

South San Antonio ISD finds HP 39gs calculators ease math challenges

HP 39gs calculator frees algebra teacher to teach



“The HP 39gs calculator is so easy to use, it practically teaches by itself. So it’s now easier for me to teach algebra—because I don’t have to teach how to use the calculator.”

—Joel Gaines, Math Teacher, South San Antonio Independent School District

HP customer case study: HP 39gs calculator’s easy-to-use interface makes it easy for math students to grasp algebraic concepts

Industry: Education

Objective:

Improvements in students’ math achievement; more effective teaching

Approach:

Incorporate graphic calculator into algebra curriculum

IT improvements:

- Ease of use means students up to speed quickly
- Minimal number of steps to perform operations
- Single button to switch between function views
- Two-way infrared port simplifies transmission of e-lessons

Business benefits:

- Frees up classroom time for teaching
- Easier for students to grasp relationship between functions
- Less risk of student frustration
- Calculator projection software makes leading lessons easy
- Customizable e-lessons support specific lessons, curricula
- Flexible and powerful for most secondary school math and science classes

Math is a top priority for the South San Antonio Independent School District: it’s outlined in the lead sentence in its vision and goals statement for student learning to improve achievement in math and science.

The district also believes that technology should be used to increase the effectiveness of student learning, as well as teachers’ ability to teach.

For two years, now, math teacher Joel Gaines has taken that guidance and run with it. He’s equipped his eighth-grade algebra students with HP 39gs calculators, partially made possible with a grant from HP.

The calculator that ‘teaches by itself’

Gaines is a believer in the role technology can play in the classroom. But, he says, it has to be good technology. “Put a device with batteries in front of kids, and they just take off,” he says. “But the technology has to be easy to use and understand. If it’s not easy to use they get frustrated.”

Given this perspective, it’s no surprise that the first thing Gaines noticed about the HP 39gs calculator is how easy it is to use. “I handed the calculator out, and



Customer solution at a glance

Primary applications

Eighth grade algebra instruction

Primary hardware

- HP 39gs graphing calculator

by the time we started class the next day, the students were already doing things with them. I was planning to take some time to show them how to use it, but I didn't need to. It was amazing."

Students are also less likely to make "human operator"-type mistakes with the HP 39gs calculator. "Some calculators make it hard to correct yourself if you get into the wrong mode by accident," Gaines says. "All the students in the room enter the same numbers, but for three or four kids, the graphs won't work." At that point, Gaines adds, the teacher has only two choices: stop the lesson to try to help the kids who got into trouble, or ask those kids to look onto a neighbor's calculator. These types of problems are virtually non-existent with the HP 39gs calculator. "It's so much easier to correct user mistakes."

Switch views with one easy button

The calculator's ease of use has also proven to be a classroom time-saver. "With other calculators I've tried, I've had to take a few minutes out of every class period to teach the students how to use the calculator on that day's lesson," Gaines says. "With the HP calculator, the students just grab their calculators and go." It leaves more time for lessons and reduces the chance that distractions will interfere with Gaines' ability to cover the day's academic work.

The calculator's ease of use, Gaines says, is based in part upon the simplicity of its interface: in most cases, users can execute operations by using only a single button. "A lot of other graphic calculators take three or four steps to move between graph, numeric, and symbol views," he explains. "With the HP 39gs calculator, you do it with one easy button." This is nice enough from a functionality standpoint, but even more important, it helps the students grasp algebraic concepts. "It's easier for the students to see how different functions relate to one another."

The calculator's split screen capability—the HP 39gs screen measures 131 x 64 pixels—also lets the students perform comparisons easily, Gaines adds.

Another time-saver Gaines appreciates comes courtesy of the calculator's two-way infrared port. As a classroom device, one of the HP 39gs calculator's features is its support for e-lessons (HP Aplets):



electronic lessons adapted from textbooks that teachers can use as learning tools. Teachers can also create their own Aplets, and Gaines occasionally does just that. Then, at the start of class, he uses the calculator's infrared* data communications capability to transfer the custom Aplet from his calculator to several students' calculators; they in turn pass along the e-lessons until the entire class has it. "It takes only a minute and everyone's ready to go," he says.

Freed to focus on teaching

Another teaching aid Gaines finds useful is a software application that comes with the calculator; it allows teachers to project a replica of the calculator onto an interactive whiteboard or screen. "It makes it easy to lead the class through lessons step by step," Gaines says.

South San Antonio is making progress on its goal of improving its students' math performance: last year, for instance, Gaines' own algebra students scored substantially higher on their standardized tests than the previous class. The boost in scores was influenced by many factors, of course. But the HP 39gs calculator probably played a part, Gaines says, because it made it easier for him to teach. "Because the calculator is so easy to learn and use, I can focus on teaching algebra," he says. "It might only be a few minutes a day, but over the course of a year, it really adds up."

To learn more, visit www.hp.com/calculators

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*Infrared range calibrated to a maximum of 4 inches to prevent unauthorized sharing.

This customer's results depended upon its unique business and IT environment, the way it used HP products and services and other factors. These results may not be typical; your results may vary.

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