

## Connecting With Water, Soil and History in Picture Canyon

by Sabrina Carlson

To celebrate Earth Day, the students of Flagstaff Junior Academy's 5th and 6th grade class set out to hike and learn in Picture Canyon near Flagstaff. After a morning classroom introduction to stream dynamics and the effect that gravity and gradient have on the velocity of water, the 40 students from Mr. Ross and Mrs. Chapman's classes loaded up four big white vans and headed to the trail!



We started out on the Tom Moody Trail along the Rio de Flag. We observed the slow moving and low gradient stream bed at the start of the walk nearest the Wild Cat Hill Water Treatment Facility. Within a half-mile we spotted the first sign that the velocity of the Rio was about to change, just a few small ripples in the surface and water moving a little bit faster. Fifty meters up the trail and the students could hear the rushing and crashing of the water as the Rio cascaded down the volcanic intrusion that makes up Flagstaff's only perennial natural waterfall. Students exclaimed about the suddenly steep gradient and change in velocity. Here we also spotted our first petroglyphs – rock carvings left behind by ancient inhabitants of the canyon.



We intersected the Arizona Trail and turned north on the Elden Mountain Passage. Not far from here, the whole class played a game that demonstrated the different levels of erosion experienced by hillsides with vegetation, and hillsides that have suffered damage from fire and deforestation.



The students were then separated into four groups to rotate through different lessons. The first group headed north up the canyon with Mr. Ross to view and draw pictures of the petroglyphs. This was the undisputed highlight of the trip!

The second group stayed near the riverbank where they worked with Mrs. Chapman to take soil and water temperature readings and measure soil moisture near the creek, and away from it. They made predictions about which areas would be the warmest and which sections of soil would have the most moisture. They noted the geographical position of

each area and considered the effect sun exposure might have on their readings.

A third group headed out with my co-leader Richard for a “trail building” activity. Each pair of students was given a two-foot section of yarn and instructed to plan out a trail for users the size of ants. They had to take into consideration drainage, erosion prevention, accessibility to users, and how to make the best use of scenic viewpoints. The kids did a great job and were all extremely creative!

Last but not least, I took students out on a plant identification excursion. In small groups, students carefully drew pictures of plants in their journals, and learned to use plant field guides to learn more about what they had drawn like the elevation where the plant is normally found; what time of the year to expect flowers; and traditional food or medicinal uses.



During lunch, the students were extremely diligent to make sure everything they brought with them was put back in their backpacks to be carried back out.

After one of the most successful moments of silence a group of middle schoolers has EVER participated in, the tired but happy group of scholars headed back to school. I can't wait for our next adventure together!



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