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Solving the Equation:

What Families Think About Math Instruction, Access, and Opportunity in New York

Why New York needs to urgently address math instruction and outcomes

edtrust NEW YORK

Solving the Equation:

What Families Think About Math Instruction, Access, and Opportunity in New York

By **Tierra Porter**, Policy Analyst and **Jeff Smink**, Deputy Director

Introduction

Foundational skills in literacy and math are the cornerstones of future student success. While education leaders across New York have begun to address literacy instruction and outcomes, math has been largely overlooked. Yet math has a profound impact on the ability of students to succeed in school, college, and career. A strong foundation in math can help students develop the critical thinking and problem-solving skills necessary to access advanced coursework and, ultimately, high-paying careers, particularly in the growing Science, Technology, Engineering, and Math (STEM) fields.

Unfortunately, state and federal assessment data reveal deeply troubling trends in New York student math outcomes, particularly for students of color and those from low-income backgrounds:

- On the 2024 National Assessment of Educational Progress (NAEP), New York's 4th grade math scores show that only 37% of students scored at or above Proficient, with 24% scoring Below Basic, meaning nearly one-fourth of New York students lack fundamental numeracy skills. Subgroup proficiency gaps remain wide: Black (22%) and Latinx (22%) students trail far behind White (45%) and Asian (61%) peers.
- New York now ranks 37th in the nation in Grade 4 math, a decline from its position two decades ago. In fact, NAEP trend data show that New York's fourth-grade math performance is no higher than it was in 1998.
- New York ranked 27th in the nation in Grade 8 math NAEP scores. Only 26% of all New York students scored Proficient, with a troubling 41% Below Basic—one of the highest Below Basic rates in the nation. Subgroup proficiency is even lower: Black (16%), Latinx (12%), White (35%), Asian (57%). The 2024 proficiency rate in New York is essentially unchanged from 25% in 2000.

New York ranks
37th
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New York ranks
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> **While education leaders across New York have begun to address literacy instruction and outcomes, math has been largely overlooked.**

- New York 2024 state test results reveal in Grade 4, only 58% of students statewide scored proficient (Levels 3-4), while 20% scored at Level 1, the lowest performance level. 47% of Black students, 46% of Latinx students, and 47% of economically disadvantaged students reached proficiency, compared with 65% of White students and 81% of Asian students; only 29% of students with disabilities met proficiency. By Grade 8, statewide proficiency remained essentially flat at 41%, with 39% of students again scoring at Level 1, 28% at Level 3, and only 13% achieving the highest level (Level 4).
- New York City's 2024 state test results (grades 3-8) show similar disparities: 81% of Asian students and 75% of White students met math proficiency, compared with only 43% of Black and 43% of Latinx students. Proficiency for students with disabilities remains at 29%, and ELLs/MLLs at 30%—reinforcing that the city and state continue to struggle with deep inequities in foundational math achievement that mirror statewide NAEP trends.

Statewide, only

47%

of Black students

46%

of Latinx students

47%

of economically disadvantaged students reached proficiency in Grade 4 math.

These stark outcomes and racial disparities reflect systemic inequities in access to high-quality math instruction and resources in New York. Given these outcomes and the importance of math skills to future student success, EdTrust-New York is launching a new initiative to better understand the math landscape across New York, starting with how families experience the quality of math instruction their children receive in school—and whether students are getting the support they need.

As a first step, we partnered with the MassINC Polling Group to learn how parents across the state perceive their children's math instruction, where they see gaps in school-provided support, and how opportunity gaps emerge through differences in socioeconomic status, access to resources, and experiences with school communication. These findings will help inform EdTrust-New York's math strategy and advocacy with state and local leaders to strengthen the math instruction that schools are responsible for providing.

Photo by Allison Shelley for EDUimages

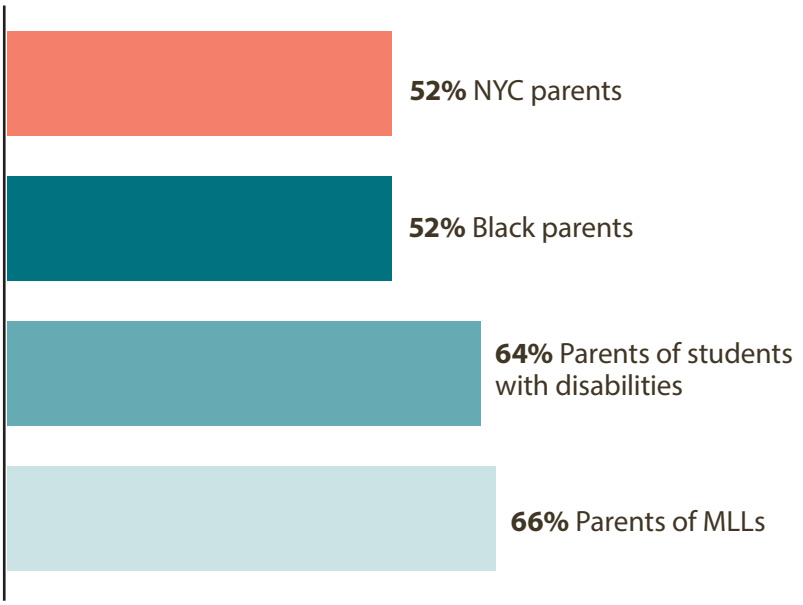
Key Findings

Finding 1

Parents express mixed confidence in their children's math progress and skills.

Across New York State, most parents feel their children can perform basic math calculations.

However, many parents are concerned about their child's progress in math. Concern was higher among Black parents, NYC parents, parents of students with disabilities, and parents of students who are multilingual learners (MLLs).



Only **53%**

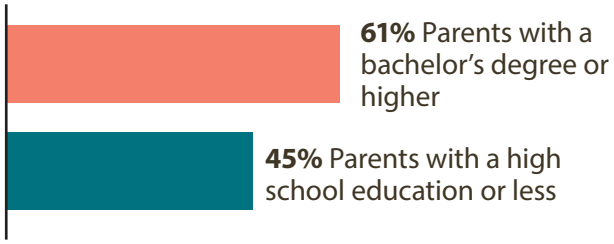
of parents say their child is "very confident" doing basic math.

43%

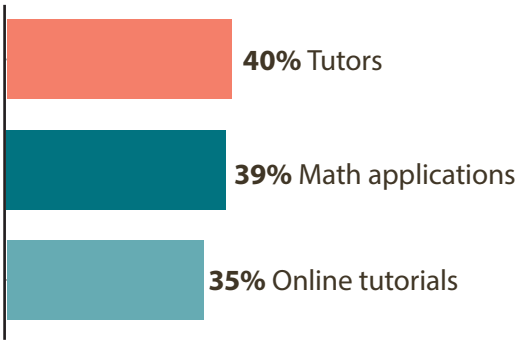
of parents are worried about their child's progress in math.

These two measures capture different dimensions of math learning: confidence reflects whether a child can perform foundational skills, while concern reflects whether that child is meeting grade-level expectations, keeping up with coursework, or progressing in a system that increasingly requires higher-level math. Many parents believe their child can hurdle basic math, yet still worry that they are falling behind in broader proficiency benchmarks. This pattern emerged consistently across the survey.

Parents' confidence is directly tied to household income and educational attainment. Families with a bachelor's degree or higher are much more likely to say they were "very confident" in their child's math work.



Even though 86% of parents say their child receives the math support they need in school, 39% still seek outside help. Among those who seek outside help, parents most commonly use:



This pattern demonstrates that many families feel schools are doing their best, yet their children require additional support that is not provided in school.

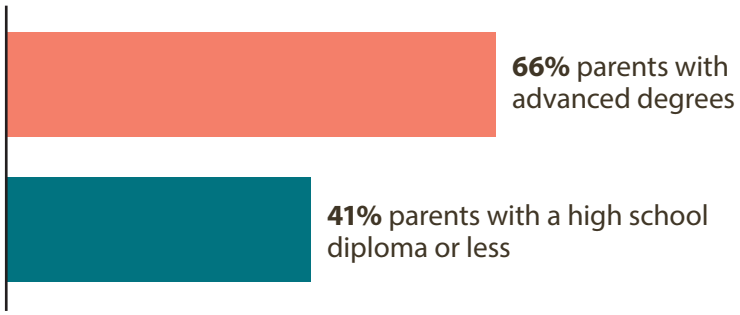
These results suggest that while most families believe their children are progressing, there is significant uncertainty—especially among parents with less formal education—about whether their child's math learning is on track. This finding supports research from Learning Heroes that reveals a significant gap between parents' perception of their child's grade level proficiency and their performance on state and local assessments.

Finding 2

Math identity and gender gaps mirror structural privilege.

Research—including findings from the *Math Identity & Narrative Project*—shows that feeling like a "math person" is not innate but shaped by early experiences, access to high-quality instruction, and supportive adults. Students who develop a positive math identity are far more likely to persist through challenging coursework, enroll in advanced classes, and access college and career opportunities—regardless of background. When certain groups of parents and children are disproportionately less likely to see themselves as "math people," it reflects systemic differences in exposure, expectations, and opportunity, not differences in ability. Math identity is heavily stratified by income, education, and gender, reinforcing longstanding inequities in who feels confident navigating the math pipeline.

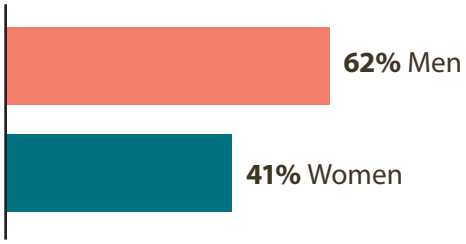
Parents with advanced degrees are nearly twice as likely as those with a high school diploma or less to identify as a "math person."



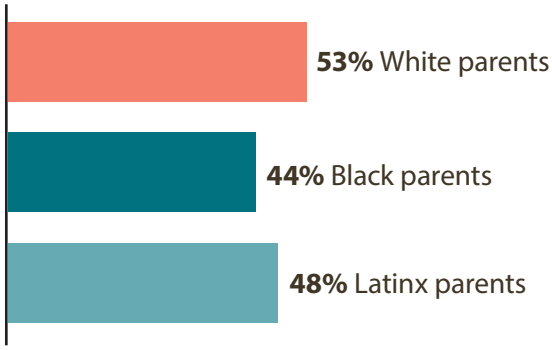
51%

of parents identify as a "math person," and 51% said their child would do the same

Men report higher math confidence than women, echoing persistent gender stereotypes about math abilities.



Gaps in who identifies as a "math person" by racial group exist — but are smaller than by income and education.

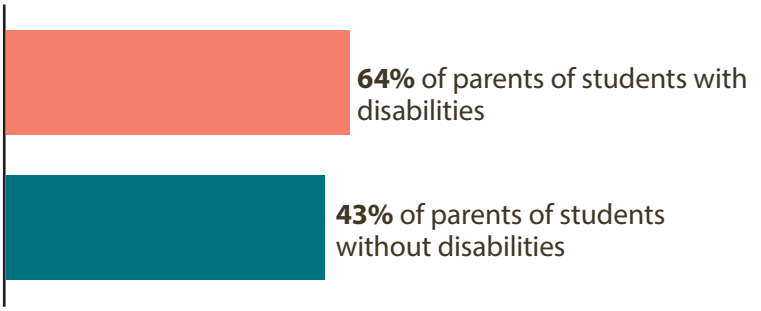


This pattern underscores that math identity is socially conditioned, not innate—research from the Math Narrative Project finds that parents' beliefs and messages about their own math capability significantly shape how their children view and engage with math. Families with greater access to education and resources are more likely to feel confident in math themselves, transmit that confidence to their children, and foster stronger math identities.

Finding 3

Students with disabilities face persistent gaps in math support, confidence, and school communication.

Parents of students with disabilities are significantly more concerned about their child's math progress:



Parents of students with disabilities seek outside help at much higher rates — showing lower confidence in supports and instruction at school.

56% *of parents of students with disabilities sought outside math help, compared to those without IEPs, indicating lower confidence that school-based instruction is sufficient.*

Parents of students with disabilities are more likely to cite cost as a barrier to accessing supplemental math help.

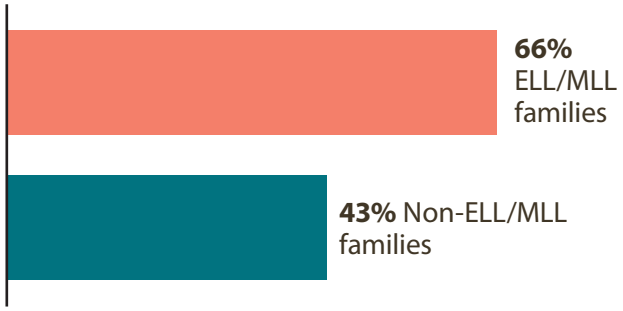
60% *of parents of students with disabilities cite cost as a barrier to getting outside math help.*

The findings illustrate systemic inequities that restrict students with disabilities' access to advanced math pathways, early Algebra opportunities, and long-term college-and career-aligned outcomes.

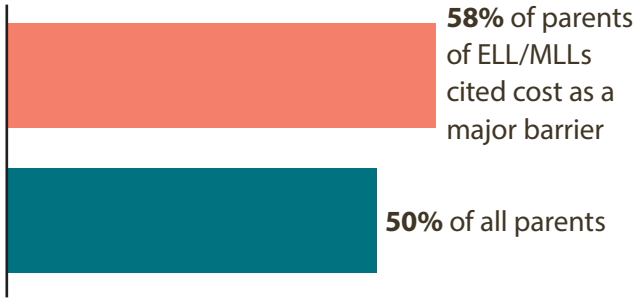
Finding 4

Parents of English Language Learners/Multilingual Learners (ELLs/MLLs) report high levels of concern and experience systemic barriers to math communication and support.

Parents of ELLs/MLLs express higher-than-average concern about their child's math progress:

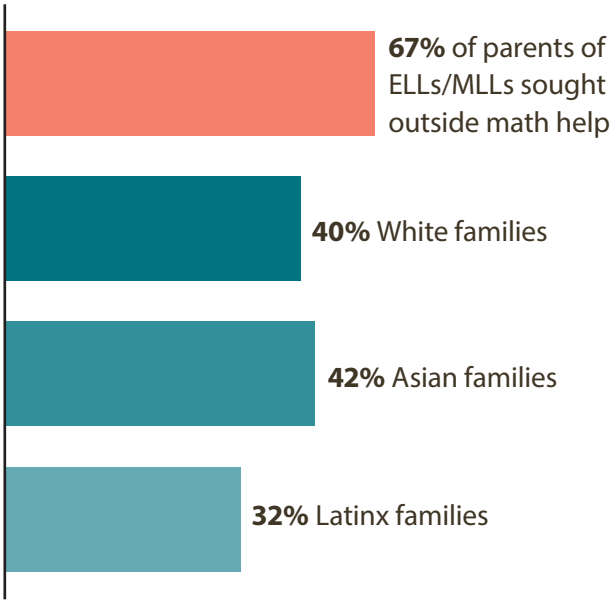


Parents of ELLs/MLLs report cost as a major barrier to accessing outside math help:



These gaps reduce early access to gateway courses like 8th grade Algebra I, limiting long-term opportunities in advanced coursework, STEM access, and college readiness.

Parents of ELLs/MLLs are more likely to report challenges supporting math at home, a pattern reflected in the fact that 67% of parents of ELLs/MLLs sought outside math help—one of the highest rates among all subgroups.



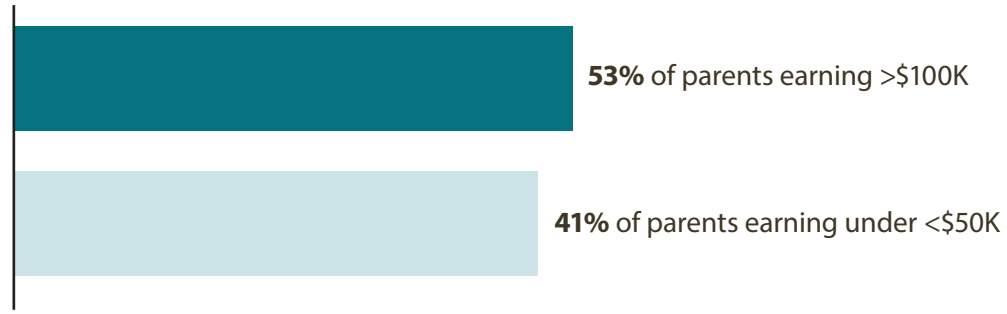
This elevated reliance on external support reflects the reality that school-based math resources often do not fully meet the unique instructional or language needs of ELL/MLL students.

Finding 5

Socioeconomic status divides parents' perception of math resources and supports available to their child.

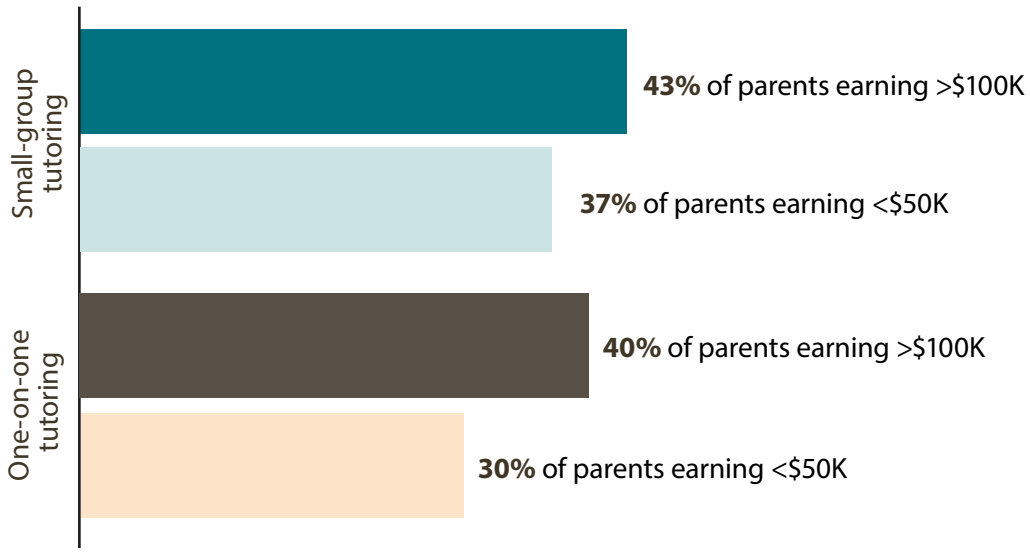
Across nearly every question about school-provided math support, the poll found that parental education and household income were the strongest predictors of whether families reported access to tutoring, intervention services, or online math tools.

Parents earning over $100,000 annually are significantly more likely to report that their child's school provides online math practice tools, compared to families earning under $50,000.



Percentage of parents reporting access to online math tools

Parents earning over $100,000 annually are also significantly more likely to report that their child's school provides small-group tutoring and one-on-one tutoring, compared with families earning under $50,000 annually.



Percentage of parents reporting access to small group and one-on-one tutoring

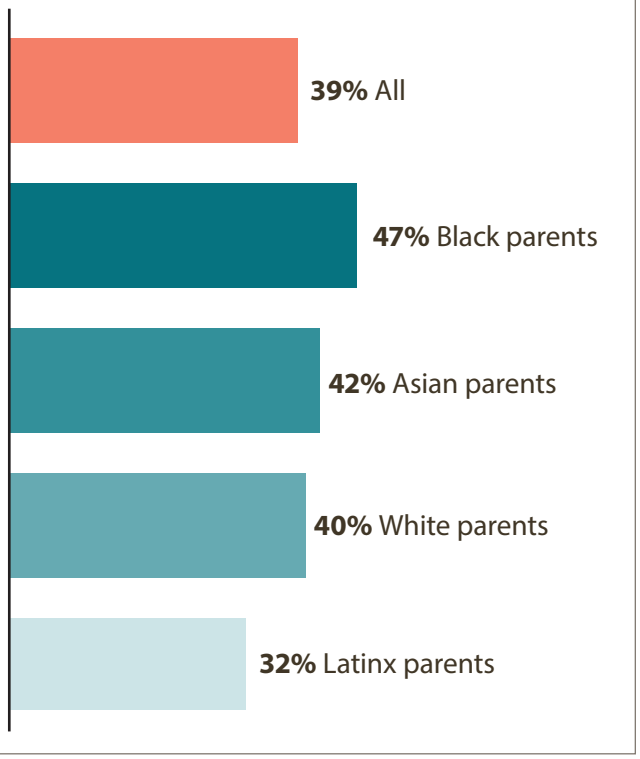
Finding 5

Socioeconomic status is the strongest driver of whether families report access to in-school math supports. These patterns show that additional math help provided by schools—tutoring, and intervention time is more readily available in schools for higher-income families while those with lower-incomes face consistent access barriers. This reinforces longstanding structural inequities that shape students' math opportunities long before they have an opportunity to enter advanced coursework.

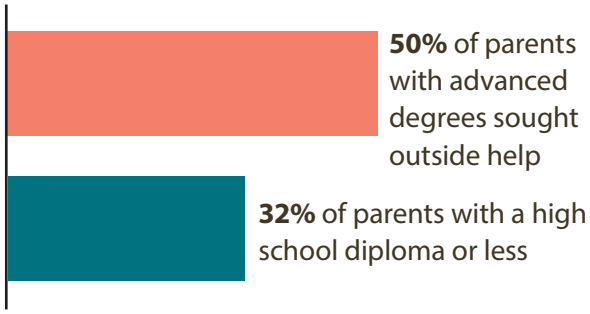
Finding 6

Seeking outside math help is common—but unequal.

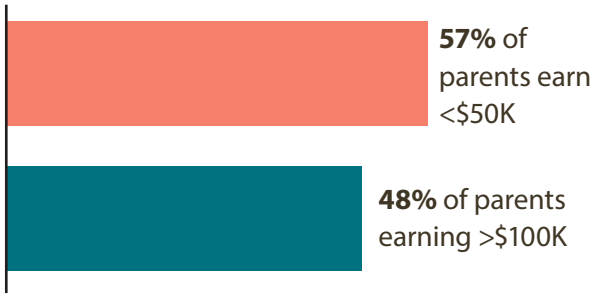
Statewide, 39% of parents have sought math help for their children outside of school. Latinx parents were the least likely to do so, often due to cost and access barriers reflected elsewhere in the poll.



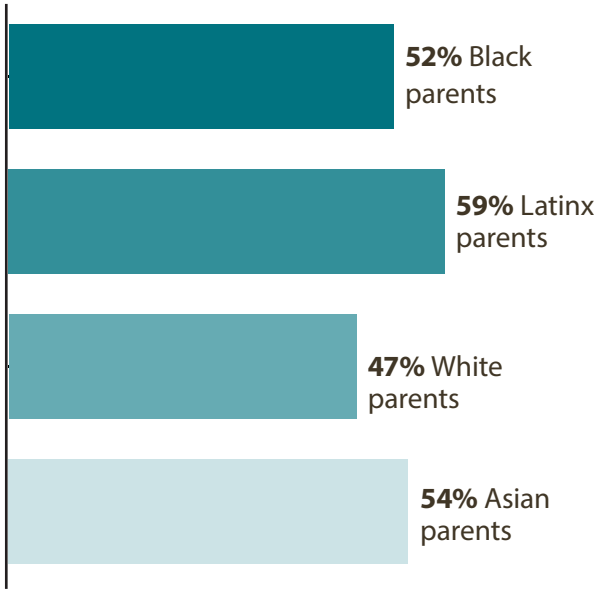
While Black parents have the highest rate of seeking outside help, a strong predictor of whether families access supplemental math support is parental education level:



Parents identify cost as a major factor in deciding what help to use, especially for parents earning lower incomes.

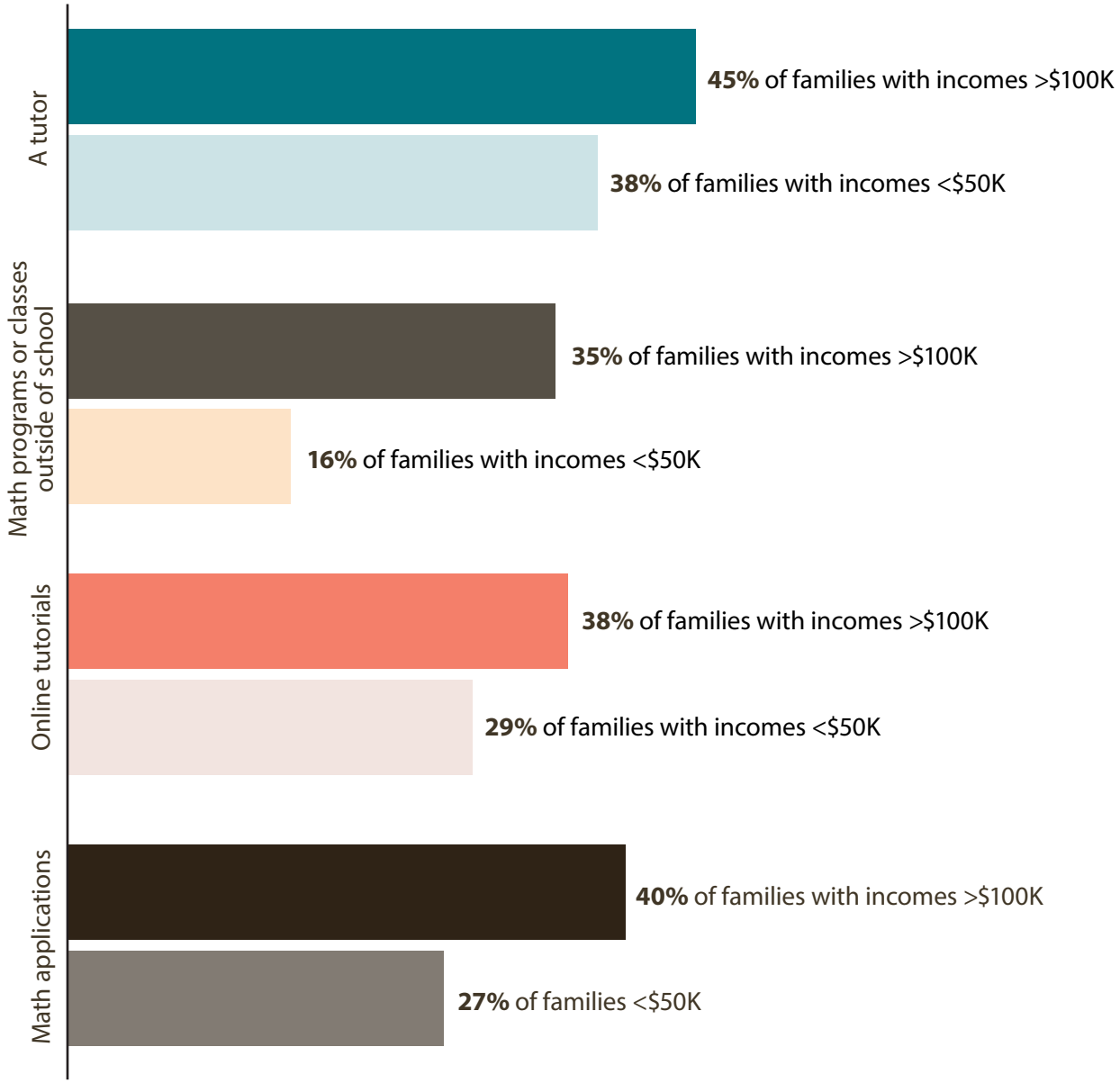


Cost concerns are more pronounced among Black, Latinx, and Asian parents, reinforcing inequities in who can access supplemental math support.



Finding 6

Household income above $100,000 correlates significantly with higher access to out-of-school resources and support.



This means that students from low-income backgrounds receive less math support, despite parents being just as likely—or more likely—to be concerned about progress.

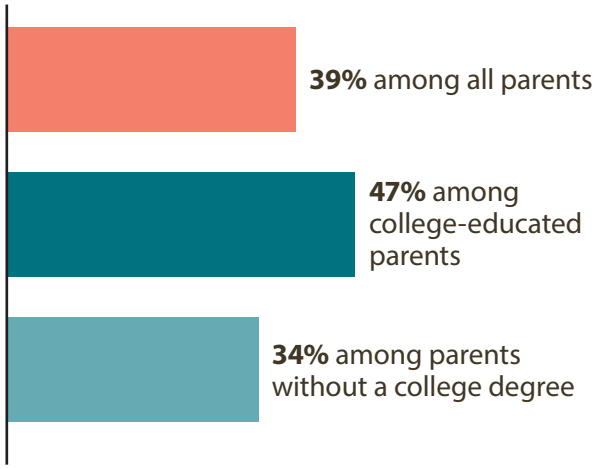
Together, these patterns show that although many families actively seek outside math support, those with fewer financial resources face disproportionate barriers, restricting access to the very help their children may need most. The result is a supplemental-learning landscape where opportunity is shaped not by a child's needs, but by a family's socioeconomic position and ability to pay.

Finding 7

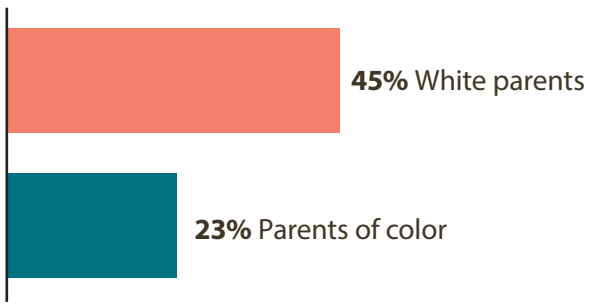
Gaps in course planning, information, and communication limit access to advanced math pathways.

Early math placement matters: While many factors impact students' opportunities and outcomes, research has shown students who pass Algebra I by 9th grade are twice as likely to graduate high school and are significantly more likely to enroll in and complete a bachelor's degree and access well-paid careers.

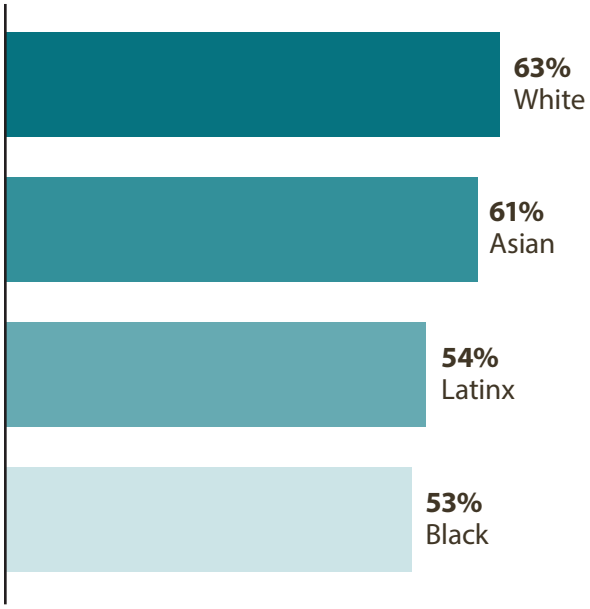
Parents of middle school students report that schools are not consistently informing them about what math courses their children should take in high school:



Parent participation in course selection is low and inequitable: Only 34% of parents of middle school students report taking part in math course planning, with significant gaps between White parents and parents of color.



Compliance with state advanced coursework notification law is inconsistent: Despite a 2023 New York law that EdTrust-New York and the New York Equity Coalition advocated for, requiring districts to annually inform families about advanced class opportunities, only 60% of parents report receiving this information, with differences across racial groups.

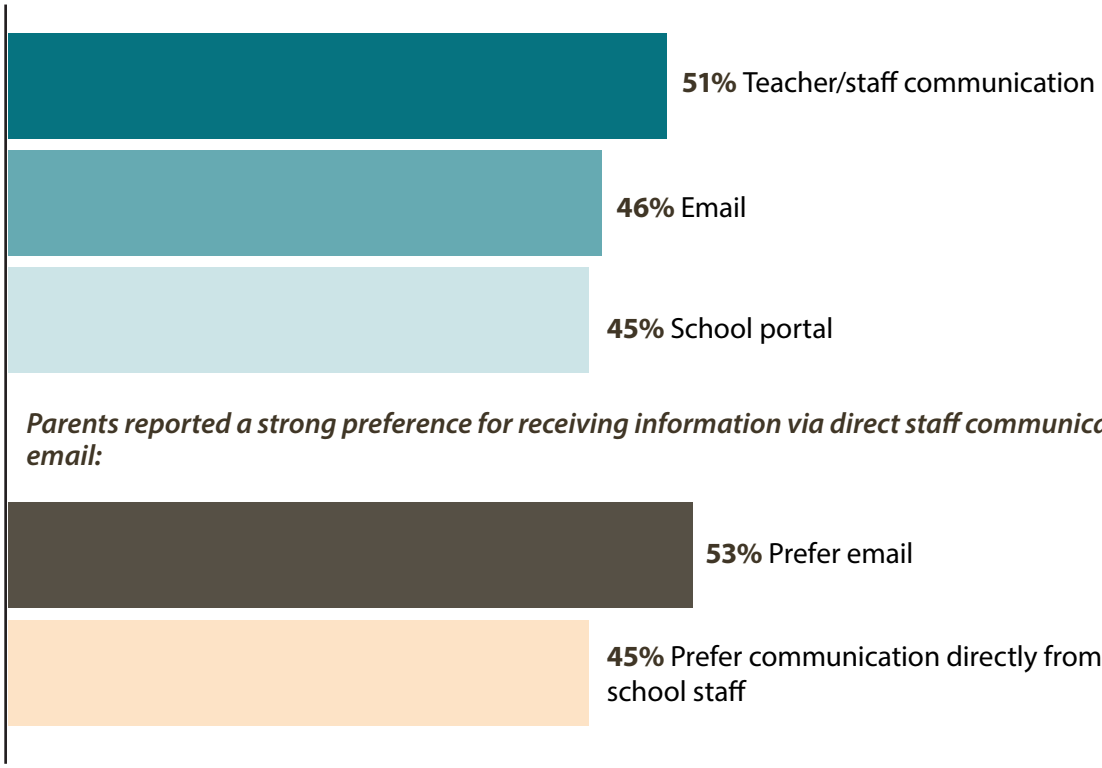


<$50,000

Families earning low-incomes and with lower education degrees face the sharpest information gaps: Parents of middle school students earning under $50,000 (43%) and those with a high school diploma or less (44%) are significantly less likely to receive required information.

Finding 7

Schools should take into account how parents prefer to receive communication. Among parents who received information, communication came most often through:



These early inequities compound over time: Families with less exposure to advanced coursework are less likely to learn about or access gateway courses like 8th-grade Algebra I, limiting access to the advanced math sequences tied to college readiness and long-term economic mobility.

Finding 8

Parents' limited understanding of Algebra I milestones and math pathways reinforces inequities in access to higher-level coursework.

Research consistently shows that students who take Algebra I by 8th or 9th grade are far more likely to take Calculus by graduation, resulting in a higher likelihood of obtaining a bachelor's degree, majoring in STEM fields, and securing well-paid careers.

Yet, early and equitable access to Algebra I is uneven across the state.

The poll reveals that most parents across New York lack clear information about these milestones:

Recent research from EdTrust-New York identified

20,000

*seventh graders who demonstrated readiness for **8th-grade Algebra I** through 7th grade math assessment scores, but were not enrolled in the course, reflecting systemic barriers, not student ability.*

Only **43%** of parents correctly identified that a student must take Algebra I in 8th grade or earlier to reach Calculus by 12th grade.

17% 

of parents report they did not know the correct timing at all.

Only **39%** of middle school parents statewide say their school discussed high school math course plans.

Participation in course selection with their students among White parents was **45%** vs. **23%** among parents of color.

Among high school parents,

Only **36%** report that their child took Algebra I in 8th grade or earlier—despite this being one of the strongest predictors of access to AP Calculus, AP Statistics, advanced STEM pathways, and competitive college admissions.

The Roots of Inequitable Access to Advanced Math

To better understand the roots of inequitable access to advanced math courses, the poll explored parents' knowledge of, experiences with, and expectations for Algebra I and other advanced coursework. The findings reveal clear and persistent disparities across income, race, and education level, show how early exposure to college pathways shapes understanding of the system, and reveal long-standing gaps in advanced course placement that further reinforce inequities in the math pipeline.

Among high school parents whose children had not taken Algebra yet, families earning

Over $100,000

are significantly more aware (29%) of early Algebra requirements.

vs.

Among high school parents whose children had not taken Algebra yet, families earning

Under $50,000

are significantly less aware (0%) of early Algebra requirements.

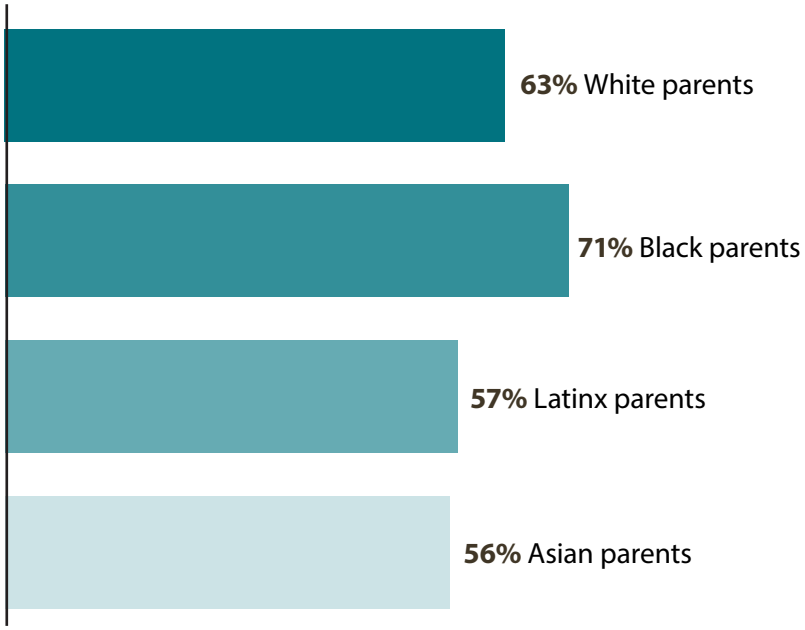
When families have limited information about these milestones, combined with inconsistent school communication, students who could succeed in advanced math are denied opportunities to be placed, enrolled, or even know that the pathway exists.

These findings demonstrate that information gaps, not student ability, drive many of the disparities in advanced math participation, and that ensuring families have timely, clear guidance can unlock students' full potential.

Finding 9

Awareness of NYC Solves, a systemwide high-quality math instruction initiative in New York City Public Schools, remains low—but interest is high.

Only 31% of New York City (NYC) parents of grades 6-12 students had heard of the city's NYC Solves before the survey. Once informed, support was strong across all racial groups—with 61% of parents saying they strongly support the initiative. This high level of endorsement was consistent across subgroups:



These findings demonstrate that NYC Solves has broad, public backing once families understand its purpose and goals. This gap underscores the need for more transparent communication about this initiative, especially in communities that have historically been excluded from policy discussions and information about math instruction and supports in school.

> These findings demonstrate that NYC Solves has broad, public backing once families understand its purpose and goals.

Finding 10

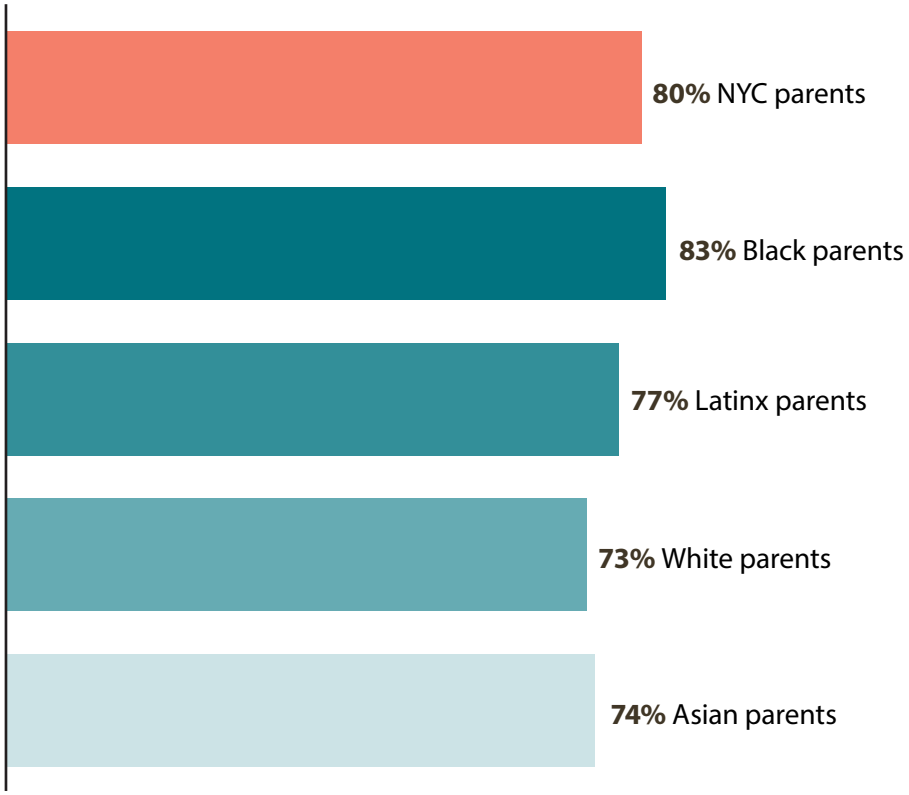
Parents overwhelmingly support statewide math reform.

New York State currently provides no guidance or requirements for districts on the selection of math curriculum, yet large majorities of parents favor statewide efforts to standardize and strengthen math instruction:

80%

of parents support requiring schools to use evidence-based math curriculum, with 50% indicating strong support.

Parents overwhelmingly support providing a state-vetted list of high-quality math curriculum options, with 75% expressing support for this approach. Support was highest among Black, Latinx, and NYC parents, indicating strong alignment across racial groups around ensuring consistent, evidence-based math instruction for all children.



Recommendations

In 2023, EdTrust-New York and our partners launched a comprehensive, statewide effort to address New York's literacy crisis. That work was grounded in a statewide parent poll that provided critical insights into students' and families' experiences, helping to inform concrete progress, including the passage of the Back to Basics law, increased resources for teacher professional development in literacy instruction, and more. This new poll marks the first step in a similar effort to tackle the challenges in math. It is part of EdTrust-New York's initiative to build awareness, urgency, and solutions to the math challenges facing students and educators across the state. Building on the information provided by parents in this poll and our literacy work, we recommend the following investments in New York's upcoming budget, starting with:

Coaching for Educators:

- States such as Alabama and North Carolina have successfully addressed poor math outcomes by providing math coaches to support high-quality instruction in the classroom, with a focus on high-need districts. We propose an initial state investment of **$20 million** to provide a qualified math coach for up to 200 high-need elementary schools across the state.

High-Impact Tutoring:

- Students in grades 6-9 continue to be impacted by pandemic-related unfinished learning, as evidenced by recent state assessment data showing only 41% of 8th graders proficient in math. High-impact tutoring is a proven strategy to improve student math outcomes. We propose a **$5 million** investment that would support evidence-based, high-impact math tutoring for grades 6-9 in up to 25 high-need districts across the state.

Auto Enrollment in 8th grade Algebra I:

- Increasing access to Algebra I for qualified 8th graders is a proven strategy to improve student outcomes, address systemic equity barriers, and put more students on track to take calculus and other advanced math courses in high school, preparing them for postsecondary opportunities in STEM. To address this issue in New York, we are proposing an **$8.5 million** investment in competitive grants to districts that currently do not offer 8th grade Algebra I access to all qualified 7th graders. Grants will be used to offer new Algebra I classes to more 8th graders and include support for students and educators to help with the transition.

In addition to these budget proposals, EdTrust-New York is calling on New York City Public Schools to continue their investment in NYC Solves, a districtwide initiative that provides high-quality instructional materials along with professional learning and coaching for teachers. This districtwide initiative builds on the success of NYC Reads, a similar initiative focused on literacy, which launched in 2023-24 and is already showing promising results.

Specifically, NYCPS should:

- **Maintain NYC Solves:** This should include shared high-quality curriculum, universal screening and intervention support, ongoing professional learning for educators and citywide school-community partnerships.
- **Invest in Teachers:** Train all teachers in evidence-based math instruction and best practices for integrating social-emotional learning into math instruction.

Conclusion and Next Steps

The latest NAEP and state assessment data make clear that New York is facing a deepening math crisis, driven by decades of systemic inequity, particularly impacting Black, Latinx, Native American, Asian American and Pacific Islander students, as well as students from low-income backgrounds. New York's leaders must continue to invest in evidence-based math instruction across all grade levels to meet this moment.

New York's recent efforts to make literacy a statewide priority have provided a strong foundation for understanding how improvements in math instruction can be achieved in New York. This year, EdTrust-New York will continue to build the case for this important work. We are developing a comprehensive landscape study to assess the current state of student math outcomes and evidence-based math instruction and curriculum in New York, including initial recommendations for improvement. We look forward to collaborating with stakeholders statewide to prioritize math instruction and drive improved student outcomes in the years ahead.