EL DORADO UNION HIGH SCHOOL DISTRICT

EDUCATIONAL SERVICES

Course of Study Information Page

Course Title:	**California Natural Resources 1 (#0336)**	
Rationale:	We rely on the natural bounties that the Earth provides for our recreation, employment, transportation, and basic subsistence. Within El Dorado County we have a wealth of resources that we draw from to build and light our houses, fill our plates, and spend our weekends enjoying. Whether or not we feel connected to the environment, we rely on it for our livelihood. Our increasingly complex relationship with nature requires that our students have a thorough understanding of our interactions with the environment. This understanding will lead them to become good stewards for future generations.	
Course Description:	The Natural Resources Program has been developed to connect students to their environment. Through scientific data collection, direct hands-on learning, and studying of the complex relationship of humans and their use of resources, students will understand how we are connected to the environment. Students will engage in scientific data collection, experimental design, scientific writing and statistical analysis to gain an intimate understanding of the resources and opportunities El Dorado County has to offer.	
How Does This Course Align with or Meet State and District Content Standards	Currently, there are no content standards for Environmental Study/Science courses at either the state or national level. However, most of the topics covered can be directly tied to both state and national standards that span several topics.	
Length of Course:	1 year/2 Semesters	
Grade Level:	11	
Credit:	☒ Number of units: 10 ☒ Meets graduation requirements ☒ Request for UC "a–g" requirements	☐ College Prep ☒ Elective ☒ Career Technical
Prerequisites:	Passing grade of C- or better in NR Biology, AP or Non AP Environmental Science (or concurrent enrollment), Geometry	
Department(s):	Science	
District Sites:	EDHS	
Board of Trustees Adoption Date:	April 28, 2009	

Textbooks / Instructional Materials	**Natural Resources Conservation: Management for a Sustainable Future**, Chiras & Reganold, Prentice Hall, 2010 – 10th Edition
Date Adopted by the Board of Trustees:	6/22/2010

Course description that will be in the Course Directory: California Natural Resources 1 is the first CTE course in the Natural Resources program at EDHS. During the year, students will investigate local ecosystems and the environmental issues associated with these areas. Students will complete field studies to help relate cause and effect patterns within the environment. Community service will be an ongoing part of this program.

EL DORADO UNION HIGH SCHOOL DISTRICT

EDUCATIONAL SERVICES

Course Title: California Natural Resources 1 (#0336)

TABLE OF CONTENTS

EL DORADO UNION HIGH SCHOOL DISTRICT

EDUCATIONAL SERVICES

Department: Science

Course Title: California Natural Resources 1 (#0336)

UNIT/STANDARD #: Unit 1: Introduction to Field Research

LEARNING OUTCOME: Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations

LEARNING OUTCOME	INSTRUCTIONAL STRATEGIES	ASSESSMENTS	INTERVENTIONS
1. What students will learn, know, and be able to do? (Must be aligned to state content standards.) Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other four strands, students should develop their own questions and perform investigations. (CCS Investigation and Experimentation 1a-1n; CTE Academic Standard 1.2 Science)	2. Instructional strategies that will be used to engage students. Teachers will use direct instruction and guided inquiry to demonstrate proper laboratory design. Cooperative learning groups in the form of large and small group settings will work together to design and complete investigations and experiments.	3. How will we know that students have learned? Include both Formative (for learning) and Summative (of learning) assessment examples. Frequent checks for understanding will be used. These may take the form of warm-ups, quizzes, homework activities, or investigations. Example (Formative): List and explain the different steps of the scientific method. (Summative): Design an experiment on the dissolution rate of sugar that is limited to two variables.	4. What will we do if students do not learn? (Outline the planned intervention strategies) Group activities will allow peer tutoring within the learning activities for designing activities. Warm ups and/or quizzes will be used to give students and their teacher the opportunity to be sure that each student understands each objective before moving to the next. When assignments are missed or completed at less than 50%, students will be assigned a recovery time to fill in missing knowledge gaps. Teachers will be available for extra assistance for students who need the help. 5. What will we do if students already know it? Provide a minimum of enriching practice problems, then move to the next topic. Students will also have the opportunity to work on/complete independent study projects that will be on going in the course.

Content Area Standards (Please identify the source)

The students will demonstrate mastery of the following content standards:

Scientific Investigation and Experimentation 1a-1n (California Content Standards: Science)
CTE Agricultural and Natural Resource Industry Sector Foundation Standards 1.2, 2.4, 4.0
CTE Forestry and Natural Resource Pathway E11.0

EL DORADO UNION HIGH SCHOOL DISTRICT

EDUCATIONAL SERVICES

Department: Science

Course Title: California Natural Resources 1 (#0336)

UNIT/STANDARD #: Unit 2: Ecology of El Dorado County

LEARNING OUTCOME: Stability in an ecosystem is a balance between competing effects.

LEARNING OUTCOME	INSTRUCTIONAL STRATEGIES	ASSESSMENTS	INTERVENTIONS
1. What students will learn, know, and be able to do? (Must be aligned to state content standards.) Stability in an ecosystem is a balance between competing forces.	2. Instructional strategies that will be used to engage students. Teachers will use direct instruction and guided inquiry to help explain and describe biotic and abiotic interaction in an ecosystem. Cooperative learning groups in the form of large and small group settings will work together to identify and relate the interrelatedness of the abiotic and biotic features of organisms unique to El Dorado County. Field trips and field studies will promote hands on, real world experience for students.	3. How will we know that students have learned? Include both Formative (for learning) and Summative (of learning) assessment examples. Frequent checks for understanding will be used. These may take the form of warm-ups, quizzes, homework activities, or investigations. Example (Formative): Compare and contrast abiotic and biotic factors in an ecosystem. (Summative): Illustrate a typical food-web unique to an El Dorado County ecosystem. Discuss the flow of energy, how nutrients are cycled (minimum of 3 abiotic cycles), and appropriately label first and second order producers and tertiary consumers.	4. What will we do if students do not learn? (Outline the planned intervention strategies) Group activities will allow peer tutoring within the learning activities for designing activities. Warm ups and/or quizzes will be used to give students and their teacher the opportunity to be sure that each student understands each objective before moving to the next. When assignments are missed or completed at less than 50%, students will be assigned a recovery time to fill in missing knowledge gaps. Teachers will be available for extra assistance for students who need the help. 5. What will we do if students already know it? Provide a minimum of enriching practice problems, then move to the next topic. Students will also have the opportunity to work on/complete independent study projects that will be

			on going in the course.

Content Area Standards (Please identify the source)

The students will demonstrate mastery of the following content standards:

Ecology 6a-6f (California Content Standards: Biology)
CTE Agricultural and Natural Resource Industry Sector Foundation Standards 5.0-5.3, 7.0-7.6, 9.0-9.6
CTE Forestry and Natural Resource Pathway E1.0-E1.5, E4.4, E4.5, E5.0-E5.7, E8.0-E8.4

EL DORADO UNION HIGH SCHOOL DISTRICT

EDUCATIONAL SERVICES

Department: Science

Course Title: California Natural Resources 1 (#0336)

UNIT/STANDARD #: Unit 3: Natural Resources of El Dorado County

LEARNING OUTCOME: Students understand the use, processing, and marketing of products from natural resource industries.

LEARNING OUTCOME	INSTRUCTIONAL STRATEGIES	ASSESSMENTS	INTERVENTIONS
1. What students will learn, know, and be able to do? (Must be aligned to state content standards.) Students understand the use, processing, and marketing of products from natural resource industries	2. Instructional strategies that will be used to engage students. Teachers will use direct instruction and guided inquiry to help explain and describe the relationship between local natural resources and the economic goods and services related to those resources. Cooperative learning groups in the form of large and small group settings will work together to identify Natural Resources unique to El Dorado County, how those resources are processed and marketed. Field trips and field studies will promote hands on, real world experience for	3. How will we know that students have learned? Include both Formative (for learning) and Summative (of learning) assessment examples. Frequent checks for understanding will be used. These may take the form of warm-ups, quizzes, homework activities, or investigations. Example (Formative): Discuss at least three natural resources found in El Dorado County. Name one salable product made from each. (Summative): Discuss at least two possible uses for a tree from a local tree farm. Analyze the steps in the	4. What will we do if students do not learn? (Outline the planned intervention strategies) Group activities will allow peer tutoring within the learning activities for designing activities. Warm ups and/or quizzes will be used to give students and their teacher the opportunity to be sure that each student understands each objective before moving to the next. When assignments are missed or completed at less than 50%, students will be assigned a recovery time to fill in missing knowledge gaps. Teachers will be available for extra assistance for

	students.	manufacturing process needed for the raw resource to become the final, salable commodity.	students who need the help. 5. What will we do if students already know it? Provide a minimum of enriching practice problems, then move to the next topic. Students will also have the opportunity to work on/complete independent study projects that will be on going in the course.

Content Area Standards (Please identify the source)

The students will demonstrate mastery of the following content standards:

California Geology 9a (California Content Standards: Earth Science)
CTE Agricultural and Natural Resource Industry Sector Foundation Standards 1.3, 2.4, 5.0, 6.0, 8.0
CTE Forestry and Natural Resource Pathway E2.0-E2.6, E4.0-E4.7, E5.6, E7.0-E7.5, E10.0-E10.6, E12.0-E12.5, E13.0-E13.4

EL DORADO UNION HIGH SCHOOL DISTRICT

EDUCATIONAL SERVICES

Department: Science

Course Title: California Natural Resources 1 (#0336)

UNIT/STANDARD #: Unit 4: El Dorado County Water Resources

LEARNING OUTCOME: Students know the importance of water to society, the origins of California's fresh water, and the relationship between supply and need.

LEARNING OUTCOME	INSTRUCTIONAL STRATEGIES	ASSESSMENTS	INTERVENTIONS
1. What students will learn, know, and be able to do? (Must be aligned to state content standards.) Students know the importance of water to society, the origins of California's fresh water, and the relationship between supply and need.	2. Instructional strategies that will be used to engage students. Teachers will use direct instruction and guided inquiry to examine water quality, distribution and use of water. Cooperative learning groups in the form of large and small group settings will work together to identify El Dorado county waterways, particular issues associated with these waterways, and how water is used/distributed in our county Field trips and field studies will promote hands on, real world experience for students.	3. How will we know that students have learned? Include both Formative (for learning) and Summative (of learning) assessment examples. Frequent checks for understanding will be used. These may take the form of warm-ups, quizzes, homework activities, or investigations. Example (Formative): What are some common uses of fresh water? (Summative): Discuss the importance of California's snow pack. Analyze the impact a low snow pack year might	4. What will we do if students do not learn? (Outline the planned intervention strategies) Group activities will allow peer tutoring within the learning activities for designing activities. Warm ups and/or quizzes will be used to give students and their teacher the opportunity to be sure that each student understands each objective before moving to the next. When assignments are missed or completed at less than 50%, students will be assigned a recovery time to fill in missing knowledge gaps. Teachers

		have on at least two industry sectors.	will be available for extra assistance for students who need the help. 5. What will we do if students already know it? Provide a minimum of enriching practice problems, then move to the next topic. Students will also have the opportunity to work on/complete independent study projects that will be on going in the course.

Content Area Standards (Please identify the source)

The students will demonstrate mastery of the following content standards:

California Geology 9b-9c (California Content Standards: Earth Science)
Energy in the Earth System 5a-c, 5f-g, 6f-g (California Content Standards: Earth Science)
CTE Forestry and Natural Resource Pathway E2.0-E2.6, E6.0-E6.6

EL DORADO UNION HIGH SCHOOL DISTRICT

EDUCATIONAL SERVICES

Department: Science

Course Title: California Natural Resources 1 (#0336)

UNIT/STANDARD #: Unit 5: Geology and Soils of El Dorado County

LEARNING OUTCOME: Students understand soil composition and soil management

LEARNING OUTCOME	INSTRUCTIONAL STRATEGIES	ASSESSMENTS	INTERVENTIONS
1. What students will learn, know, and be able to do? (Must be aligned to state content standards.) Students understand soil composition and soil management.	2. Instructional strategies that will be used to engage students. Teachers will use direct instruction and guided inquiry to help explain and describe the different ways soils is categorized as well as the economic importance of soil Cooperative learning groups in the form of large and small group settings will work together to identify the different types of soil found in El Dorado County. Field trips and field studies will	3. How will we know that students have learned? Include both Formative (for learning) and Summative (of learning) assessment examples. Frequent checks for understanding will be used. These may take the form of warm-ups, quizzes, homework activities, or investigations. Example (Formative): What is soil? (Summative): Determine the porosity and permeability of a specific soil type.	4. What will we do if students do not learn? (Outline the planned intervention strategies) Group activities will allow peer tutoring within the learning activities for designing activities. Warm ups and/or quizzes will be used to give students and their teacher the opportunity to be sure that each student understands each objective before moving to the next. When assignments are missed or completed at less than 50%, students

	promote hands on, real world experience for students.		will be assigned a recovery time to fill in missing knowledge gaps. Teachers will be available for extra assistance for students who need the help. 5. What will we do if students already know it? Provide a minimum of enriching practice problems, then move to the next topic. Students will also have the opportunity to work on/complete independent study projects that will be on going in the course.

Content Area Standards (Please identify the source)

The students will demonstrate mastery of the following content standards:

California Geology 9a-9b (California Content Standards: Earth Science)
Biogeochemical Cycles 7a-c (California Content Standards: Earth Science)
Dynamic Earth Processes 3c
CTE Forestry and Natural Resource Pathway E3.0-E3.5