

## Students + Technology = Exceptional

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Despite the fact that I've been a teacher for more than a few years, this has been a year of "firsts". It is the first time I have applied for a grant, the first time I've been awarded a grant, and the first time I've been able to use technology extensively in my remediation for learning and language impaired students. I have my own iPad, so I've been fortunate enough to incorporate this type of interactive learning before, but to have three iPad minis (my grant award) available for my small groups of students made a world of difference.

Not only was it a year of firsts for me, but with these iPad minis, there were many firsts for my students as well. It was the first time some of them had even held an iPad. It was the first time they were able to use an interactive



math program that responded to their specific strengths and skill deficits. It was the first time they were genuinely excited about solving math word problems, using an app that taught the Singapore bar method. They learned Touch Math, which helped their fact fluency and confidence, both in the small group setting and their general education classrooms.

Since many of my students also struggle significantly with reading, they explored phonics, learned synonyms and antonyms, and listened to stories read aloud to them (something they do not get nearly enough.) By far, their favorite reading app was not a reading app at all. It was a voice recorder. Sounds odd, doesn't it? On Fridays, when I needed to do running records of individual students, the others would buddy read a selection that we had worked on during the week. This not only allowed for

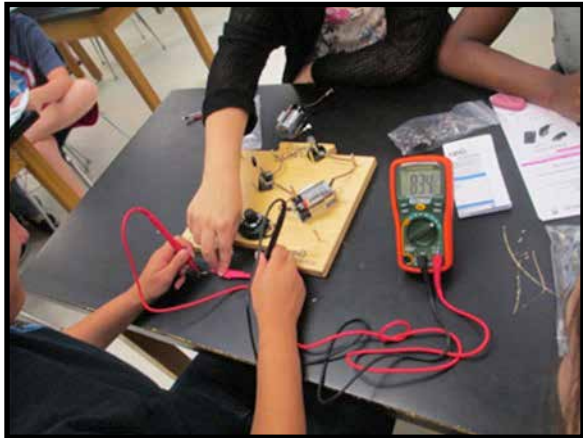
practice of fluency and deeper comprehension, but they could hear themselves read as the app played back the recording. They thought it was AMAZING! After getting over the giggles of, "Do I really sound like that?!" they worked hard to improve their fluency and accuracy of their readings. And yet another first, as this was the first time ever that my students were excited to reread anything. That is one difficult task, especially for children who dislike reading as much as mine do!

For me, this grant was not about iPads. It was about getting my students excited about learning, when they struggle so much on a daily basis. My students and I cannot thank you enough for the opportunities you have provided us through the use of these iPad minis. Even in the last few weeks of school, when motivation is typically waning, they still come to me excited for intensive reading and math and ready for what the day will bring. I look forward to using these phenomenal little devices year after year to continue to motivate, engage, and help support my students. Thank you again for the investment you have made in the education and future of each one of these students.



## Report on Excited about Electricity Project Sharon Richardson/Davidson Middle School

My Honors Physical Science students were excited to learn about the relationship between current, voltage, resistance, and power. The “Excited about Electricity” project began with an introduction to some background information about the terms current, voltage, resistance, and power. Students were also introduced to the mathematical equations used to calculate current, voltage, resistance, and power.



Students worked in small cooperative groups to complete a series of four “hands-on” activities using the CPO “Electricity” lab program. All the labs required the use of digital multi-meters and could not have been done without the funds received from this grant. Eight digital multi-meters were purchased with the NDIA funds.

In the first activity, students investigated the question “Why do charges move through a circuit?” The lab included background information about voltage. Students measured voltage using a multi-meter, and described the transfer of energy that occurred in the circuit. The second activity explored the question “How does current move through a circuit?” Students learned background information about current. They then measured amps with a multi-meter. The third activity provided the opportunity to investigate the question “What is resistance and how is it measured?”

Students learned about the role of resistance in a circuit and measured ohms with a digital multi-meter. They also observed the effect of adding resistors on bulb brightness. The final activity explored “How voltage, current, and resistance are related?” Students observed how resistance affected current and how voltage was affected by a current using a digital multi-meter. These labs greatly increased student knowledge about electricity.

Following the labs, students used formulas to demonstrate the mathematical relationships between current, voltage, and resistance. They also answered questions designed to determine their knowledge about voltage, current, and resistance. All students successfully completed the lab activities and assessment with a 91 or above average. Most students were very motivated during the labs but I was especially excited about the enthusiasm I noted in my female students. They showed no hesitation in using the meters and were very eager to do the activities. The NDIA grant made it possible for these students and future students to learn about electricity “hands on” which makes them more motivated to learn.

