

Math Nation Teacher Survey: Spring 2023 External Report

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Introduction

Math Nation, a program within Accelerate Learning, provides comprehensive digital and print resources for students, families, and teachers. Math Nation features engaging, Study Expert-led videos, digital practice problems, and teacher-specific supports for 6-8th grade math, Algebra 1, Geometry, Algebra 2, and SAT/ACT and more. Math Nation is committed to respond to the needs of all students and educators with innovative online tools and resources, a flexible platform that can be used both in or outside the classroom, and continual development of new learning tools and techniques.

To support this goal of continuous improvement, Accelerate Learning desires input from Math Nation users to better understand what Math Nation is doing well and what challenges still exist. To gather such information, Accelerate Learning partnered with WestEd, a nonprofit education research organization, to create and implement a teacher survey in the spring of 2023. The current report discusses findings and conclusions from analysis of this survey.

Methods

WestEd and Accelerate Learning co-created a survey in the winter of 2022-2023. Both organizations collaboratively iterated on the conceptual design, wanting to ensure the survey produced the most meaningful results for improvements to Math Nation. Ultimately, the survey focused on the following key areas:

- Teacher and school demographics
- Years of experience with Math Nation
- Math Nation usage frequency, in the classroom and at home
- Teachers' perceptions on the following:
 - General benefits of Math Nation access
 - Specific benefits of Math Nation to students
 - Specific benefits of Math Nation to teachers
 - Specific features of Math Nation
 - Overall impressions of Math Nation

In addition, the survey asked teachers to select the tools that they feel are most effective for improving students' success in Math as well as their most important reasons for using Math Nation.

WestEd researchers sent the survey through SurveyMonkey to approximately 106,000 emails of active Math Nation teachers, identified by Accelerate Learning. The survey was open for approximately three weeks, at which point WestEd closed the survey and extracted the data and conducted the analyses.

Results

WestEd received responses from 2,158 participants. Descriptive statistics showed that many of the respondents were not using Math Nation for a large variety of reasons (e.g., they were coordinators not teachers or they were not familiar with Math Nation). These respondents were filtered out, leaving 952 respondents in the analytic sample.

Demographics

Respondents represented 16 states, with the majority coming from Florida (40%), South Carolina (25%), and Mississippi (18%). They reported the following characteristics:

- About 91% of the respondents reported teaching at a public school, 7% at a public charter school, 1% at a private school, and < 1% teaching at a parochial school.
- Approximately 37% of the respondents described their school district as suburban, 28% as urban, and the remaining 36% as rural.
- 49% reported teaching at a large school (800 or more students), 39% reported teaching at a medium size school (300-799 students), and 12% at a small size school (less than 300 students).
- Respondents reported having a wide range of teaching experience, but the sample overall consisted of experienced teachers, with a mean of 14 years of experience and a standard deviation of 9 years.
- 455 respondents reported teaching middle school grades (only), 399 reported teaching high school grades (only).
- 64% identified as White or Caucasian, 25% identified as Black or African American, 4% as Hispanic, 3% as Asian or Pacific Islander, 1% as American Indian or Alaskan Native, and 3% as multi-ethnic.

- 80% of respondents identified as female.
- 7% reported that they have taught using Math Nation for less than a year, 56% for 1-2 years, 19% for 3-4 years, and 18% for 5 or more years.
- Regarding students' access to technology at school, 78% reported that their students have 1-to-1 devices (1 device for every 1 student) in the classroom, 16% reported that their students have access to a device at home with internet access, 13% reported that their students are able to bring personal mobile devices for use in the classroom, 10% reported that their students have computers in other rooms at school (e.g. computer labs, school library), and 8% reported that their students have access to a limited number of computers in the classroom.

Math Nation Usage

Respondents reported a range of use of Math Nation, both in the classroom and at home (see Table 1). Note that 144 respondents reported not knowing how often Math Nation was used at home, so are not represented in Table 1.

Table 1. Teachers' Reported Frequency of Use of Math Nation

		Frequency of Use at Home				
		Never	About once per week	About 2-3 times per week	Almost every day	Every day
Frequency of Use in the Classroom	Never	0	12	2	0	2
	About once per week	114	142	27	4	1
	About 2-3 times per week	31	62	60	11	1
	Almost every day	20	31	46	28	3
	Every day	20	25	48	34	34

Descriptive Results

This section highlights some of the descriptive results of the survey.

Teachers' Perceptions of Math Nation

Teachers were asked to rate their perceptions of Math Nation on a list of prompts, using a 4-point Likert scale, ranging from strongly agree to strongly disagree. Highlights of teachers' perceptions of Math Nation are listed below. See Table 2 for the full list of results.

General Benefits of Math Nation Access

- 94% of teachers agree or strongly agree that: Math Nation makes math learning more accessible to my students outside of school hours.
- 91% agree or strongly agree that: Math Nation helps fill learning needs when students do not have access to, or cannot afford, private tutoring.

Specific Benefits of Math Nation to Students

- 92% agree or strongly agree that: using Math Nation increases students' mathematics knowledge and reasoning.
- 90% agree or strongly agree that: Math Nation has helped or will help increase my students' standardized test scores.
- 93% agree or strongly agree that: Math Nation helps students prepare for future math courses.
- 92% agree or strongly agree that: Math Nation helps provide students with a good math foundation, which can ultimately help with college readiness.

Specific Benefits of Math Nation to Teachers

- 94% agree or strongly agree that: Math Nation assumes all students are capable of learning and doing interesting mathematics.

Specific Features of Math Nation

- 95% agree or strongly agree that: Math Nation uses real-world concepts with which students can relate.
- 91% agree or strongly agree that: the connections between different mathematical ideas were made explicit for students in the Math Nation videos and materials.
- 95% agree or strongly agree that: Math Nation's content was as up-to-date as possible.

Overall Impressions of Math Nation

- 94% agree or strongly agree that: Math Nation staff is highly responsive and helpful in addressing my needs.
- 91% agree or strongly agree that: I would recommend Math Nation to my colleagues.
- 92% agree or strongly agree that: I want the teachers and students in my district to have access to Math Nation next year.

Table 2. Teachers' Perceptions of Math Nation

	Strongly Agree	Agree	Disagree	Strongly Disagree	Strongly Agree or Agree
Access					
Math Nation makes math learning more accessible to my students outside of school hours.	43.5%	50.2%	4.6%	1.7%	93.7%
Math Nation helps/helped my students to fill learning gaps from the COVID-slide.	31.8%	52.9%	12.3%	3.0%	84.7%
Math Nation helps fill learning needs when students do not have access to, or cannot afford, private tutoring.	36.6%	54.1%	7.5%	1.8%	90.7%
Student Benefits					
Math Nation increases my students' confidence in their ability to learn math.	27.4%	59.2%	11.1%	2.2%	86.6%
Using Math Nation increases students' mathematics knowledge and reasoning.	32.9%	59.3%	6.4%	1.4%	92.2%
Math Nation has helped or will help increase my students' standardized test scores.	31.6%	58.4%	8.8%	1.2%	90.0%
Math Nation helps students prepare for future math courses.	33.6%	59.6%	5.3%	1.4%	93.2%
Math Nation helps provide students with a good math foundation, which can ultimately help with college readiness.	33.5%	58.3%	6.7%	1.5%	91.8%
Math Nation increases students' interests in a future math or STEM-related career.	26.8%	55.4%	16.0%	1.8%	82.2%
My students enjoy using Math Nation more than other resources.	24.8%	50.8%	19.3%	5.1%	75.6%

Table 2 (continued). Teachers' Perceptions of Math Nation

	Strongly Agree	Agree	Disagree	Strongly Disagree	Strongly Agree or Agree
Teacher Benefits					
Math Nation helps me address the need for individualized instruction	31.5%	54.6%	11.5%	2.4%	86.1%
Math Nation is beneficial for substitute teaching ensuring students can learn at a high level in the absence of their primary teacher.	35.8%	49.9%	11.8%	2.6%	85.7%
Math Nation assumes all students are capable of learning and doing interesting mathematics.	39.4%	54.8%	4.6%	1.2%	94.2%
Math Nation Features					
Math Nation uses real-world concepts with which my students can relate.	36.8%	57.7%	4.4%	1.1%	94.5%
Math Nation videos are engaging and hold students' interest.	28.1%	58.1%	11.6%	2.2%	86.2%
The connections between different mathematical ideas were made explicit for students in the Math Nation videos and materials.	29.8%	61.2%	7.9%	1.1%	91.0%
Math Nation's content was as up-to-date as possible.	36.4%	58.5%	3.7%	1.4%	94.9%
The Student Wall is a great online math community for my students.	28.4%	55.7%	13.2%	2.8%	84.1%
The Teacher Wall is a collaborative math community I use to advance my teaching practice.	26.7%	52.7%	17.5%	3.1%	79.4%
Math Nation Overall					
Math Nation staff is highly responsive and helpful in addressing my needs.	36.7%	57.5%	4.6%	1.2%	94.2%
I would recommend Math Nation to my colleagues.	40.2%	50.6%	5.9%	3.3%	90.8%
I want the teachers and students in my district to have access to Math Nation next year.	42.5%	49.1%	5.1%	3.2%	91.6%

Most Effective Tools

When teachers were asked to select the four most effective tools for improving students' success in math, the following received the highest number of votes:

1. The Check Your Understanding Tool (53%)
2. Study Expert videos (51%)
3. The Test Yourself Tool (45%)
4. Consumable student workbooks that accompany the Study Expert videos (33%).

See Table 3 for the full list of results.

Table 3. Teachers' Selected Most Effective Math Nation Tools

Math Nation Tools	Votes	Percent
The Check Your Understanding Tool	501	52.6%
Study Expert videos	479	50.3%
The Test Yourself Tool	427	44.9%
Consumable student workbooks that accompany the Study Expert videos	314	33.0%
The Student Tutoring Wall	270	28.4%
EdgeXL Practice and Assessment Generator Tool	214	22.5%
The Teacher Wall	206	21.6%
Personalized, adaptive On-Ramp Learning Tools	157	16.5%
ACT Prep Course	138	14.5%
Math in Action: On-location video and activity series	127	13.3%
PSAT and SAT Prep Course	108	11.3%

Most Important Reasons for Using Math Nation

When asked to select the four most important reasons teachers chose to use Math Nation, the following received the highest number of votes:

1. It is all accessible online. (62%)
2. It is aligned to my state's standards. (53%)
3. The digital workbooks and consumable workbook have the same lessons, making the resource versatile. (43%)
4. It provides students the ability to choose from a variety of Study Experts with diverse backgrounds that my students can relate to. (38%)

See table 4 for the full list of results.

Table 4. Teachers' Most Important Reasons for Using Math Nation

Reasons for Using Math Nation	Votes	Percent
It is all accessible online.	587	61.7%
It is aligned to my state's standards.	500	52.5%
The digital workbooks and consumable workbook have the same lessons, making the resource versatile.	405	42.5%
It provides students the ability to choose from a variety of Study Experts with diverse backgrounds that my students can relate to.	362	38.0%
It provides rigorous practice.	339	35.6%
It allows my students to receive tutoring at night and on the weekends.	211	22.2%
It follows the Illustrative Mathematics curriculum (6th-8th grade only)	166	17.4%
It gives me reliable reports on student activity and progress.	162	17.0%
The accessibility of the mobile app (i.e. available on all devices, ability for students to download videos and watch them offline)	121	12.7%
The training and professional development	72	7.6%
The customer service	32	3.4%

Conclusions

Overall, the results of this survey demonstrated highly positive perceptions of Math Nation from teachers. The majority of teachers reported positive perceptions regarding the general accessibility of Math Nation, specific benefits of Math Nation to students and teachers, as well as specific features of Math Nation.