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FROM the EDITOR

Rebooting My Views on Science

For me, science will always remain an abstract concept, lost a long time ago behind an act of defiance that resulted in the banning of nearly two dozen seventh-graders from entering their school’s science classroom again. For those who considered a career in science, the punishment probably stunted their plans. As for me, I never looked back—I was never any good at science anyway.

Like most students across the Midwest, my exposure to the world of complex theoretical thought came through a classroom, where I heard lectures by teachers who wore white lab coats. And like most junior high schools at the time, ours was an ancient three-story brick structure. The science department could be found just past the math department at the south end of the first-floor hallway. The two classrooms faced each other but were configured in such a manner as to share a narrow auxiliary passageway accessed at the rear of each room.

What happened that soured me on science started with our class’ dismal performance at a practice test. Our collective score fell well below what our substitute teacher had expected and that set her off. This substitute had terrorized us much of the year with her proclamations and demands. And on that day, she took out her frustrations on one of the quieter students, a girl whose only transgression was a wrong answer about the periodic table. She lashed out verbally at the student until she announced the main science teacher across the hall would dispense the necessary corrective action. She pushed her way through the rows of desks to the back of the room, swung open the door to the passageway and disappeared.

No one dared move. We knew that when she returned she would have the other science teacher with her and we were all doomed to some sort of horrendous punishment. The silence broke with a desk chair sliding, and we turned to see one of us stand up. Ray was known by everyone and liked by most. He didn’t say anything to anybody, just moved quickly to the rear of the room and pushed the door closed. It rattled a little on its hinges. He turned the knob on the handle to lock it, and then he returned to his seat. No one could believe what had just happened.

The first pull at the door handle from inside the passageway came right after that. It was followed by a more serious pull that wobbled the door frame and then a really determined pull that rattled everything loud and forceful. That’s when the first snickers start up around me. With the next great shake of the door’s handle, the entire classroom erupted in laughter. And of course, that sealed our fate. Both the substitute and the fulltime teacher stomped through the main doorway moments later and the laughter ceased.

See From the Editor
Continued on Page 7
OUTDOOR CALIFORNIA 3
The substitute practically screamed that she wanted the name of whoever had locked the door.
She never got it.

Lots of things happened next, and they included more teachers, the principal and the parents. In the end everyone in the class was forbidden from taking another science class for the rest of our junior high years. I’m not able to explain why nobody ever gave Ray up to the principal. I know that there’s always an inherent battle between what can be labeled as a miracle and what can be explained by science, but I don’t care what anyone says—that was a miracle.

And that’s what I remember about science from my school years—an unfair memory built on a stage where everything from teaching style to curriculum was as old fashioned and out of date as the school where it occurred.

That all changed for me this fall, nearly 50 years of bad memories of science erased during an afterschool function at Grand Oaks Elementary School in Citrus Heights. It was there that I learned of an organization called Sierra Nevada Journeys and how people like Kayla Reeser, who are associated with it, are introducing students to the world of science in ways that turn my old cliché of science and scientists on its head.

Reeser led the Family Science Night at Grand Oaks, a 90-minute whirlwind of activities where the students and parents engaged with science theories, something that had never occurred to the educators of my generation. This hands-on approach brought out the exciting nature of children, but also sparked a sense of wonder that fuels interest. “They can hold it, they can see it and they can apply it,” Reeser said.

The organization utilizes community volunteers to bring its Family Science Night to elementary schools in 11 school districts through the Sacramento Valley and five more districts in Reno, Nevada.

As part of the Family Science Night, a series of stations are set up to encourage the students to interact with the presentation. One of the more popular stations was led by Sierra Nevada Journey’s volunteer Alex Macintyre, a sophomore at Jesuit High School in Carmichael. As a second-year volunteer, Macintyre knew just how to demonstrate the lesson, and his easy manner got the students involved from the beginning. The station offered a hands-on experience with three items to help calculate water displacement. Macintyre handed participants a clear narrow cylinder filled partially with water and a handful of pennies. He asked for predictions on how many pennies would be necessary to raise the water level to a predetermined level. The kids were careful to count each penny as it dropped within the cylinder. In the end it required the release of 60 pennies. Macintyre explained how volume is a measure of the amount of space an object takes up. “When you put a penny in the tube, it’s going to take up space and the water has to go somewhere, right?” he explained.

What impressed me most was the way Reeser and her volunteers joined with teachers from Grand Oaks to interact with the families, draw them in by asking questions that would lead down the path of discovery. Questions engage the mind, and if you can engage the minds of young people then you can direct them towards greatness.

Reese is a core educator with Sierra Nevada Journeys, and she explained how the nonprofit group has worked with the school districts to offer outdoor science learning programs. It didn’t take long listening to what this group offers before I was convinced this was a better way to instill in students an awakening to the natural world around them. The organization offers leading-edge curriculum taught in the classroom by credentialed science teachers. It includes day-and-night project expeditions as well as a summer camp at the modern 200-bed Grizzly Creek Ranch Campus. The organization’s unique method enhances the development of young people’s critical thinking skills. And they do it in a way that can stir a sense of stewardship within the child for the world’s natural resources.

“What we do is to teach science in the outdoors,” Reeser said. “The best part for the kids is the hands-on aspect. Science in the classroom is always by the book. But here, with this program, it’s more experiencing how science works. The kids are going to remember this stuff later in the classroom.”

Clearly, Sierra Nevada Journeys has discovered a way to offer science education where it seems more like play than work. Let’s face it, schools may have changed over the decades and today’s curriculum looks nothing like it did from back in the day, but young people have pretty much stayed the same. Students usually gravitate towards something that is fun over something that is work. That’s the best way to reach the heart of a student, make it fun.

That was probably the part that was missing from my earliest science experience. Reeser said she remembered a time when parents were picking up their children from a summer camp and one of the kids ran up all out of breath. She said, “I heard the little kid exclaim, ‘Mom, you’re right, outside is cool.’”

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