

CASE STUDY

Des Moines Public Schools

IM 9-12 MATH™





About IM

Illustrative Mathematics® (IM) is guided and inspired by educators who are doing extraordinary work. Since our founding as a non-profit organization in 2013, IM has become a leader in problem-based mathematics education. Our comprehensive, standards-aligned, K–12 curriculum has reached over 1.5 million students. At the same time, our robust catalog of professional learning has served more than 28,000 teachers.

We know this success is the result of mathematicians, educators, and communities working collaboratively. Together, we create the IM Classroom, where *all* students are active participants in their learning. The IM Classroom stands on these four pillars:

- ◆ Teachers and students use an IM Certified® curriculum and practice IM’s problem-based instructional model with integrity.
- ◆ Teachers participate in IM Certified® Professional Learning and have access to implementation support.
- ◆ School and district leaders understand and support the systemic changes that are necessary to change teachers’ practice.
- ◆ Families and communities are engaged with and support their students’ learning.



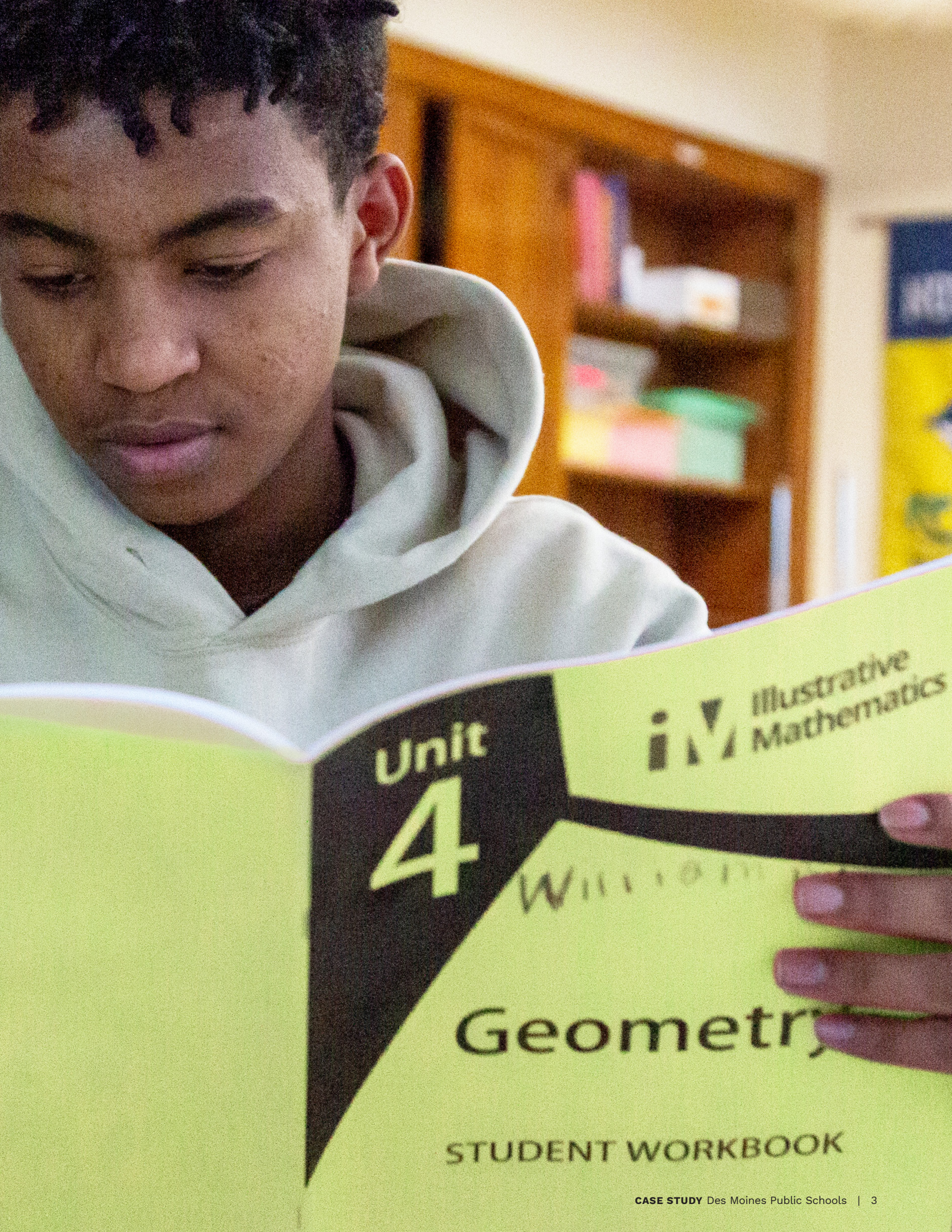
In Fall 2022, Illustrative Mathematics set out to identify a school district that exemplifies the IM Classroom model. It didn’t take long to find one. In fact, we found many teams doing amazing work implementing the IM curriculum. Our team visited school offices, classrooms, lunchrooms, and gymnasiums. We met with educators and heard stories about why the decision to adopt the IM curriculum was integral to their school district’s vision of equitable instruction for all students.

Des Moines Public Schools (DMPS) is one of the districts we chose to spotlight. The case study presented on the following pages captures the intimate conversations that IM had with the school leaders, teachers, and students of DMPS. It describes the district’s journey from their decision to adopt IM 9–12 Math™ to the successful implementation of the program. While the narratives are specific to DMPS, the educational themes and pathways to success will resonate with many school districts across the nation.

We hope you take inspiration in the stories that you will read about Des Moines Public Schools’ journey. Join us in IM’s vision of creating a world where all learners know, use, and enjoy mathematics.

THE IM EXPERIENCE

The IM Experience connects educators to engaging experiences and resources. It elevates the IM curriculum journey in a new way — through events, case studies, webinars, support services, digital resources, and more. It is an experience that IM is curating and developing to engage our audiences so they can share what they need beyond adopting our curriculum.



Unit
4

Illustrative
Mathematics

WILLIAMSON COUNTY

Geometry

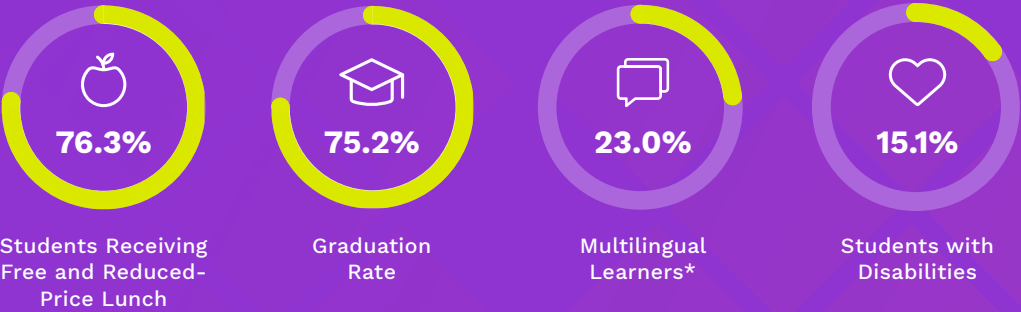
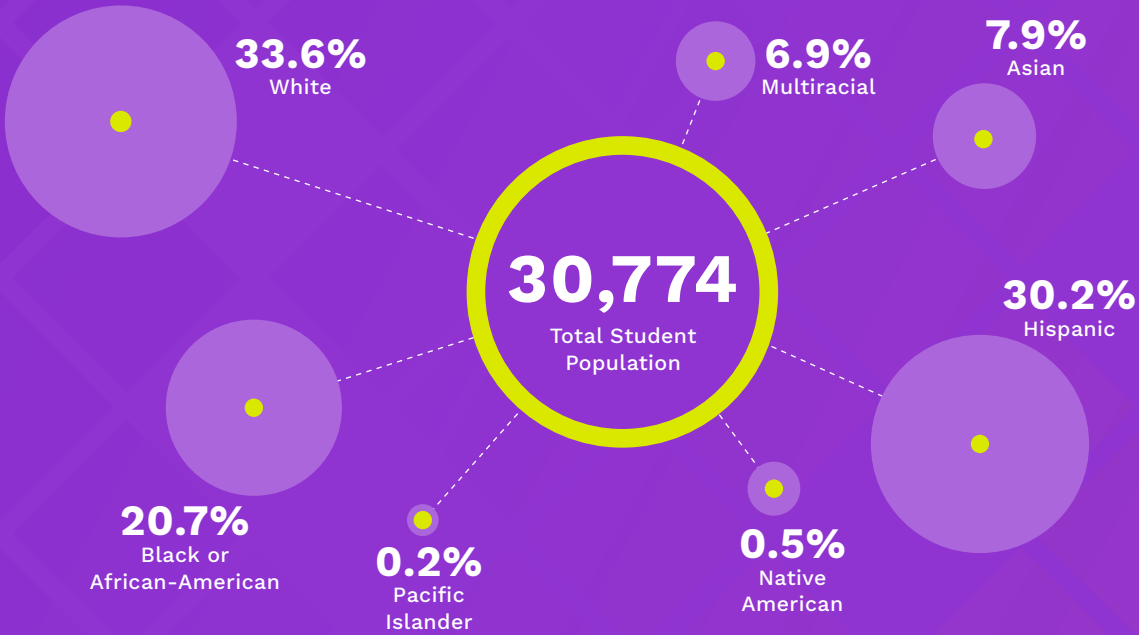
STUDENT WORKBOOK





AT A GLANCE

DMPS District Demographics



*Students come from almost 90 countries with nearly 100 languages spoken.

This case study highlights DMPS high schools and their journey from adoption through implementation of IM 9–12 Math™. Through interviews and surveys of hundreds of students, teachers, and school and district leaders, we learn why their decision to adopt the Illustrative Mathematics curriculum was integral to their vision for equitable instruction for all students.



All Means All

When you enter any Des Moines Public Schools (DMPS) campus, you are bound to encounter a T-shirt or a poster with the hashtag #AllMeansAll. This is not just a catchy phrase for DMPS; it's their cornerstone belief. In fact, everything DMPS does, including math instruction, is guided by the idea that a high-quality education is a fundamental right of all students.

Des Moines Public Schools is the largest and most diverse school district in Iowa, serving over 30,000 students and a relatively high percentage of Black and Brown students. (See Demographic

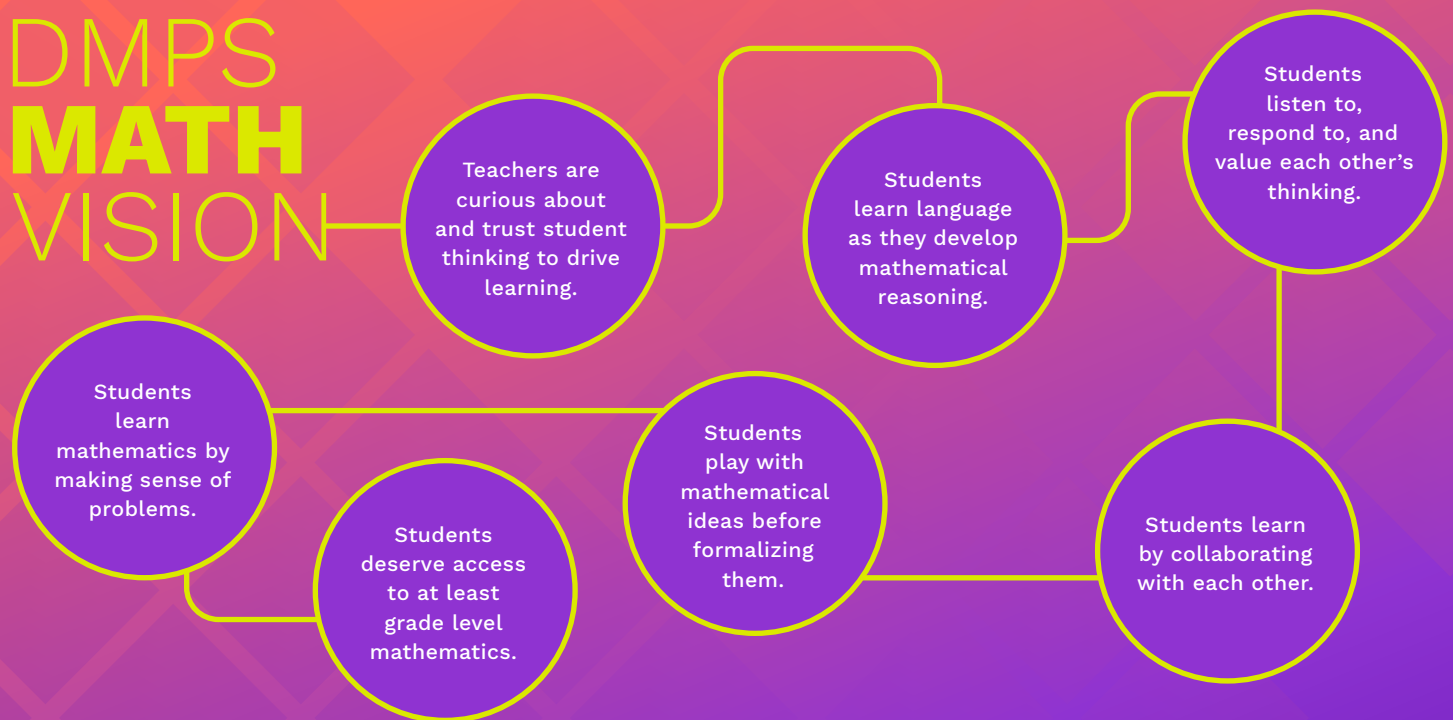
Snapshot on page 5.) Iowa is 84.1% White and 4.3% Black, while DMPS is 33.6% White and 20.7% Black. Though some students come from families who have lived in Des Moines for generations, many come to the district as immigrants or refugees.

In 2017, DMPS proudly declared itself a [sanctuary](#) and safe haven for immigrant and refugee families. That same year, DMPS enrolled over 4,000 students from countries across the globe, including 1,500 refugee students. DMPS takes pride in its diversity, supporting refugee student acclimation and education with

such initiatives, as the Summer Refugee [Jumpstart](#) Program. Additionally, DMPS provides multilingual learners access to mathematics through the use of [Math Language Routines](#), found throughout IM's curriculum.

Hoover High School principal, Qynne Kelly, celebrates her school's demographics as she discusses the dynamics of diversity within racial groups. She shares about the various groups making up the diverse student population, including students from Kenya, Ethiopia, and around the world. She notes that, with Des Moines being a city that is recognized for embracing immigrants and foreign-born families, many refugee students are placed at DMPS. Principal Qynne Kelly stands firm, "Whether students are Black or Latino, American-born or from a refugee population, their diverse needs must be met. All means all."

DMPS MATH VISION



Our beliefs about teaching and learning mathematics.

In Des Moines Public Schools, we will ensure all students have equitable access to a rigorous math experience that is supported by a balance of conceptual understanding, real-world application, and procedural skills and fluency.



A Focus on Equity

Lincoln High School Associate Principal, Ocie Lowery, III, describes the conscious decision DMPS has made to foster diversity and equitable learning environments. “I think it’s a strength of understanding who we are, and we demonstrate it by making those decisions based upon what’s needed for our students, let alone our community, and not just the current community that we’re a part of but what we want the community to become,” Lowery says. “It’s something that we’re always looking at and looking forward to. So I think that’s one of the big strengths when we talk about diversity. It’s not just in race. It’s not just in culture. It’s in the whole package. It’s everything that we come across.”

DMPS educators share the sentiments voiced by Lowery. However, the district’s previously selected high school curriculum was not meeting the needs of all students. It was not preparing students for postsecondary success (college, military, workforce, etc.) Equally important, the curriculum was not completely aligned to the state and national mathematics standards. As a result, teachers needed to supplement the curriculum with outside resources, or else risk not providing equitable instruction for all their students.

DMPS took action by establishing a new math vision and belief statements. Teachers and school leaders alike wanted a new curriculum that would allow students to be more engaged, more collaborative, and better equipped to internalize mathematical concepts. Starting with the school board, every decision at Des Moines Public Schools was guided by a clear message: All students should have equitable access to a rigorous and inclusive math experience.

Selecting the Illustrative Mathematics curriculum enables DMPS to achieve



I really appreciate how it’s focused on the actual standards. And when you crosswalk our Common Core standards with what IM asks them to do, they’re really trying to meet the requirements of those standards.”

ISAAC RODENBERG, DISTRICT HIGH SCHOOL MATH CURRICULUM COORDINATOR

DES MOINES PUBLIC SCHOOLS’ EQUITY STRATEGIES

1

LEARNING

Providing students with essential knowledge, skills, and abilities.

2

THRIVING

Ensuring each student reaches their maximum potential through enriching relationships.

3

BELONGING

Working in partnership with students, families, and community to create connections that increase student success.

these objectives by encouraging students to develop lifelong and career-oriented skills, such as collaborative discourse and innovative problem solving. The IM curriculum also provides clear and supportive guidance for teachers to foster positive mathematical identities in their students and create environments where all students see themselves as doers of mathematics.

Isaac Rodenberg, District High School Math Curriculum Coordinator, shares how the IM curriculum delivers a solution: “We want students doing rich mathematical tasks — things that have high levels of accessibility, both for students that typically do very, very well in math, and for students that struggle

with mathematics. The IM curriculum is really built around that. I love that there are good thinking tasks for students to engage with. I really appreciate how it’s focused on the actual standards. And when you crosswalk our Common Core standards with what IM asks [students] to do, they’re really trying to meet the requirements of those standards.”

For DMPS educators, the choice to adopt the IM curriculum wasn’t just about boosting grades or test scores. It was about cultivating a lifelong love of math and offering students opportunities to connect the math they learn in school to the math they encounter in the real world — to apply math concepts to solve problems arising in their everyday lives.

Ocie Lowery, III

Associate Principal, Lincoln High School

With 16 years of experience in Des Moines Public Schools and previously a Professional Learning Community (PLC) lead for Algebra, Lowery had a clear idea about what he wanted a good curriculum to do for students, and it was not just limited to the classroom.

“The IM curriculum was adopted with the thinking of shifting our mindsets from just doing routine or rudimentary work and really wanting our students to have an understanding of how processing works, how to gather and develop the skills that would be transferable to whatever industry they go to, whatever scenario they may go into, but also wanting to show that with mathematics, it’s really about logic. It’s really about using those strategies to be applied to new learning and to stretch our students.

IM was selected to make sure we tell the whole story within the realm of education, wanting to ensure that we’re not just having our

students stop at the high school level, but also being able to go to those post-secondary ventures, whether it is college, whether it is trades, whether it is the armed forces, whatever it may be.

With those scenarios, you’re not sitting there with a textbook in your hand every single time when you’re in the field. You have to think about the scenario that you have, even if it doesn’t have a math number to it, and begin to put things together. It’s about thinking. We understood that we weren’t always demanding that of our students, so wanting to ensure that we actually put them in situations and scenarios where they needed to actually think.

That’s one of the core reasons that we chose the IM curriculum over other curriculums that were presented to us.”





Leadership Strategy

Prior to adopting IM 9–12 Math™, DMPS high school teachers had quite a bit of autonomy over their curricular choices. While the district technically had a shared curriculum before IM, each teacher was free, to design, develop, or find their own resources.

Charged with the commitment to equity, however, high school math teachers and administrators began to recognize the problems with this decentralized, unregulated approach. Specifically, the schools across the district were not able to deliver equitable instruction. As Rodenberg explains, “We can’t function as a system with this unregulated approach, in particular, one that has over 60 different schools.”

For roles like Rodenberg’s, a common curriculum creates the opportunity to add structure to coaching and planning support. It also helps to consolidate and unify professional learning for teachers and administrators so they can effectively collaborate to unpack math concepts and share ideas for adapting lessons to meet the needs of all students.

To provide all students access to rigorous and equitable math learning, Des Moines teachers needed more than just a common math curriculum. They needed a program that centers student thinking and offers opportunities for students to solve problems and discuss their unique ideas in authentic ways. DMPS needed a curriculum that allows students to see themselves as doers of mathematics who can persevere through challenging problems.

DMPS was very thorough in their search for a new math curriculum. The district collected extensive data from the community and spoke with dozens of local employers. Principal Kelly describes



“We need problem solvers, people who can work with others. We need people who can think outside the box, think innovatively, who can fail and try again.’ This was the feedback Des Moines received.”

QYNNE KELLY, PRINCIPAL, HOOVER HIGH SCHOOL

the approach: “They asked, ‘What is it that you are looking for in employees? What skills do they need to have?’ The answer was not ‘Be able to cite every year every war started.’ That’s not useful anymore. Instead, it was, ‘We need problem solvers, people who can work with others. We

need people who can think outside the box, think innovatively, who can fail and try again.’ This was the feedback Des Moines received.”

After months of research, DMPS knew the answer was IM 9–12 Math™.

FEATURE



QYNNNE KELLY

PRINCIPAL,
HOOVER
HIGH SCHOOL

One of the challenges of adopting a new math curriculum is transparency with all stakeholders. Upon adoption of the IM curriculum, Principal Qynne Kelly mapped out a plan to communicate to parents, families, and the community about how the new curriculum will benefit students.

Principal Kelly understands that communicating the *why* is always critical to a successful implementation of new curriculum in schools.

Upon initial review, the IM curriculum looks different from what families were used to with math instruction. For example, students are encouraged to solve problems in ways that make sense to them, rather than follow step-by-step instructions. This intentional measure is designed to help students retain the math they learn, but it can leave families feeling in the dark, without a clear sense of how to help their students with their math homework.

Principal Kelly shares how she communicated the benefits of the new curriculum to the community to allay any potential fears or concerns ahead of time. She understands

that communicating the *why* is always critical to a successful implementation of new curriculum in schools. “The switch to IM was in the messaging. It’s moving away from instruction that’s more procedural to more conceptual. Because these are skills that we can use across a variety of curriculum, across a variety of content areas, but then also can be used in truly any line of work students are going into, conceptual thinking is going to be a piece of it likely. And so that was why we made the switch in math.

Switching to IM did not come with its challenges. With parents, the way that their kids are doing math doesn’t look [familiar]. I’m finding that when I just sit down for three to five minutes even and say to them, this is what employers are saying. This is how we’re trying to meet that need. It actually is more rigorous. It actually is going to prepare your student, regardless of what path they’re taking, college, trades. This is what’s getting them ready for post-secondary.’ Parents immediately bought in. They just want to know the *why*. And once they know the why, they’re on board.

So what’s really important in making the shift away from how we used to do school into the present, is to communicate the why to all of our stakeholders.”



90%

of Algebra I, Geometry, and Algebra II teachers, in a 2022 survey of DMPS, said that if they had questions about the curriculum, they knew they could get help from someone at the district.

Leadership Makes the Difference

Confident in their decision about IM curriculum adoption, DMPS leaders now faced a new challenge: implementing the curriculum. DMPS leaders set out to meet the challenge with a focus on professional learning. Using a combination of IM Certified® Professional Learning and support provided by the district's curriculum coordinators, leaders employed a careful balance of hands-on support and teacher empowerment. As a result, teachers became more familiar with the curriculum, and a more positive view of the shift to IM emerged.

Principal Kelly attributes this success to effective leadership. She says: "It's the willingness to let go of some control. Let the teachers be the ones to create the action steps. Let them be the ones

to find their data, talk about their data, determine what they're going to do with the data.

"Then, as a leader, Are you visible? I always make sure my teachers are actively seeing me. In the beginning, when I was learning how to use the [IM Implementation Reflection Tool](#), I made sure that I was visible. I made sure they could see me asking questions — really interrogating the language of the Tool.

"They could see me coming in with different people, asking them questions and leaning on their expertise because, even if they don't know IM, they know math. So, using them as a means and as an expert, and showing that I'm there to learn — that matters too — modeling continuous learning and showing that you are also in the trenches with them doing the work."

For DMPS, leadership moves such as the ones Kelly describes are paying off. Of high school math teachers surveyed, 90% say they meet a minimum of once per week to discuss approaches to teaching the curriculum. Likewise, 70% say that IM encourages a collaborative teacher community.

Lincoln High School Geometry teacher Nick Bigelow believes that successful IM implementation requires collaboration with teachers and instructional leaders. Bigelow says, "It's wonderful that IM provides so much for us in the teacher materials. I don't have to go thinking, 'What am I teaching tomorrow?' because it's there for me. But on the other hand, you need people around you, like a PLC, like instructional coaches, administrators who are on board with it, because there are so many ways to get it wrong or so many things that could get missed."

Again pointing to leadership, Principal Kelly underlies the importance of setting the right tone during PLCs and maintaining the integrity of the valuable time teachers are spending together. "It's about finding the fine line — allowing teachers space to let out some stress about something, but then also disrupting and/or confronting when we get into kind of a toxic space, or we start blaming kids. All of that is really determined by the leader."

A Shift in Teacher Practice

For DMPS, the IM adoption meant a sea change in math instruction and a mindset shift for teachers. Instead of using their own resources, teachers now had to use one common curriculum. They also had to transition from a traditional direct instructional model to a new one based on problem solving, where students learn math by *doing* math.

These changes were met with a variety of perspectives. Roosevelt High School Algebra I teacher Rob Randazzo, for example, was ready for the shift, largely because he was already using a problem-based approach with the curriculum he chose to teach his students. In contrast to traditional methods, a problem-based

approach starts with students making connections to what they already know and showing what they can do instead of being given steps to follow in advance.

However, Randazzo was the exception. Most teachers were employing a more traditional direct instruction model, where the teacher first models a set of steps to find a solution. Only then would students attempt to share their thoughts on the problem. For these teachers, making the shift to a problem-based instructional model would prove to be more challenging. As North High School Algebra

II teacher Mike Lucht explains, “We are breaking old habits as teachers, which is good. But breaking the ‘I do, we do, you do’ model was a little bit harder.”

Associate Principal Lowery echoes Lucht’s point: “The first year of IM implementation is hard because, for the teachers, it causes us to have to really decide what of our teacher identity do we want to keep, and it really makes us come face-to-face with releasing authority to our students. So when it came to that period of time, most teachers wanted to throw it into the trash. And they were trying to find ways

to get around it. Then, once most people had gotten to a point of reckoning around November, December, they realized what we were trying to accomplish.”

In IM’s problem-based curriculum, students are empowered to be active participants in their learning. Instead of showing students how to solve a problem, teachers must let students try it first and then orchestrate a discussion which leads to a clear conclusion. This instructional model requires teachers to trust students. In fact, it’s the only way for the method to work effectively and sustainably.

CHANGE PRESENTS MORE CHALLENGES

In addition to navigating a new math curriculum and shifting instructional practices, DMPS teachers also faced other challenges. These included:

shortened class periods that supported the increase in teacher planning time

unfinished learning and/or interrupted instruction due to the pandemic and other factors such as refugee status

fewer preps during school hours and more time covering other classes due to a teacher shortage

The IM Curriculum is designed with each individual teacher and their own pedagogical style and local considerations in mind. By design, IM emphasizes implementing the curriculum with integrity, as opposed to rigid fidelity. Teachers are free to adapt the curriculum to fit the cultural and academic needs of their district, school, classroom, and students. Teachers and leaders can make instructional decisions that make sense for their students without disrupting the intentional ways that the curriculum centers student thinking, collaboration, discourse, standards alignment, and the story of coherence.

When DMPS leaders granted more teacher prep time to accommodate the planning needed to support curriculum implementation, they shifted the schedule from seven to eight periods each day. The trade-off was a reduction in class time to only 42 minutes daily, resulting in 9 fewer hours of instruction per school year. For teachers, this became a critical issue of pacing. Lessons that were meant for one day were often taking two or three days to complete. To maintain appropriate pacing, DMPS educators needed to identify which activities could be safely cut without diminishing the integrity of each lesson. This requires a deep understanding of the math content standards and the progression of learning in each unit of the curriculum.

Understanding the learning progression is also important when addressing the needs of students with unfinished learning or interrupted instruction. Because students are always learning, whether they are in class, at home, or on the job, they typically have untapped knowledge that the teacher can use to help

students make connections between what they already know and what they are expected to learn. This is a key piece of the puzzle that the IM curriculum helps teachers unlock.

The need to offer students space to use their funds of knowledge becomes compounded when there is also a need to make math tasks more relevant to the increasingly diverse students in the classroom. Teachers and leaders have recognized that IM has made efforts at the elementary level to incorporate lessons that positively reflect the lived experiences of Black and Brown students. Still, there are concerns that IM’s current secondary curriculum does not have enough real-world examples that resonate with students.

IM’s 2022 survey of DMPS educators shows that 97% of teachers believe it is important for a math curriculum to have relevant examples. At the same time, survey comments and teacher interviews suggest that IM’s curriculum has opportunities to improve. As teacher Nick Bigelow pointed out, “I think IM makes a very intentional attempt to offer the kids a variety of real-world problems. It seems to me that they’re far more applicable in Algebra I than the other two high school courses. I think the kids can really resonate with the real-world examples that they see throughout the year in Algebra I. I’m not seeing it as much in Geometry or Algebra II.”

IM content and curriculum authors are aware of this crucial feedback, and in future versions of the curriculum, there will be even more relevant real-world tasks that apply to students and in their lived experience.

Advice to Teachers from Teachers

Despite the challenges, teachers across the district are working hard to implement the new curriculum with integrity. Some, like Lucht and Randazzo, have advice to teachers who may be new to the IM curriculum.

Lucht has a message for teachers that can help guide unit planning. “My advice to teachers is to work the whole unit before

you attempt to teach. It’s important to understand how all of the tiny activities and concepts tell the story of the big concepts within each unit. It’s a lot of prep work, but if you can’t see where it’s going, I think it’s hard to teach.”

Randazzo encourages teachers to push through despite the inevitable setbacks. He says, “Do your best. You’re going to feel that it’s awkward at times. You’re not going to feel that it’s great. You’re going to

have lessons that don’t go well. The kids are going to bomb a test. But trust the curriculum writers, because it’s another thing in teaching that I think a lot of us forget. I went to school to be a teacher. I did not go to school to be a curriculum writer.”

In each interview with DMPS teachers, one notable phrase was echoed: *Trust the process*. In other words, using the new curriculum may not be easy at first, but it *will* be worth it.



My advice to teachers is to work the whole unit before you attempt to teach. It’s important to understand how all of the tiny activities and concepts tell the story of the big concepts within each unit. It’s a lot of prep work, but if you can’t see where it’s going, I think it’s hard to teach.”

MIKE LUCHT, NORTH HIGH SCHOOL ALGEBRA II TEACHER



IMPACT ON TEACHERS

In Spring 2022

50.0%

of teachers agreed that the IM curriculum is easy for them to use

In Fall 2022

67.7%

of teachers agreed that the IM curriculum is easy for them to use

In Spring 2022

33.8%

of teachers stated they could adapt the IM curriculum to meet student needs

In Fall 2022

41.9%

of teachers stated they could adapt the IM curriculum to meet student needs



Impact on Students

Along with teachers, DMPS students also had to adapt to using the IM curriculum. Students who were accustomed to passively learning were now expected to actively participate in partner conversations and whole-class discussions. They needed to share their thinking even when their ideas were not yet fully formulated. This was a major change, and DMPS educators soon realized it was for the better.

As Principal Kelly noted, “The older students struggled the most because they had built habits and routines around old-school, traditional math instruction. So, now that we’re three years in, I hear a lot less ‘What is this math? Why is it like this? This is so hard,’ than I did in the beginning.

“And here’s how it always came out. ‘Teachers never help. They never give me the answer. The teachers don’t help me like I like them to help me,’ a.k.a., the teacher doesn’t sidle up right next to me and direct me and rescue me or point me exactly to the answer. That was incredibly frustrating for the kids. They’re used to being rescued. They’re used to that life raft being thrown at them. And so not having that was really frustrating for them.

“Now I think we’re far enough down the line that they are used to being told, ‘Okay, tell me what you’re thinking. Why do you think that? Ask your friend.’ and all these strategies that come with making thinking visible. That’s becoming more normalized to them, which I’m very grateful for.”

Students’ increasing comfort level with communicating their mathematical thinking in class has now become a metric for implementation success. Beyond the various IM assessments, many educators point to student engagement — the ability of the curriculum to get students who would otherwise not be interested in math actively participating — as a key way to measure success. Lucht says he looks to see if “kids are willing to do math and are willing to improve”.



REAL STUDENTS | REAL STORIES

Tenley

9th grade student, Roosevelt High School

Tenley didn’t like math. She *really* didn’t like math — to the point that her mom contacted her teacher, Mr. Randazzo, at the beginning of the year to let him know that there would be challenges.

“In the past, the teacher would solve the problems on the monitor, and we were just supposed to write and copy it. And I did not like that at all,” Tenley explains. “I did not think I did a good job at all last year in math because I didn’t understand it. It felt like I was guessing every time on my answers.”

Tenley says what she likes about learning this year with the IM curriculum is the challenge of working with her classmates to figure out the answers instead of just being told what to do by the teacher. For Tenley, it is rewarding once it all “clicks” into place. In other words, Tenley is enjoying all the components of using a problem-based curriculum.

Tenley has gone from avoiding math to using it both in and outside of the classroom. “I use math with sports a lot of the time. In softball, I have my stats for my batting averages and my RBIs,” she says. “With my batting average, the best I could be is 1.000. It’s interesting to see how far away I am from 1.000 or how close I am to 1.000, depending on my performance.”

When asked what her career aspirations are and if they will include math, Tenley says, “Because I’m liking math more this year, I’ve been debating it more. But if you would have asked me last year, I would’ve said no way. **I did not like math last year at all. But it’s becoming better and more fun to do or just easier for me to understand.** So, I want to be a psychologist or a psychiatrist because I like working with people, and I like learning about the body and the brain, and I think it’s interesting.”

With her goals, there is definitely math in Tenley’s future, and with a love of math, we know Tenley can do it!



Student Success



been saying for years, *‘Math is all around you.’* I like that it gives students time to talk to one another and do some discovery of math. It doesn’t just make the teacher the expert. It’s: How do we all become experts from the lens that we’re in?”

In addition to adopting the IM curriculum, DMPS is making other changes. The school board is investing resources to address the inequities they have seen in student achievement data. “There are a lot of school districts that just go through the motions of educating students and don’t really take a super critical look at how we as educators and those in the education system might be negatively impacting some of our students,” Rodenberg explains. “We are explicitly attempting to be anti-racist as we center Black male achievement.”

IM’s 2022 student survey results show that DMPS high school students are more engaged in the IM curriculum. The data are consistent across gender, race, age, and background.

While significant, the IM curriculum is only one piece of the puzzle leading to success in DMPS. High school math teacher Randazzo notes that even with a high-quality curriculum, there is still the need for teachers to believe that all of their students are capable learners, and students need to see themselves as doers of mathematics and active participants in their learning. The IM curriculum is helping

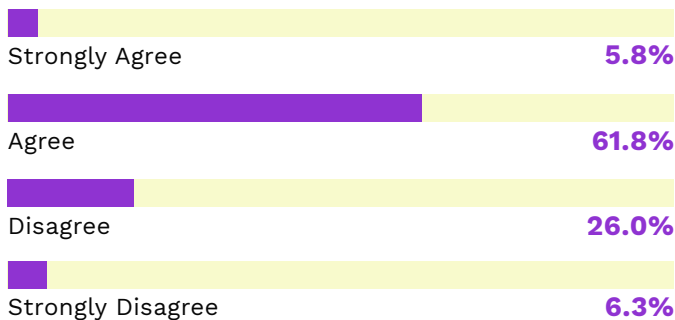
make these goals a reality by supporting the development of positive mathematical identities for all students.

As Associate Principal Lowery says, “It allows for our students’ voices to be honored, that you do actually know how to do this thing you call math that you’re afraid of, but in a different format. And so it opens our students’ eyes to recognize we’ve

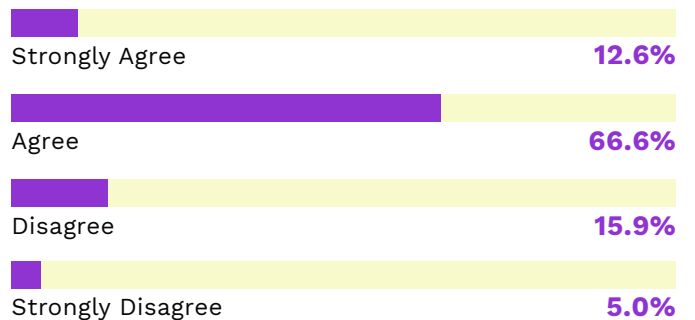
While students’ perceptions about their math educational experience can directly impact their math identities, they are not a direct indicator of achievement in mathematics. Upcoming math data, including state exams, will help to further measure the impact of teacher and leader efforts on student achievement. With IM’s high-quality instructional materials as a resource, the district is clearly headed in the right direction for students and teachers alike.

2022 DMPS HIGH SCHOOL STUDENT SURVEY RESULTS*

“My thinking has grown or changed as a result of new learning in math.”



“My teacher helps me understand and connect math ideas.”

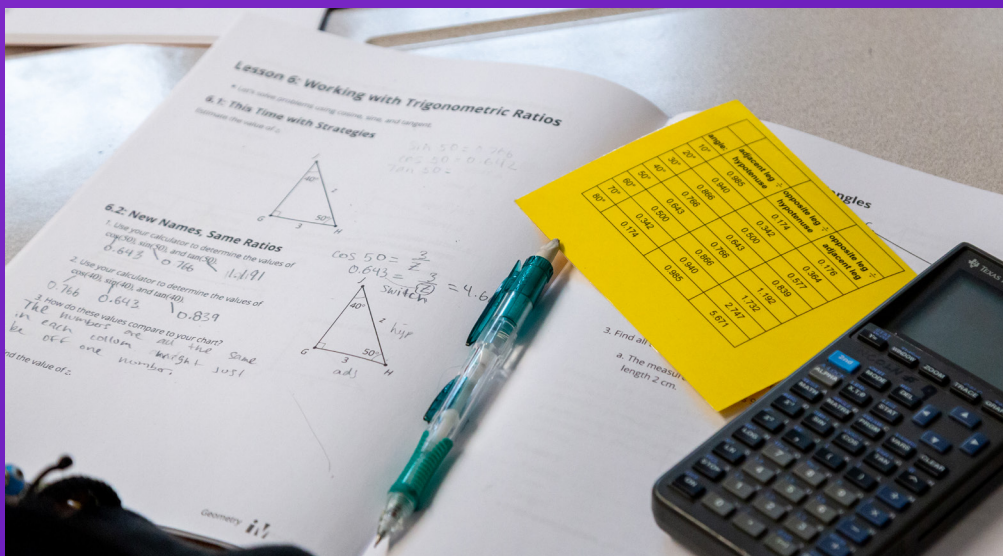


*Survey of 1,600 DMPS high school students taking Algebra I, Geometry, or Algebra II



The IM Classroom

This case study illustrates that for Des Moines Public Schools educators, #AllMeansAll is not just a hashtag on a T-shirt. It is the magic that teachers and leaders bring alongside the IM curriculum to classrooms and meetings to ensure that all students know, use, and enjoy mathematics. DMPS has overcome many of the challenges of adopting a new curriculum and has emerged as an exemplar of the IM Classroom.



WHAT IS THE IM CLASSROOM?



Teachers and students use an IM Certified® curriculum and practice IM's problem-based instructional model with integrity.



Teachers participate in IM Certified® Professional Learning and have access to implementation support.



School and district leaders understand and support the systemic changes that are necessary to change teachers' practice.



Families and communities are engaged with and support their students' learning.



Does your school or district exemplify the IM Classroom? Share your experience with us at <https://illustrativemathematics.org/im-experience/>

DMPS IM ADOPTION TIMELINE

- **JAN 2019**
Select Algebra classrooms pilot IM
- **JUL 2019**
IM is adopted for all Algebra classes
- **JUL 2020**
IM is adopted for all Grade 6–12 classes
- **AUG 2020**
Virtual IM Certified® “Teach and Learn” Professional Learning is offered to all Grade 6–12 math teachers
- **AUG 2020**
IM Implementation Reflection Tool is used to guide district professional learning
- **JUL 2021**
IM is adopted for all Grade K–12 classes
- **AUG 2021**
In-person IM Certified® “Observing in a Problem-Based Classroom” Professional Learning is offered to all principals and associate principals
- **AUG 21–JUN 2022**
District math leaders participate in IM Learning Lab
- **JUN 2022**
In person IM Certified® “Math Language Routines” Professional Learning is offered to all teachers

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With this curriculum, students are sharing their conceptual understanding of math concepts, engaging in collaborative discussions, and talking with their peers about what these concepts mean in ways that makes sense to them. These are things we want to see students doing, and their teachers are making that happen.”

ISAAC RODENBERG



600

SCHOOLS

#ALLMEANSALL

100

YEARS

+

//

I found this curriculum easy to implement because it fit well with what I believe math should be anyway.”

ROB RANDAZZO





//

It was hard for me to learn math when we were just watching the teacher do problems on the board and we had to try to remember all of the steps ourselves. Math class is so much easier now that I get to talk with my partner and work through the math problems with them.”

TENLEY

30,000

STUDENTS



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I like that the IM curriculum clearly spirals the learning within and across grades. It helps students to see that things they learned in Unit 1, for example, are actually the backbone for what they’ll learn in Unit 3.”

OCIE LOWERY, III

5,000

TEACHERS



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