution and expansion of environmental ethics in Western cultures.
- The precepts of classical and neoclassical economic theory and summarize their implications for the environment.
- Comparisons for the concepts of economic growth, economic health and sustainability.
- The explanation for the fundamentals of environmental economics and ecological economics.

Students will be able to:

- Apply concepts of models as a method to predict and understand the science and technology involved in understanding global climate change.
- Assess and apply science and technology patterns to determine the extent of global climate change.
- Analyze the international implications of environmental occurrences.

Name:

Dates: 4th Marking Period – April

Course/Subject: AP Environmental Science

Unit Plan 10: Natural Resources: Energy

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.B.3.2.3: Explain how natural processes impact the environment over time.

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

1. Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world.

Essential Question(s):

- How are environmental issues currently affecting real people around the world?
- How do scientists use data to explain the science behind environmental issues?
- How do decisions and actions impact the environment?
- How do culture and world view impact environmental decision?

Learning Objectives:

Students will know . . .

- How to apply concepts of models as a method to predict and understand science and technology.
- How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- The influences of culture and worldview on the choices people make.
- The nature, evolution and expansion of environmental ethics in Western cultures.
- The precepts of classical and neoclassical economic theory and summarize their implications for the environment.
- Comparisons for the concepts of economic growth, economic health and sustainability.
- The explanation for the fundamentals of environmental economics and ecological economics.

Students will be able to:

- Apply concepts of models as a method to predict and understand the science and technology involved in the production of energy.
- Assess and apply science and technology patterns to produce energy.
- Analyze the international implications of environmental occurrences.

Name:

Dates: 4th Marking Period – April

Course/Subject: AP Environmental Science

Unit Plan 11: Waste Management

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.B.3.2.3: Explain how natural processes impact the environment over time.

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

1. Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world.

Essential Question(s):

- How are environmental issues currently affecting real people around the world?
- How do scientists use data to explain the science behind environmental issues?
- How do decisions and actions impact the environment?
- How do culture and world view impact environmental decision?

Learning Objectives:

Students will know . . .

- How to apply concepts of models as a method to predict and understand science and technology.
- How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- The influences of culture and worldview on the choices people make.
- The nature, evolution and expansion of environmental ethics in Western cultures.
- The precepts of classical and neoclassical economic theory and summarize their implications for the environment.
- Comparisons for the concepts of economic growth, economic health and sustainability.
- The explanation for the fundamentals of environmental economics and ecological economics.

Students will be able to:

- Apply concepts of models as a method to predict and understand the science and technology involved in the management of waste.
- Assess and apply science and technology patterns to manage waste.
- Analyze the international implications of environmental occurrences.

Name:

Dates: 4th Marking Period – April

Course/Subject: AP Environmental Science

Unit Plan 12: Waste Management

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.B.3.2.3: Explain how natural processes impact the environment over time.

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

1. Our intricate relationship with the environment and the factors involved with making balanced decisions to create a better world.

Essential Question(s):

- How are environmental issues currently affecting real people around the world?
- How do scientists use data to explain the science behind environmental issues?
- How do decisions and actions impact the environment?
- How do culture and world view impact environmental decision?

Learning Objectives:

Students will know . . .

- How to apply concepts of models as a method to predict and understand science and technology.
- How to analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.
- The influences of culture and worldview on the choices people make.
- List the major approaches to managing waste.
- Delineate the scale of the waste dilemma.
- Describe conventional waste disposal methods: landfills and incineration.
- Evaluate approaches for reducing waste: source reduction, reuse, composting and recycling.
- Discuss industrial solid waste management and principles of industrial ecology.
- Assess issues in managing hazardous waste.

Students will be able to:

- Apply concepts of models as a method to predict and understand the science and technology involved in the management of waste.
- Assess and apply science and technology patterns to manage waste.
- Analyze the international implications of environmental occurrences.
- Analyze personal solid waste.

Name:

Dates: May (After AP Test)

Course/Subject: AP Environmental Science

UNIT 13: Field Study in Environmental Science

Stage 1 – Desired Results

PA Standard(s)/Assessment Anchors Addressed:

S11.A.1.1.4: Explain how specific scientific knowledge or technological design concepts solve practical problems.

S11.A.1.2.1: Apply and explain scientific concepts to societal issues using case studies.

S11.A.1.3.1 Use appropriate quantitative data to describe or interpret change in systems.

S11.A.2.2.1 Evaluate appropriate methods, instruments and scale for precise quantitative and qualitative observations.

S11.A.2.2.2 Explain how technology is used to extend human abilities and precision.

S11.A.3.2 Compare observations of the real world to observations of a constructed model.

Understanding(s):

Students will understand . . .

- How scientists know what they know.

Essential Question(s):

- How do scientists study ecosystem to explain the science behind the Susquehannock forested areas?

Learning Objectives:

Students will know . . .

- That scientists can engage in scientific inquiry to extend thinking and add to the overall body of knowledge.

Students will be able to:

- Plan and implement data collection strategies appropriate to the study of the forested areas of the Susquehannock High School campus.
- Perform data analysis and evaluation of evidence.
- Communicate the results of studies.