



# ST. LOUIS PARK PUBLIC SCHOOLS

## EFFICACY STUDY



*Do The Math*® is a supplemental program intended to assist students in Grades K–5 who are struggling with fundamental arithmetic skills. The program is organized into 13 scaffolded modules that focus on building fluency with whole numbers and fractions. Through a series of 30-minute lessons, *Do The Math* offers comprehensive teacher support and step-by-step instructions aimed at helping students develop the skills and number sense they need to accurately and efficiently compute and reason and to apply their skills and reasoning to solve problems.

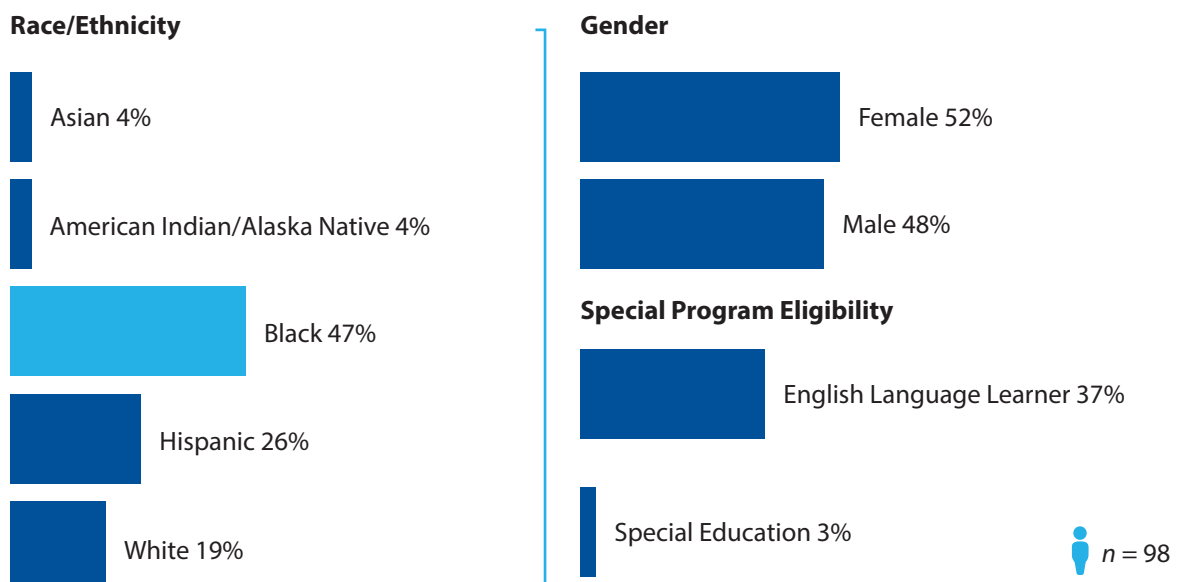
This evaluation involved 92 students in Grades 3–5 who were enrolled in *Do The Math* in 2016–2017 in St. Louis Park Public Schools in Maryland. The evaluation sought to answer the following question: **How do *Do The Math* students perform on the NWEA MAP assessment and on *ProgressSpace* end-of module assessments?**

## METHODS

### SAMPLE

St. Louis Park Public Schools serves approximately 4,500 students in kindergarten through Grade 12 and has 4 elementary schools, 1 middle school, and 1 high school. This study includes 98 students from 4 elementary schools who were enrolled in *Do The Math* in 2016–2017 in Grades 3–5. Thirty-five of these 98 students were also enrolled in *Do The Math* the prior year, in 2015–2016. Figure 1 presents the demographic characteristics of the sample.

**FIGURE 1. STUDENT DEMOGRAPHICS**





## MEASURES

The **NWEA Measures of Academic Progress (MAP) Growth** assessment measures student mathematics skills. This computer adaptive assessment was administered in fall and spring to *Do The Math* students. Results are reported in Rasch Units (RIT), which are equal interval scale scores. Table 1 presents MAP Growth norms for fall, spring, and fall to spring growth.<sup>1</sup>

**TABLE 1. NWEA MAP STUDENT GROWTH NORMS: MATHEMATICS**

GRADE	FALL		SPRING		FALL TO SPRING GROWTH	
	MEAN	SD	MEAN	SD	MEAN	SD
3	190.40	13.10	203.40	13.81	12.99	6.47
4	201.94	13.76	213.49	14.97	11.55	6.41
5	211.44	14.68	221.36	16.18	9.92	6.80

**ProgressSpace** is a *Do The Math* embedded assessment used for making instructional decisions and measuring student success. Table 2 summarizes the modules that *Do The Math* students engaged in as measured by completion of both a beginning - and end-of-module *ProgressSpace* assessment.

**TABLE 2. DO THE MATH PROGRESSSPACE BY GRADE**

GRADE	ADDITION AND SUBTRACTION	MULTIPLICATION	DIVISION	FRACTIONS
3	Module B Module C	Module A	Module A	Module A
4	Module C	Module B Module C	Module A Module B	Module A
5		Module C	Module B	Module A

**Note.** Only one student completed a beginning- and end-of-module assessment for Addition and Subtraction Module C and Multiplication Module B.

<sup>1</sup>Thum Y. M., & Hauser, C. H. (2015). NWEA 2015 MAP Norms for Student and School Achievement Status and Growth. NWEA Research Report. Portland, OR: NWEA, Table A.1 (p. 55).

# FINDINGS

This section presents the results of analyses that examine *Do The Math* students' (a) growth on NWEA MAP mathematics assessment scores, and (b) change between beginning- and end-of-module *ProgressSpace* assessments.

## MAP GROWTH

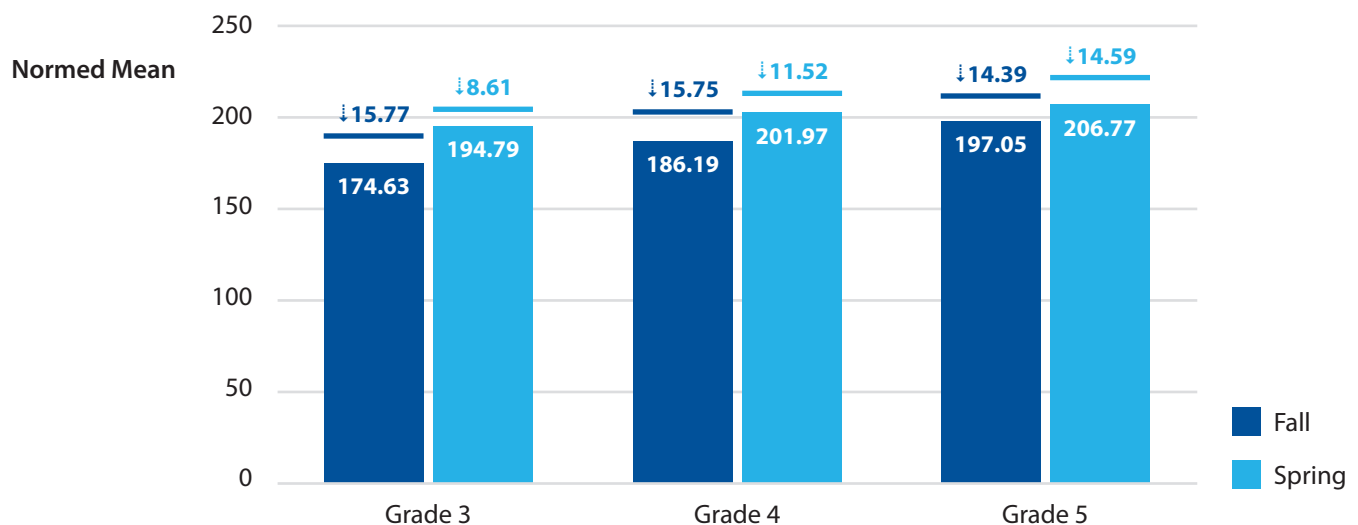
Table 3 presents *Do The Math* students' 2016–2017 NWEA MAP RIT scores for fall and spring, observed fall to spring growth and the projected fall to spring growth by grade level. **Students' actual fall to spring growth exceeded the projected growth for all 3 grade levels.**

**TABLE 3. NWEA MAP MATHEMATICS RIT SCORE GAINS**

GRADE	n	FALL 2016		SPRING 2017		FALL TO SPRING GROWTH		PROJECTED GROWTH	
		MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
3	44	174.63	28.48	194.79	13.28	<b>20.05</b>	25.34	12.99	6.47
4	32	186.19	34.67	201.97	8.80	<b>15.78</b>	32.68	11.55	6.41
5	22	197.05	7.48	206.77	9.30	<b>10.65</b>	8.03	9.92	6.80

Figure 2 displays *Do The Math* students' 2016–2017 MAP RIT scores in fall and spring by grade level. *Do The Math* students' fall and spring RIT scores are below the nationally normed mean for each grade level. However, in Grades 3 and 4 the difference between *Do The Math* students' RIT scores and the nationally normed mean declined between fall and spring (from 15.77 to 8.61 in Grade 3 and from 15.75 to 11.52 in Grade 4).

**FIGURE 2. NWEA MAP MATHEMATICS RIT SCORES**





## PROGRESSSPACE

Table 4 presents *Do The Math* students' mastery of content from the beginning- to end-of-module *ProgressSpace* assessment. On average, within each topic students were completing approximately half of the items correctly on the beginning-of-module assessment and made gains of more than 25% between the beginning- and end-of-module assessment. All increases were statistically significant. **Overall students achieved the greatest percent increase in content mastered (38%) in Multiplication.**

**TABLE 4. DO THE MATH PROGRESSSPACE ASSESSMENT SCORES**

TOPIC	n	BEGINNING		END		GAIN	
		ITEMS CORRECT	PERCENT CORRECT	ITEMS CORRECT	PERCENT CORRECT	ITEMS	PERCENT
Addition and Subtraction	33	9.70	48%	16.03	80%	6.33	32%
<b>Multiplication</b>	<b>37</b>	<b>9.89</b>	<b>49%</b>	<b>17.57</b>	<b>88%</b>	<b>7.68</b>	<b>38%</b>
Division	42	9.64	48%	16.19	81%	6.55	33%
Fractions	41	8.39	42%	13.85	69%	5.46	27%

**Note.** Multiple modules within a topic are combined.

Appendix A presents *Do The Math* students' mastery of content from the beginning- to end-of-module *ProgressSpace* assessments by grade level. Grade level specific findings include:

- Of the 4 topics, Grade 3 students achieved the greatest percent increase in content mastered in Multiplication (43%) and Division (45%), with students' end-of-module performance in these topics reaching 90% and 88%, respectively.
- On the end-of-module assessment within each topic, Grade 4 students completed, on average, 75% or more of the items correctly, with students' end-of-module performance highest in Multiplication (86%).
- On the end-of-module assessment within each topic, Grade 5 students answered, on average, 72% or more of the answers correctly, with students' end-of-module performance highest in Multiplication (87%).



# SUMMARY

This study of 98 students who were enrolled in *Do The Math* in Grades 3–5 in 2016–2017 sought to measure how *Do The Math* students performed on the NWEA MAP and *ProgressSpace* end-of module assessments after participating in *Do The Math*. Findings revealed that *Do The Math* students' made significant progress from fall to spring on the NWEA MAP mathematics assessment, with students exceeding the fall-to-spring projected growth for all 3 grade levels. Additionally, in 2 of the 3 grades, the difference between *Do The Math* students' NWEA MAP RIT scores and the nationally normed mean declined between fall and spring. Analyses of *ProgressSpace* assessment data also showed significant gains in performance as measured by beginning- and end-of-module assessments. While significant gains were evident for all topics (Addition and Subtraction, Multiplication, Division, and Fractions), the greatest gains were observed for Multiplication. These findings suggest that students in the study benefited from their participation in *Do The Math*.

## APPENDIX A PROGRESSSPACE GRADE LEVEL RESULTS

**TABLE A1. DO THE MATH PROGRESSSPACE ASSESSMENT SCORES: GRADE 3**

TOPIC	n	BEGINNING		END		GAIN	
		ITEMS CORRECT	PERCENT CORRECT	ITEMS CORRECT	PERCENT CORRECT	ITEMS	PERCENT
Addition and Subtraction	32	9.69	48%	16.00	80%	6.31	32%
Module B	27	9.85	49%	16.37	82%	6.52	33%
Module C	5	8.8	44%	14	70%	5.2	26%
<b>Multiplication</b>	<b>18</b>	<b>9.33</b>	<b>47%</b>	<b>17.94</b>	<b>90%</b>	<b>8.61</b>	<b>43%</b>
<b>Division</b>	<b>11</b>	<b>8.09</b>	<b>40%</b>	<b>17</b>	<b>85%</b>	<b>8.91</b>	<b>45%</b>
Fractions	9	6.78	34%	9.89	49%	3.11	16%



**TABLE A2. DO THE MATH PROGRESSSPACE ASSESSMENT SCORES: GRADE 4**

TOPIC	n	BEGINNING		END		GAIN	
		ITEMS CORRECT	PERCENT CORRECT	ITEMS CORRECT	PERCENT CORRECT	ITEMS	PERCENT
Addition and Subtraction	1	10.00	50%	17.00	85%	7.00	35%
<b>Multiplication</b>	<b>16</b>	<b>10.25</b>	<b>51%</b>	<b>17.19</b>	<b>86%</b>	<b>6.94</b>	<b>35%</b>
Module B	1	15.00	75%	19.00	95%	4.00	20%
Module C	15	9.93	50%	17.07	85%	7.13	36%
Division	15	10.73	54%	15.87	79%	5.13	26%
Module A	9	11.00	55%	16.44	82%	5.44	27%
Module B	11	10.09	50%	15.09	75%	5.00	25%
Fractions	13	8.69	43%	15.69	78%	7.00	35%

**Note.** Only one student completed a beginning- and end-of-module assessment for Addition and Subtraction Module C and Multiplication Module B.

**TABLE A3. DO THE MATH PROGRESSSPACE ASSESSMENT SCORES: GRADE 5**

TOPIC	n	BEGINNING		END		GAIN	
		ITEMS CORRECT	PERCENT CORRECT	ITEMS CORRECT	PERCENT CORRECT	ITEMS	PERCENT
<b>Multiplication</b>	<b>3</b>	<b>11.33</b>	<b>57%</b>	<b>17.33</b>	<b>87%</b>	<b>6.00</b>	<b>30%</b>
Division	16	9.69	48%	15.94	80%	6.25	31%
Fractions	19	8.95	45%	14.47	72%	5.53	28%

**Visit [Heinemann.com/DoTheMath](http://Heinemann.com/DoTheMath) for more information**



Connect with us:



Houghton Mifflin Harcourt™, Do The Math®, and ProgresSpace® are trademarks or registered trademarks of Houghton Mifflin Harcourt. © Heinemann. All rights reserved. 3/21