



BERKWOOD HEDGE SCHOOL

California Water Unit

An Example Of Integrated Curriculum In The Fourth Grade Classroom

REPRESENT

Model Making

- Constructing a watershed model (connects to Science Investigations)
- Making a salt dough relief map of California
 - ❖ After becoming familiar with the location of major geographical regions and features of California, students make a salt dough relief map of the state, which they paint and label. Through this process, students begin developing a schema for California water systems; in making a relief map, they work on creating a mental map, an understanding of the relative locations of the San Francisco Bay, the San Joaquin and Sacramento Rivers in the Central Valley, Lake Tahoe and Mono Lake in the Sierras, and Owens Valley in Southern California.

Geography

- Analyzing a California Water Map (location of water sources and populated cities)
 - ❖ After completing the relief map, students study a California water map. They use color-coded sticky dots to mark the annual rainfall of cities located throughout the state. Through analytical discussions, they make connections between the population of cities, annual rainfall, and the location of water sources. They recognize that annual rainfall is insufficient in meeting the water needs of cities, and notice the human-made water systems (such as aqueducts and reservoirs), shown on the map.
- Locating our local creek watershed on a Watershed Map
 - ❖ Students work on a mapping activity in small groups to locate the watershed where Berkwood Hedge is located, Strawberry Creek Watershed.

Art

- Representing a creative visualization of a healthy fish habitat
 - ❖ An artist from the *Watershed Adventures* program visits our classroom and guides the students through a creative visualization related to a water scene. The students use watercolors to render their concept on paper. They write a message, which articulates their vision for a clean environment, to accompany their artwork.

Mathematics

- Graphing and charting science data (connects to Science Investigations)
 - ❖ As a part of their science investigations related to the properties of water, students use graphs and charts to organize their data.

INVESTIGATE

Science

- Engaging in experiments to learn about the hydraulic cycle and properties of water (connects to Mathematics)
 - ❖ Students engage in scientific investigations that teach them about the hydraulic cycle. Additional investigations provide opportunities for students to learn about properties of water, such as surface tension and density of hot and cold water.
- Performing experiments with their watershed models that show the impact of pollution and the importance of marshes (connects to Model-Making)
 - ❖ Students construct a clay model of a watershed and use it to perform experiments that show the impact of pollution and the importance of marshes.
- Identifying native plants, birds, and macro-invertebrates at a local marsh (connects to Field Study)
 - ❖ The class participates in a marsh program through *The Watershed Project*. The first session is an in-class visit that teaches students to identify and recognize native marsh plants, as well as the role marshes play as a nursery habitat for plants and wildlife. In the second session, the class takes a field trip to a marsh in Richmond where they identify native plants, birds, and macro-invertebrates.

EDUCATE

Community-Based Service Learning

- Surveying and cleaning trash in local storm drains
 - ❖ Students connect with their local community by removing plant debris and trash from local storm drains.
- Stenciling on local unmarked storm drains
 - ❖ In the Spring, students stencil "No Dumping - Drains to Bay" on local unmarked storm drains.

School-wide Education

- Sharing service learning projects at Community Meetings
- Raising money to donate to a non-profit organization that protects CA water (organization decided by the class)
 - ❖ The weekly Community Meeting provides an opportunity for students to share the work that they have done in the community (e.g. cleaning and stenciling storm drains), as well as solicit donations for "Soup's On". Students describe the work of the organization and tell why they chose to donate the money they raise through Soup's On to that particular organization.

Interactive Writing

- Composing a letter to the non-profit organization
 - ❖ Through interactive writing, the students compose a letter to the organization that is enclosed with the donation.

RESEARCH

On the Web

- Learning about non-profit organizations that protect CA water through an internet search (connects to School-wide Education)
 - ❖ They research websites of several non-profit organizations that work to protect California water and decide which organization they would like to donate the money the class makes from "Soup's On".

Texts

- Learning more about CA water through reading nonfiction publications
 - ❖ Students extend the knowledge they gain through hands-on and interactive experiences by reading from a Cobblestone publication on California Water.

In The Field

- Collecting data while cleaning local storm drains (Connects to Service Learning)
 - ❖ As the students clean local storm drains in small groups, they survey the trash that they remove, tallying the kinds of trash that they find. After the activity, the small groups pool their data and come up with totals for the different trash items. Students draw conclusions from their data, discussing the impact the trash has on the San Francisco Bay.

SYNTHESIZE

Field Study

- Visiting a local marsh and learning about the role of marshes in the environment (connects to Science Investigations)
 - ❖ The class takes a field trip to a marsh in Richmond where they engage in activities such as identifying native plants, birds, and macro-invertebrates in the marsh.

Living History

- Participating in a town meeting to debate the extension of the Los Angeles Aqueduct in 1924
 - ❖ We conclude the Water unit with a living history town meeting in which students represent different interest groups and debate the extension of the Los Angeles Aqueduct in Owens Valley in 1924. They consider and take on the perspectives of ranchers and farmers, residents of Owens Valley, as well as residents and city officials from Los Angeles. Students grapple with social justice issues in their discussion of land use, environmental impact, water rights, and access to water.