



District goes all out with STEM, hands-on learning

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Second-graders map out a plan for a new playground that limits wind and water erosion. Eighth-graders apply Newton's laws of motion to their roller coaster designs.

These units are part of [Whiteriver \(Ariz.\) Unified School District's Tech Ready Grant](#) that funds work at four of the district's five schools. The grant dollars were awarded by the state through [School Improvement Grant](#) rollover funds.

Whiteriver USD is a public school district located on the Fort Apache Indian Reservation. All its schools receive Title I funds, and nearly 100 percent of students are Apache and qualify for free or reduced-price meals.

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The grant pays for four curriculum developers and four tech integration coaches, said Bruce Goode, WUSD's tech integration coordinator. The curriculum developers write units that emphasize science, technology, engineering and math, model lessons in classrooms, and support teachers' use of the units. The coaches help students and teachers learn to use the one-to-one mobile devices the grant helps fund. The grant also supports overall infrastructure upgrades for [Common Core State Standards](#) assessments.

Project-based learning

The district's K-12 STEM units use project-based learning and also integrate reading and writing. The units include interactive digital test items that match the format, difficulty level, and technology skills needed for CCSS-aligned assessments.

The web-based units include a teacher's guide and take students step-by-step through content with essential questions, videos to build background knowledge, vocabulary games, experiments and simulations, and pre- and post-assessments.

"We weave all this into a project where they are actually getting out of the classroom," Goode said. "They're engineering or making something in the process."

Goode and Susan Rodriguez, one of the district's curriculum developers, shared some tips with Title1Admin® about creating and implementing STEM units that emphasize project-based learning.

- **Make test prep fun.** Ultimately, the district's underlying goal is to prepare students for the CCSS assessments, Rodriguez said. However, there's no reason to rely on traditional test prep that can squelch students' love for learning, they said. "Open the doors for teachers and students to be able to dream and think outside the box," she said. Many teachers are hungry for time to teach science more thoroughly using a project-based, multi-disciplinary approach, she added.
- **Ramp up teachers' interest.** Before the grant launched, the district hosted a half-day tech expo at each school. Teachers selected from various mini tech classes. Later, an all-day training gave details about the grant, the STEM units, and the tech devices and how to use those effectively for instruction. An online summer class was also offered.
- **Use readily available resources.** Start with resources that are already in your classrooms and community. For example, students read a story in their basal reader about a school that started a compost pile, and they wanted to do the same, Rodriguez said. A local farm taught students how to build and use a compost pile for their garden.

--[Tricia Offutt](#) covers family and community engagement and other Title I issues for LRP Publications.

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