

ALIGNMENT WITH CALIFORNIA STATE BOARD GRADE 3 EDUCATION STANDARDS

The **Life Sciences** component of the State 3rd Grade Science Contents Standards is fully integrated into the Shellmaker 3rd Grade program

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.
- b. *Students know* examples of diverse life forms in different environments, such as oceans, deserts, tundra, forests, grasslands, and wetlands.
- c. *Students know* living things cause changes in the environment in which they live: some of these changes are detrimental to the organism or other organisms, and some are beneficial.
- d. *Students know* when the environment changes, some plants and animals survive and reproduce; others die or move to new locations.
- e. *Students know* that some kinds of organisms that once lived on Earth have completely disappeared and that some of those resembled others that are alive today.

The program is designed for students to explore nature through observation and interpretation, consistent with the **Investigation and Experimentation** component of the State 3rd Grade Science Contents Standards:

5. 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 three strands, students should develop their own questions and perform investigations. Students will:

- a. Repeat observations to improve accuracy and know that the results of similar scientific investigations seldom turn out exactly the same because of differences in the things being investigated, methods being used, or uncertainty in the observation.
- b. Differentiate evidence from opinion and know that scientists do not rely on claims or conclusions unless they are backed by observations that can be confirmed.
- c. Use numerical data in describing and comparing objects, events, and measurements.
- d. Predict the outcome of a simple investigation and compare the result with the prediction.
- e. Collect data in an investigation and analyze those data to develop a logical conclusion.

The following components of the State 3rd Grade **History/Social Science** Contents Standards are incorporated through observation of the Bay and its surroundings in conjunction with the use of maps and aerial photographs, and through discussion of the life of the local Tongva (Gabrielino) Indians:

3.1 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.

1. Identify geographical features in their local region (e.g., deserts, mountains, valleys, hills, coastal areas, oceans, lakes).
2. 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).

3.2 Students describe the American Indian nations in their local region long ago and in the recent past.

1. Describe national identities, religious beliefs, customs, and various folklore traditions.
2. Discuss the ways in which physical geography, including climate, influenced how the local Indian nations adapted to their natural environment (e.g., how they obtained food, clothing, tools).
3. Describe the economy and systems of government, particularly those with tribal constitutions, and their relationship to federal and state governments.
4. Discuss the interaction of new settlers with the already established Indians of the region.

3RD GRADE SHELLMAKER SCHOOL TOUR PROGRAM

Shellmaker Island is the perfect setting for a truly remarkable outdoor learning experience that ties together so many of the various facets of the Science and History/Social Science curriculum. Shellmaker sits at the dividing line between the waterfront homes and yachts of Lower Newport Bay and the natural beauty of the Upper Newport Bay Ecological Reserve. Upper Newport Bay is one of only a few remaining estuaries in Southern California and is the home of nearly 200 species of birds, including several endangered species, as well as numerous species of mammals, fish, other critters and native plants. The Bay is an important stopover for migrating birds on the Pacific Flyway and up to 30,000 birds can be seen here on any day during the winter months.

The 3rd Grade program is an intensive 1½ hour outdoor program designed to allow students to allow students to experience the wonders of nature while covering core materials of the California State Board Education Standards as shown overleaf. Shellmaker School Tours are conducted by trained volunteer naturalists on Wednesday and Friday mornings from 10:00 until 11:30 AM. Children rotate between four outdoor stations at which they learn about different aspects of the bay as related to the 3rd grade curriculum. Each school group is divided into sub-groups of approximately 15 students. Each sub-group is assigned to a tour guide who leads the sub-group from station to station.

Ecology/Plant Station

Shellmaker Island is the home of the California Coastal Commission (CC) Native Plant Nursery. At the Ecology/Plant Station students learn about the growth, survival and reproduction of various plants found in wetland, grassland and other environments. They get to feel and smell cultivated native plants such as sagebrush and pickleweed. They see how saltmarsh plants are adapted to survive in a saltwater environment. They also learn how living things, including humans, causes changes to the environment and that some of these changes are beneficial and some detrimental.

Geography/History Station

Here students observe their surroundings and study 3-dimensional, topographic and street maps and aerial photographs of Upper Newport Bay, Newport Beach, and Orange County. They have the opportunity to see how the local environment has changed and discuss physical and human geography issues relating to the bay. Archaeologists digging into Upper Newport Bay's past discovered that the bay area was inhabited 9,000 years ago. This is the earliest dated site for a native American settlement in Orange County. So it is fitting for students to here learn about the American Indians who lived here long ago and in the recent past. The life of the local Tongva (Gabrielino) Indians and how they adapted to the natural environment of Upper Newport Bay is explored. This is a "touch and feel" station where the children can handle rabbit pelts, abalone shells, etc. use a grinding stone, and play an Indian game.

Bird Station

Birds have many interesting physical adaptations. Two very important ones are the shape of its beak and feet. These determine where and on what the bird will feed. The huge diversity of beak shapes in the birds found on the mudflats of UNB means that these birds are not competing for the same foods. Those with long slender beaks probe in the mud for worms while those with short beaks feed on shellfish on the surface of the mud. At the Bird Station these physical adaptations are discussed and observed. Students learn about bird migration (an important behavioral adaptation) and the importance of wetlands along the Pacific Flyway. Students also learn about why certain birds have become extinct in the past and learn about the threats to survival of some of the birds that are found at Upper Newport Bay.

Marine Life Station

Shellmaker Island is the home of the California Department of Fish and Game (DFG) Marine Studies Center (MSC). At the Marine Life Station the diverse forms of life found in estuary, coastal and ocean environments are discussed. Mud samples are taken from beneath the MSC dock and examined for worms, shellfish and other marine invertebrates. Mussels, sea squirts, etc. can be touched and fish observed in the outdoor tanks. Depending on availability, students may also go inside the Marine Lab and see the indoor aquaria that replicate the upper and lower bay and coastal tidepool environments.