

| Environmental Studies AB | Annual or Semester Course--Grades 9-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Course Code Number and Abbreviation | 36-05-03 Env Stu A 36-05-04 Env Stu B | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Course Description | <p>The major purpose of this course is to develop student understanding of the relationships among biotic and abiotic environmental factors, contemporary societal needs, evolving technology, and economic considerations. Field and laboratory investigations allow students to collect and analyze data, extrapolate and project regional factors, study trends, or problems that focus on environmental issues.</p> <p>Environmental Studies AB may be used as an elective for District graduation requirements. It meets one year of the University of California 'g' requirement for an elective course.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Instructional Units and Pacing Plans | <table border="0" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Instructional Units</th> <th colspan="2" style="text-align: right;">*Suggested Weeks</th> </tr> </thead> <tbody> <tr> <td>Earth, the Scientific Method, and Ecological Interactions</td> <td style="text-align: right;">2</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Matter and Energy in the Ecosystem</td> <td style="text-align: right;">2</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Interactions and Balance in Ecosystems</td> <td style="text-align: right;">4</td> <td style="text-align: right;">4</td> </tr> <tr> <td>Biomes</td> <td style="text-align: right;">8</td> <td style="text-align: right;">8</td> </tr> <tr> <td>Food Chains and Feeding the World</td> <td style="text-align: right;">2</td> <td style="text-align: right;">3</td> </tr> <tr> <td>People and their Needs for Survival</td> <td style="text-align: right;">2</td> <td style="text-align: right;">2</td> </tr> <tr> <td>Human Population and Resources</td> <td style="text-align: right;">2</td> <td style="text-align: right;">2</td> </tr> <tr> <td>Energy Resources and Production</td> <td style="text-align: right;">2</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Conservation and Recycling</td> <td style="text-align: right;">2</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Habitat Destruction and Urbanization</td> <td style="text-align: right;">2</td> <td style="text-align: right;">2</td> </tr> <tr> <td>Pollution (Water, Land, and Air)</td> <td style="text-align: right;">2</td> <td style="text-align: right;">3</td> </tr> <tr> <td>Natural Resources (Minerals, Soil, and Water)</td> <td style="text-align: right;">2</td> <td style="text-align: right;">2</td> </tr> <tr> <td style="text-align: right;">Total</td> <td style="text-align: right;">*32</td> <td style="text-align: right;">*38</td> </tr> <tr> <td></td> <td style="text-align: right;">year-round</td> <td style="text-align: right;">traditional</td> </tr> </tbody> </table> <p>* Suggested weeks are to be used as an estimate only. Pacing will depend on how State Content Standards and the Literacy and Mathematics initiatives are embedded.</p> | | | Instructional Units | *Suggested Weeks | | Earth, the Scientific Method, and Ecological Interactions | 2 | 3 | Matter and Energy in the Ecosystem | 2 | 3 | Interactions and Balance in Ecosystems | 4 | 4 | Biomes | 8 | 8 | Food Chains and Feeding the World | 2 | 3 | People and their Needs for Survival | 2 | 2 | Human Population and Resources | 2 | 2 | Energy Resources and Production | 2 | 3 | Conservation and Recycling | 2 | 3 | Habitat Destruction and Urbanization | 2 | 2 | Pollution (Water, Land, and Air) | 2 | 3 | Natural Resources (Minerals, Soil, and Water) | 2 | 2 | Total | *32 | *38 | | year-round | traditional |
| Instructional Units | *Suggested Weeks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Earth, the Scientific Method, and Ecological Interactions | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Matter and Energy in the Ecosystem | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Interactions and Balance in Ecosystems | 4 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Biomes | 8 | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Food Chains and Feeding the World | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| People and their Needs for Survival | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Human Population and Resources | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Energy Resources and Production | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Conservation and Recycling | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Habitat Destruction and Urbanization | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pollution (Water, Land, and Air) | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Natural Resources (Minerals, Soil, and Water) | 2 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total | *32 | *38 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | year-round | traditional | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**California Common
Core State Standards**

Reading:

1. Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.
2. Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text
7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words

Writing:

1. Write arguments focused on discipline-specific content.
 - a. Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.
 - b. Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.
 - c. Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.
 - d. Establish and maintain a formal style.
 - e. Provide a concluding statement or section that follows from and supports the argument presented.

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**Representative
Performance
Objectives**

In accordance with their individual capacity, students will grow in the ability to:

- Demonstrate process skills of scientific thinking: observing, communicating, comparing, ordering, categorizing, relating, inferring, and applying.
- Demonstrate skills in the area of speaking, listening, writing, reading, graphing, mapping and mathematics.
- Evaluate the contributions of science and technology and their relevance to improving our daily lives in preparation for the future.
- Establish the relevance of science and its applications to careers and real-life situations.
- Select and use appropriate tools and technology (such as computer-linked probes, spreadsheets, and graphing calculators) to perform tests, collect data, analyze relationships, and display data.*
- Identify and communicate sources of unavoidable experimental error.*
- Identify possible reasons for inconsistent results, such as sources of error or uncontrolled conditions.*
- Formulate explanations by using logic and evidence.*
- Solve scientific problems by using quadratic equations and simple trigonometric, exponential, and logarithmic functions.*
- Distinguish between hypothesis and theory as scientific terms.*
- Recognize the usefulness and limitations of models and theories as scientific representations of reality.*
- Analyze the locations, sequences, or time intervals that are characteristic of natural phenomena (e.g., relative ages of rocks, locations of planets over time, chemical reaction rates, and succession of species in an ecosystem).*

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| | <ul style="list-style-type: none"> • Recognize the issues of statistical variability and the need for controlled tests.* • Recognize the cumulative nature of scientific evidence.* • Analyze situations and solve problems that require combining and applying concepts from more than one area of science.* • Investigate a science-based societal issue by researching the literature, analyzing data, and communicating the findings. Examples of issues include irradiation of food, cloning of animals by somatic cell nuclear transfer, choice of energy sources, and land and water use decisions in California.* • Know that when an observation does not agree with an accepted scientific theory, the observation is sometimes mistaken or fraudulent (e.g., the Piltdown Man fossil or unidentified flying objects) and that the theory is sometimes wrong (e.g., the Ptolemaic model of the movement of the Sun, Moon, and planets).* • Investigate a societal issue by researching literature, analyzing data and communicating findings and discuss possible future outcomes. • Demonstrate interconnections between the many disciplines of science. • Demonstrate the interdisciplinary connections between science and other curricular fields. <p>Note: <i>Asterisked items are Science Investigation and Experimentation Standards for the State of California.</i></p> |
| <p>Representative Content Objectives</p> | <p><i>In accordance with their individual capacity, students will grow in the ability to:</i></p> <ul style="list-style-type: none"> • Evaluate and recognize the impact of environmentally related social issues. • Explain how scientific knowledge and technology affects society and the environment. • Describe how society manages the environment. • Distinguish between conservation and preservation and evaluate conditions under which each is a more appropriate action. |

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| | <ul style="list-style-type: none">• Explain the positive and negative impacts of human intervention upon both physical and biological environmental processes.• Use data to compare and contrast the relationship of environmental needs to human impacts within a variety of biotic and abiotic systems.• Describe human beings position in the biosphere and their effects upon the environment. |
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