Data Analysis and Evaluation of the McGraw-Hill's

Reveal Math Program, Its Implementation,

and its Impact on Test Scores in a Michigan School District

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Executive Summary

The participating district is located in western Michigan and uses McGraw Hill's *Reveal Math* curriculum. The Auburn Center for Evaluation (ACE) was asked to analyze math test data for students using the program to answer the following evaluation questions:

1. Do differences exist between pre-implementation (2020-2021) MAP growth scores and post-implementation MAP growth scores (2021-2022)?

2. How do fall and spring MAP assessment scores compare to normative data for schools using the *Reveal Math* curriculum?

To answer the first question, mixed analysis of variance (ANOVA) tests were conducted, one for each grade level. The second question was answered using descriptive statistics.

Key Findings

1. First and second grade students earned growth scores in the *Reveal* Math implementation year (2021-2022) that were significantly better than growth scores earned during the baseline year (2020-2021).

2. Growth scores for kindergarten and grades 3 through 5 were statistically similar from the baseline year to the implementation year.

3. Growth scores exceed the normed growth data across both years for every grade level except for 1st grade (baseline) and 4th grade (implementation).

4. ELL students and students receiving special education services exceeded the normed growth data for each grade level. Students eligible for free or reduced-price lunch exceeded the normed growth data for every grade level except for fourth grade.

Limitations of the Evaluation

1. Data for the evaluation were completely dependent on the quality and quantity of information provided by the participating district.

2. Transience or mobility of the student population in participating schools is a concern. Only students with both fall and spring assessment scores were considered for these analyses, and it is possible that they differ systematically from students who failed to take one of the assessments.

3. Intermediate and long-term shifts in knowledge, attitudes, perceptions, and achievements in math may not have resulted from the McGraw Hill curriculum alone. Many schools in Michigan have multiple federal, state, and local initiatives in effect at the same time. Since many of these initiatives are aimed at improving academic achievement, this may or may not have had an impact on the assessment scores – or may have had less of an impact compared to other factors not accounted for in these analyses.

4. Interpretations based on statistical significance alone should be made with caution.

5. The baseline school year (2020-2021) took place during the COVID-19 pandemic and families were given the option of having their children attend school with full-time remote learning. Physical schools also closed for a period of time due to the spread of COVID-19. Differences in learning associated with different learning modalities likely had a substantial impact on assessment scores, and that is not factored into these analyses.

Data and Method

As part of a larger evaluation effort, two evaluation questions were answered:

1. Do differences exist between pre-implementation (2020-2021) MAP growth scores and post-implementation MAP growth scores (2021-2022)?

2. How do fall and spring MAP assessment scores compare to normative data for schools using the *Reveal Math* curriculum?

The participating school district is located in a suburban area in western Michigan and serves fewer than 2000 students. They began using the McGraw Hill *Reveal Math* curriculum in the 2021-2022 school year. Of interest was to learn whether students' MAP growth scores differed from the baseline, pre-intervention school year (2020-2021) and the initial year of *Reveal Math*'s implementation (2021-2022), as well as to learn how they compared with the Northwest Evaluation Association's (NWEA) normative data.

Data Sources and Analyses

Data were provided by the school district. The MAP math assessments were administered three times annually in the school district. Fall and spring assessment scores were compared for this evaluation. The first evaluation question sought to learn if differences existed both within subjects (from fall to spring assessment), as well as between subjects (2020-2021 school year vs. 2021-2022 school year). As such, mixed analysis of variance (ANOVA) tests were conducted, and of interest were whether the interaction term findings were statistically and practically significant. A significant interaction term finding would indicate that there were differences in student growth from fall to spring across the two different school years. Partial eta-squared effect

sizes are reported as a measure of practical significance (Salkind, 2017). Partial eta-squared

values can be interpreted as follows:

- A small effect size is about .01

- A medium effect size is about .06

- A large effect size is about .16

Separate data files were obtained for subgroups including: (1) race/ethnicity; (2) gender;

(3) English language learner (ELL) status; (4) whether a student received special education

services; and (5) whether a student was eligible for free or reduced-price lunch. The latter was

used as a proxy for wealth. Subgroups with fewer than five individuals were excluded from this

report as an ethical consideration. Subgroups for Asian American students were not included in

any of the analyses for this evaluation due to small sample sizes. These individuals are included

in the overall grade-level statistics. These analyses were conducted using SPSS version 28.

COVID-19 Pandemic

The COVID-19 pandemic represented a significant disruption to schooling. The 2020-

2021 school year opened during the pandemic and school districts across the United States

reopened with a range of instructional options for families (Marshall & Bradley-Dorsey, 2022).

The district offered families a remote learning option for the 2020-2021 school year. Early

evidence suggests that students who engaged in remote learning for longer durations of time

experienced reduced academic achievement during this historic time, compared with students

who spent more time attending school in person (e.g., Halloran et al., 2021). It is imperative that

this evaluation's findings are viewed with these contextual factors in mind.

Comparison of Fall to Spring Growth Scores

The first evaluation question sought to learn whether there were differences in student growth scores pre- and post-implementation of the McGraw-Hill *Reveal Math* curriculum. NWEA MAP math assessment data were compared from the 2020-2021 and 2021-2022 school years in terms of student growth from the fall to spring assessment administrations. Significant results were found for grades 1 and 2. First grade students experienced significantly greater gains post-implementation (mean score growth=24.47) compared to scores from the previous academic year (mean score growth=15.70). These findings also yielded a large effect size (partial eta^2 = .157), indicating that approximately 15.7% of the overall variance can be explained by the academic year from which the scores were obtained. Students performed significantly better following the implementation of the *Reveal Math* curriculum. Similar findings were found from grade 2 assessment scores. Second grade students experienced significantly greater gains post-implementation (mean score growth=21.26) compared to scores from the previous academic year (mean score growth=18.69). These findings yielded a small effect size (partial eta^2 = .016). Student growth scores were statistically similar from year-to-year for kindergarten, 3rd grade, 4th grade, and 5th grade students. See Table 1 for means, standard deviations, and ANOVA results.

Table 1. – *Fall to Spring Mixed ANOVA Findings*

		Fall		Spring				
	N	M	SD	M	SD	F	*p*-value	Partial eta^2
Kindergarten								
2020-2021	144	141.17	10.49	159.26	9.96	2.009	.158	.008
2021-2022	120	144.18	10.57	163.78	10.26			
1st Grade								
2020-2021	116	161.68	11.16	177.38	13.11	44.042	<.001	.157
2021-2022	122	159.33	11.54	183.80	11.35			
2nd Grade								
2020-2021	137	171.59	11.76	190.28	11.68	4.284	.039	.016
2021-2022	121	168.73	14.15	189.99	14.01			
3rd Grade								
2020-2021	120	183.66	10.10	200.88	12.04	0.010	.920	<.001
2021-2022	140	186.48	11.80	203.61	12.76			
4th Grade								
2020-2021	119	196.55	11.26	207.85	13.20	0.365	.547	.002
2021-2022	120	195.87	13.07	206.63	13.81			
5th Grade								
2020-2021	126	206.31	11.95	218.35	13.83	1.714	.192	.007
2021-2022	130	204.87	13.32	218.12	15.00			

Note: F, p, and partial eta^2 values are for the test administration x year interaction term. Only students who completed both assessments in a given year were included in these analyses.

Comparison with Normative Data

The fall and spring assessment scores were also compared with MAP's normative data. Data were compared with the 2020 normative data (NWEA, 2020a). Subgroup data for race/ethnicity, gender, ELL students, students receiving special education services, and students eligible for free or reduced-price lunch are presented. Student growth is also presented in terms of months of learning that occurred during the school year, based on the NWEA normed growth data (NWEA, 2020a). The assessments assume that six months of learning takes place between the fall and spring assessment administrations. As such, values greater than six indicate that additional learning has taken place; values less than six months indicate that students did not learn as much as the median student in the United States would have been expected to learn. Months of learning are calculated by dividing observed growth values by normed growth values, and then multiplying by six (NWEA, 2020b). All analyses performed using Stata version 17.

Kindergarten

Students exceeded normed growth scores overall for both academic years. The lack of statistical significance is likely explained by the fact that students performed well in the baseline year, as well as during the implementation year. With few exceptions, most subgroups also performed better than the normed data. Students receiving special education services' gains were equal to 1.5 months of additional learning during the implementation year. See Table 2 for descriptive statistics and Table 3 for a comparison with normed data for kindergarten students.

First Grade

Students in the baseline school year had growth scores below the normed scores (mean score growth=15.70), whereas students in the *Reveal Math* implementation year experienced

growth scores more than one standard deviation about the normed data (mean score growth=24.47). Every subgroup exceeded the normed growth in the implementation year, most by more than one standard deviation. White students, students of more than one race, ELL students, and students receiving special education services all earned growth scores in the implementation year equivalent to more than nine months of learning, or 1.5 academic years. See Table 4 for descriptive statistics and Table 5 for a comparison with normed data for first grade students.

Second Grade

The fall means for students in both academic years were below the normed data overall, and for each subgroup, with Black students as the lone exception. Student growth was above the normed data for both academic years. Growth was more than a standard deviation above the normed data for the implementation year (mean score growth=21.26). Growth was above the normed data for all subgroups across both years, except for Black students in the implementation year. This can likely be explained by the small sample size (n=5). During the implementation year, students of all race/ethnicity groups, male students, students receiving special education services, and students eligible for free or reduced-price lunch all earned scores that were greater than a standard deviation above the normed data. Students receiving special education services earned growth scores equivalent to more than 10 months of learning. See Table 6 for descriptive statistics and Table 7 for a comparison with normed data for second grade students.

Third Grade

The fall means for students in both academic years were below the normed data overall, as well as for each subgroup. Student growth was above the normed data for both academic years. Students had mean growth of 17.23 points during the baseline year and 17.14 during the implementation year. All subgroups had growth scores above the normed data for both academic years with two exceptions. ELL students earned scores more than one standard deviation above the normed data during the baseline year and students of more than one race/ethnicity group earned growth scores below the normed data during the implementation year. See Table 8 for descriptive statistics and Table 9 for a comparison with normed data for third grade students.

Fourth Grade

The fall means for students in both academic years were below the normed data overall, as well as for each subgroup. White students were the lone exception, scoring above the normed data on fall assessments for both years. The spring means were also below the normed data overall, as well as for each subgroup. White students in the baseline year were the lone exception to this; White students scored just below the normed data for the spring assessment. Overall, student growth was better during the baseline year (mean score growth=13.20) compared to the implementation year (mean growth score=10.77). During the implementation year, Hispanic students, ELL students, male students, and students receiving special education services all outperformed the normed growth data. See Table 10 for descriptive statistics and Table 11 for a comparison with normed data for fourth grade students.

Fifth Grade

The fall means for students in both academic years were below the normed data overall, with White students in the baseline year as the lone exception. Similarly, students scored below the normed data on the spring assessment overall, as well as among subgroups. White students (both years), females (baseline year), and males (implementation year) were the exceptions. Student growth scores outpaced the normed data in both the baseline year (mean score growth=12.04) and the implementation year (mean growth score=13.25). All subgroups scored earned growth scores above the normed data for both years. See Table 12 for descriptive statistics and Table 13 for a comparison with normed data for fifth grade students.

Table 2. – *2020-2021 and 2021-2022 MAP Scores Descriptive Data – Grade K*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2020-21	144	141.17	10.49	159.26	9.96
	2021-22	120	144.18	10.57	163.78	10.26
Black	2020-21	13	137.23	10.75	156.69	9.30
	2021-22	9	145.44	11.42	162.67	9.67
Hispanic	2020-21	37	137.97	10.68	154.51	10.30
	2021-22	16	137.44	8.19	158.25	9.14
White	2020-21	83	143.05	10.43	161.39	9.68
	2021-22	74	145.54	10.19	165.84	10.30
More than one race	2020-21	9	143.89	6.17	163.44	4.80
	2021-22	17	144.00	11.64	160.82	10.30
Female	2020-21	79	143.23	10.03	160.27	9.09
	2021-22	71	144.10	9.19	162.46	9.03
Male	2020-21	65	138.68	10.56	158.03	10.87
	2021-22	49	144.31	12.40	165.69	11.65
ELL	2020-21	20	133.50	9.64	151.60	10.11
	2021-22	6	133.50	5.54	153.00	9.14
SPED	2020-21	17	140.41	9.83	158.41	11.16
	2021-22	15	141.27	11.50	163.33	14.31
FRL	2020-21	74	139.64	9.25	157.87	9.47
	2021-22	45	144.71	10.45	164.04	9.89

Note: Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Table 3. – *2020-2021 and 2021-2022 MAP Scores Compared with Normative Data – Grade K*

	Year	N	Fall Normed	Fall Mean	Spring Normed	Spring Mean	Growth Normed	Growth Mean	Months of Learning
All Students	2020-21	144	139.56	141.17	157.11	159.26	17.54	18.08	6.18
	2021-22	120		144.18		163.78		19.60	6.70
Black	2020-21	13	139.56	137.23	157.11	156.78	17.54	19.46	6.66
	2021-22	9		145.44		162.67		17.22	5.89
Hispanic	2020-21	37	139.56	137.97	157.11	154.51	17.54	16.54	5.66
	2021-22	16		137.44		158.25		20.81	7.12
White	2020-21	83	139.56	143.04	157.11	161.39	17.54	18.34	6.26
	2021-22	90		145.54		165.84		20.30	6.94
More than one race	2020-21	9	139.56	143.89	157.11	163.44	17.54	19.56	6.69
	2021-22	17		144.00		160.82		16.82	5.75
Female	2020-21	79	139.56	143.23	157.11	160.27	17.54	17.04	5.83
	2021-22	71		144.10		162.46		18.37	6.28
Male	2020-21	65	139.56	138.68	157.11	158.03	17.54	19.35	6.62
	2021-22	49		144.30		165.69		21.39	7.32
ELL	2020-21	20	139.56	133.50	157.11	151.60	17.54	18.10	6.19
	2021-22	6		133.50		153.00		19.50	6.67
SPED	2020-21	17	139.56	140.41	157.11	158.41	17.54	18.00	6.16
	2021-22	15		141.27		163.33		22.07	7.55
FRL	2020-21	74	139.56	139.64	157.11	157.86	17.54	18.23	6.24
	2021-22	45		144.71		164.04		19.33	6.61
KEY	More than 1 SD below Norm			Less than 1 SD below Norm		Above norm by less than 1 SD		Above norm by more than 1 SD	

Note: Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Table 4. – *2020-2021 and 2021-2022 MAP Scores Descriptive Data – Grade 1*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2020-21	116	161.68	11.16	177.38	13.11
	2021-22	122	159.33	11.54	183.80	11.35
Black	2020-21	15	159.07	8.80	173.53	6.05
	2021-22	11	151.91	17.55	174.82	9.99
Hispanic	2020-21	18	158.00	11.19	170.94	12.19
	2021-22	37	155.89	10.56	179.78	11.47
White	2020-21	70	163.84	11.46	180.41	13.71
	2021-22	90	188.23	11.81	205.81	11.67
More than one race	2020-21	12	156.92	9.36	173.25	12.88
	2021-22	8	155.50	13.13	181.38	9.01
Female	2020-21	61	160.26	10.93	174.49	11.97
	2021-22	65	160.85	10.33	183.86	12.00
Male	2020-21	55	163.25	11.29	180.58	13.68
	2021-22	57	157.60	12.65	183.72	10.66
ELL	2020-21	5	148.20	6.72	159.60	7.83
	2021-22	22	152.36	13.49	177.05	10.31
SPED	2020-21	15	156.67	11.54	173.33	14.06
	2021-22	21	157.29	11.23	183.33	9.92
FRL	2020-21	57	159.53	10.79	174.72	12.39
	2021-22	77	157.32	11.63	181.34	10.61

Note: Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Table 5. – *2020-2021 and 2021-2022 MAP Scores Compared with Normative Data – Grade 1*

	Year	N	Fall Normed	Fall Mean	Spring Normed	Spring Mean	Growth Normed	Growth Mean	Months of Learning
All Students	2020-21	116	160.05	161.68	176.40	177.38	16.35	15.70	5.76
	2021-22	122		159.33		183.80		24.47	8.98
Black	2020-21	15	160.05	159.07	176.40	173.53	16.35	14.47	5.31
	2021-22	11		151.91		174.82		22.91	8.41
Hispanic	2020-21	18	160.05	158.00	176.40	170.94	16.35	12.94	4.75
	2021-22	37		155.89		179.78		23.89	8.77
White	2020-21	70	160.05	163.84	176.40	180.41	16.35	16.57	6.08
	2021-22	65		163.08		187.98		24.91	9.14
More than one race	2020-21	12	160.05	156.92	176.40	173.25	16.35	16.33	5.99
	2021-22	8		155.50		181.38		25.88	9.50
Female	2020-21	61	160.05	160.26	176.40	174.49	16.35	14.23	5.22
	2021-22	65		160.85		183.86		23.02	8.45
Male	2020-21	55	160.05	163.25	176.40	180.58	16.35	17.33	6.36
	2021-22	57		157.60		183.72		26.12	9.59
ELL	2020-21	5	160.05	148.20	176.40	159.60	16.35	11.40	4.18
	2021-22	22		152.36		177.05		24.68	9.79
SPED	2020-21	15	160.05	156.67	176.40	173.33	16.35	16.67	6.12
	2021-22	21		157.29		183.33		26.05	9.56
FRL	2020-21	57	160.05	159.53	176.40	174.72	16.35	15.19	5.57
	2021-22	77		157.32		181.34		24.01	8.81
KEY	More than 1 SD below Norm			Less than 1 SD below Norm		Above norm by less than 1 SD		Above norm by more than 1 SD	

Note: Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Table 6. – *2020-2021 and 2021-2022 MAP Scores Descriptive Data – Grade 2*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2020-21	137	171.59	11.76	190.28	11.68
	2021-22	121	168.73	14.15	189.99	14.01
Black	2020-21	5	183.60	10.71	188.00	13.40
	2021-22	16	161.63	12.32	183.50	12.46
Hispanic	2020-21	26	168.61	9.47	187.12	10.91
	2021-22	20	168.55	10.20	189.55	8.58
White	2020-21	92	172.00	11.70	191.75	11.63
	2021-22	70	171.17	14.33	192.63	13.87
More than one race	2020-21	13	170.54	14.79	187.15	12.63
	2021-22	15	165.13	17.31	185.20	18.97
Female	2020-21	75	170.87	11.72	189.96	11.32
	2021-22	61	166.90	13.86	186.97	14.33
Male	2020-21	62	172.47	11.84	190.66	12.17
	2021-22	60	170.58	14.32	193.07	13.08
ELL	2020-21	11	168.00	8.72	187.27	8.75
	2021-22	7	160.71	9.86	181.00	8.12
SPED	2020-21	12	165.67	10.52	182.00	10.30
	2021-22	19	159.84	10.40	184.32	12.53
FRL	2020-21	63	170.70	10.80	189.24	11.33
	2021-22	68	166.49	13.72	188.00	13.45

Note: Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Table 7. – *2020-2021 and 2021-2022 MAP Scores Compared with Normative Data – Grade 2*

	Year	N	Fall Normed	Fall Mean	Spring Normed	Spring Mean	Growth Normed	Growth Mean	Months of Learning
All Students	2020-21	137	175.04	171.59	189.42	190.28	14.38	18.69	7.80
	2021-22	121		168.73		189.99		21.26	8.87
Black	2020-21	5	175.04	183.60	189.42	188.00	14.38	4.40	1.83
	2021-22	16		161.63		183.50		21.88	9.13
Hispanic	2020-21	26	175.04	168.62	189.42	187.12	14.38	18.50	7.72
	2021-22	20		168.55		189.55		21.00	8.76
White	2020-21	92	175.04	172.00	189.42	191.75	14.38	19.75	8.24
	2021-22	70		171.17		192.63		21.46	8.95
More than one race	2020-21	13	175.04	170.54	189.42	187.15	14.38	16.62	6.93
	2021-22	15		165.13		185.20		20.07	8.37
Female	2020-21	75	175.04	170.87	189.42	189.96	14.38	19.09	7.97
	2021-22	61		166.90		186.97		20.07	8.37
Male	2020-21	62	175.04	172.47	189.42	190.66	14.38	18.19	7.59
	2021-22	60		170.58		193.07		22.48	9.38
ELL	2020-21	11	175.04	168.00	189.42	187.27	14.38	19.27	8.04
	2021-22	7		160.71		181.00		20.29	8.47
SPED	2020-21	12	175.04	165.67	189.42	182.00	14.38	16.33	6.81
	2021-22	19		159.84		184.32		24.47	10.21
FRL	2020-21	63	175.04	170.70	189.42	189.24	14.38	18.54	7.74
	2021-22	68		166.49		188.00		21.51	8.97
KEY	More than 1 SD below Norm			Less than 1 SD below Norm		Above norm by less than 1 SD		Above norm by more than 1 SD	

Note: Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Table 8. – *2020-2021 and 2021-2022 MAP Scores Descriptive Data – Grade 3*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2020-21	120	183.66	10.10	200.88	12.04
	2021-22	140	186.48	11.80	203.61	12.76
Black	2020-21	7	176.14	10.70	192.29	15.13
	2021-22	6	180.17	12.80	198.33	14.98
Hispanic	2020-21	29	181.07	6.61	198.21	9.57
	2021-22	30	183.70	10.07	201.60	12.01
White	2020-21	69	185.48	9.89	202.51	11.37
	2021-22	90	188.23	11.81	205.81	11.67
More than one race	2020-21	13	182.69	14.72	200.69	16.24
	2021-22	14	183.86	13.40	196.07	16.79
Female	2020-21	59	183.00	9.30	199.37	12.20
	2021-22	75	186.60	11.56	202.91	12.68
Male	2020-21	61	184.30	10.87	202.34	11.80
	2021-22	65	186.34	12.15	204.43	12.89
ELL	2020-21	18	181.44	7.78	200.39	10.58
	2021-22	11	182.09	10.75	200.55	12.68
SPED	2020-21	8	177.75	8.29	196.13	9.69
	2021-22	22	181.36	9.77	195.36	14.17
FRL	2020-21	70	182.53	10.45	199.04	12.41
	2021-22	73	183.18	10.95	200.60	13.15

Note: Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Table 9. – *2020-2021 and 2021-2022 MAP Scores Compared with Normative Data – Grade 3*

	Year	N	Fall Normed	Fall Mean	Spring Normed	Spring Mean	Growth Normed	Growth Mean	Months of Learning
All Students	2020-21	120	188.48	183.66	201.08	200.88	12.60	17.23	8.20
	2021-22	140		186.48		203.61		17.14	8.16
Black	2020-21	7	188.48	176.14	201.08	192.29	12.60	16.14	7.69
	2021-22	6		180.17		198.33		18.17	8.65
Hispanic	2020-21	29	188.48	181.07	201.08	198.21	12.60	17.14	8.16
	2021-22	30		183.70		201.60		17.90	8.52
White	2020-21	69	188.48	185.48	201.08	202.51	12.60	17.03	8.11
	2021-22	90		188.23		205.81		17.58	8.37
More than one race	2020-21	13	188.48	182.69	201.08	200.69	12.60	18.00	8.57
	2021-22	14		183.86		196.07		12.21	5.81
Female	2020-21	59	188.48	183.00	201.08	199.37	12.60	16.37	7.80
	2021-22	75		186.60		202.91		16.31	7.77
Male	2020-21	61	188.48	184.30	201.08	202.34	12.60	18.05	8.60
	2021-22	65		186.34		204.43		18.09	8.61
ELL	2020-21	18	188.48	181.44	201.08	200.39	12.60	18.95	9.02
	2021-22	11		182.09		200.55		18.45	8.77
SPED	2020-21	8	188.48	177.75	201.08	196.13	12.60	18.38	8.75
	2021-22	22		181.36		195.36		14.00	6.67
FRL	2020-21	70	188.48	182.53	201.08	199.04	12.60	16.51	7.86
	2021-22	73		183.18		200.60		17.42	8.30
KEY	More than 1 SD below Norm		Less than 1 SD below Norm		Above norm by less than 1 SD		Above norm by more than 1 SD		

Note: Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Table 10. – *2020-2021 and 2021-2022 MAP Scores Descriptive Data – Grade 4*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2020-21	119	196.55	11.26	207.85	13.20
	2021-22	120	195.87	13.07	206.63	13.81
Black	2020-21	9	189.22	10.86	197.78	11.18
	2021-22	**	**	**	**	**
Hispanic	2020-21	31	191.32	8.73	200.74	11.26
	2021-22	36	188.72	11.74	201.75	13.61
White	2020-21	70	199.84	10.82	212.79	11.38
	2021-22	60	200.37	10.90	209.83	9.47
More than one race	2020-21	9	196.33	13.97	204.00	17.73
	2021-22	18	195.22	16.44	204.94	14.24
Female	2020-21	56	194.52	10.26	205.91	12.56
	2021-22	58	196.15	12.32	206.64	13.78
Male	2020-21	63	198.37	11.86	209.57	13.62
	2021-22	62	195.60	13.83	206.63	13.96
ELL	2020-21	16	188.00	9.09	199.38	9.52
	2021-22	20	191.80	11.56	203.95	16.29
SPED	2020-21	15	188.80	14.39	198.67	15.60
	2021-22	15	187.13	17.16	201.00	16.66
FRL	2020-21	67	193.03	10.39	204.00	13.41
	2021-22	79	194.37	13.04	204.90	12.95

Note: ** Fewer than 5 students in this category; Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Table 11. – *2020-2021 and 2021-2022 MAP Scores Compared with Normative Data – Grade 4*

	Year	N	Fall Normed	Fall Mean	Spring Normed	Spring Mean	Growth Normed	Growth Mean	Months of Learning
All Students	2020-21	119	199.55	196.55	210.51	207.85	10.96	13.20	7.22
	2021-22	120		195.87		206.63		10.77	5.90
Black	2020-21	9	199.55	189.22	210.51	197.78	10.96	8.56	4.69
	2021-22	**		**		**		**	**
Hispanic	2020-21	31	199.55	191.32	210.51	200.74	10.96	9.42	5.16
	2021-22	32		188.72		201.75		13.03	7.13
White	2020-21	70	199.55	199.84	210.51	212.79	10.96	11.38	6.23
	2021-22	60		200.37		209.83		9.47	5.18
More than one race	2020-21	9	199.55	196.33	210.51	204.00	10.96	7.67	4.20
	2021-22	18		195.22		204.94		9.72	5.32
Female	2020-21	56	199.55	194.52	210.51	205.91	10.96	11.39	6.24
	2021-22	58		196.15		206.64		10.48	5.74
Male	2020-21	63	199.55	198.37	210.51	209.57	10.96	11.21	6.14
	2021-22	62		195.60		206.63		11.03	6.04
ELL	2020-21	16	199.55	188.00	210.51	199.38	10.96	11.38	6.23
	2021-22	20		191.80		203.95		12.15	6.65
SPED	2020-21	15	199.55	188.80	210.51	198.67	10.96	9.87	5.40
	2021-22	15		187.13		201.00		13.87	7.59
FRL	2020-21	67	199.55	193.03	210.51	204.00	10.96	10.97	6.01
	2021-22	79		194.37		204.90		10.53	5.76
KEY	More than 1 SD below Norm			Less than 1 SD below Norm		Above norm by less than 1 SD		Above norm by more than 1 SD	

Note: ** Fewer than 5 students in this category; Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Table 12. – *2020-2021 and 2021-2022 MAP Scores Descriptive Data – Grade 5*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2020-21	126	206.31	11.95	218.35	13.83
	2021-22	130	204.87	13.32	218.12	15.00
Black	2020-21	14	196.86	9.13	209.29	13.27
	2021-22	12	194.83	12.39	208.58	13.65
Hispanic	2020-21	30	204.70	11.86	215.27	11.75
	2021-22	32	201.22	10.40	211.63	11.03
White	2020-21	69	209.29	11.29	221.99	13.57
	2021-22	75	208.40	13.57	222.85	15.08
More than one race	2020-21	11	206.00	12.16	218.09	13.77
	2021-22	11	202.36	12.48	215.09	14.65
Female	2020-21	67	206.49	10.87	219.19	12.86
	2021-22	62	203.34	12.10	216.73	14.75
Male	2020-21	59	206.10	13.15	217.39	14.91
	2021-22	68	206.26	14.28	219.38	15.21
ELL	2020-21	8	191.25	9.32	205.00	7.46
	2021-22	8	191.88	9.54	202.50	6.87
SPED	2020-21	18	194.56	9.04	207.56	11.14
	2021-22	24	193.63	15.13	207.08	15.78
FRL	2020-21	65	205.02	13.08	215.54	14.36
	2021-22	72	201.65	12.69	213.33	14.65

Note: Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Table 13. – *2020-2021 and 2021-2022 MAP Scores Compared with Normative Data – Grade 5*

	Year	N	Fall Normed	Fall Mean	Spring Normed	Spring Mean	Growth Normed	Growth Mean	Months of Learning
All Students	2020-21	126	209.13	206.31	218.75	218.35	9.61	12.04	7.52
	2021-22	130		204.87		218.12		13.25	8.27
Black	2020-21	14	209.13	196.86	218.75	209.29	9.61	12.43	7.76
	2021-22	12		194.83		208.58		13.75	8.58
Hispanic	2020-21	30	209.13	204.70	218.75	215.27	9.61	10.57	6.60
	2021-22	32		201.22		211.63		10.41	6.50
White	2020-21	69	209.13	209.29	218.75	221.99	9.61	12.70	7.93
	2021-22	75		208.40		222.85		14.45	9.02
More than one race	2020-21	11	209.13	206.00	218.75	218.09	9.61	12.09	7.55
	2021-22	11		202.36		215.09		12.73	7.95
Female	2020-21	67	209.13	206.49	218.75	219.19	9.61	12.70	7.93
	2021-22	62		203.34		216.73		13.39	8.36
Male	2020-21	59	209.13	206.10	218.75	217.39	9.61	11.29	7.05
	2021-22	68		206.26		219.38		13.12	8.19
ELL	2020-21	8	209.13	191.25	218.75	205.00	9.61	13.75	8.58
	2021-22	8		191.88		202.50		10.63	6.64
SPED	2020-21	18	209.13	194.56	218.75	207.56	9.61	13.00	8.12
	2021-22	24		193.63		207.08		13.46	8.40
FRL	2020-21	65	209.13	205.02	218.75	215.54	9.61	10.52	6.57
	2021-22	72		201.65		213.33		11.68	7.29
KEY	More than 1 SD below Norm		Less than 1 SD below Norm		Above norm by less than 1 SD		Above norm by more than 1 SD		

Note: Fall and spring scores reflect mean scores overall and for each subgroup; ELL=English language learners; SPED=students receiving special education services; FRL=students eligible for free or reduced-price lunch

Conclusion

This evaluation yielded four key findings:

1. First and second grade students earned growth scores in the *Reveal* Math implementation year (2021-2022) that were significantly better than growth scores earned during the baseline year (2020-2021).

2. Growth scores for kindergarten and grades 3 through 5 were statistically similar from the baseline year to the implementation year.

3. Growth scores exceeded the normed growth data across both years for every grade level except for 1st grade (baseline) and 4th grade (implementation).

4. ELL students and students receiving special education services exceeded the normed growth data for each grade level. Students eligible for free or reduced-price lunch exceeded the normed growth data for every grade level except for fourth grade.

First and second grade were the only two grades for which statistically significant results were found. Students exposed to the *Reveal Math* curriculum performed better than students enrolled in those grades the previous year using a different curriculum. Student growth scores exceeded the normed data for each year in the intervention year, with the exception of fourth grade (in which students experienced growth akin to 5.9 months of learning). Strong student growth in the baseline year is likely the reason that more statistically significant results were not found. Future evaluation work might include longitudinal data analysis to learn if students who have received multiple years of exposure to the curriculum perform differently from those who have only been exposed to the curriculum for a single year, as is the case for this evaluation.

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