

**Testimony of
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Imagine that you're eight years old. You enter room 408 at Will Davis Elementary School in Austin, Texas for the first time. This is it! Third grade! Projects. Hmm. You've heard that there are lots of projects in third grade. But, what about science? Will there be science projects? There she is, the teacher. What's that she's wearing? A LAB coat? There's writing all over it! Look, kids' handprints, kids' writing. What does it say on her sleeve? "Science rules!"

Now, imagine that you're that same third grader and it's May. You think back over your year of projects and learning. Here's what you remember:

Your Invent Austin project. You noticed a problem. Perhaps your dad doesn't like to eat cereal from a box because all those broken bits and crumbs get soggy and really mess up his milk. Perhaps your parents have yelled at you when you wiped your ketchup-laden hands on the car seat when you were inhaling your fast food dinner on the way to soccer practice. You decided to invent something to solve your chosen problem. You did research to find out if there was already a solution to the problem. There wasn't. You made a model. It didn't quite work, so you made another,,and maybe several more until you finally had one that worked! A plastic cereal box with a built in sifter at the bottom and another section under it with a trap door to empty the crumbs. Now Dad is happy! A ketchup pocket that is attached to the front of the fries container so all you have to do is squirt your ketchup into the pocket and dip your fries in one at a time. Voila! No messy hands! You did market surveys to see if people would buy your invention and how much they would be willing to pay for it. You created an advertising plan. This whole time, you kept an inventor's log of all your work. Finally, you wrote up your invention and drew a labeled diagram of it. You submitted it to be judged and won a medal. Was that your favorite project? Or was it another one?

When learning about sound, you used drinking straws to make reed instruments. You devised a way to make the instruments play different pitches. But the hardest part was getting that reed to work when you blew on it! But, you did it...and your teacher said you could take it outside at recess to play it. Maybe all that noise in the classroom was making her a little crazy, but, hey, it was all her idea to do this project!

But don't forget about making that electromagnet! Who would have thought there could be so many ways to make it stronger...more winds of the wire, thicker wire, but would using a thicker core make it stronger? And then, you used your electromagnet to make a model telegraph and sent messages from your group of students to another group. That was cool!

Oh. What about those bean plants? We all thought that bean seeds would need soil, water, and light to sprout! Boy, were we wrong! They sprouted just fine in a covered container that had a wet coffee filter in it. Then, that teacher asked us if we could continue to grow these bean plants

without soil. We said, “No way!” But she taught us about hydroponics, and we put the plants in a hydroponics unit, and they grew, and grew, and bloomed, and made beans!

But that’s not all! Ouch. Those crayfish can pinch! But it doesn’t hurt much. We observed them and learned all about their physical structures and adaptations. We watched them and wrote about their behaviors. Whoa. Look at that crayfish back up with its tail tucked under when we reach toward it. Was it trying to scare us off when it reared up with its pincers spread whenever we came near? Yep. That is one of its behavioral adaptations. Another time we put two crayfish together to see what they would do. Oh, my goodness! That little one attacked the big one and bit off its leg! “But don’t worry,” our teacher said. “It will grow a new one.”

Well, tomorrow’s the big day, the day all partner groups show their PowerPoint shows about a planet to our parents. We learned a lot about each planet and the sun, and about making presentations using PowerPoint—how to create a background, insert pictures from the Internet, how to add sounds, and how to “use transitions discriminatingly” as our teacher suggested so that our audiences wouldn’t get dizzy watching fade-ins, box-outs, cover-downs, and all those other ones in one show. (But, when she wasn’t looking, we tried them all!)

Ah, it’s been quite a year. Yes, there were lots of projects in third grade. And, boy oh boy, “Science REALLY Rules!”

Now, this picture of third grade science is quite different from what I experienced when I was in third grade, long ago. But it’s also quite different from what my students’ parents experienced not so long ago. Why is third grade science not taught by just reading a textbook? Because students learn science by doing science, just as real world scientists do. How is it possible to have this kind of science teaching and learning?

Give teachers the science equipment and supplies they need, give them and students access to technology, preferably in their classrooms AND in a lab, and give teachers the training they need to learn how to teach science.

In my school district, we have a dual science adoption, a textbook and kit-based units. We have a science resource center where the kits are housed, refilled with supplies after each use, and then delivered to schools on a schedule. We use our textbooks to supplement our learning and to learn about topics that aren’t in our kits, such as the planets. My district also subscribes to a video-on-demand service so that when my students read about the characteristics of the sun, I can pause during the reading lesson and show a two-minute video clip about sun flares, sunspots, and prominences. I have four computers in my classroom for students to use and we also can use our computer lab when we all need to do research or prepare presentations. Teachers in my district are required to take training on all the kits we teach. During these training sessions, we participate in many of the activities we will use with our students and learn important tips, such as how to pick up a crayfish without getting pinched! Teachers also have access to many technology training sessions ranging from learning the operating system of our computers to using such programs as Inspiration and PowerPoint. Because of these advantages, I am able to successfully teach science and to guide my students further along the path of inquiry. After all, in third grade, science rules.