

MESA REPUBLIC

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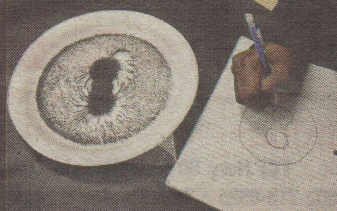
Z15 SECTION M

SCIENCE PROJECT



ASU Associate Professor David Meltzer brings his passion for science to Preparatory Polytechnic.

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Preparatory Polytechnic Middle School students Andrew Hoesel, Adam Shewell, Catherine Krempski and Maggie McCarville do an experiment.

PHOTOS BY MARK HENLE/THE REPUBLIC

ASU faculty helps young learners

Associate professor likes middle-school duty

**ASU K-12
CHARTER SCHOOLS
EXPANDING**

What: ASU Preparatory
Academy officials (Phoenix

David Meltzer watched eager young minds, aching to be doctors and dentists, bound into his college classroom.

But the hard reality was that many lacked a strong science background and couldn't hack the demanding college science curriculum.

Wanting to be a guiding force in young science careers, he decided to push into a new frontier: K-12 classrooms.

The Arizona State University associate professor, a physicist on the Polytechnic campus in east Mesa who also teaches in the teachers college, has one foot in the higher education ranks and the other in middle school, specifically Preparatory Polytechnic Middle School.

Three years ago, Arizona State University officials launched their first K-12 charter school, so they could combine research into K-12 education along with preparing children for college.

The first ASU charter school opened in 2008 in east Mesa and

has steadily grown.

There's an elementary school in an office complex not far from the ASU Polytechnic campus, where the middle school sits. And this fall, the high school will be situated on the Poly campus.

University leaders say the enterprise makes sense for plenty of reasons, ranging from a strong alignment with the school's research agenda to a desire to help students be better prepared for higher education.

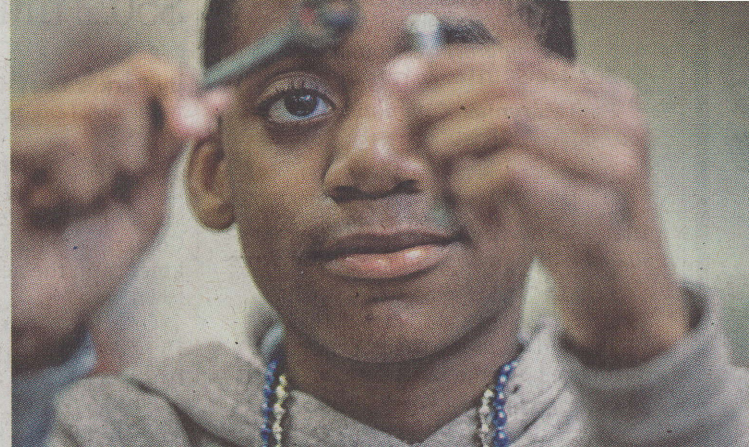
Plans call for educational innovations to be hatched at the schools and then filtered throughout Arizona.

Enter Associate Professor Meltzer.

The 86 students in Grade 5-6 cluster classrooms march over from the nearby middle school onto the Poly campus, where they complete hands-on science experiments under Meltzer's instruction.

At the same time, he uses feedback and a video recorder to research the best ways to teach science lessons to elementary students.

"They can learn really



ASU Preparatory Polytechnic Middle School fifth-grader Jordan Taylor works on a magnetic-field experiment. MARK HENLE/THE REPUBLIC

quickly," he said. "I'm teaching them the same lessons given to my college students."

He said he wants to preserve a few dreams and maybe excite a few students about science.

The rules and expectations were different for teaching middle-school students. The task before him was more than preparing students for college-level science courses.

"If we can catch them here and get them to be excited about science, they'll carry that into high school, and hopefully beyond," Meltzer said.

In college, learning was the students' responsibility, he said.

That's not true with children. If they don't learn certain skills, the teacher has failed.

The fear of failing K-12 children prodded Meltzer into frequent self-analysis about how he could improve the techniques of future science teachers.

Learning with the middle schoolers couldn't be just cerebral. Standing and talking would just rock these students to sleep.

To reach them, learning had to be entertaining and demonstrative.

"Kids are TV-oriented, and if I can't show them, they are not going to get it," Meltzer said.

Many of the lessons are hands-on such as the one on electromagnetism, in which students used magnets and compasses.

"He has tons of resources," fifth-sixth grade teacher Geri Lawrence said. "They're working in a lab, it's hands-on, and they're learning critical thinking."

Fifth-sixth grade teacher Jim Conner agreed.

"It gets them thinking about attending university," said Conner, pointing out many of the kids already wear ASU maroon and gold.

and Polytechnic campuses) will host a series of informational meetings on its free charter-school program. The sessions will cover: how to enroll; the school's recent name change (formerly University Public School); using the internationally-recognized Cambridge Curriculum; and the academy's new high school launch of ninth grade this fall, and then the expansion to Grades 10-12 over the next three years.

Where: The East Mesa Polytechnic Elementary School, 6859 E. Rembrandt Ave., Building 1, and the ASU Preparatory Academy, Phoenix; 735 E. Fillmore St.

When: Each meeting from 6 to 7 p.m. on March 30, April 12, and April 28.

Information:

Call 480-727-5750 or e-mail sue.henderson@asu.edu.

The ASU charter-school initiative is under the umbrella of a non-profit group called University Public Schools Inc.

Charter schools are tax-supported public schools but with fewer restrictions than traditional district schools. For example, charter schools can hire teachers without certification.

Arizona's charter schools are authorized by the state Board of Education but are run by each school's own governing board, usually consisting of parents, teachers and community members.

Unlike in traditional public schools, the University Public Schools teachers spend six weeks each year on professional development and 90 minutes per day for classroom planning. This extra time allows for classroom innovations.

And now, ASU professors spend time teaching middle school.

This is the bottom line for Meltzer: "It's really fun (teaching middle-school students), otherwise I wouldn't do it."

Middle-school students get university exposure

Each week, students from the ASU Preparatory Polytechnic Middle School walk over to the nearby Polytechnic campus, where they get instruction by an Arizona State University associate professor in hands-on science labs. Here is what some of the sixth-graders had to say about the experience.

— Ray Parker, *The Republic/azcentral.com*



Jake Taylor
12

"We learn from a professor and get to use the stuff the college students use, so I really like it."



Emily Nasiff
12

"I really like it (since) it expands my knowledge. He's got more tools than we have in school."



Conner Den Boer
11

"We get to work together learning new things in science, such as electricity and magnets. It's more fun here."



Grace Kaylor
11

"I like how we get to use all the supplies. When we studied parts of the body, we used a microscope and saw a film about skeletons."