

Osborn Elementary School Field Days at Barn Beach Reserve “Winter Ecology”—January – February 2009—Summary of Activities

On **Field Day 1 (January 20-22)**, Osborn 5th graders began their study of winter in Leavenworth.

Inside the Barn, students reviewed the physical properties of water—especially snow. They studied a climatogram of Leavenworth, showing yearly averages for precipitation and temperature. Each student used real climate data to construct a climatogram for an assigned “eastside” or “westside” city and found the city on a Washington road map and a precipitation map.

On the grounds of BBR, students studied a snow pit to determine temperature variations and how animals survive winter below the snowpack. Students collected snow and melted it to determine its liquid water content, used magnifiers to examine the crystal structure of snowflakes, and collected temperature and humidity readings from three different “microclimates.”

On **Field Day 2 (January 27-29)**, the 5th graders began to answer the question, “What’s Out There in Winter?”

Inside, groups of students discussed similarities and differences among a bird and seven mammals common to the West to construct a dichotomous key—a skill they first learned at BBR as 4th graders. Students gathered around a globe in a darkened room to study longitude, latitude, rotation, and tilt, and Earth’s orbit around the sun in order to learn about day/night, time zones, and seasons. Small groups did mini-labs about Earth’s atmosphere and a math activity called, “What is a million? What is a billion?”

Outside, students took a 40-minute boot walk over partially cleared paths and iced-over snow to look for animal signs and discuss winter survival strategies. Several groups followed some tracks to make an exciting discovery: a raccoon in its winter den. Students also used a dichotomous key to identify six species of evergreen trees, and they observed signs of winter aquatic life in the Wenatchee River.

On **Field Day 3 (February 3-5)**, the 5th graders began studying ecosystems: major world biomes and the shrub-steppe and ponderosa pine ecosystems in Washington State.

Inside, students learned how to take photographs using the “macro” setting on a digital camera. Small groups of students read about deserts, grasslands, temperate forests, and tropical rain forests in “Amazing Plants and Animals” and studied climatograms from cities on six different continents. Students also constructed shrub-steppe food webs.

Outside, students went on a scavenger hunt with digital cameras. They compared dog, cat, and coyote tracks, and photographed leaf buds, pine cones, maple seeds, wolf and pipe lichen, deer scat and tracks, and any live animal they could find, including Stellar’s jays, chickadees, and crows.

On **Field Day 4 (February 10-12)**, this year’s 5th graders concluded their winter studies at BBR—without the opportunity to experience significant new snowfall and the challenges and fun of snowshoeing. ☹

Inside, students viewed an old-fashioned slide show to review food webs and learn how energy moves through ecosystems. Students also learned about the cycling of carbon dioxide in photosynthesis and respiration. They identified variables and made predictions, observations, and conclusions about an experimental set-up using a water plant (*Elodea*), aquatic snails, and the pH indicator, bromthymol blue.

Outside, students predicted where Ski Hill and the Hatchery are and then used a map and compass to check for accuracy. They also used compasses and metric tapes to navigate in three different directions to find “buried treasure” in the snow.