

## Seasons of Change

"Seasons of Change" is a collaborative effort field trip created and designed by George Mayne 4<sup>th</sup> grade teacher Cynthia Overby and Don Edwards San Francisco Bay Wildlife Refuge Environmental Education Center Director Genie Moore.

This field trip is a year- long endeavor. The 4<sup>th</sup> grade students at George Mayne School are divided into small groups and visit the Environmental Education Center AKA "The Birdhouse" three times throughout the year to act as field scientists. They make predictions and observations and collect data during the fall, winter, and spring and then compare that data over time to note differences and similarities throughout the changing seasons.

Prior to the first field trip in the fall, Genie Moore visits Mayne with some of her staff to teach the students what they will be doing as scientists and how to use the tools they will be using during their visits. Students learn how to use a compass so they can document the changes in the environment north, south, east, and west. They learn how to use and read a hydrometer to help them determine the salinity of the water in different parts of the refuge. They learn how to use and read a thermometer so they can measure and record the air and soil temperatures. Students also learn how to use digital cameras to photographically document their observations, and Genie also teaches them to use and care for binoculars. They are also given a lesson on the refuge itself. They learn about the different habitats and animals they will see. After she preps the students with information about what they will be doing during their trips, she works with the kids to help them make predictions about what they will see during their first

visit to the "Birdhouse", and talks about how those initial predictions may change over the course of the seasons and why those changes may occur.

In preparation for these trips, students also enjoy a visit from the Santa Clara Valley Audubon Society. The presenters teach them how to identify their group bird. They also learn about their bird's habitat, adaptations, mating and migration habits, and other interesting facts.

During each trip, students work in their bird groups to collaborate on the completion of data collection and bird counts and they document all of their findings in their science notebooks. At the end of each trip, each group prepares a creative presentation to share their data and findings with the other groups. Students perform raps, sing songs, perform skits, and come up with other creative ways to demonstrate their findings and understandings to their peers.

Once students return to school, they chart their data and see how it stacks up against their predictions. They then discuss and share out why they think their predictions were accurate or not and then make predictions for their next trip.

The "Seasons of Change" field study has been a valuable experience for the 4<sup>th</sup> grade students at Mayne. They are learning to be real scientists and are collecting and utilizing data as true scientists do.

This field trip would not be possible without the collaborative efforts between Genie Moore and her staff and volunteers at Don Edwards San Francisco Bay Wildlife Refuge and George Mayne School. This partnership has been ongoing for over 20 years and the "Birdhouse" is a valuable resource for the George Mayne School community. They

provide field trips, school site presentations, host our school wide Science Night activities, provide summer camps, and many other enriching science activities for students and families.

If you are interested in partnering with or taking advantage of the many exciting science based opportunities that Don Edwards San Francisco Bay Wildlife Refuge has to offer, contact Genie Moore at [genie\\_moore@fws.gov](mailto:genie_moore@fws.gov).