Observation and Play on The Peaks

by Sabrina Carlson

On October 12th 2015, a warm and lovely fall day, 32 students of Ms. Esparza's 6th grade science class headed out from the Aspen Loop Trailhead to the San Francisco Peaks Passage (34) of the Arizona Trail to hike 3.5 miles, observe, question, and play.

As we waited for our bus in the Sinagua Middle School parking lot, students gathered data on elevation, air temperature, soil temperature, average tree height and the predominant tree species within view. As is true all around the City of Flagstaff, we were just shy of 7,000 ft. elevation and the only native tree species in view is the ubiquitous Ponderosa Pine.

Pausing on the trail to imagine how tall the peaks used to be.

At the base of Snow Bowl Road, we stopped the bus to take another reading. Despite having only risen about 600 ft. in elevation, it was slightly chillier at this stop. The Ponderosa Pine was still the predominant vegetation visible, but the students observed one very important thing about this swath of forest. It was badly overgrown and extremely unhealthy. All the trees were spindly and small, the forest floor choked with pine needles that prevented any grass growth, and a substantial infestation of dwarf mistletoe had begun. We took this moment for an unplanned conversation about fire management strategies past and present, and the importance of good science being able to change views and policies when new evidence is presented.

At the start of the Aspen Loop we collected one more data set. At nearly 9,000 ft. the air and soil temperature had dropped significantly, and the primary vegetation had changed to the golden leafed aspens. When asked what other types of trees they saw, most of the students said "Ponderosa." In Flagstaff, the ponderosas are so common we begin to assume ALL conifers are ponderosa. I hinted that perhaps some of these trees were actually a different kind of evergreen and we would see what we could figure out as we hiked.

Along our sunny hike, we paused to give some coniferous trees a closer examination. Using a dichotomous key in a tree identification book, the students began to decode the mystery of the non-ponderosa trees. They found Blue Spruce, Douglas Fir and Limber Pine. Students were intrigued to learn that the Limber Pine's branches could be tied into a knot without breaking them and the Blue Spruce had such tiny little cones. This sparked a discussion about biodiversity and the importance of multiple plant and animal species in an ecosystem.

After a lunch break at the Alfa Fia Tank, the students offered to teach me a new game. I was very excited to learn, and they were very excited to share! The game, called Camouflage, involves one student who is the predator, and the rest are the prey. While the predator closed their eyes and counts to ten, the prey hide themselves in the brush. However, they can't simply step behind a tree. The prey must be able to see the predator at all times. Once the predator opens her eyes they call out and "eat" anyone who they can see. "Red shirt!" "Orange Hat!" all phrases that show the prey that their camouflage isn't working. Lots of fun and the students reviewed the predator/prey relationships of the Colorado Plateau by choosing place-based animals for each round.

The Winning Hiding Spot in Camouflage

Before leaving our rest stop to head back to the bus, the students decided to deconstruct a series of forts that had been built by other groups all throughout the forest. They reasoned that fort building is great fun, good survival practice, and a practical use of math and physics. But they were concerned that whomever had built, but not dismantled the forts had failed to exercise "Leave No Trace" ethics. They felt it was important to remedy the situation.

The tired travelers climbed back on the bus with a new appreciation for the many diverse tree species in the mixed conifer forests on the peaks and a new sense of teamwork on connectivity to each other.

A Perfect Day for a Hike!

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