

# San Diego County Office of Education Outdoor School Program

## Alignment with California Science Content Standards for Grade Six

The Sixth Grade Outdoor School Program provides instruction to participating students in four key content areas. It should be noted that additional concepts are taught, but the vast majority of instruction is related to the following:

- 1) The Flow of Energy (photosynthesis, wind, food pyramid, producers, consumers, decomposers)
- 2) The Cycling of Matter (soil, water, air, life cycles)
- 3) The Interrelating of Life (communities, habitat, niche, food web)
- 4) The Changing of Forms (adaptation, geologic time, succession, evolution, plate tectonics, erosion, weathering, climate)

Each of these content areas is directly related to one or more of the California State Board of Education's Science Content Standards for the sixth grade.

**The Flow of Energy** is directly related to Standard Number 4, Energy in the Earth System, Standard Number 5, Ecology (Organisms in ecosystems exchange energy and nutrients among themselves and with the environment), and Standard Number 6, Resources (Sources of energy and materials differ in amounts, distribution, usefulness, and the time required for their formation).

**The Cycling of Matter** is directly related to Standard Number 1, Plate Tectonics, Standard Number 2, Shaping the Earth's Surface, and Standard Number 4, Energy in the Earth System (specifically the "water cycle" referenced in subsection "a").

**The Interrelating of Life** is directly related to Standard Number 5, Ecology.

**The Changing of Forms** is directly related to Standard Number 1, Plate Tectonics, Standard Number 2, Shaping the Earth's Surface, Standard Number 5, Ecology (particularly as to how it relates to organisms adapting and changing to as stated in subsections a-e).

All of the above content areas are presented in a manner which also meets Standard Number 7, Investigation and Experimentation. Outdoor education, by its hands-on nature, is ideally suited to meet this standard.

The curriculum guidelines for the ongoing activities presented to the students also parallel the California State Science Standards in the following ways:

### California State Science Standards

1. Plate tectonics explains important features of the Earth's surface and major geologic events.
2. Topography is reshaped by weathering of rocks and soil by the transportation and deposition of sediment
3. Heat moves in a predictable flow from warmer objects to cooler objects until all objects are at the same temperature.
4. Many phenomena on the Earth's surface are affected by the transfer of energy through radiation and convection currents.
5. Organisms in Ecosystems exchange energy and nutrients among themselves and with the environment.
6. Sources of energy and materials differ in amounts, distribution, usefulness and the time required for their formation.
7. Scientific progress is made by asking meaningful questions and conducting careful investigations.

### Outdoor Education Guidelines

- \*Geological Formations \*Rocks and Minerals
- \*Geological Timeline \*Rock Cycle \*Rock Craft
- \*Erosion Model/Weatherization \*Ore Panning
- \*Watershed Studies \*Orienteering \*Soil Study
- \*Firemaking (friction) \*Wind Energy \*Solar Energy
- \*Radiant Energy \*Cloud Formation \*Night/Day Variations in Weather \*Seasonal Changes
- \*Latitude and Climate Zones
- \*Pond Study \*Decomposition \*Pollution Studies
- \*Environmental Impact Report \*Habitat Studies
- \*Food Pyramid
- \*Riparian Studies \*Water Cycle \*Recycling
- \*Cattle Grazing (Nitrogen Cycle) \*Small Forests
- \*Manzanita plant cycle \*Differences in Chaparral and Riparian Region