



LOS
FRESNOS
TECHS
IT UP IN
MATH AND
SCIENCE

by **Alejandra Guzman**

REFLEX MATH

Tina Burnias, a fourth-grade teacher at Dora Romero Elementary (DRE), was one of the first teachers in Los Fresnos CISD to discover Reflex Math, which was recommended by an educator friend. When Tina heard that a grant was available for the program, she applied. In just two months of using Reflex Math, her fourth grade class grew from 25% to a 55% math fact fluency rate.

ExploreLearning's Reflex Math helps build and strengthen critical math concepts, including the commutative property of relationships. Students earn points and move through different levels to unlock new math challenges and can use their points to buy clothing and accessories in the virtual store for their avatar.

Los Fresnos CISD is a growing district of 10,800 students in the Rio Grande Valley. The district's science teachers have been using the Gizmos program for several years and recently piloted the Math Reflex program in elementary schools. Students have shown significant growth in math fact fluency and four out of the nine pilot schools decided to purchase a site license this year.



PREVIOUS PAGE: Mr. Medina, a new Biology teacher at Los Fresnos United 9th grade campus, pairs his students up to work on their Paramecium Homeostasis Gizmo to ensure they understand the concepts of cellular transport in living organisms.

LEFT: Sol, a first grader at Los Fresnos Elementary, practices her addition and subtraction facts through the Reflex app at home on her iPad.

RIGHT: Mr. Blackman guides Jason, a tenth grader, with his student exploration guide as he completes the Archimedes' Principle Gizmo in class in order to prepare for the upcoming sailboat buoyancy lab.

Photos taken by Alejandra Guzman

"Students think they are playing games, but they are actually learning math," Sara Tudon, the district mathematics curriculum coordinator explained. And while each campus uses Reflex differently, they have noticed an average of a 22% increase in math fact fluency.

Many schools in the district open the computer lab before and after school to allow students more time with Reflex. Students can also access the program anywhere with any Internet-connected device, which allows them to take more control of their learning inside and out of the classroom.

Some teachers are using Reflex Math to motivate and reward students. Rosa Linda Carlos, a third-grade teacher at DRE, uses it as an incentive to get her students through less-exciting material, and she has class and individual student award ceremonies when a milestone is attained or after students achieve 70% fluency. Ms. Carlos also hopes to increase the friendly competition in Reflex Math school-wide, displaying graphs in the hallways that show class progress.

Laura Trevino, the assistant principal at DRE, has seen first-hand the positive impact of the program, "Reflex Math is fun, exciting, and challenging. It even increases student self-esteem," she reports. Plus, detailed data provides educators with insights into each student's specific strengths and weaknesses and helps them track and monitor the progress of individuals and groups.

Learning with Reflex Math

Even in the brief period that we've used this program in Los Fresnos CISD, we've seen both a growth in student math fluency and a real interest from students. Third grader Perla keeps her Reflex milestone certificates in her class leadership binder. She now has a 70% fluency and has already reached her 5,000-fact milestone.

My own daughter, a first-grader in our district, has gone from 16% fluency to a 62% fluency in just 18 days; she can't get enough of the program.

For more information on how Dora Romero uses Reflex Math, scan the QR code below to watch a short video.



GEARING UP WITH GIZMOS IN SCIENCE

There are over 400 science and math Gizmos, which are online, virtual labs for grades 3-12. Regardless of which level of science I was teaching (Integrated Physics, Chemistry Biology, etc.), I have always made sure to include Gizmos in my curriculum and lesson plans.

With these virtual simulations, students have the power to create their own experiments and work through the scientific method. They are empowered to ask questions, make predictions, collect data, graph results, and make conclusions. I also love that all students or student groups can test different variables, collaborate, and discuss with the class.

In Los Fresnos CISD, all high school science teachers and students use Gizmos. Annice Garza, the district's science curriculum coordinator says Gizmos "help to create real world examples that make it easier for students to relate to and helps them make connections."

Gizmos are extremely versatile, regardless of technology constraints. They can be used for teacher demonstrations, teacher-led lessons, student-led lessons (with an interactive whiteboard), or collaborative activity if students are paired up or work in small groups. If computers are limited, they also work as a station activity. Teachers, schools, or districts who are strapped for time or have limited budgets will find that Gizmos are great alternative or supplement for hands-on labs.

Teaching with Gizmos: Examples

Amanda Ellison, a Biology teacher at Los Fresnos United, enjoys using the photosynthesis Gizmo with her students because it mimics a real lab, but doesn't require the lab equipment, budget, and time constraints.

Loy Blackman, an IPC teacher at Los Fresnos High School, uses Gizmos to introduce new units. Also a football and softball coach, he loves how interactive Gizmos are. He makes connections between sports and science with Gizmos that make concepts more comprehensible to the athletes in his class. Recently, Loy guided Jason, a tenth grader who was preparing for an upcoming sailboat buoyancy lab, as he completed the Archimedes' Principle Gizmo in class.

Jesus Medina, a new Biology teacher at Los Fresnos United Ninth Grade

campus, paired students to work on their Paramecium Homeostasis Gizmo to ensure they understand the concepts of cellular transport in living organisms.

Brent Burkott, a Biology teacher at Los Fresnos United, uses Gizmos to reinforce what has already been taught in class.

Other Settings for Gizmos

- On alternative behavioral campuses
- In credit recovery programs
- For homebound students. ●

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