

First Graders Investigate Change on Kindergarten Mountain

Introduction

This yearlong unit looks at change on Kindergarten Mountain, a popular mound on our school grounds. Students make seasonal observations, predictions, and comparisons. They also investigate, (through a local 3-stop field trip and a visit from a knowledgeable longtime town resident who is a former Plainfield principal and teacher) the land use that led to the creation of Kindergarten Mountain and are introduced to the sort of succession that happens on an abandoned mound of gravel. Finally, students show what they have learned about Kindergarten Mountain's history, first by sketching and/or writing on paper, and then through a class reenactment, in the playground sandbox, of the mountain's history from flat farmland to its current forested state.

Observe, Wonder, and Predict

1. Look and Wonder. Students are already familiar with and excited about the place from having visited numerous times during their Kindergarten year. The purpose of the first visit this year was to **observe, think, and wonder**. Having been given a brief thinking and looking time, students each had a chance to tell (while teacher recorded) something they wonder about. Also, a set of late summer photos was taken for use in making later seasonal comparisons.
2. Sensory Exploration. Content Specialist, Jim McCracken, led a session focusing on use of four of our five senses near and on Kindergarten Mountain:
 - **Sight**. Seek colors in nature that match colored paint samples.
 - **Sound**. Spend a silent minute with eyes closed listening for sounds in nature. Then discussed what was heard.
 - **Touch**. Given a card stating a type of texture (e.g., smooth, rough, sharp...) each searched and later shared findings.
 - **Smell**. Explore smells, each student collecting small bits of natural materials in a cup to make a "tea" to smell.
3. Observe and Predict. Consider **WHAT might CHANGE, HOW might it change, and WHEN**). Having been given a brief thinking and looking time, students each had a chance to tell something they predict will change while teacher charted what change was predicted, how, and when. On a given sheet, students then drew their current observation on the left side and their prediction on the right side.
4. Look Closely and Sketch. Once the deciduous leaves fell, we looked at what was still green. After, one planning and scheming visit with Content Specialist, Susan Sawyer, she returned twice to work directly with students on close observation and sketching, including the unique opportunity for students to browse through her substantial collection of sketchbooks. As we sat on top of Kindergarten Mountain, Susan made a comment that would later lead us into our investigation

of the Mountain's past, "You know people have a history. Well, places have a history too."

- Conifers. Through both outdoor and indoor time, students were introduced to five species of conifers, all but one of which grows on Kindergarten Mountain or nearby on the school grounds. Susan led students in observing similarities and differences among samples and encouraged their careful, detailed sketching. This session included learning (through seeing larch samples) that the terms evergreen and conifer do not mean the same thing.
- What else is still green? Visiting the Mountain to notice what was still green, prepared us for Susan's second visit the following week. Students placed "study circles" (hula hoops) somewhere on the Mountain to guide their close looking. Each brought back in a ziplock a small sample of two or three items (green or not) to sketch in detail.

Investigate to Check Predictions

Many students had predicted seasonal changes, so we returned to the Mountain in November to see and to take a set of Fall photos to compare with those of late summer. One student predicted that erosion over a long time (100 years) would result in no more mountain, just flatness. Consequently, we took some baseline measurements in case there might be measurable change by the time these first graders reach their final year (8th grade) at Plainfield School.

1. Follow-up on September predictions of seasonal change. Students drew what had, indeed, happened to complete the series of three recordings: observation, prediction, follow-up observation.
2. Comparison of Late Summer and Fall photos. Given the sets of photos, taken from the same spots, student partnerships used a given framework to chart their comparisons.
3. Baseline Measurements for Tracking Erosion of Kindergarten Mountain. Students excitedly volunteered for jobs to help the class accomplish two types of measurements:
 - Height. With the help of a volunteer, we shined a laser level from the top of Kindergarten Mountain to the trunk of a nearby tree whose base coincided with the base of the Mountain. A measuring tape was extended up along that trunk to the spot of light to obtain the height, 13 ½ feet.
 - Circumference of the Base. Using a long coil of rope, students began to extend the rope around the base of the mountain. Due to the thickness of vegetation and wetness on the back side, the remaining distance was roped by the teacher on the weekend. A small group of students, however, took the resulting data and wrote a plan for how to determine the distance that the three

lengths of rope would total. The plan was carried out on the ballfield, yielding a circumference, 304 ½ feet.

Investigate Kindergarten Mountain's Past

This step of our year-long project involved one more Content Specialist and four local community members.

1. What might current but veteran teacher Mr. Woodie know, having taught Kindergarten here since 1987? Students generated a list of 11 questions, practiced, and then excitedly interviewed this teacher. He had lots of information for us about the naming of it, the building of the stairs, and the fact that Kindergarten Mountain was manmade during a period of mining gravel for the building of Intestates 89 and 91 during the 1960's.
2. What might we find out about Kindergarten Mountain's age from nature, in particular, from the taking of a core sample from a tall tree at the base of Kindergarten Mountain? Sullivan County Natural Resources Director, Lionel Chute, kindly taught us about taking tree core samples and involved students in the taking and interpreting of a sample. We determined that the tree was 36 years old, meaning that it had started growing in about 1981, three years before I started teaching in Plainfield.
3. Finding Out About the Gravel Pit. Steve Beaupre, longtime resident and retired Plainfield School principal and teacher, accompanied us on a carefully designed 3-stop field trip. In preparation, students had listened to parts of Mr. Woodie's interview recording, seen photos of the particular part of the 1953 aerial photos on which we would focus, and had generated questions to ask at each of the three stops.
 - Stop #1, The Plainfield Town Office. Here we viewed aerial photos taken in 1953, showing what is now the school grounds when it was flat, treeless farmland owned by the Lapan family. There was no sign of Kindergarten Mountain; its current area was part of that farm field and was flat, flat, flat. We also heard memories from Mr. Beaupre (who was Plainfield School's first Principal in 1972) and Town Administrator, Steve Halloran (who was a Plainfield Student when the school was first built), each relaying some of their memories of the freshly mined gravel area during the early 1970's.
 - Stop #2, A Local Gravel Pit. Clara McNamara, of Mak's Trucking and Excavation, kindly showed us their currently operating gravel pit to help us understand what the gravel mining stage may have been like on the current Plainfield School grounds - the excavating, screening and sorting, and the hauling away of gravel for important projects.
 - Stop #3, Plainfield Town Highway Garage. Behind the garage are several mounds of gravel, rock, or sand with varying amounts of vegetation.

After Town Administrator Steve Halloran introduced us to the many types of piles, students narrowed their focus to four particular piles (chosen for their different stages of ecological succession), listing what vegetation they saw on each one. Mr. Beaupre was stationed one of the piles and spoke about the concept of pioneer plants.

- Field Trip Follow-Up. Mr. Beaupre came to school the following week to help us to fathom what we had learned. He briefly demonstrated, in the sandbox, the transition from flat farmland to gravel pit. He then led a walk through the gravel operation area of our school grounds, ending on top of Kindergarten Mountain. With students having walked this area numerous times as Kindergarteners and First Graders, this time Mr. Beaupre helped us to see signs of and to imagine this familiar area's gravel removal times.

Show What We Know about Kindergarten Mountain's History

Throughout the investigation of the Mountain's past, students were made aware that few people in our school and wider community know this history, and one purpose of our study was to share what we found out. Our first step was for students, alone or with a partner, to show on paper what they now knew about Kindergarten Mountain's past. In the second step, we referred to those papers as well as parts of the book, *How the Forest Grew*, by William Jaspersohn, to guide us in a reenactment, documented with photos, that took much of a school day. Again, students eagerly signed up for various roles as we:

- Shaped the sandbox to show the flat 1953 farmland with the nearby brook.
- Acted out (with shovels, trowels, and toy trucks) the 1960's gravel mining phase, piling the mined gravel outside the sandbox to represent material used in the building of Interstates 89 and 91 and making sure that Kindergarten Mountain and other remaining mounds had been left behind.
- Went to gather vegetation to represent three stages of ecological succession (early, middle, and current).
- Placed the gathered vegetation, progressively, photographing each of the three stages.

In conclusion, how rewarding it is to hear of students having told family members while driving on the two Interstates, "We are driving on part of the Plainfield School Grounds!"