Correlation of the Content Standards for California Public Schools at the Pigeon Point Environmental Education Program (PPEEP)

Students who attend PPEEP will gain knowledge of science and other curricular areas through experiential education in several ecosystems: marine, redwood, mixed woodland, coastal scrub, and the intertidal zones. The following are examples of learning opportunities that relate to the California State Content Standards.

GRADE SIX SCIENCE CONTENT STANDARDS

Plate Tectonics and Earth's Structure

1. Plate tectonics accounts for important features of the Earth's surface and major geologic events. As a basis for understanding this concept:
    - Students learn that evidence of plate tectonics is derived from the location of earthquakes and mid-ocean ridges, as well as from the distribution of fossils and rock types. (a)
    - Students learn that the Earth is composed of several layers. (b)
    - Students learn that lithospheric plates the size of continents and oceans move at rates of centimeters per year in response to movements in the mantle. (c)
    - Students learn that earthquakes are sudden motions along breaks in the crust called faults and that volcanoes and fissures are locations where magma reaches the surface. (d)
    - Students learn that major geologic events, such as earthquakes, volcanic eruptions, and mountain building result from plate motions. (e)

Relevant Activities: Geology walk at Pigeon Point, coastal geology observations at Año Nuevo State Reserve

Shaping the Earth's Surface

2. Topography is reshaped by the weathering of rock and soil and by the transportation and deposition of sediment. As a basis for understanding this concept:
    - Students understand that water running downhill is the dominant process in shaping the landscape, i.e. erosion. (a)
    - Students have an opportunity to explore a coastal mountain stream and learn how the water erodes the landscape as well as transporting sediment. (b)
    - Students have an opportunity to explore a coastal riparian ecosystem including a marsh and lagoon where they participate in activities that teach about the deposition of sediment along the coast. (c)
    - Students learn that earthquakes, volcanic eruptions, landslides, and floods change human and wildlife habitats. (d)

Activities: Creek exploration and rock examination during Redwood Discovery Hike, Salt Marsh Hike

Energy in the Earth System

3. Many phenomena on the Earth's surface are affected by the transfer of energy through radiation and convection currents. As a basis for understanding this concept:
    - Students learn that the sun is a key source of energy on the Earth's surface. (a)
    - Students learn that solar energy reaches the Earth through radiation, mostly in the form of visible light. (b)

Ecology (Life Science)

4. Organisms in ecosystems exchange energy and nutrients among themselves and with the environment. As a basis for understanding this concept:
    - Students learn that energy entering ecosystems as sunlight is transferred by producers into chemical energy through a process called photosynthesis and then from organism to organism through food webs. (a)
    - Students learn that matter is transferred over time from one organism to others in the food web and between organisms and the physical environment. (b)
    - Students learn that organisms are categorized by their function they serve in an ecosystem. (c)
    - Students learn that populations of organisms may play similar ecological roles in similar biomes. (d)
    - Students learn the number and types of organisms an ecosystem can support depends on the resources available and on abiotic factors, such as quantities of light and water, a range of temperatures, and soil composition. (e)

Activities: Photosynthesis review and forest ecology lessons during Redwood Discovery Hike, tidepool and beach explorations.

Resources

5. Sources of energy and materials differ in amounts, distribution, usefulness, and the time required for their formation. As a basis for understanding this concept:
    - Students learn about different natural energy and material resources, including air, soil, rocks, minerals, petroleum, fresh water, wildlife, and forests. (b)
    - Students learn about the natural origin of the materials used to make common objects. (c)

Activities: Food Waste measurements and discussion during meals, "Sun, Soil, Water and Air" activity in redwoods, coastal history lessons at Pigeon Point, Pescadero Marsh and Año Nuevo.

GRADE SIX HISTORY-SOCIAL SCIENCE CONTENT STANDARDS

World History and Geography: Ancient Civilizations

1. Students describe what is known through archaeological studies of the early physical and cultural development of humankind from the Paleolithic era to the agricultural revolution.
    - Students learn about the Native Americans from the Santa Cruz Mountains, the Ohlone People, and how they adapted to living in this environment through knowledge of hunting and gathering as well as a variety of primitive skills. (1)
    - Through discussions generated by activities about human and non-human adaptations students learn about the various ways all organisms have adapted and continue to adapt to a variety of environments. (2)

Activities: Native plant uses at Pescadero Marsh, Ohlone history at Año Nuevo, native-themed stories during evening fireside time.

GRADE SIX VISUAL AND PERFORMING ARTS: Music Content Standards

Creative Expression (2.0)

1. Apply Vocal and Instrumental Skills
    - Students sing a varied repertoire of music before meals and during evening fireside. (2.1)

Connections, Relationships, Applications (5.0)

2. Connections and Applications
    - Students are exposed to and participate in environmental education songs that teach a variety of 6tb grade science concepts. (5.1)

Example of songs: Decomposition, Banana Slug, Gusano, Photosynthesis, Sea Star, etc.

GRADE SIX VISUAL AND PERFORMING ARTS

1. Development of the Vocabulary of Theatre:
    - Students prepare and perform a skit about Pigeon Point as a nighttime activity. (1.1)
    - Students participate in improvisational activities, demonstrating an understanding of text, subtext, and context. (2.1)

Activities: Town Hall Meeting, Skit Night Activity

Connections, Relationships, Applications (5.0)

1. Connections and Applications
    - Students use theatrical skills to communicate concepts and ideas from other curriculum areas. (5.1)

Activities: Build-a-tree in the redwoods, elephant seal activities at Año Nuevo.

GRADE SIX ENGLISH LANGUAGE ARTS

Listening and Speaking Strategies (1.0)

Students deliver focused, coherent presentations that convey ideas clearly and relate to the background and interests of the audience. They evaluate the content of oral communication.

Speaking Applications (2.0)

Students deliver well-organized formal presentations employing traditional rhetorical strategies (e.g., narration, exposition, persuasion, description).

- Deliver informative presentations. (2.2)
- Deliver persuasive presentations. (2.4)
- Deliver presentations on problems and solutions. (2.5)

Activities: Town Hall Meeting presentations, Q&A session, and debates.