

# Math by way of art: For Pasadena school, arts plus math is really adding up

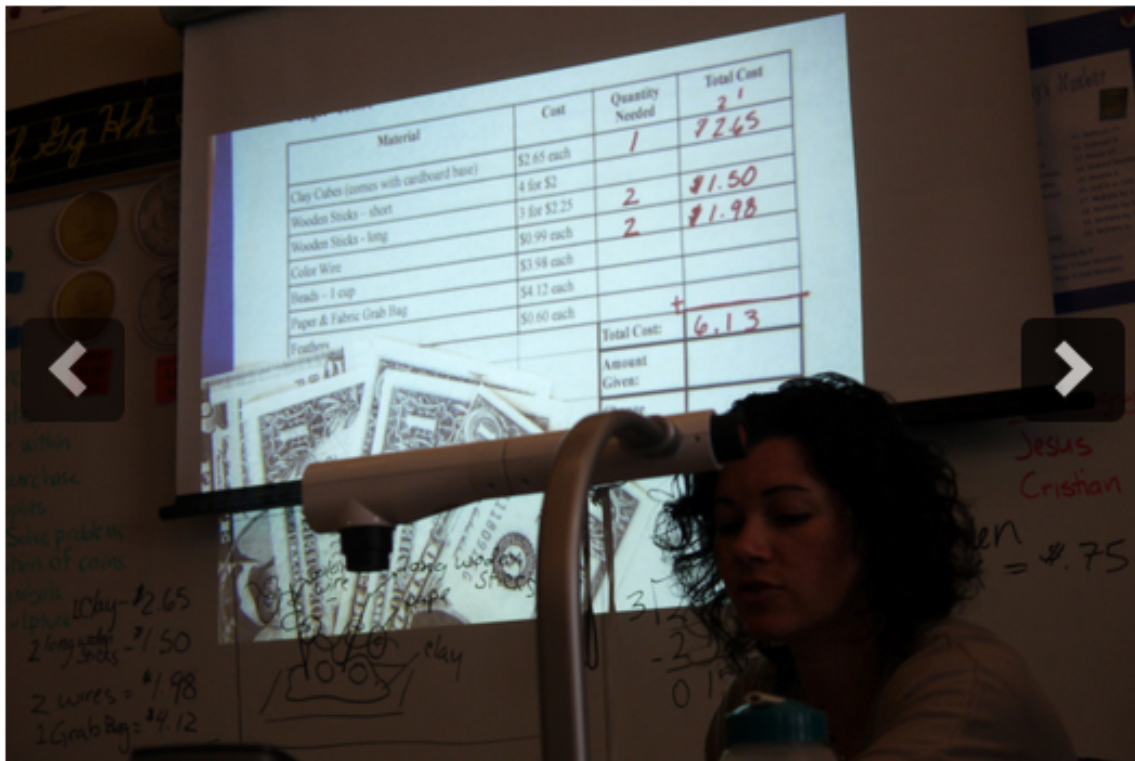
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Administrators and teachers are grappling with how to boost math scores to prepare students for an increasingly technology based work force.

Jefferson Elementary in Pasadena may hold some of the answers. The school's been using *art* to teach its students math.

On a recent visit, students were working on an elaborate art project. They were asked to sketch two ideas that would later become a 3D sculpture. The catch – the students were given a budget and a price list and could only use the art supplies they could afford.

Along with budgeting, the school's students have worked on art projects that helped them learn place value and the concepts of area and perimeter. But unlike dry textbook problems, the projects brought lessons to life.

"Even my more challenged students -- and I have about five of them -- the engagement is like 180 degrees. It's like a different child," said third-grade teacher Beverly Grotts.

The program, called "Artful Connections with Math," was developed by the Pasadena Unified School District and the Armory Center for the Arts. Funded by a \$1 million grant from the U.S. Department of Education, it pairs classroom teachers like Grotts with "teaching artists" who show them how to use hands-on, visual art projects to teach math concepts.

The instruction targets creative problem solving skills and helps students connect the dots between math and other subjects.

"The sooner we can teach our kids how all these subjects interweave, I think the better off we are," said teaching artist Melanie Moore Bermudez, who works with Grotts.

This is one of many novel approaches educators are experimenting with to teach math. Across the state, elementary students' math proficiency rates have been lagging behind those in English and science.

The California Alliance for Arts Education wants to replicate Jefferson's program. It's testing a similar approach at 10 pilot schools around the state this fall.

It's part of an effort to encourage Title I schools, which receive extra federal funding to support low income students, to use those funds for arts-based instruction of core subjects. More than half of all California schools are Title I schools.

Because Title I funds are earmarked for things like English and math, many Title I schools have been afraid to use the funding for arts teachers -- even if they're using arts to teach the core subjects.

"Somehow the arts remain an outlier and perceived as: well that's not exactly math and that's not exactly literacy so how do we justify it," said Joe Landon, who heads the California Alliance for Arts Education.

The group published [a paper](#) last month outlining the process for schools.

All of this, Landon explains, will help close the gap between public schools where parents are able to supplement arts education and typically poorer schools where they are not. Since the budget crisis, arts education has been decimated in much of Southern California.

"What we're really trying to do here is address an issue of education equity that we feel that every student deserves an equal opportunity to receive the benefits of arts education and arts education strategies as part of a complete education," he said.

Jefferson Elementary is a Title I school, but the principal, Amin Oria, said she's in triage mode and can't spare any of next year's approximately \$95,000 budget on arts integration. She has other things she has to spend money on like salaries for support staff to help improve literacy rates.

Still, she loves the hand-on instruction, pointing out that it's especially useful for students whose first language is not English. Almost 90 percent of the school's students are Latino and more than 50 percent of them speak English as a second language.

For all students, she said problem solving in small groups help the math lesson to sink in.

"They're really engaged, involved and really understanding versus a typical lesson from a math text book," Oria said.

The teachers are learning, too.

Grotts, the third grade teacher, likes the arts teaching techniques so well, she's now using them in her everyday teaching. Her students often draw in their journals and learn things like the benefits and traps of credit cards.

As her students get more comfortable with art, she does too. She was a sociology major in college and struggled to draw stick figures before becoming a teacher.

"I'm amazed at how much I'm able to take in," she said. "I don't have that wall as much as I used to have."