

# Algebra for All—With Help from IXL

HORIZON SCIENCE ACADEMY HIGH SCHOOL, COLUMBUS, OHIO



Algebra teacher Tammy Rhymer has high expectations for her students. “You don’t get a pass just for attending in my room,” she says. But how do you teach algebra to every student when many of them didn’t master elementary school math? For Tammy, IXL was the answer—and the proof is in the results.

## High Expectations, With Many Challenges

Horizon Science Academy High School is an urban public charter school in Columbus, Ohio, serving a diverse population of economically disadvantaged students. They are a Blue Medal School of Excellence with a strong focus on preparing students for college. Because they aim to send 100 percent of their students on to higher education, Horizon Science expects all freshmen to take Algebra I and does not offer a pre-algebra course.

However, students come to Horizon Science with a wide range of skills, especially in math. “Many of my freshman students are operating at the 3rd grade level or below,” explains Tammy. “I’m supposed to teach them algebra, but they aren’t coming to me with even basic math skills.” On top of these challenges, some of Tammy’s students come to her with limited English proficiency and little prior math instruction even in their own language. “Many of my ELL girls in particular were not given even basic education in their home countries,” she says. “They are some of my hardest working students, but they are coming in really behind. One of my girls could only count to 100 in her native language.”

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“Kids are doing way more problems on their own on IXL than I ever would have dreamed of assigning. Before, I was making worksheets with 20 problems and begging them to try five. Now I have kids doing dozens of problems on their own until they get the mastery score they want.”

- Tammy Rhymer, Teacher, Algebra I

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### Meeting Students Where They Are

In spite of these challenges, Tammy is expected to teach algebra to all of her students. But how do you differentiate instruction when your students range from 1st grade level to advanced? In 2013, Tammy turned to IXL for help.

At first, she assigned IXL to her students for simple practice and review. But she quickly saw the advantages for differentiation. “IXL differentiates automatically. If students are struggling, the problems are easier. As they start to get it, the problems get more challenging,” she says. IXL also allows students who are not on grade level to work on the skills they need to catch up. “For some of my ELL students, I may have to start them at 1st or 2nd grade, but now at least have work they can do at their level, and they are able to build mastery on skills they missed when they were younger.”

Tammy especially appreciates how easy IXL makes differentiation. “When we write our lesson plans, we have to explain how we will differentiate instruction. Now I can just write ‘IXL.’ It does it for you, without the hours of work needed to create and grade different assignments at different levels.”

### Motivated by Mastery

Tammy now uses IXL either in the classroom or for homework four or five days a week. “Ninety-eight percent of the homework is on IXL,” she says. And while she appreciates the time saved on grading, the biggest benefit she sees in switching from paper worksheets to IXL is in student motivation. “On paper, they didn’t do it, or they cheated. Now, they are actually doing the problems, because they want to see their scores go up. It’s like a video game for them.” Students are required to achieve a SmartScore (IXL’s proprietary scoring system that measures how well a student understands a skill) of 80 to get credit on the homework (70 for her lower-level students), but many students work as long as it takes to get their scores to 90 or above. “I see students doing 50, 60, even 100 problems to try to raise that score. And since IXL problems get harder when your mastery goes up, I know they are really working to get those last few points. That represents real learning.”

## Case Study

Tammy believes that the instant feedback students get in IXL is the secret to the motivation. On paper, students have no idea if they are on the right track or not. But with IXL, students get instant gratification when they get a problem right, and immediate help if they get it wrong. This allows students to work more independently. “Once, we didn’t finish covering a lesson in class, and I forgot to cancel the homework. But most of my students completed it anyway. When I asked them how, they said ‘Ms. Rhymer, IXL tells you how to get the answer if you get it wrong, so we figured it out.’”

All that learning is making a difference. Not every student passes Tammy’s Algebra I class—some are too far behind to catch up in one year, and some face outside challenges that impact their ability to be successful in school. But Tammy sees noticeable growth in the number of students getting A’s in her class. “It’s really pushed up the overall mastery level for my kids,” she says. That success has been noted. For the 2015/2016 school year, all of the math teachers at Horizon Science will be using IXL.

### A Model for Algebra Success at Horizon Science Academy High School

Here’s how algebra teacher Tammy Rhymer is using IXL in her classroom:

- **Homework:** 98 percent of homework assignments are on IXL. Many of her students complete homework on smartphones. For students who cannot access IXL at home, Tammy keeps her room open before and after school and during lunch.
- **Independent/Small Group Classwork:** Once or twice a week, Tammy can use the school’s Chromebook cart for in-class work. She has also used Chromebooks for pair activities on IXL.
- **Whole Class Instruction:** Tammy often projects IXL on her electronic whiteboard for the class. Sometimes she models problem-solving herself, and sometimes she has students take turns.
- **Assessment Practice:** Tammy assigns IXL to help students prepare for upcoming tests. She also uses problems generated by IXL when creating her tests, so students know that the problems they face on the test will be in the same format as the ones they are practicing on IXL.