

Information for Course Syllabus

Name of Course: AP Environmental Science

Grade Level: 11-12

School: ORHS

Major Assignments: Biome Project, Energy Project,
Invasive Species Project

Field Trips: None

How can parents access instructional materials? Canvas

AP Environmental Science

2021-2022

Term 1

Intro to Ecosystems	ERT 1: Ecosystems are a result of biotic and abiotic interactions. (1.A) Predator prey relationships, symbiosis, Competition (1.G)Hydrologic cycle (1.D)Carbon Cycle (1.F) The Phosphorous Cycle (1.E) Nitrogen Cycle
	ENG 1: Energy can be converted from one form to another. (1.A) Primary productivity (1.B) Trophic Levels (1.C) Energy Flow and the 10% rule (1.D) Food Chains and Food Webs
	ERT 1: Ecosystems are a result of biotic and abiotic interactions. (1.B) Terrestrial Biomes (1.C) Aquatic Biomes
Biodiversity	ERT 2: Ecosystems have structure and diversity that change over time. (2.A) Levels of Biodiversity (2.B) Ecosystem Services (2.C) Human impact on Ecosystem Services (2.D) Island biogeography (2.E) Role of in Evolution (2.F) Ecological Tolerance (2.G) Natural disruptions to ecosystems (2.H) Adaptations (2I) Ecological Succession (2J) Effects on ecosystem of succession

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Term 1

Populations	ERT 3: Populations change over time in reaction to a variety of factors. (3.A) Generalist and Specialist Species (3.B) K and R selected species (3.C) Survivorship Curves (3.D) Carrying Capacity (3.E) Importance on ecosystem (3.R) Energy resource availability affect on population growth
	EIN 1: Human Populations change in reaction to a variety of factors, including social and cultural factors. (1A) Age structure Diagrams (1B) Total Fertility Rate (1C) Human Population Dynamics (1D) Demographic Transition

Earth Systems and Populations	ERT 4: Earth's systems interact, resulting in a state of balance over time. (4A) Plate tectonics (4B) Soil Formation and Erosion (4C) Soil Composition and Properties (4D)Earth's Atmosphere (4E) Global wind patterns (4F) Watersheds
	ENG 2: Most of the Earth's atmospheric processes are driven by input energy from the sun. (2A) Solar Radiation and Earth's Seasons (2B)Earth's Geography and Climate (2C) El Nino and La Nina

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Term 1

Land and Water Use

EIN 2: When humans use natural resources, they alter natural systems.

- (2A) The tragedy of commons
- (2B) Clearcutting
- (2C) The Green Revolution
- (2D) Impact of Agricultural Practices
- (2E) Methods of Irrigation
- (2F) Benefits and drawbacks of irrigation methods
- (2G) Pest Control Methods
- (2H) Meat production methods
- (2I) Benefits and drawbacks of meat production
- (2J) Impacts of Overfishing
- (2K) Natural resource extraction through mining
- (2L) Impact of mining
- (2M) Impact of Urbanization
- (2N) Ecological Footprint

STB 1: Humans can mitigate their impact on land and water resources through sustainable use.

- (1A) Sustainability
- (1B) Methods to Reduce Urban Runoff
- (1C) Integrated pest management
- (1D) Benefits and drawbacks of IPM
- (1E) Sustainable Agriculture and Food production
- (1F) Benefits and Drawbacks of Aquaculture
- (1G) Sustainable Forestry

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Term 2

Aquatic and Terrestrial Pollution

STB 3: Human activities, including the use of resources, have physical, chemical, and biological consequences of ecosystems.

- (3A) Point and Nonpoint pollution
- (3B) Human impact on aquatic ecosystems
- (3C) Describe endocrine disruptions
- (3D) Effects of endocrine disruptions on ecosystems
- (3E) Impact of human activities on wetlands and mangroves
- (3F) Eutrophication
- (3G) Thermal Pollution
- (3H) Persistent Organic Pollutants
- (3I) Bioaccumulation and Biomagnification
- (3J) Effects of Bioaccumulation and Biomagnification
- (3K) Solid waste disposal methods
- (3L) Effects of solid waste disposal methods
- (3M)Waste Reduction Methods
- (3N)Sewage Treatment

EIN 3: Pollutants can have both direct and indirect impacts on the health of organisms, including humans.

- (3A) Lethal Dose 50% (LD 50)
- (3B) Dose Response Curves
- (3C) Pollution and human health
- (3D) Pathogens and Infectious Disease

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Term 2

Energy Resources and Consumption

ENG 3: Humans use energy from a variety of sources resulting in positive and negative consequences.

(3A) Renewable and Nonrenewable Resources

(3B) Trends in energy consumption

(3C) Fuel Types and uses

(3D) Occurrence of natural energy resources (Where?)

Use and methods of power generation

(3E) fossil fuels

(3G) nuclear energy

(3J) Solar Energy

(3L) Hydroelectric energy

(3N) Geothermal energy

(3P) Hydrogen Fuel Cells

(3R) Wind Energy

Effects of on environment

(3F) Fossil fuels

(3H) nuclear energy

(3I) Biomass

(3K) Solar Energy

(3M) Hydroelectric energy

(3O) Geothermal energy

(3Q) Hydrogen Fuel Cells

(3S) Wind Energy

(3T) Methods of Energy Conservation

Atmospheric Pollution

STB 2: Human activities have physical, chemical, and biological consequences for the atmosphere.

(2A) Identify sources and effects of air pollutants

(2B) causes and effects of photochemical smog and methods to reduce

(2C) Thermal inversion

(2D) Natural sources of CO₂ and particulates

(2E) Indoor air pollutants

(2F) Effects of indoor air pollutants

(2G) Reduction of Air pollutants

(2H) Acid deposition

(2I) Effects of acid deposition on environment

(2J) Noise Pollution cause and effects

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Term 2

Global Change	<p>STB 4: Local and regional human activities can have impacts on the global level. (4A) Importance of stratospheric ozone (4B) Chemicals to substitute CFC's (4C) Identify Greenhouse gases (4D) Sources and potency of greenhouse gases (4E) Threats to human health and environment by increased greenhouse gases (4F) Climate change impact on ecosystems (4G) Causes and effects of Ocean warming (4H) Causes and effects of Ocean Acidification</p>
	<p>EIN 4: The health of a species is closely tied to its ecosystem, and minor environmental changes can have a large impact. (4A) Invasive species problems, strategies to control (4B) Endangered species cause and strategies to combat (4C) Human activities affect biodiversity and strategies to combat</p>

AP Exam Review