SCOUT ISLAND
OUTDOOR EDUCATION CENTER
FRESNO COUNTY SUPERINTENDENT OF SCHOOLS

Learning Modules

- **All Activities are Phenomenon-based, support NGSS by offering local, environmentally-based, real-life science and engineering opportunities.**
- **Nearly all activities support the Environmental Principles and Concepts and partially provide the annual 40 hours of outdoor environmental education recommended by the California's Blue Print for Environmental Literacy, under Sections 71302 and 51227.3 of the Ed Code**

** (The Standards listed are not taught to mastery, but instead touch upon and discuss the ideas, concepts, practices and principles listed)

Birds, Beaks & Feet

The unique adaptations that provide birds the ability to fly and to occupy many diverse niches are illustrated through the hands-on manipulation of replica beaks, feet, and feathers. Structure-function relationships are highlighted, as are local food webs and feeding styles. Local bird species are highlighted, and bird watching is introduced.

Disciplinary Core Ideas			Cross Cutting Concept	Science and Engineering Practices	Environmental Principles and Concepts
K-2	**3-5**	**6-8**	Patterns	• Asking Questions and Defining Problems	Principle 1 - A, B
LS1.A,C	LS1.A,C	LS1.A	Stability and Change	• Constructing Explanations and Designing Solutions	Principle 2 - C, D
LS4.C,D	LS2.A	LS2.A	Structure and Function		Principle 4 - B, C
	LS4.C,D	LS4.C			Principle 5 - B

Birds of Prey

A local Master Falconer presents live birds of prey while pointing out the adaptations for flight, predation, camouflage, behavior, and survival. Food webs that include these local predators are highlighted. This presentation allows the student to view these raptors in an up-close and non-threatening fashion not normally available in the wild.

Disciplinary Core Ideas				**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	**9-12**	Scale, Proportion and Quantity Energy and Matter, Flows, Cycles and Conservation Structure and Function Patterns	• Asking Questions and Defining Problems • Planning and Carrying Out Investigations	Principle 1 - A, B Principle 2 - C, D Principle 4 - B Principle 5 - A, B
LS1.A, C, D LS2.A LS4.D ESS3.C	LS1.A, C, D LS2.A LS4.C LS4.D ESS3.C	LS1.A, C, D LS2.A LS4.C	LS1.A LS2.A			

Canoeing

Participants are instructed in basic canoe skills, water safety, teamwork, and communication skills. After a canoe and safety orientation participants will practice paddling skills and techniques on the river. We believe that participation in the canoe program fosters water safety knowledge, land stewardship practices, and an appreciation of nature.

Disciplinary Core Ideas			**Cross Cutting Concept**	**California State Standards**	
4-5	**6-8**	**9-12**	Cause and Effect Patterns	Physical Education	9th-12 Grades:
ESS2.C ESS3.A ESS3.C LS4.D	ESS2.C ESS3.A ESS3.C LS4.D	ESS2.C ESS3.A ESS3.C LS4.D		4th Grade 3.1, 3.2, 3.6, 3.7, 5.6 5th Grade: 3.1, 3.7, 5.5 6th Grade 5.1, 5.3, 5.4 7th Grade 1.3, 1.4, 1.6, 5.1, 5.4, 5.5 8th Grade 3.6, 5.2, 5.5, 5.6	Course 1: 1.1.,1.7, 1.10, 3.1, 3.9 Course 2: 3.1, 3.8 Course 3A: 1.1, 1.2, 1.4, 1.5, 2.1, 3.4, 3.7 Course 3B: 3.10, 3.11 Course 3C: 3.6, 3.9 Course 3E 1.1-1.7, 3.7, 3.8, 3.10 Course 4A: 1.4, 3.3

Confidence, Initiative, and Teamwork (Experience Leadership Opportunities and Character Development)

The instructor is a national faculty member of the "Pursue Victory with Honor" program associated with the acclaimed Character Counts. **C.I.T.** traits are accomplished through teacher-led discussions and hands-on activities that provide teachable moments to reemphasize the qualities of self-confidence, utilizing initiative, teaching the importance of teamwork, and building an understanding of leadership. The activities will vary depending on the grade level of the students.

California State Standards	
Physical Education (2-8)	5th Grade: 5.3-5.7
2nd Grade: 5.1 -5.7	6th Grade: 5.1, 5.2, 5.4
3rd Grade: 5.3-5.6	7th Grade: 5.1-5.5
4th Grade: 5.3-5.6	8th Grade: 5.1, 5.2, 5.4, 5.5, 5.6, 5.7

Decomposition Mission

Students study the process of decomposition, through exploration and discussion. They will discover the key characteristics of decomposition, by creating a rea decomposition sequence model. Students will learn the difference between chemical and physical decomposition, as well as, search for evidence of decomposers. Students will classify the different types of decomposers observed in their models. Finally, students will realize the role that decomposers play in the cycling of matter within ecosystems. (Adapted from Lawrence Hall of Science)

Disciplinary Core Ideas		**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	Cause and Effect	• Asking Questions and Defining Problems	Principle 1 - B, C
LS1.C	LS1.A	Stability and Change	• Developing and Using Models	Principle 3 - A, B, C
LS2.A	LS3.B	System and System Models		
	LS4.B, D			

Draw the River

Using colored pencils students create an environmental art piece. Students are exposed to basic art vocabulary and techniques, learning a new way to "see" the natural environment. The components of a natural habitat (food, water, shelter) are also discussed.

Disciplinary Core Ideas		**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**	**California Art Standards:**
K-2	**3-5**	Structure and Function	• Asking Questions and Defining Problems • Constructing Explanations and Designing Solutions	Principle 1	2nd Grade: 1.3, 2.3 3rd Grade: 1.3, 1.5, 2.3 4th Grade: 1.5 5th Grade: 2.1 6th Grade: 2.1, 2.3, 2.4 7th Grade: 2.1 9th- 12th Grades: 2.1, 2.4, advanced: 2.1
LS1.A	LS1.A				
LS3.B	LS3.B				
LS4.D	LS4.B, D				

Fur, Feet and Tracks

Usually offered as an extension to Paws and Jaws, students will learn more about mammalian structure-function relationships. In this activity, students investigate fur samples and tracks, through hands-on exploration of pelt samples and track plates. Students will also use field guides to answer questions, writing and drawing "field notes" about these local animals.

Disciplinary Core Ideas		**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	Cause and Effect Patterns Systems and System Models	• Asking Questions and Defining Problems	Principle 1 - A, B Principle 2 - C
LS1.A	LS1.A			
LS4.D	LS4.C			
	LS4.D			

Gold Rush

Discover California's rich past by learning about the California Gold Rush. Learn the importance of the gold rush in bringing thousands of immigrants to California and it becoming the 31st state in the union. Learn how and when gold was discovered, and how people mined gold. Learn about supply and demand of goods and services during the wild days of the gold rush.

Disciplinary Core Ideas				**Cross Cutting Concept**	**Environmental Principles and Concepts**	**California State Standards:**
K-2	**3-5**	**6-8**	**9-12**	Cause and Effect	Principle 2 - B, C, D	History-Social Science
ESS3.C	ESS3.A	ESS3.A	ESS3.A	Patterns	Principle 4 - A, C	4th Grade: 4.1.5, 4.3.2, 4.3.3, 4.4.2
	ESS3.C	ESS3.C	ESS3.C			

I spy… (Primary Grade level Scavenger Hunt)

Using the five senses, young students locate and collect small items that represent the plants and animals of this river community. Students work in small groups to complete this task. Throughout the activity, students will learn what the different types of plant and animal habitats are in and around a local river.

Disciplinary Core Ideas		**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	Patterns	• Asking Questions and Defining Problems	Principle 1- A
LS1.D	LS1.D	Structure and Function	• Constructing Explanations and Designing Solutions	Principle 2 - C
LS4.D	LS4.C, D	System and System Models	• Planning and Carrying Out Investigations	

Incredible Journey

Students simulate the movement of water within the water cycle by rolling giant dice to demonstrate the variable paths, direction, and states of matter. A detailed discussion of the water cycle precedes the activity and includes the topic of local water resources, water treatment, and water conservation. Closure involves a writing component that outlines their specific water journey and the processes involved. (Adapted from Project Wet)

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	Stability and Change System and System Models	• Developing and Using Models	Principle 1 - A, B Principle 3 - A, B, C
ESS2.C	ESS2.C	ESS2.C			
ESS3.C	ESS3.C	ESS3.C			
ESS3.A	ESS3.A	ESS3.A			
PS1.A	LS2.B	PS1.A			
	PS1.A				

Indomitable Salmon

Students will study the physical life cycle of the Pacific Salmon. Students simulate the hazardous migration of the Pacific Salmon. This recreation takes the smolts from fresh water to the ocean and back to freshwater creeks to spawn. Fish hatcheries, native fish, and the current status of the salmon restoration along the San Joaquin River are discussed. (Adapted from Project Wild)

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	Cause and Effect Patterns Stability and Change System and System Models	• Constructing Explanations and Designing Solutions • Using Mathematics and Computational Thinking	Principle 2 - C Principle 3 - A, B, C Principle 4 - C Principle 5 - A, B
LS1.B	LS1.B	LS1.B			
LS3.A	LS2.C	LS2.C			
ESS3.C	LS2.D	ESS3.C			
	ESS3.C				

Macroinvertebrates

Using macroinvertebrates (water creepy crawlies) as biological indicators of river water quality, students determine the health of the San Joaquin River. Color picture keys assist students with the identification and classification of the freshly collected animals. A written analysis involves the collection of class data and the sorting of samples to determine levels of pollution tolerance.

Disciplinary Core Ideas				**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	**9-12**	Patterns Stability and Change Structure and Function Systems and System Models	• Asking Questions and Defining Problems • Engaging in Argument from Evidence • Obtaining, Evaluating, and Communicating Information • Planning and Carrying Out Investigations • Using Mathematics and Computational Thinking	Principle 2 - A, B, C Principle 3 – C Principle 4 - B
ESS2.C ESS3.C LS1.A, C, D LS2.A LS4.D	ESS2.C ESS3.C LS1.A, C, D LS2.A, C LS4.C, D	ESS3.C LS1.A, C, D LS2.A, C LS4.C, D	LS2.C ESS3.C			

Making Cordage

In their study of experimental archaeology, students will make cordage and use an activity sheet to experience a technique and skill prehistoric peoples needed for everyday life. Students will be able to compute the amount of time and materials that may have been required to make cordage in prehistoric times and share their impressions of what daily life of these people might have been like. *(compare and contrast then v. now).* Students will take home the cordage they have made. If time and supplies permit, students may make pine nut beads to adorn their cordage. During this activity students read "How the Mono Tied Their World Together", briefly discussing the importance of natural resources to the Mono and their prehistoric ancestors.

Disciplinary Core Ideas		**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**	**California State Standards:**
K-2	**3-5**	Scale Proportion and Quantity	• Asking Questions • Constructing Explanations	Principle 1 - A, B Principle 2 – B, C Principle 3 – A, B Principle 4 – A, B	History-Social Science 2.4.1, 3.1.2, 3.2.2, 4.2.1 Math K-5 - Reason Abstractly and Quantitatively Grade 4 - 4.MD, Grade 5 -5.MD
ESS3.A	ESS3.A				

Marvelous Minerals

Students explore the wonderful world of minerals through a series of hands-on stations. Using a variety of mineral samples, students work in teams and rotate through stations to investigate physical properties of minerals such as color, crystal shape, hardness (Mohs scale), magnetism, density, heft, luster, streak, taste and odor.

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
3-5	**6-8**	**9-12**	Patterns	• Asking Questions	Principle 1 - A, B
ESS2.C	ESS2.C	ESS2.C	Structure and Function	• Constructing Explanations	Principle 2 - B, C
ESS3.A, C	ESS3.A, C	ESS3.A, C	Energy and Matter		Principle 4 - A
LS4.D	LS4.D	LS4.D	Stability and Change		Principle 5 - A
			Systems and System Models		

Migration Headache

Students become "migrating birds" traveling between nesting and wintering habitats. Along their journeys they experience some of the threats that may affect the species survival. Migratory flyways and local bird migrations are highlighted with emphasis on the birds in our Pacific Flyway and our local wetland areas. Students then graph the results to see the fluctuations in population and the correlation to wildlife threats. (Adapted from Project Wild)

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	Cause and Effect	• Developing and Using Models	Principle 2 - A, B, C
ESS3.C	ESS3.C	ESS3.C	Stability and Change	• Using Mathematics and Computational Thinking	
LS4.D	LS2.C	LS2.C			
	LS4.C, D	LS4.B, C, D			

Minerals, Rocks & Fossils

The students have just returned from a geological expedition. Their job now is to identify and describe the samples they have collected. Working with other students in small groups they will move through several stations where they will carry out investigations to describe and identify various minerals, rocks and fossils. They will co-operatively arrive at their results and then record them in their Geologic Lab Journal.

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
3-5	**6-8**	**9-12**	Energy and Matter Patterns Stability and Change Systems and System Models	• Asking Questions and Defining Problems • Analyzing and Interpreting Data	Principle 1 - A Principle 4 - A Principle 5 - A
ESS2.C ESS3.A, C LS4.D	ESS2.C ESS3.A, C LS4.D	ESS2.C ESS3.A, C LS4.D			

Nature Walkabout

Lead by qualified instructors, students take a stroll along the San Joaquin River discovering local riparian flora and fauna. The identification of the wildlife and native plants involves the use of the students' five senses. Adaptations specific to survival, including the Native American uses of these plants and animals and the problems caused by invasive plants are the focus of this guided walk. Scientific and common names are used, depending on the grade level.

Disciplinary Core Ideas				**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	**9-12**	Patterns Stability and Change Structure and Function Systems and System Models	• Asking Questions and Defining Problems • Constructing Explanations and Designing Solutions	Principle 1 - A, B, C Principle 2 - C, D Principle 5 - A, B
ESS2.C, E ESS3.A, C LS1.A, C	ESS2.A, B ESS3.A, C LS1.A LS2.C	ESS2.C, E ESS3.A, C LS1.A, C LS2.C	ESS2.C ESS3.A, C LS2.C			

Paws and Jaws

The adaptations that allow mammals to be successful on land and water are explained through the hands-on exploration of replica skulls, teeth, and feet. Structure-function relationships are modeled so that predator-prey relationships, food web placement, and feeding types (carnivore, herbivore and omnivore) can be easily identified. Local animal specimens are the focus of this activity.

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	Cause and Effect Patterns Structure and Function	• Asking Questions and Defining • Engaging in Argument from Evidence • Obtaining, Evaluating, and Communicating Information • Planning and Carrying Out Investigations	Principle 2 - C
LS1.A	LS1.A	LS1.D			
LS1.D	LS1.D				
LS4.D	LS4.C				

Pony Express

The Pony Express was an exciting part of American western history. The Express lasted only eighteen months from April of 1860 until October of 1861. The distance traveled by the Pony Express was more than two thousand miles from St. Joseph, Missouri to Sacramento, California. Students will be given information and participate in activities about the Pony Express route and its importance of mail delivery to and from the west before the establishment of the railroads.

California State Standards:
History-Social Science 3.1.2, 3.2.2, 4.2.1

Predator vs. Prey

Using cards listing predator or prey adaptations, students will be able to compare the predators' adaptations against preys'. The games will assist students in simulating real life predator-prey interactions, while understanding the concept of change over time in a population.

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
3-5	**6-8**	**9-12**	Stability and Change Systems and System Models	• Asking Questions and Defining • Developing and Using Models	Principle 3 - A, C Principle 4 - A, B, C
ESS2.C	ESS2.C	LS2.D			
ESS3.A, C	ESS3.A, C	LS4.C, D			
LS2.C	LS2.C				
LS2.D					

Quick Frozen Critters

Students will play an active game of freeze tag while learning about predator and prey relationships. They will explain the importance of the relationship between predators and prey and the environment they live in and describe how the interdependence limits wildlife populations. (Adapted from Project Wild)

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
3-5	**6-8**	**9-12**	Cause and Effect Patterns Stability and Change System and System Models	• Asking Questions and Defining • Developing and Using Models	Principle 3 - A, C Principle 4 - A, B, C
ESS2.C	ESS2.C	LS2.D			
ESS3.A, C	ESS3.A, C	LS4.C, D			
LS2.C	LS2.C				
LS2.D					

Reading by the River

An instructor guides the students through a selection of environmental-based literature to generate a discussion of stewardship and personal responsibility from the readings. The selections always focus on some aspect of rivers and/or riverside plants and animals. This activity is designed to increase reading skills and build an awareness of the common waterways and lands we all share.

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	Patterns	• Asking Questions and Defining	Principle 1 - A, B
ESS2.A	ESS2.A	ESS1.C	Structure and Function	• Constructing Explanations and Designing Solutions	
ESS3.A	ESS3.A	ESS2.A			
		ESS3.A			

Rock-On!

The rock cycle forms the foundation of this lesson. Students examine many different types of rocks and Coast Range fossils while learning about global and local plate tectonics and the processes of erosion. Emphasis is placed on California's diverse geology, mountain building, volcanic activity, and glaciations. Exploration of the San Joaquin riverbed to determine rock origin and types completes this module.

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
3-5	**6-8**	**9-12**	Cause and Effect	• Asking Questions and Defining	Principle 1 - A
ESS2.C	ESS2.C	ESS2.C	Patterns		Principle 4 - A
ESS3.A, C	ESS3.A, C	ESS3.A, C	Stability and Change		Principle 5 - A
LS4.D	LS4.D	LS4.D			

Salmon Art - Salmon Natural History and Art

The life cycle, historic importance, and the current relevance of the Pacific Salmon to the San Joaquin River are explained. Students enrich their knowledge base by using anatomically correct latex models of salmon and trout (Salmonids) to create colorful artistic fish prints reminiscent of Japanese Gyotaku images.

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	Structure Function	• Developing and Using Models	Principle 1 - A, B, C Principle 2 - A, B, C
ESS3.C LS1.A, B	ESS3.C LS1.A, B	ESS3.C, D LS1.D			
California State Standards: History-Social Science 3.1.2, 3.2.2, 4.2.1					

Scavenger Hunt

Students work in pairs or small groups to locate and identify various flora and fauna that inhabit Scout Island. Incorporating a multi-sensory approach to interpret the clues and evidence left in the environment, students gain a broader concept of riparian habitats from the living and non-living component parts.

Disciplinary Core Ideas				**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	**9-12**	Patterns Structure and Function Systems and System Models	• Asking Questions and Defining Problems • Constructing Explanations and Designing Solutions • Planning and Carrying Out Investigations	Principle 1 - A
LS4.D	ESS2.C ESS3.A, C LS4.D	ESS2.C ESS3.A, C LS4.D	LS4.D			

Suitcase for Survival: Illegal Wildlife Trade and Endangered Species

Using confiscated wildlife artifacts, products and parts provided by the U.S. Fish and Wildlife Agency, this national program raises awareness about wildlife trade and the loss of biodiversity. This presentation addresses the general reasons many species are endangered and/or threatened and focuses specifically on the billions of dollars of uncontrolled illegal trade in wild plants and animals. Students will gain an understanding of why biodiversity is important and how their actions can contribute to biodiversity conservation. Children will get a chance to handle elephant tusks, sea turtle items, python skins, leopard pelts, and more.

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
4-5	**6-8**	**9-12**	Cause and Effect	• Asking Questions and Defining	Principle 1 - C
ESS3.C	ESS3.C	ESS3.C	Patterns		Principle 2 - A, B, C
LS2.C	LS2.C	LS2.C	Systems and System Models		Principle 3 - C
					Principle 4 - A, B, C
					Principle 5 - A, B

Walking Where They Lived

This nature walk guides students along the river corridor and to the Native American site at Scout Island. Native plants, their historic usages and cultural implications are emphasized. The activity focuses on the relationship and dependence of the indigenous peoples to their natural surroundings. Stories from local tribes, their basketry and use of grinding stones are shared.

Disciplinary Core Ideas				**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	**9-12**	Energy and Matter	• Asking Questions and Defining Problems	Principle 1 - A, B
ESS3.C	ESS3.C	ESS3.C	ESS3.C	Patterns	• Constructing Explanations and Designing Solutions	Principle 3 - C
				Stability and Change		Principle 5 - A, B
California State Standards:						
History-Social Science						
3.1.2, 3.2.2, 4.2.1						

Water Quality

Students perform several water quality (physical-chemical) index tests to measure the water quality of the San Joaquin River at Scout Island. These tests include pH, total dissolved solids, turbidity, temperature, and dissolved oxygen. The results are used as a means of estimating the overall health of the Scout Island stretch of the river. The results are then assessed in relation to the salmon restoration project and the water quality parameters required by the salmon to survive.

Disciplinary Core Ideas				**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	**9-12**	Patterns Stability and Change Systems and System Models	• Analyzing and Interpreting Data • Asking Questions and Defining Problems • Constructing Explanations and Designing Solutions • Engaging in Argument from Evidence • Planning and Carrying Out Investigations • Using Mathematics and Computational Thinking	Principle 1 - A, B, C Principle 2 - A, B, C, D Principle 3 - C Principle 4 - B, D Principle 5 - B
ESS3.A, B	ESS3.A, B LS2.C LS4.C, D PS1.A	ESS3.A, B LS2.C LS4.C, D PS1.A	ESS3.A, B LS2.C LS4.C, D			

Watershed Models

By constructing a 3-dimensional model, students simulate a watershed, learning that every person on earth lives within a watershed that we all share. In this activity students investigate drainage patterns and the origin of the water in their local community. Revisiting the water cycle, students define what determines our local watersheds. They will learn the origin of water used in their community and that water running downhill is the dominant process in shaping the California landscape.

Disciplinary Core Ideas				**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	**9-12**	Cause and Effect Energy and Matter Patterns Stability and Change Systems and System Models	• Asking Questions and Defining Problems • Constructing Explanations and Designing Solutions • Developing and Using Models • Planning and Carrying Out Investigations	Principle 1 - B, C Principle 2 - A, B, C Principle 3 - A, B, C Principle 4 - A, B, C Principle 5 - A, B
ESS2.C ESS3.A, C	LS2.C ESS2.C ESS3.A, C	LS2.C ESS2.C ESS3.A, C	LS2.C ESS2.C ESS3.C			

Weather Watch

Using the water cycle as the basis for an overview of meteorology, this activity is split between classroom and field exploration. Attention is paid to California's diverse climatology, local weather patterns, cloud types, and storm formations. The on-site weather station provides real-time data for local weather condition analysis.

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	Cause and Effect	• Asking Questions and Defining	Principle 1 - B
ESS2.A	ESS2.A	ESS2.A	Patterns		Principle 2 - A, B
ESS2.D	ESS2.D	ESS2.D	Stability and Change		Principle 5 - A, B
			System and System Models		

Web of Life

Students learn the ecological basis behind food chains and food webs. Feeding levels (producers, consumers, and decomposers), energy requirements, and nutrition types (carnivore, herbivore and omnivore) are explained. Using this information, students create a pictorial food web using the plants and animals at Scout Island. Species interaction and competition for resources are addressed.

Disciplinary Core Ideas			**Cross Cutting Concept**	**Science and Engineering Practices**	**Environmental Principles and Concepts**
K-2	**3-5**	**6-8**	Energy and Matter	• Asking Questions and Defining	Principle 2 - C
ESS3.A	ESS3.A	ESS3.A	Patterns	• Constructing Explanations and Designing Solutions	Principle 3 - C
LS1.C	LS1.C	LS1.C	Stability and Change	• Developing and Using Models	Principle 4 - C
LS2.A	LS2.A, B	LS2.A, B	System and System Models	• Planning and Carrying Out Investigations	