Course at a Glance

Plan

The Course at a Glance provides a useful visual organization of the AP Environmental Science curricular components, including:

- Sequence of units, along with approximate weighting and suggested pacing. Please note, pacing is based on 45-minute class periods, meeting five days each week for a full academic year.
- Progression of topics within each unit.
- Spiraling of the big ideas and science practices across units.

Teach

SCIENCE PRACTICES

Science practices spiral throughout the course.

- 1 Concept Explanation
- 2 Visual Representations
- 3 Text Analysis
- 4 Scientific Experiments
- 5 Data Analysis
- 6 Mathematical Routines
- 7 Environmental Solutions

BIG IDEAS

Big ideas spiral across topics and units.

- ENG Energy Transfer
- ERT Interactions Between Earth Systems
- EIN Interactions Between Different Species and the Environment
- STB Sustainability

Assess

Assign the Personal Progress Checks—either as homework or in class—for each unit. Each Personal Progress Check contains formative multiple-choice and free-response questions. The feedback from the Personal Progress Checks shows students the areas where they need to focus.

UNIT 1 The Living World: Ecosystems

~14–15 Class Periods | **6–8%** AP Exam Weighting

ERT 1	1.1	Introduction to Ecosystems
ERT 1	1.2	Terrestrial Biomes
ERT 1	1.3	Aquatic Biomes
ERT 2	1.4	The Carbon Cycle
ERT 2	1.5	The Nitrogen Cycle
ERT 2	1.6	The Phosphorus Cycle
ERT 2	1.7	The Hydrologic (Water) Cycle
ENG 1	1.8	Primary Productivity
ENG 1	1.9	Trophic Levels
ENG 6	1.10	Energy Flow and the 10% Rule
ENG 2	1.11	Food Chains and Food Webs

Personal Progress Check 1

- **Multiple-choice: ~30 questions**
- **Free-response: 1 question (partial)**
  - Analyze an environmental problem and propose a solution

The Living World: Biodiversity

~11–12 Class Periods | **6–8%** AP Exam Weighting

ERT 1	2.1	Introduction to Biodiversity
ERT 1	2.2	Ecosystem Services
ERT 1	2.3	Island Biogeography
ERT 3	2.4	Ecological Tolerance
ERT 5	2.5	Natural Disruptions to Ecosystems
ERT 5	2.6	Adaptations
ERT 5	2.7	Ecological Succession

Personal Progress Check 2

- **Multiple-choice: ~20 questions**
- **Free-response: 1 question (partial)**
  - Design an investigation

Note: Partial versions of the free-response questions are provided to prepare students for more complex, full questions that they will encounter on the AP Exam.

UNIT 3 Populations

~12–13 Class Periods | 10–15% AP Exam Weighting

- ERT 1 — 3.1 Generalist and Specialist Species
- ERT 5 — 3.2 K-Selected r-Selected Species
- ERT 5 — 3.3 Survivorship Curves
- ERT 5 — 3.4 Carrying Capacity
- ERT 6 — 3.5 Population Growth and Resource Availability
- EIN 5 — 3.6 Age Structure Diagrams
- EIN 5 — 3.7 Total Fertility Rate
- EIN 7 — 3.8 Human Population Dynamics
- EIN 1 — 3.9 Demographic Transition

Personal Progress Check 3

- **Multiple-choice: ~20 questions**
- **Free-response: 1 question (partial)**
  - Analyze an environmental problem and propose a solution doing calculations

UNIT 4 Earth Systems and Resources

~11–12 Class Periods | 10–15% AP Exam Weighting

- ERT 2 — 4.1 Plate Tectonics
- ERT 4 — 4.2 Soil Formation and Erosion
- ERT 4 — 4.3 Soil Composition and Properties
- ERT 2 — 4.4 Earth's Atmosphere
- ERT 2 — 4.5 Global Wind Patterns
- ERT 1 — 4.6 Watersheds
- ENG 2 — 4.7 Solar Radiation and Earth's Seasons
- ENG 2 — 4.8 Earth's Geography and Climate
- ENG 7 — 4.9 El Niño and La Niña

Personal Progress Check 4

- **Multiple-choice: ~25 questions**
- **Free-response: 1 question**
  - Design an investigation

UNIT 5 Land and Water Use

~18–19 Class Periods | 10–15% AP Exam Weighting

- EIN 1 — 5.1 The Tragedy of the Commons
- EIN 1 — 5.2 Clearcutting
- EIN 3 — 5.3 The Green Revolution
- EIN 1 — 5.4 Impacts of Agricultural Practices
- EIN 7 — 5.5 Irrigation Methods
- EIN 7 — 5.6 Pest Control Methods
- EIN 5 — 5.7 Meat Production Methods
- EIN 7 — 5.8 Impacts of Overfishing
- EIN 7 — 5.9 Impacts of Mining
- EIN 7 — 5.10 Impacts of Urbanization
- EIN 5 — 5.11 Ecological Footprints
- STB 5 — 5.12 Introduction to Sustainability
- STB 4 — 5.13 Methods to Reduce Urban Runoff
- STB 7 — 5.14 Integrated Pest Management
- STB 7 — 5.15 Sustainable Agriculture
- STB 7 — 5.16 Aquaculture
- STB 7 — 5.17 Sustainable Forestry

Personal Progress Check 5

- **Multiple-choice: ~35 questions**
- **Free-response: 1 question**
  - Analyze an environmental problem and propose a solution

UNIT 6 Energy Resources and Consumption

~16–17 Class Periods | **10–15%** AP Exam Weighting

ENG 1	6.1 Renewable and Nonrenewable Resources
ENG 6	6.2 Global Energy Consumption
ENG 1	6.3 Fuel Types and Uses
ENG 2	6.4 Distribution of Natural Energy Resources
ENG 7	6.5 Fossil Fuels
ENG 2	6.6 Nuclear Power
ENG 7	6.7 Energy from Biomass
ENG 5	6.8 Solar Energy
ENG 7	6.9 Hydroelectric Power
ENG 1	6.10 Geothermal Energy
ENG 1	6.11 Hydrogen Fuel Cell
ENG 7	6.12 Wind Energy
ENG 6	6.13 Energy Conservation

Personal Progress Check 6

- **Multiple-choice: ~35 questions**
- **Free-response: 1 question**
  - Analyze an environmental problem and propose a solution doing calculations

UNIT 7 Atmospheric Pollution

~11–12 Class Periods | **7–10%** AP Exam Weighting

STB 4	7.1 Introduction to Air Pollution
STB 5	7.2 Photochemical Smog
STB 2	7.3 Thermal Inversion
STB 4	7.4 Atmospheric CO_2 and Particulates
STB 5	7.5 Indoor Air Pollutants
STB 7	7.6 Reduction of Air Pollutants
STB 4	7.7 Acid Rain
STB 3	7.8 Noise Pollution

Personal Progress Check 7

- **Multiple-choice: ~20 questions**
- **Free-response: 1 question**
  - Design an investigation

UNIT 8 Aquatic and Terrestrial Pollution

~19–20 Class Periods | **7–10%** AP Exam Weighting

STB 1	8.1 Sources of Pollution
STB 6	8.2 Human Impacts on Ecosystems
STB 1	8.3 Endocrine Disruptors
STB 7	8.4 Human Impacts on Wetlands and Mangroves
STB 2	8.5 Eutrophication
STB 1	8.6 Thermal Pollution
STB 1	8.7 Persistent Organic Pollutants (POPs)
STB 4	8.8 Bioaccumulation and Biomagnification
STB 7	8.9 Solid Waste Disposal
STB 6	8.10 Waste Reduction Methods
STB 2	8.11 Sewage Treatment
EIN 6	8.12 Lethal Dose 50% (LD_{50})
EIN 5	8.13 Dose Response Curve
EIN 4	8.14 Pollution and Human Health
EIN 2	8.15 Pathogens and Infectious Diseases

Personal Progress Check 8

- **Multiple-choice: ~35 questions**
- **Free-response: 1 question**
  - Analyze an environmental problem and propose a solution doing calculations

UNIT 9 Global Change

~19–20 Class Periods | 15–20% AP Exam Weighting

STB 1	9.1	Stratospheric Ozone Depletion
STB 7	9.2	Reducing Ozone Depletion
STB 1	9.3	The Greenhouse Effect
STB 2	9.4	Increases in the Greenhouse Gases
STB 5	9.5	Global Climate Change
STB 7	9.6	Ocean Warming
STB 1	9.7	Ocean Acidification
EIN 7	9.8	Invasive Species
EIN 7	9.9	Endangered Species
EIN 7	9.10	Human Impacts on Biodiversity

Personal Progress Check 9

- **Multiple-choice: ~25 questions**
- **Free-response: 1 question**
  - Analyze an environmental problem and propose a solution