

FOLSOM CORDOVA UNIFIED SCHOOL DISTRICT



Environmental Science

Board Approval Date: Jan 23, 2025	Course Length: 2 Semesters
Grading: A-F	Credits: 5 Credits per Semester
Proposed Grade Level(s): 11, 12	Subject Area: Physical Science, Life Science Elective Area (if applicable):
Prerequisite(s): Successful completion of Biology of the Living Earth, Successful completion of Chemistry of the Earth System or Physics in the Universe	Corequisite(s):
CTE Sector/Pathway:	
Intent to Pursue 'A-G' College Prep Status: Yes	
A-G Course Identifier: (d) Laboratory Science	
Graduation Requirement: No	
Course Intent: District Course Program (if applicable):	
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COURSE DESCRIPTION:

Environmental Science is an interdisciplinary science course that studies the major themes of biodiversity, natural resource management, energy sources, global environmental policy, and the future. The course incorporates standards from the NGSS Life Science, Earth Science, Physical Science, Engineering Technology and Applications of Science domains, as well as the California adopted Environmental Principles and Concepts. This course is comprised of a series of units that include Basics of Ecosystems, Earth Systems, Climate Change, Humans and Natural Systems, Energy and Mineral Resources, and Human Solutions.

DETAILED UNITS OF INSTRUCTION:

Unit Number/Title	Unit Essential Questions	Examples of Formative Assessments	Examples of Summative Assessment
1. Ecosystems Basics	What is the human impact on biodiversity? How does matter and energy cycle on Earth? What causes ecosystem disturbances?	● Create a model showing how matter and energy cycle on Earth ● Ecosystem disturbances activity ● Human impact on biodiversity partner reading	● Unit Test ● Project ● Lab or other means of assessment
Unit 1 Essential Standards: LS2-7: Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.			
2. Earth's Systems and processes	How do plate tectonics function? What processes operate on Earth? What feedback loops impact Earth's systems? How does water affect processes and landscapes on Earth?	● Plate tectonics and thermal convection simulation ● Stream Table and Erosion Activity ● Earth's Feedback loops activity	● Unit Test ● Project ● Lab or other means of assessment
Unit 2 Essential Standards: ESS2-: Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features ESS2-2: Analyze geoscience data to make the claim that one change to Earth's surface can create feedback that causes changes to other Earth systems.			
3. Climate Change	What are the factors that impact climate change? How does carbon cycle	● Carbon cycle poster ● Climate Models Activity	● Unit Test ● Project ● Lab or other

	through Earth's systems, and how does carbon cycling impact climate? How can climate models be used to predict climate change?	Earth's Atmosphere activity	means of assessment
Unit 3 Essential Standards: ESS2-4: Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.			
4. Humans and Natural Systems	How do natural resources, natural hazards, and climate change impact human populations? How do we manage natural resources to provide for the needs of humans?	- Natural hazard data activity - Natural resource use by country data activity - Energy resource use data by country activity	- Unit Test - Project - Lab or other means of assessment
Unit 4 Essential Standards: ESS3-1: Construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity. ESS 3-3: Create a computational simulation to illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.			
5. Energy and Mineral Resources	What are the benefits and drawbacks of using Earth's resources for energy and manufacturing?	Energy and resources comparison activities	- Unit Test - Project - Lab or other means of assessment
Unit 5 Essential Standards: ESS3-2: Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.			
6. Human Solutions	What can be done to mitigate human-caused climate issues? How can solutions to human impacts on biodiversity or earth systems be evaluated?	Analysis of climate change solutions	- Unit Test - Project - Lab or other means of assessment
Unit 6 Essential Standards: HS-ESS3-4: Evaluate or refine a technological solution that reduces impact of human activities on natural systems.			

RELEVANT STANDARDS AND FRAMEWORKS, CONTENT/PROGRAM SPECIFIC STANDARDS:

Link to Common Core Standards (if applicable):

Educational standards describe what students should know and be able to do in each subject in each grade. In California, the State Board of Education decides on the standards for all students, from kindergarten through high school.

<http://www.corestandards.org/ELA-Literacy/RST/11->

[12/https://www.cde.ca.gov/be/st/ss/documents/ccssmathstandarAug2013.pdf](https://www.cde.ca.gov/be/st/ss/documents/ccssmathstandarAug2013.pdf)

Link to Framework (if applicable):

Curriculum frameworks provide guidance for implementing the content standards adopted by the State Board of Education (SBE). Frameworks are developed by the Instructional Quality Commission, formerly known as the Curriculum Development and Supplemental Materials Commission, which also reviews and recommends textbooks and other instructional materials to be adopted by the SBE.

Link to Subject Area Content Standards (if applicable):

Content standards were designed to encourage the highest achievement of every student, by defining the knowledge, concepts, and skills that students should acquire at each grade level.

<https://www.cde.ca.gov/ci/sc/cf/documents/scifwchapter7.pdf>

Link to Program Content Area Standards (if applicable):

Program Content Area Standards apply to programs such as International Baccalaureate, Advanced Placement, Career and Technical Education, etc.

TEXTBOOKS AND RESOURCE MATERIALS:

Board Approved	Pilot Completion Date (If applicable)	Textbook Title	Author(s)	Publisher	Edition	Date
<i>This text will be board approved with the approval of this outline.</i>		<i>Biozone: Earth and Space Science</i>	Kent Pryor, Sarah Gaze, Lissa Bainbridge-Smith	Biozone	2nd Edition	1/1/2022