AP Environmental Science SC5181 A	Scope and Sequence
Unit Lesson	**Objectives**
INTRODUCTION	
Energy Transfer	
	Explain how energy is transferred within and between environments on Earth.
Interactions between Living Things, Land, Water, and Air	
	Describe how the biosphere requires resources from the other three spheres to persist.
Resource Availability, Human Consumption, and Population Growth	
	Define sustainability in terms of resource availability, human consumption and human population growth.
Human Resource Use and Sustainability	
	Describe the tragedy of the commons in relation to human resource use and sustainability.
Methods of Science	
	Explain how observation, hypothesizing, and experimentation are used to make scientific conclusions.
Accuracy, Precision, and Uncertainty	
	Explain accuracy and precision and how each is increased or decreased while taking measurements.
Data Analysis	
	Evaluate whether or not presented data support a hypothesis and were taken using controlled scientific methods.
Wet Lab: The Scientific Method Inquiry	
	Learn how to design an experiment using the scientific method.
Review: Introduction	

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		Describe how the biosphere requires resources from the other three spheres to persist.
		Define sustainability in terms of resource availability, human consumption, and human population growth.
		Describe the tragedy of the commons in relation to human resource use and sustainability.
		Explain how observation, hypothesizing, and experimentation are used to make scientific conclusions.
		Explain accuracy and precision and how each is increased or decreased while taking measurements.
		Evaluate whether or not presented data support a hypothesis and were taken using controlled scientific methods.
	Test	
THE	**BIOSPHERE**	
	Predation	
		Describe predator-prey relationships.
		Describe symbiosis, mutualism, commensalism, and parasitism. Provide examples of each.
		Describe interspecific and intraspecific competition and give examples of each.
	Niches and Competitive Exclusion	
		Describe niche and competitive exclusion.
		Describe how resources partitioning and niche differentiation reduce competition and prevent competitive exclusion.
	Trophic Levels	
		Construct a trophic level diagram containing producers, primary consumers, secondary consumers, and decomposers, that describes the flow of matter through a community.
	Energy Flow in a Food Web	
		Describe the flow of energy in a food web diagram and explain why only about 10 percent of the energy is passed between trophic levels.

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	Food Webs	
		Predict how a food web will change with the loss or addition of a species.
	Factors Determining the Characteristics of an Ecosystem	
		Define biotic factors, abiotic factors, and ecosystems.
		Explain how ecosystems are systems and create a model of an ecosystem as a system that includes inputs, outputs, and cycled materials.
	Carbon	
		Explain, using models, how carbon atoms move between sources and sinks in the carbon cycle.
		Evaluate how long carbon can reside in the sources and sinks of the carbon cycle.
		Explain, using models, how carbon cycles between producers, consumers and decomposers.
		Evaluate claims about how the burning of fossil fuels increases carbon dioxide in the atmosphere based on the carbon cycle.
	Nitrogen	
		Explain, using models, how nitrogen atoms move between sources and sinks in the nitrogen cycle.
		Evaluate how long nitrogen can reside in the sources and sinks of the nitrogen cycle.
		Explain nitrogen fixation as the process in which atmospheric nitrogen is converted into a form of nitrogen (primarily ammonia) that is taken in by plants and used to synthesize plant tissues.
	Phosphorus	
		Explain, using models, how phosphorus atoms move between sources and sinks in the phosphorus cycle.
		Explain why phosphorus is often a limiting factor in aquatic and terrestrial ecosystems.
	Wet Lab: Chemical Weathering: Carbonation vs. Hydrolysis	

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		To learn how weak acids and water compare in the process of chemical weathering of rocks.
	Water	
		Explain how the properties of liquid water (cohesion and adhesion, specific heat, expands as it freezes, good solvent) are important to maintaining life.
		Explain and model how water molecules move between sources and sinks in the hydrological cycle.
	Climate and Biomes	
		Describe biomes and how climate influences the distribution of biomes.
		Identify the characteristics of the major terrestrial biomes, including taiga, temperate rainforests, temperate seasonal forests, tropical rainforests, shrubland, temperate grassland, savanna, desert, and tundra.
	Aquatic Biomes	
		Identify the characteristics of the major aquatic biomes, both freshwater and saltwater.
		Identify the characteristics of the major freshwater biomes, including streams, rivers, ponds, and lakes.
		Identify the characteristics of the major saltwater biomes, including oceans, coral reefs, marshland, and estuaries.
	Wet Lab: Study Your Biome	
		To determine the biome that you live in by exploring the abiotic and biotic factors of your local environment.
	Productivity	
		Describe primary productivity, gross primary productivity, and net primary productivity.
		Compare net and gross primary productivity across aquatic and terrestrial biomes.
		Describe how climate changes have shifted the distribution of biomes in the past and continues to do so with modern anthropogenic climate change. Describe how mineral and non-mineral natural resources in the terrestrial environment are distributed globally.
	Wet Lab: Primary Productivity of Grass	
		To learn about primary productivity and how sunlight influences net productivity in an ecosystem.

AP Environmental Science SC5181 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
	Review: The Biosphere	
		Define predation as an organism eating another organism.
		Describe symbiosis, mutualism, commensalism, and parasitism. Provide examples of each.
		Describe interspecific and intraspecific competition and give examples of each.
		Describe niche and competitive exclusion.
		Describe how resources partitioning and niche differentiation reduce competition and prevent competitive exclusion.
		Construct a trophic level diagram containing producers, primary consumers, secondary consumers, and decomposers, that describes the flow of matter through a community
		Describe the flow of energy in a food web diagram and explain why only about 10 percent of the energy is passed between trophic levels.
		Predict how a food web will change with the loss or addition of a species.
		Define biotic factors, abiotic factors, and ecosystem
		Explain how ecosystems are systems and create a model of an ecosystem as a system that includes inputs, outputs, and cycled materials.
		Explain, using models, how carbon atoms move between sources and sinks in the carbon cycle.
		Evaluate how long carbon can reside in the sources and sinks of the carbon cycle.
		Explain, using models, how carbon cycles among producers, consumers, and decomposers.
		Evaluate claims about how the burning of fossil fuels increases carbon dioxide in the atmosphere based on the carbon cycle.
		Explain, using models, how nitrogen atoms move between sources and sinks in the nitrogen cycle.
		Evaluate how long nitrogen can reside in the sources and sinks of the nitrogen cycle.
		Explain nitrogen fixation as the process in which atmospheric nitrogen is converted into a form of nitrogen (primarily ammonia) that is taken in by plants and used to synthesize plant tissues.
		Explain, using models, how phosphorus atoms move between sources and sinks in the phosphorus cycle.

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Unit	**Lesson**	**Objectives**
		Explain how the properties of liquid water (cohesion and adhesion, specific heat, expands as it freezes, good solvent) are important to maintaining life.
		Explain and model how water molecules move between sources and sinks in the hydrological cycle.
		Describe biomes and how climate influences the distribution of biomes.
		Identify the characteristics of the major terrestrial biomes, including taiga, temperate rainforests, temperate seasonal forests, tropical rainforests, shrubland, temperate grassland, savanna, desert, and tundra.
		Identify the characteristics of the major aquatic biomes, both freshwater and saltwater.
		Identify the characteristics of the major freshwater biomes, including streams, rivers, ponds, and lakes.
		Identify the characteristics of the major saltwater biomes, including oceans, coral reefs, marshland, and estuaries.
		Describe primary productivity, gross primary productivity, and net primary productivity.
		Compare net and gross primary productivity across aquatic and terrestrial biomes.
		Describe how climate changes have shifted the distribution of biomes in the past and continues to do so with modern anthropogenic climate change. Describe how mineral and non-mineral natural resources in the terrestrial environment are distributed globally.
	Test	
BIODIVERSITY		
	Biodiversity and Species Richness	
		Define genetic, habitat, and species diversity as well as species richness.
		Describe the relationship between the genetic diversity of a population and how well it can respond to environmental stressors.
		Explain a population bottleneck and how it can lead to a loss of genetic diversity. An example is elephant seal populations affected by hunting.
	Ecosystem Resiliency	
		Predict how quickly an ecosystem of given size will respond to a disturbance.

AP Environmental Science SC5181 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Explain how the loss of habitat leads to a loss of specialist species followed by a loss of generalist species, as well as reduced numbers of species that have large territorial requirements.
	Wet Lab: Modeling Species Abundance and Diversity of Pollinators	
		To model the diversity of pollinators and calculate the diversity index of two different sample groups.
	Ecosystem Services	
		Define the four categories of ecosystem services: provisioning, regulating, cultural, and supporting.
		Predict how human activity can alter ecosystem services.
	Island Biogeography	
		Define island biogeography as the study of the ecological relationships and distribution of organisms on islands, and of these organisms' community structures.
	Wet Lab: Island Biogeography	
		To learn how distance from the mainland and the size of an island affect the number of species on an island.
	Island Species	
		Define ecological tolerance as the range of conditions, such as temperature, salinity, flow rate, and sunlight that an organism or species can endure before injury or death results.
		Explain why islands tend to support more specialists and the effects of islands being colonized by new species arriving from elsewhere.
	Evolution of Species	
		Explain how species have evolved to be specialists versus generalists because of the resources, such as food and territory, and how invasive species affect specialists.
		Define evolution and explain how organisms adapt to their environment over time, both in short- and long-term scales, via small changes at the genetic level.
	Natural Disruptions and Environmental Changes	

AP Environmental Science SC5181 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Explain how natural disruptions, both short- and long-term, impact an ecosystem.
		Explain how environmental change drives natural selection, and give examples.
	Interactive Simulation: Natural Selection	
	Ecological Succession	
		Compare and contrast primary and secondary succession.
		Describe keystone species and their communities.
		Explain indicator species and how they can be used to judge ecosystem health.
		Define pioneer members of an early successional species and how they may result in the origin of new species.
		Analyze how a disturbance in an ecosystem will affect the total biomass, species richness, and net productivity over time.
	Virtual Lab: Evidence of Succession	
		To learn about ecological succession and its role in forming a climax community.
	Review: Biodiversity	
		Define genetic, habitat, and species diversity as well as species richness.
		Describe the relationship between the genetic diversity of a population and how well it can respond to environmental stressors.
		Explain a population bottleneck and how it can lead to a loss of genetic diversity.
		Predict how quickly an ecosystem of given size will respond to a disturbance.
		Explain how the loss of habitat leads to a loss of specialist species followed by a loss of generalist species, as well as reduced numbers of species that have large territorial requirements.
		Define the four categories of ecosystem services: provisioning, regulating, cultural, and supporting.
		Predict how human activity can alter ecosystem services.

AP Environmental Science SC5181 A	Scope and Sequence
Unit Lesson	**Objectives**
	Define island biogeography as the study of the ecological relationships and distribution of organisms on islands, and of these organisms' community structures.
	Define ecological tolerance as the range of conditions, such as temperature, salinity, flow rate, and sunlight that an organism or species can endure before injury or death results.
	Explain why islands tend to support more specialists and the effects of islands being colonized by new species arriving from elsewhere.
	Explain how species have evolved to be specialists versus generalists because of the resources, such as food and territory, and how invasive species affect specialists.
	Define evolution and explain how organisms adapt to their environment over time, both in short- and long-term scales, via small changes at the genetic level.
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	Explain indicator species and how they can be used to judge ecosystem health.
	Define pioneer members of an early successional species and how they may result in the origin of new species.
	Analyze how a disturbance in an ecosystem will affect the total biomass, species richness, and net productivity over time.
Test	
POPULATIONS	
Reproduction	

AP Environmental Science SC5181 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Define biotic potential.
		Compare and identify the differences between generalist and specialist species.
		Compare r-selected and K-selected species.
		Students will research and summarize the characteristics of several r- versus K-selected species.
		Describe examples of species that are not strictly r- or K-selected.
	Survivorship Curves	
		Analyze survivorship curves and compare Type I, Type II, and Type III curves.
		Explain how survivorship differs between r-selected and K-selected species.
	Population	
		Explain statistics used to describe populations, including abundance, density, and distribution.
	Virtual Lab: Effects of Limiting Factors on Population Growth	
		To learn about how limiting factors influence population growth by modeling the allocation of different types of land resources to humans.
	Carrying Capacity	
		Define carrying capacity and predict factors that impact a habitat's carrying capacity.
	Statistics and Factors Affecting Human Population Growth Rates	
		Identify factors that predict whether human populations will increase or decrease.
		Identify limiting factors on human populations and differentiate between density-dependent and density-independent factors.
		Calculate the doubling time of a human population, using the rule of 70.
	Interpreting Population Growth Rates	

AP Environmental Science SC5181 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Explain population growth rates utilizing age structure diagrams.
		Explain the demographic transition as the transition from high to lower birth and death rates in a country or region as it develops from a preindustrial to an industrialized economic system.
		Describe the 4 stages of demographic transition according to the demographic transition model (DTM).
	Review: Populations	
		Define biotic potential.
		Compare and identify the differences between generalist and specialist species.
		Compare r-selected and K-selected species.
		Students will research and summarize the characteristics of several r- versus K-selected species.
		Describe examples of species that are not strictly r- or K-selected.
		Analyze survivorship curves and compare Type I, Type II, and Type III curves.
		Explain how survivorship differs between r-selected and K-selected species.
		Explain statistics used to describe populations, including abundance, density, and distribution.
		Define carrying capacity and factors that determine a habitat's carrying capacity.
		Identify factors that predict whether human populations will increase or decrease.
		Identify limiting factors on human populations and differentiate between density-dependent and density-independent factors.
		Calculate the doubling time of a human population, using the rule of 70.
		Explain population growth rates utilizing age structure diagrams.
		Explain the demographic transition as the transition from high to lower birth and death rates in a country or region as it develops from a preindustrial to an industrialized economic system.
		Describe the 4 stages of demographic transition according to the demographic transition model (DTM).
	Test	

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Unit	**Lesson**	**Objectives**
THE PHYSICAL SPHERES		
	Earth's Interior	
		Describe the layers of the Earth (core, mantle, crust) and define plate tectonics.
		Model how convection in the mantle drives plate tectonics.
		Explain how transform boundaries often result in earthquakes.
		Compare convergent and divergent boundaries involving continental and oceanic plates.
	Soil Formation	
		Explain how soil forms.
		Categorize soils by horizons and describe their composition and organic material.
		Explain how soils are eroded.
		Explain how soils affect water quality.
		Explain how particle size and composition of soil can affect the porosity, permeability, water-holding capacity, and fertility of the soil.
		Analyze a soil texture triangle, a diagram to identify and compare soil types based on their percentage of clay, silt, and sand.
	Atmosphere	
		Identify the major gases that make up the atmosphere and their relative abundance.
		Compare and contrast the mesosphere, thermosphere, and exosphere and how they are differentiated based on temperature gradients.
		Explain how uneven heating of the Earth results in density differences in the air that create the prevailing wind bands that vary with latitude.
		Explain how the Coriolis effect affects the direction of prevailing winds, based on latitude.
	Atmospheric Convection	
		Model atmospheric convection that results in low pressure systems that cause rain and high pressure systems that bring

AP Environmental Science SC5181 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		fair weather.
	Rain Shadow Effect	
		Describe models of a rain shadow caused by a mountain.
		Explain how El Niño and La Niña form and their effects on seasonal climates.
	Sun Angle, Insolation, and Latitude	
		Describe how the angle of the sun's rays, and the intensity of solar radiation, differs based on latitude because of the tilt of the Earth.
		Describe how the hours of light received per day varies with latitude due to Earth's tilt and position in its orbit.
		Describe how the seasons result from Earth's tilt and position in its orbit.
		Identify the longest summer and shortest winter days in each hemisphere.
	Wet Lab: Climate Change and Cities Engineering Design	
		To develop an engineering design solution to determine materials and landscaping that will help lower temperatures in your school building or home.
	Water Infiltration	
		Evaluate the amount of freshwater and saltwater within various reservoirs on Earth.
	Review: The Physical Spheres	
		Describe the layers of the Earth (core, mantle, crust) and define plate tectonics.
		Model how convection in the mantle drives plate tectonics.
		Compare convergent and divergent boundaries involving continental and oceanic plates.
		Explain how transform boundaries often result in earthquakes.
		Explain how soil forms.
		Categorize soils by horizons and describe their composition and organic material.

AP Environmental Science SC5181 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Explain how soils are eroded.
		Explain how soils affect water quality.
		Explain how particle size and composition of soil can affect the porosity, permeability, water-holding capacity, and fertility of the soil.
		Analyze a soil texture triangle. A soil texture triangle is a diagram to identify and compare soil types based on their percentage of clay, silt, and sand.
		Identify the major gases that make up the atmosphere and their relative abundance.
		Compare and contrast the mesosphere, thermosphere, and exosphere and how they are differentiated based on temperature gradients.
		Explain how uneven heating of the Earth results in density differences in the air that create the prevailing wind bands that vary with latitude.
		Explain how the Coriolis effect affects the direction of prevailing winds, based on latitude.
		Model atmospheric convection that results in low pressure systems that cause rain and high pressure systems that bring fair weather.
		Describe models of a rain shadow caused by a mountain.
		Explain how El Niño and La Niña form and their effects on seasonal climates.
		Evaluate the amount of freshwater and saltwater within various reservoirs on the Earth.
		Describe how the angle of the sun's rays, and the intensity of solar radiation, differs based on latitude because of the tilt of the Earth.
		Describe how the hours of light received per day varies with latitude due to Earth's tilt and position in its orbit.
		Describe how the seasons result from Earth's tilt and position in its orbit.
		Identify the longest summer and shortest winter days in each hemisphere.
	Test	
SEMESTER REVIEW AND EXAM		
	Semester Review	

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Unit Lesson	**Objectives**
	Explain how energy is transferred within and between environments on Earth.
	Describe how the biosphere requires resources from the other three spheres to persist.
	Define sustainability in terms of resource availability, human consumption, and human population growth.
	Describe the tragedy of the commons in relation to human resource use and sustainability.
	Explain how observation, hypothesizing, and experimentation are used to make scientific conclusions.
	Explain accuracy and precision and how each is increased or decreased while taking measurements.
	Evaluate whether or not presented data support a hypothesis and were taken using controlled scientific methods.
	Define predation as an organism eating another organism.
	Describe symbiosis, mutualism, commensalism, and parasitism. Provide examples of each.
	Describe interspecific and intraspecific competition and give examples of each.
	Describe niche and competitive exclusion.
	Describe how resources partitioning and niche differentiation reduce competition and prevent competitive exclusion.
	Construct a trophic level diagram containing producers, primary consumers, secondary consumers, and decomposers, that describes the flow of matter through a community.
	Describe the flow of energy in a food web diagram and explain why only about 10 percent of the energy is passed between trophic levels.
	Predict how a food web will change with the loss or addition of a species.
	Define biotic factors, abiotic factors, and ecosystems.
	Explain how ecosystems are systems and create a model of an ecosystem as a system that includes inputs, outputs, and cycled materials.
	Explain, using models, how carbon atoms move between sources and sinks in the carbon cycle.
	Evaluate how long carbon can reside in the sources and sinks of the carbon cycle.
	Explain, using models, how carbon cycles between producers, consumers and decomposers.

AP Environmental Science SC5181 A	Scope and Sequence
Unit Lesson	**Objectives**
	Evaluate claims about how the burning of fossil fuels increases carbon dioxide in the atmosphere based on the carbon cycle.
	Explain, using models, how nitrogen atoms move between sources and sinks in the nitrogen cycle.
	Evaluate how long nitrogen can reside in the sources and sinks of the nitrogen cycle.
	Explain nitrogen fixation as the process in which atmospheric nitrogen is converted into a form of nitrogen (primarily ammonia) that is taken in by plants and used to synthesize plant tissues.
	Explain, using models, how phosphorus atoms move between sources and sinks in the phosphorus cycle.
	Explain why phosphorus is often a limiting factor in aquatic and terrestrial ecosystems.
	Explain how the properties of liquid water (cohesion and adhesion, specific heat, expands as it freezes, good solvent) are important to maintaining life.
	Explain and model how water molecules move between sources and sinks in the hydrological cycle.
	Describe biomes and how climate influences the distribution of biomes.
	Identify the characteristics of the major terrestrial biomes, including taiga, temperate rainforests, temperate seasonal forests, tropical rainforests, shrubland, temperate grassland, savanna, desert, and tundra.
	Identify the characteristics of the major aquatic biomes, both freshwater and saltwater.
	Identify the characteristics of the major freshwater biomes, including streams, rivers, ponds, and lakes.
	Identify the characteristics of the major saltwater biomes, including oceans, coral reefs, marshland, and estuaries.
	Describe primary productivity, gross primary productivity, and net primary productivity.
	Compare net and gross primary productivity across aquatic and terrestrial biomes.
	Describe how climate changes have shifted the distribution of biomes in the past and continues to do so with modern anthropogenic climate change.
	Describe how mineral and non-mineral natural resources in the terrestrial environment are distributed globally.
	Define genetic, habitat, and species diversity as well as species richness.
	Describe the relationship between the genetic diversity of a population and how well it can respond to environmental stressors.

AP Environmental Science SC5181 A	Scope and Sequence
Unit Lesson	**Objectives**
	Explain a population bottleneck and how it can lead to a loss of genetic diversity. An example is elephant seal populations affected by hunting.
	Predict how quickly an ecosystem of given size will respond to a disturbance.
	Explain how the loss of habitat leads to a loss of specialist species followed by a loss of generalist species, as well as reduced numbers of species that have large territorial requirements.
	Define the four categories of ecosystem services: provisioning, regulating, cultural, and supporting.
	Predict how human activity can alter ecosystem services.
	Define island biogeography as the study of the ecological relationships and distribution of organisms on islands, and of these organisms' community structures.
	Explain why islands tend to support more specialists and the effects of islands being colonized by new species arriving from elsewhere.
	Explain how island species have evolved to be specialists versus generalists because of the limited resources, such as food and territory, on most islands, and how invasive species affect island specialists.
	Define ecological tolerance as the range of conditions, such as temperature, salinity, flow rate, and sunlight that an organism or species can endure before injury or death results.
	Explain how natural disruptions, both short and long-term, impact an ecosystem.
	Define evolution and explain how organisms adapt to their environment over time, both in short- and long-term scales, via small changes at the genetic level.
	Explain how environmental change drives natural selection, and give examples.
	Compare and contrast primary and secondary succession.
	Describe keystone species and their communities.
	Explain indicator species and how they can be used to judge ecosystem health.
	Define pioneer members of an early successional species and how they may result in the origin of new species.
	Analyze how a disturbance in an ecosystem will affect the total biomass, species richness, and net productivity over time.

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Unit Lesson	**Objectives**
	Define biotic potential.
	Compare and identify the differences between generalist and specialist species.
	Compare r-selected and K-selected species.
	Students will research and summarize the characteristics of several r- versus K-selected species.
	Describe examples of species that are not strictly r- or K-selected.
	Analyze survivorship curves and compare Type I, Type II, and Type III curves.
	Explain how survivorship differs between r-selected and K-selected species.
	Explain statistics used to describe populations, including abundance, density, and distribution.
	Define carrying capacity and predict factors that impact a habitat's carrying capacity.
	Identify factors that predict whether human populations will increase or decrease.
	Identify limiting factors on human populations and differentiate between density-dependent and density-independent factors.
	Calculate the doubling time of a human population, using the rule of 70.
	Explain population growth rates utilizing age structure diagrams.
	Explain the demographic transition as the transition from high to lower birth and death rates in a country or region as it develops from a preindustrial to an industrialized economic system.
	Describe the 4 stages of demographic transition according to the demographic transition model (DTM).
	Describe the layers of the Earth (core, mantle, crust) and define plate tectonics.
	Model how convection in the mantle drives plate tectonics.
	Explain how transform boundaries often result in earthquakes.
	Compare convergent and divergent boundaries involving continental and oceanic plates.
	Explain how soil forms.
	Categorize soils by horizons and describe their composition and organic material.

AP Environmental Science SC5181 A		Scope and Sequence
Unit	**Lesson**	**Objectives**
		Explain how soils are eroded.
		Explain how soils affect water quality.
		Explain how particle size and composition of soil can affect the porosity, permeability, water-holding capacity, and fertility of the soil.
		Analyze a soil texture triangle. A soil texture triangle is a diagram to identify and compare soil types based on their percentage of clay, silt, and sand.
		Identify the major gases that make up the atmosphere and their relative abundance.
		Compare and contrast the mesosphere, thermosphere, and exosphere and how they are differentiated based on temperature gradients.
		Explain how uneven heating of the Earth results in density differences in the air that create the prevailing wind bands that vary with latitude.
		Explain how the Coriolis effect affects the direction of prevailing winds, based on latitude.
		Model atmospheric convection that results in low pressure systems that cause rain and high pressure systems that bring fair weather.
		Describe models of a rain shadow caused by a mountain.
		Explain how El Niño and La Niña form and their effects on seasonal climates.
		Describe how the angle of the sun's rays, and the intensity of solar radiation, differs based on latitude because of the tilt of the Earth.
		Describe how the hours of light received per day varies with latitude due to Earth's tilt and position in its orbit.
		Describe how the seasons result from Earth's tilt and position in its orbit.
		Identify the longest summer and shortest winter days in each hemisphere.
		Evaluate the amount of freshwater and saltwater within various reservoirs on the Earth.
	Semester Exam	