Examples of Implementations

Amplify Desmos Math New York is a comprehensive core program based on Illustrative Mathematics'® IM K–12 Math™. This new program expands on the Desmos Math 6–8 curriculum with a balance of print and digital lessons that are visual and dynamic to pique student interest and invite all students to engage with mathematics.

Amplify Math 6-8 and Desmos Math 6–8 have been implemented over the past two years in New York City and around the country. Below are examples of implementation and the corresponding impact.

Usage in New York City

Both Amplify Math 6-8 and Desmos Math 6–8 have been implemented in New York City. Implementation details are broken down by product below.

Amplify Math

Amplify Math New York Edition (published in 2021) is currently being used at 05M514, 10X206, 07X296, 09X234, 10X331, 10X368, 24Q073, 25Q379, and 75R025. Since the pilot began,

- 501 lessons have been launched, with 5,289 submissions of student work.
- Nearly all pilot schools have decided to purchase and continue with program adoption.
- Many schools have shown clear improvement in their state test scores, notably a 7 point year-over-year gain at 05M5134.

Desmos Math 6–8

Desmos Math 6–A1 (published between 2020 and 2023) is currently being used for core instruction at 36 sites, including 01M450, 02M422, 09X241, 10X141, 15K146, 21K288, 30Q300, 32K162, and 75M035. Additionally, 50 sites are slated to participate in the Math Equity grant project sponsored by the Bill and Melinda Gates Foundation using Desmos Math 6–A1 lessons in a supplemental capacity. The pilot phase was recently completed and received overwhelmingly positive feedback from participating schools.

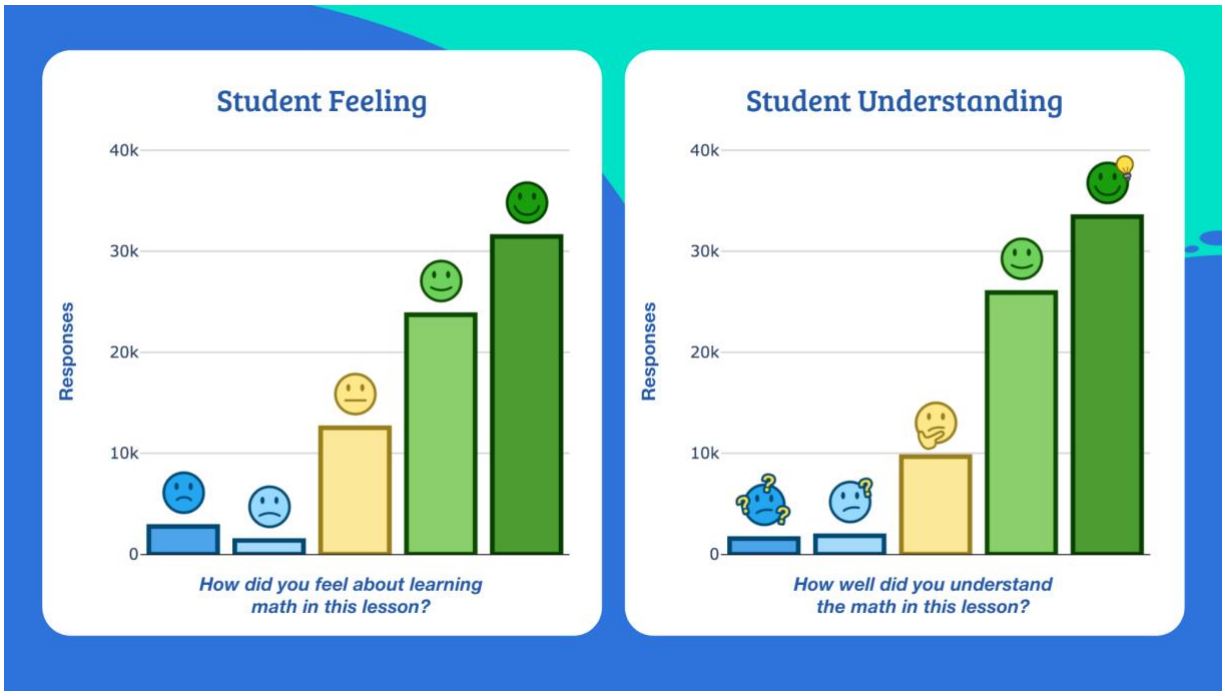
Cumulatively 240 teachers ran over 21,000 Desmos Math 6–8 sessions with about 13,000 unique logged-in students over the course of the 2022-2023 school year.

Using our innovative platform,

- New York City students have written over 16 million words in their open-ended responses to math prompts.

- New York City teachers have given their students 96,000 feedback comments on their mathematical thinking.

At the end of each Desmos Math 6–8 lesson, students are asked to select an icon that expresses their feeling about and understanding of the lesson. We've aggregated results from the lessons this school year in the graphic below. Based on these results, it is clear that students have positive self-reflection about how well they are understanding the math and their experiences with the program.



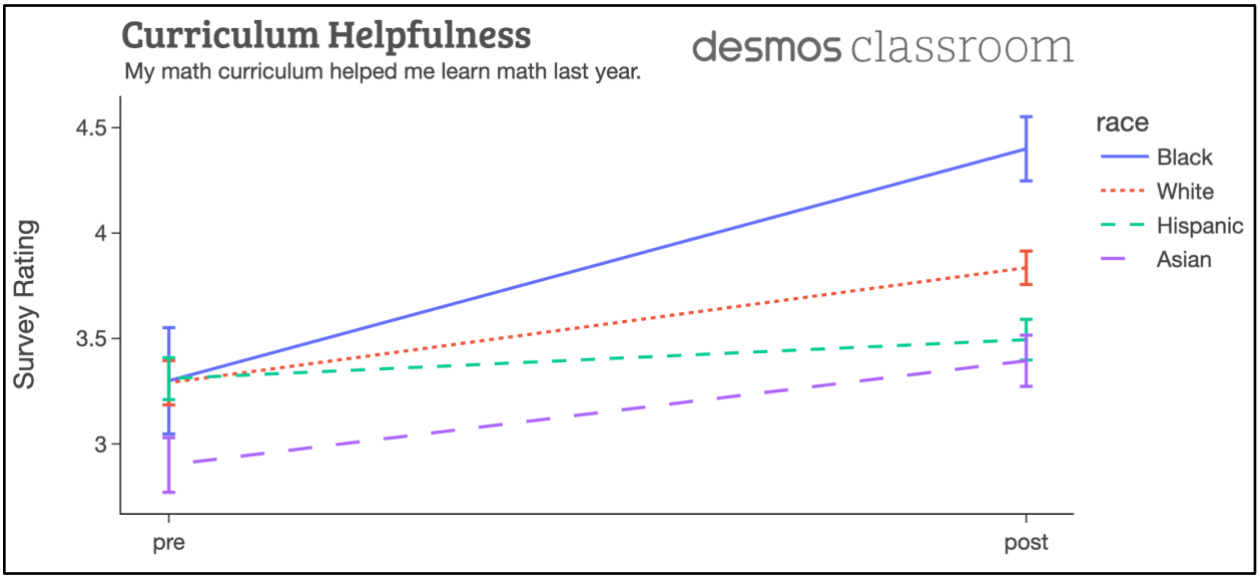
Analysis of Student Survey Results in SY2022-23 Disaggregated by Student Demographic Variables

In a forthcoming study from Amplify, Sabrina Gordon and Dr. Dan Meyer discovered that students' enjoyment and perception of the usefulness of their math curriculum increased significantly after using Desmos Math 6–8 compared to their previous curriculum.

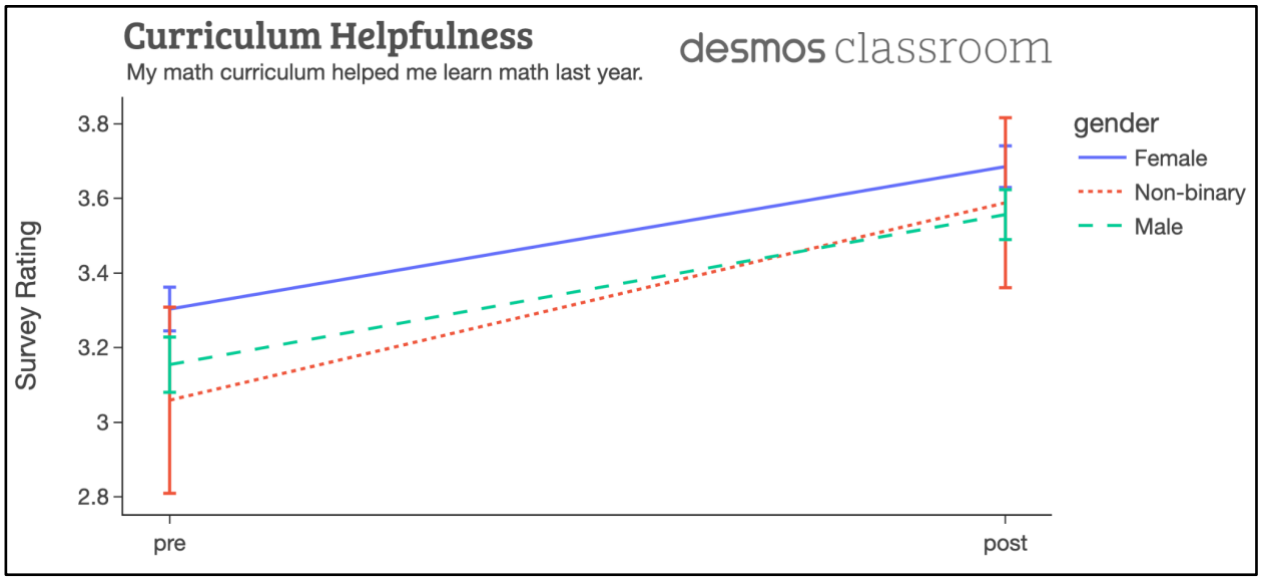
Gordon and Meyer disaggregated their findings by race, gender, and a student's status as an English language learner, aiming to understand whether those same changes in perception were shared evenly across different student subgroups. In an analysis of 605 sixth-grade students across two sites, the study focused on the main effects of using Desmos Math 6–8 on two constructs—enjoyment and perceived usefulness—and found significant results for a third—the feeling of being valued in your math classroom.

Findings

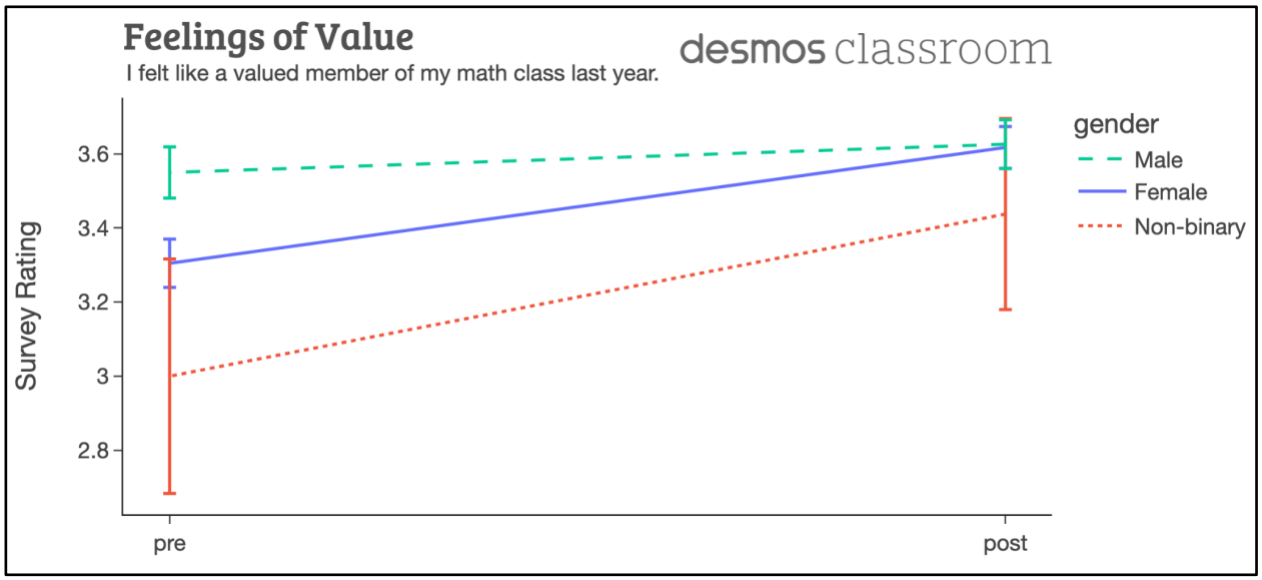
The study found that many of those differences were shared evenly across gender, race, and ELL status. In one case, a historically marginalized subgroup of students (Black students) experienced significantly greater benefit in perceived helpfulness.



When comparing the ratings over time, both female and male students reported a statistically significant increase in the helpfulness and enjoyment of the curriculum after using Desmos Math ($p < .01$). The helpfulness ratings from non-binary students also increased, although the sample size did not allow a finding of statistical significance for this result.



A finding that was suggestive but not significant (the interaction effect was only significant at p = .15) is that while all gender groups increased in the perception of their value in math class, the increase was greater for female and non-binary students than for male students.



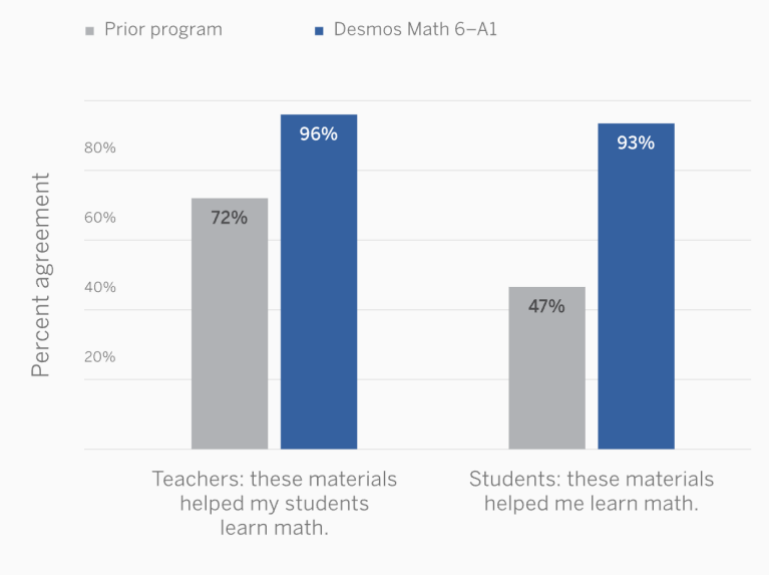
2021 pilot user survey

In 2021 we surveyed 70 teachers and 1,500 students across the country who piloted Desmos Math 6–8, asking them to compare it to their prior program.

Students learn more math

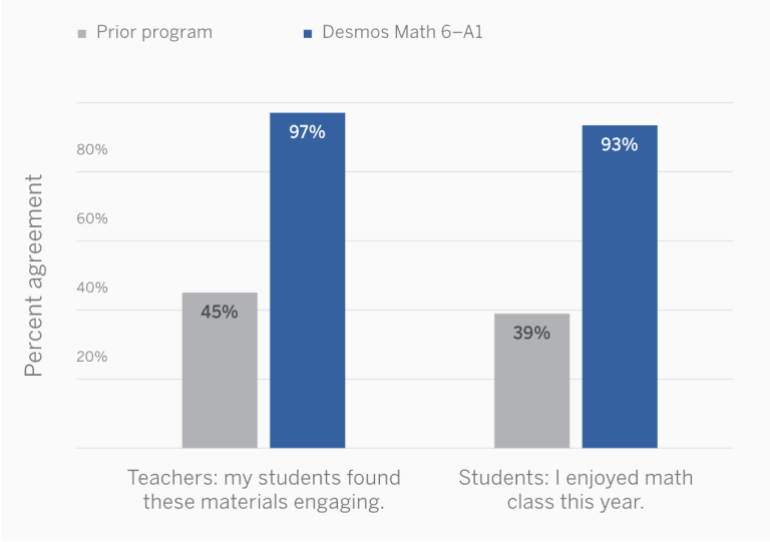
The program's problem-based lessons promote mathematical curiosity and student engagement, building on the coherence and rigor of Illustrative Mathematics' K–12 Math. Each unit includes student notes, skill practices, and rich assessments to help students show what they know and can do.

The result: Students and teachers in the pilot both said that students learned more with Desmos Math 6–A1 than with their prior program.



Students enjoy math more

Desmos Math 6–8 helps students experience the need for new mathematical ideas, and our responsive feedback shows them the value of their own thinking.

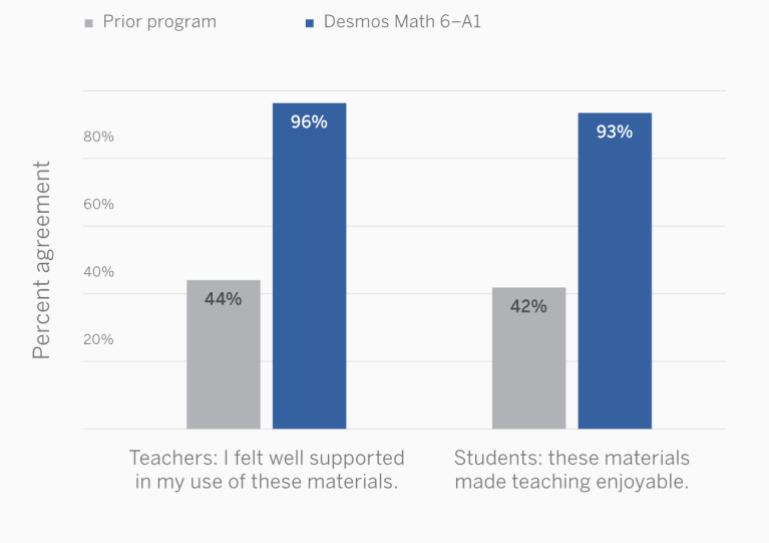


The result: Teachers in the pilot said their students were more engaged using Desmos Math 6–A1 than in their prior program, and students reported enjoying math class more.

Teachers enjoy teaching more

Our professional development team supports your team's onboarding and instruction throughout the year. Additionally, we offer just-in-time lesson preview emails, unit overview webinars, and other supports to help your team succeed.

The result: Teachers in the pilot felt better supported with Desmos Math 6–A1 than with their prior program.



Support for all learners

We offer teachers specific support for inviting, celebrating, and developing the ideas of students with disabilities and multilingual learners. Supports for students (listed below) offer teachers specific support for inviting, celebrating, and developing the ideas of students with disabilities and multilingual learners.

For students with disabilities:

- Each lesson is designed using the Universal Design for Learning (UDL) Guidelines.
- Each lesson includes strategies for accommodation and support based on the areas of cognitive functioning.
- Each lesson includes opportunities for extension and support when appropriate.
- Most digital activities are screen reader friendly.
- There are multiple methods for students' responses, such as image uploads or text-to-speech.
- Interactive elements include dynamic narration.

For multilingual learners:

- Explicit vocabulary instruction with visuals.
- Processing time before whole-class discussion.
- Sentence frames to support speaking opportunities.
- Instructions are broken down step by step.
- Background knowledge or context explicitly addressed.
- Most lessons include visual interactions to support language development.

In every digital activity, students can share their thinking in a variety of ways, including with text, audio recordings, and image uploads. Teachers can then view student work in real-time, pace students throughout the lesson, display student work to facilitate class discussions, leave students written feedback in the teacher dashboard, and utilize a variety of other digital pedagogies.

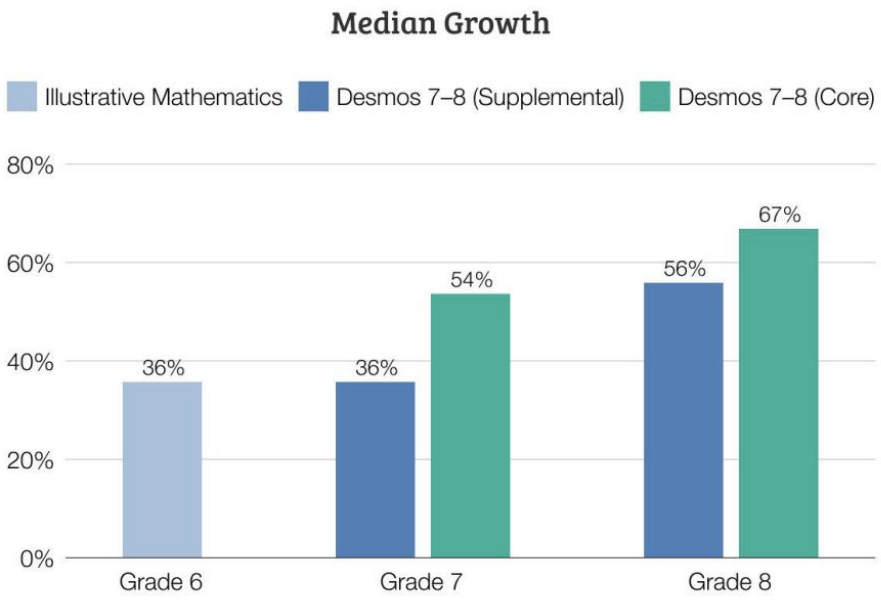
Case Studies

Desmos Math 6–8 has seen gains in student engagement and growth in two case studies.

A large midwestern school district

In a large Midwestern school district, two middle school math departments with comparable student demographics applied for pilot access to Desmos Math 6–A1, including print and digital resources, data reporting, and professional learning support. One school used Desmos Math 7 and 8 as their core curriculum, while the other used it as a supplement to their existing print curriculum, Illustrative Mathematics. Because Desmos Math 6 was still under development at the time, both schools used Illustrative Mathematics in Grade 6.

In Grades 7 and 8, students who used Desmos Math 7 and 8 as their core curriculum saw 18% higher growth in Grade 7 and 11% higher growth in Grade 8 than students who used Desmos Math 7 and 8 as a supplement to Illustrative Mathematics.



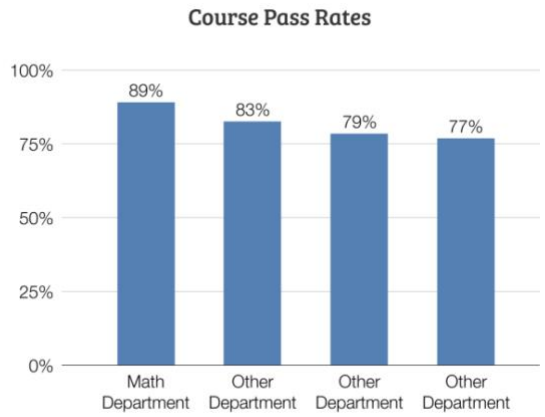
A survey of middle school math teachers in the district who adopted Desmos Math 7 and 8 after having used the Illustrative Mathematics print curriculum revealed an increase of 59% in the number of teachers who felt like Desmos Math 6–8 engaged students and an increase of 18% in the number of teachers who felt like Desmos Math 6–8 helped their students learn math.

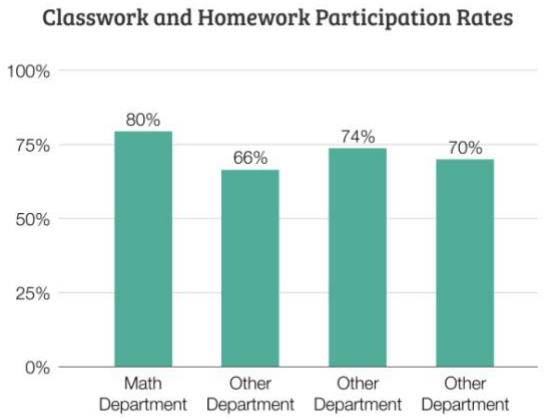
You can read more about the case study here.

Naugatuck Public Schools

In Naugatuck Public Schools, as with many school systems, students were struggling to engage with mathematics. Naugatuck wanted to see an increase in participation and course pass rates in mathematics, which typically trailed participation and pass rates in other academic departments.

Rather than scale their goals back in response to Covid-19, Naugatuck administrators, coaches, and teachers formed professional learning communities and adopted Desmos Math 6–A1. In a system-wide winter survey, the Naugatuck district administration found that mathematics participation and course pass rates had increased over previous years and exceeded rates in every other department.





Becky Moore, a Naugatuck math coach, and teacher, says, “These results were better than they’ve been even in typical years. Students remember concepts better, so teachers spend less time re-teaching and drilling. The curriculum works so well that teachers spend less time modifying it and more time collaborating in their PLCs.”

You can read more about the study here.