Grade
Third grade

Project Title
Integrating Ethnobotany and Gardening

Environmental Big Picture
Human practices depend upon and benefit from the cycles and processes that operate within natural systems. By understanding past and present uses of plants in our native ecosystems, students begin to understand the importance of preserving them.

Educator Bio
Leah Saunders teaches third grade at Murdock Elementary.

School/District
Murdock Elementary, La Mesa-Spring Valley District

Courses Involved in Project
third grade class

Learning Outcomes
Students will know:

- Examples of how plant leaves are adapted to the chaparral environment.
- How local Native Americans used local plants.

EEI Alignment
The following EEI learning objectives are addressed by this project:

- Identify that plants and animals have different structures that allow them to grow, survive, and reproduce by using/consuming the goods and ecosystem services provided by natural systems.
- Describe habitat restoration as a process that can sometimes be used to make it possible for plants and animals to survive and reproduce in areas where they once could not.
- Recognize the ways that people use the resources (goods and ecosystem services) that are provided by the ecosystems (natural systems) in their local region.
- Provide examples of goods and ecosystem services that were used by specific Native American nations.

CA Standards Alignment
Science Standards
3. Adaptations in physical structure or behavior may improve an organism's chance for survival. As a basis for understanding this concept:

a.Students know plants and animals have structures that serve different functions in growth, survival, and reproduction.
d. Students know when the environment changes, some plants and animals survive and reproduce; others die or move to new locations.

History-Social Science Standards
1. Students describe the physical and human geography and use maps, tables, graphs, photographs, and charts to organize information about people, places, and environments in a spatial context.Trace the ways in which people have used the resources of the local region and modified the physical environment (e.g., a dam constructed upstream changed a river or coastline).

2. Students describe the Native American nations in their local region long ago and in the recent past.

Lesson Topics/Conceptual Flow

Engage:
Take a schoolyard or community walk and gather different types of leaves. A leaf-rubbing project is also done at this time.

Explore:
Find out how the local Native Americans, the Kumeyaay, used native plants.

Explain:
Research how different leaves are adapted to different environments, specifically the chaparral environment.

Expand:
Study cross sections of trees to understand the effects of fire, water, drought, insects, and human impacts on the growth of trees and other plants.

Evaluate:
Use the “each one, teach one” strategy. Each student becomes an “expert” on one plant, then is responsible for sharing that knowledge with other students. A sample of how to use this strategy is at http://www.crfc.org/americanjury/lessons/grand_jury/each_one_strategy.html.

Action Project Description

Over the past several years, students have been involved in all aspects of the development of the native garden at Murdock Elementary. The school has garden areas that represent four different vegetation types found in San Diego County: chaparral, coastal sage scrub, riparian, and desert. Students worked to create the hardscape, planted many native plants, and work to maintain the garden.

Students visit the garden frequently and have a chance to observe any changes in the plants and animals found there. They study different plant species and learn how the local Native Americans, the Kumeyaay, used the plants. By adding this human element, students gain a greater appreciation for the native vegetation of the San Diego region. Students create projects to share their knowledge of the interesting features of our local ecosystems.

Connections to Other Disciplines

Art - leaf rubbings

English/Language Arts - Reading about native plants, animals, and the Kumeyaay. Create written products about the project.

Resources (Field Trips, Speakers, etc):

Natural Connections - San Diego County Office of Education's science and history-social science aligned Kumeyaay curriculum. http://www.sdcoe.net/lret2/hss/?loc=nc

Mission Trails Regional Park- offers guided hikes for classes that give information about ethnobotany. http://www.mtrp.org/school_trips.asp

Torrey Pines State Reserve- offers free docent-led hikes and pre- and post- activities for the classroom on a variety of topics, including the Kumeyaay.
http://www.torreypine.org/education/teachers-corner.html

The San Diego Natural History Museum

- The exhibit "Earth, Wind, and Wildfire" is now closed, but the Web site and lots of information are still available. http://www.sdnhm.org/exhibits/fire/index.html

- Contact the volunteer Canyoneers to see if a walking tour of an area near your school site can be arranged. http://www.sdnhm.org/canyoneers/index.html