



Meeting Individual Needs in High School Algebra and Geometry

Senn High School, Chicago Public Schools, Illinois



How do you address individual needs for math students at the high school level? Michael Meadows, a math teacher in Chicago Public Schools, was looking for an easier way to differentiate instruction for students in his high school Geometry and Honors Algebra classes and improve performance on the SATs. IXL Math gave him the detailed performance data he needed and provided his students with individualized practice and reteaching. As a result, scores on exams are up and students are having an easier time with traditionally difficult topics.

“Differentiation was one of the primary needs we wanted to address. When you have students coming in at all different levels, you have to figure out how to meet all of those different needs in the classroom.”

Michael Meadows, High School Math Teacher, Chicago Public Schools Teacher, Noble Academy

Addressing the Needs of Students from Diverse Backgrounds

Michael teaches three sections of 9th grade Honors Algebra and two sections of 10th grade Geometry, including one section targeted to students learning English as a Second Language (ESL). His students have a broad range of academic backgrounds. Some students may be working a year or two ahead of grade level standards, while others enter high school missing a large number of the foundational skills for algebra and geometry.

“We’re a large district, and our school has students coming from all across the city. The different schools have different curricula and teaching approaches, so our students may come to us with very different backgrounds and skill sets. We needed a way to determine whether they have the prerequisite skills for our high school classes and get everyone on the same page.”

This need was especially acute for his ESL Geometry students. Some of his students enter his class with little or no formal schooling. Prior to adopting IXL, Michael had to determine their mathematical skill level by having them write down example problems of the last thing they remembered learning in math class. “Some of them would be on target with grade-level skills, but others might have only gotten up to adding and subtracting three-digit numbers. We needed to be able to pinpoint exactly where their skill gaps were and get everyone up to grade level quickly.”



Working on Core and Growth Skills

Michael discovered IXL Math while looking for solutions for differentiated math instruction in the spring of 2019. After a brief trial with his ESL Geometry students, he knew he wanted to bring IXL to all of his students for the 2019-2020 school year. Senn High School ultimately adopted IXL Math for all of their freshman and sophomore students and for juniors needing additional skill development and SAT prep.

Michael's Geometry students primarily use IXL in class. After introducing a topic to the class, Michael assigns skills in IXL aligned to the standards he is teaching. Most skills are taught over a two-day period, with one day devoted to whole-class instruction and the next day spent in individual practice in IXL Math. Students are expected to achieve a minimum SmartScore (IXL's proprietary scoring system that measures how well a student understands a skill) of 80. Every other week, students have an "IXL Growth Day," which is devoted to working on skill gaps identified for each student by the IXL Real-Time Diagnostic.

For Michael's Honors Algebra students, IXL Math makes up 50% of their grade. All incoming freshmen use the Real-Time Diagnostic at the beginning of the year to pinpoint their current mastery levels and identify gaps in prerequisite skills. Students work on IXL both in class and at home. Each week, they are assigned what Michael calls "Core Skills" in IXL related to the standards they are working on in class. They work on "Growth Skills" based on the recommendations from the IXL Real-Time Diagnostic during IXL Growth Days or after they complete their Core Skills for the week.

"Scores on exams are noticeably higher this year, and IXL is the only significant change we have made to our curriculum. It's pretty evident that this is a result of IXL and the way the program holds them accountable for the skills."

Michael Meadows

Instant Feedback and Accountability Lead to Mastery

Michael's Honors Algebra and Geometry students have responded positively to IXL Math. "My Geometry students practically beg for IXL, especially my ESL students. It really keeps them motivated and they are always asking for more to do."

All the practice is paying off. While state testing and SATs were disrupted in 2020 due to the coronavirus, Michael reports that scores on in-class exams are on average 5%-6% higher than in previous years. He also has noticed that units that have been challenging for students in prior years, such as systems of equations, have been much easier for this year's Algebra classes to handle.



Michael attributes the results to two important aspects of IXL: real-time feedback and accountability. "With IXL, they get instant gratification," he says. "With worksheets, students get frustrated because they don't know whether or not they are doing something correctly. IXL lets them know right away and provides an explanation if they get a problem wrong. And IXL holds them accountable for their learning in a way that worksheets can't. The SmartScore tells the story...it's not something they can fake."

Transitioning to Remote Learning with IXL Math

IXL Math proved to be especially valuable in the spring of 2020, when coronavirus caused schools across the country to make a sudden shift to remote learning. Michael and the other math teachers at Senn High School used IXL Math in combination with teacher-made video lectures and video conferencing to keep students on track while learning from home. Michael says, "IXL definitely made the transition easier."

IXL gives Michael a clear picture of how students are progressing through grade level skills while they are working remotely. The Geometry team has created a rubric that ties IXL SmartScores for each skill to the team's 5-point mastery scale for math standards. "IXL gives students opportunities for practice and skill development, but it also is a true demonstration of mastery and learning. I don't have to give them something extra to do to test their understanding." Michael also appreciates the way IXL motivates his students. "That instant feedback is what drives kids forward and brings kids back. They love the satisfaction of seeing their SmartScores go up. I can't imagine attempting remote learning without IXL."

A Model for Success at Senn High School

Here's how Michael Meadows is using IXL in his high school Geometry and Honors Algebra classrooms:

- In Geometry, students use IXL mainly in class. Each day of direct instruction is followed by a day of IXL for practice and skill development.
- Honors Algebra students use IXL both in class and at home. They are assigned what Michael calls "Core Skills" related to the standards that are taught in class each week.
- All students also work on individual "Growth Skills" based on recommendations from the IXL Real-Time Diagnostic. Students have opportunities to fill skill gaps during biweekly IXL Growth Days, study/tutoring periods during the school day, or at home.
- Geometry students are expected to achieve a minimum SmartScore of 80 for each assigned skill. They aim for a SmartScore of 90 or 100 on Growth Skills.
- IXL makes up 50% of the grade for Honors Algebra students, with 25% based on Core Skills and 25% based on Growth Skills.