Exposing students to a variety of disciplines can shape their path through school and ultimately translate into a lifelong career and passion. But, as many technicians have encountered, nondestructive testing (NDT) is not exactly a well-known term among the general population. For that reason, student outreach is especially important. And for ASNT and dedicated volunteer members, that means starting kids early. In March, Golden Gate Section member Dan Kerr “the Science Sir” visited an elementary school, grades K–5, in a small rural town in California’s central valley, to introduce the next generation to all things NDT (Figure 1).

The school, whose name is being withheld to protect the privacy of its students, has been holding a career day for the past eight years. This year’s event saw a total of 600 students. Groups, averaging about 30 in size, spent the two-and-a-half hour event touring interactive stations set up by volunteer speakers. In addition to Kerr, there was an army soldier, a farmer, firefighters, a programmer, and a dance studio owner representing small businesses.

At his station, Kerr handed out ASNT compasses and heat sensitive pencils. Introduced incorrectly as an “aerospace scientist,” Kerr joked: “I would have suggested something different, but I didn’t have the time to explain.” He continued, “I talked about NDT—how fun it is.” He also told the students that NDT, “although not well known, is used many places to keep our world safer, and there are many career opportunities with good pay.”

And like with most specialty fields, this means that a good foundation in the core curriculum is paramount. As Kerr attested, students “need to learn their science and math first.”

For the demonstration portion, Kerr set up basic experiments showing different NDT methods in a way that could be relatable to young, curious minds (Figure 2). For one, he presented an acoustic sensor, which can “hear things” that dogs often might hear but humans cannot, such as small leaks and early electrical arcing behind walls; he also had the kids stand 10 to 20 feet away and used the sensor to detect them rubbing their fingers through their hair.

Kerr also demonstrated how a magnetic particle yoke could find a crack that could not otherwise be seen and had the students play with the powder, showing the difference between a permanent magnet and an electromagnet. The
electromagnet, he demonstrated, could “vacuum” up the powder and drop it into the garbage without having to work hard to brush it off, as one would have to with a permanent magnet. This demonstration was very similar to, and used much of the same equipment as, the one presented by ASNT at the 2014 and 2016 STEM festivals in Washington, D.C.

Towards the end of the career day, a smallish kindergartener raised her hand to ask Kerr, “Can little people be scientists too?” It was clear that the event had been a success (Figure 3).

Kerr commented on the importance of student outreach: “I wish everyone did this kind of thing more regularly at all elementary schools, especially retired and experienced people. Otherwise, all that life and work experience just goes to the grave with us!” He concluded by adding, “This is the best age to reach the kids.”

ACKNOWLEDGMENTS

Kerr credits his parents especially, for their example.

Figure 2. Dan Kerr (standing under tent) presented rudimentary experiments for the students to illustrate nondestructive methods like ultrasonics and magnetic particle testing.

Figure 3. Thank you notes written by some of the students following the career day.