Data Analysis and Evaluation of McGraw Hill's

***Reveal Math* Program, Its Implementation,**

and its Impact on Test Scores in a Wisconsin District

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Executive Summary

The School District in this study is located in Wisconsin, near one of the larger cities, 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 question: *How do fall and spring MAP assessment scores compare to normative data for schools using the Reveal Math curriculum?* Descriptive statistics were used to answer this question.

Key Findings

1. Fall-to-spring student growth exceeded the normative data for both academic years tested, including the 2020-2021 school year which occurred during the COVID-19 pandemic, breaking with national trends.

2. Fall-to-spring growth exceeded normative data for students receiving free and reduced lunch as well as for students receiving special education services for every grade level except for grade 4.

3. Fourth grade students performed much better during the 2020-2021 school year compared to normative data, after the implementation of the McGraw Hill curriculum and during COVID-19, than they did during the 2018-2019 school year.

Limitations of the Evaluation

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

The participating school district is located in Wisconsin, near one of the larger cities, and serves fewer than 5000 students. They began using the McGraw Hill *Reveal Math* curriculum in the 2020-2021 school year.

As part of a larger evaluation effort, the following evaluation question was answered: *How do fall and spring MAP assessment scores compare to normative data for schools using the Reveal Math curriculum?*

Data Sources and Analyses

Initially it was of interest 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). Such an analysis would have entailed conducting mixed analyses of variance (ANOVA) tests where the interaction term would have been of chief interest. However, two things impeded the ability for such an analysis to be conducted: (1) school closures due to the COVID-19 pandemic and (2) a change in the assessments used by the district.

Typically, this type of analysis would involve comparing baseline assessment data from the year prior to the curriculum's implementation to post-implementation assessment data. However, in this case, the year prior to implementation was the 2019-2020 school year. Schools closed for in-person learning in March 2020 due to the pandemic and the spring 2020 assessment was not administered. As such, fall-to-spring student growth data for the 2019-2020 school year does not exist. The district provided Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) math assessment data for the 2018-2019 school year as well as the 2020-2021 school year[1]. These data were analyzed descriptively and separately using Stata

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[1] The district also provided data for the 2019-2020 school year; however, these data did not allow for fall-to-spring growth to be measured since the assessment was not administered in the spring of 2020.

version 17. Comparing the last full school year prior to the pandemic to the first full school year during the pandemic would not have been a valid comparison; however, comparing each school year's data to normative data still yields useful information. As such, these comparisons were made. Beginning with the 2021-2022 school year, the district began using the Fastbridge assessments in lieu of the NWEA MAP assessments. As such, comparisons could not be made across assessments.

Data were compared for grades K-5 and included comparisons 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 10 individuals were excluded from this report as an ethical consideration. For each school year and each grade level, Black and ELL student comparisons were not made due to small sample sizes. These individuals are included in the overall grade-level statistics

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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 with Normative Data

The fall and spring assessment scores were also compared with MAP's normative data. Subgroup data for race/ethnicity, gender, ELL students, students receiving special education services, and students eligible for free or reduced-price lunch are presented. The 2018-2019 data were compared with 2015 normative data (NWEA, 2015); the 2020-2021 data were compared with 2020 normative data (NWEA, 2020a). 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

For both years assessed, students exceeded the normed data for the fall and spring assessments, both overall and for each subgroup. Greater growth was present during the 2018-2019 school year (mean growth score=23.24) than during the 2020-2021 school year (mean growth score=15.94). Student growth was below the normative data for the 2020-2021 school year both overall and for each subgroup. However, this is likely due to a ceiling effect (Ho & Yu, 2015). All subgroups performed better than the normative data, and students overall performed more than one standard deviation above the normative data, as did male, female, Asian, and

White students. See Table 1 for descriptive statistics and Tables 2 and 3 for a comparison with normed data for kindergarten students.

First Grade

For the 2018-2019 school year, students scored above the normed data and posted a mean growth score of 23.24. The same was true for each subgroup, with the exception of students receiving special education services. Students in this group earned scores below the normed data for both fall and spring assessments on average. However, students receiving special education services did demonstrate fall-to-spring growth above the normative data (mean growth score=21.14). During the 2020-2021 school year, students overall posted a mean growth score of 16.70 and exceeded the normative data for both tests across all subgroups. Female and Asian students earned mean growth scores below the normative data; however, both earned scores more than one standard deviation above the mean for both fall and spring assessments suggesting that this could reflect a ceiling effect. See Table 4 for descriptive statistics and Tables 5 and 6 for a comparison with normed data for first grade students.

Second Grade

During the 2018-2019 school year, students performed above the normative data in terms of growth overall (mean growth score=17.66), as well as with every subgroup except for students of two or more races. Students receiving special education services earned scores on the fall and spring assessments below the normative data; however, their mean growth score from fall-to-spring exceeded normative growth data (mean growth score=17.71). During the 2020-2021 school year, students performed above the normative data overall (mean growth score=16.70), as well as for every subgroup. Although mean growth for Asian students was below normative data,

this again likely reflects a ceiling effect given their high performance overall. Similar to second grade students in 2018-2019, students receiving special education services scored below normative data for both the fall and spring assessments but posted mean growth scores above the normed data (mean growth score=17.14). See Table 7 for descriptive statistics and Tables 8 and 9 for a comparison with normed data for second grade students.

Third Grade

During the 2018-2019 school year, students scored above the normative data on the fall and spring assessments, both overall and for every subgroup except for students receiving special education services (mean growth score=15.51). Students receiving free or reduced-price lunch and students receiving special education services both demonstrated fall-to-spring growth representing approximately an additional 1.5 months of learning. Similarly, district students in the 2020-2021 school year scored above the normative data on the fall and spring assessments both overall (mean growth score=13.69) and for each subgroup with the exception of students receiving special education services, although they demonstrated fall-to-spring growth that exceeded the normative data. See Table 10 for descriptive statistics and Tables 11 and 12 for a comparison with normed data for third grade students.

Fourth Grade

During the 2018-2019 school year, fall and spring assessment scores were above the normative data both overall as well as for each subgroup, with the exceptions of students receiving special education services and students receiving free or reduced-price lunch. Overall growth was below the normative data overall (mean growth score=10.44), as well as for every

subgroup. By contrast, fourth grade students performed above the normative data in 2020-2021 both overall and for all subgroups except for students receiving special education services. However, these students' mean growth score of 11.48 exceeded the normative data. Table 13 for descriptive statistics and Tables 14 and 15 for a comparison with normed data for fourth grade students.

Fifth Grade

During the 2018-2019 school year, students earned scores on both the fall and spring assessments that exceeded normative data both overall (mean growth score=10.68), as well as for each subgroup except for students receiving special education services, whose growth scores exceeded the normed data. Students in the 2020-2021 school year earned schools that exceeded the normative data on both assessments overall and demonstrated fall-to-spring growth of 13.75 points – equivalent to almost an additional 2.5 months of learning. Fall-to-spring growth exceeded the normative data for every subgroup except for Hispanic students. See Table 16 for descriptive statistics and Tables 17 and 18 for a comparison with normed data for fifth grade students.

Table 1. – *2018-2019 and 2020-2021 MAP Scores Descriptive Data – Grade K*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2018-19	273	147.12	11.86	170.36	11.18
	2020-21	201	154.86	14.72	170.80	12.00
Male	2018-19	102	146.82	13.41	170.88	13.02
	2020-21	143	154.82	15.84	171.46	13.00
Female	2018-19	123	147.69	10.17	170.56	9.65
	2020-21	118	154.92	13.31	170.01	10.67
Asian	2018-19	21	147.24	15.79	169.05	15.64
	2020-21	20	168.45	24.25	183.40	16.31
Black	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**
Hispanic	2018-19	12	143.67	11.35	168.85	9.52
	2020-21	19	149.89	16.72	163.26	13.61
Two or more races	2018-19	11	143.91	12.83	171.45	9.72
	2020-21	**	**	**	**	**
White	2018-19	222	147.86	11.33	170.86	10.78
	2020-21	210	154.45	12.54	170.59	10.62
FRL	2018-19	37	141.08	10.57	166.71	9.73
	2020-21	29	148.86	17.41	164.38	15.24
SPED	2018-19	30	143.27	12.43	163.13	13.98
	2020-21	34	147.18	13.12	162.15	14.01
ELL	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**

Note: ** Fewer than 10 students who met these criteria were tested; 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; Gender unknown for 48 kindergarten students from 2018-2019.

Table 2. – *2018-2019 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	2018-19	273	140.00	147.12	159.10	170.36	19.10	23.24	7.29
Male	2018-19	102	140.00	146.82	159.10	170.88	19.10	24.06	7.56
Female	2018-19	123	140.00	147.69	159.10	170.56	19.10	22.87	7.18
Asian	2018-19	21	140.00	147.24	159.10	169.05	19.10	21.81	6.85
Black	2018-19	**	140.00	**	159.10	**	19.10	**	**
Hispanic	2018-19	12	140.00	143.67	159.10	168.85	19.10	25.18	7.91
Two or more races	2018-19	11	140.00	143.91	159.10	171.45	19.10	27.54	8.65
White	2018-19	222	140.00	147.86	159.10	170.86	19.10	23.00	7.23
FRL	2018-19	37	140.00	141.08	159.10	166.71	19.10	25.63	8.05
SPED	2018-19	30	140.00	143.27	159.10	163.13	19.10	19.86	6.24
ELL	2018-19	**	140.00	**	159.10	**	19.10	**	**
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 10 students who these criteria were tested; 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 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	261	139.56	154.86	157.11	170.80	17.54	15.94	5.45
Male	2020-21	143	139.56	154.82	157.11	171.46	17.54	16.64	5.69
Female	2020-21	118	139.56	154.92	157.11	170.01	17.54	15.09	5.16
Asian	2020-21	20	139.56	168.45	157.11	183.40	17.54	14.95	5.11
Black	2020-21	**	139.56	**	157.11	**	17.54	**	**
Hispanic	2020-21	19	139.56	149.89	157.11	163.26	17.54	13.37	4.57
Two or more races	2020-21	**	139.56	**	157.11	**	17.54	**	**
White	2020-21	210	139.56	154.45	157.11	170.59	17.54	16.14	5.52
FRL	2020-21	29	139.56	148.86	157.11	164.38	17.54	15.52	5.31
SPED	2020-21	34	139.56	147.18	157.11	162.15	17.54	14.97	5.12
ELL	2020-21	**	139.56	**	157.11	**	17.54	**	**
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 10 students who these criteria were tested; 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. – *2018-2019 and 2020-2021 MAP Scores Descriptive Data – Grade 1*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2018-19	299	168.80	12.49	189.91	13.68
	2020-21	281	170.22	12.81	186.92	13.96
Male	2018-19	122	167.83	13.52	190.78	14.13
	2020-21	154	171.03	13.26	188.80	13.58
Female	2018-19	116	169.10	10.24	188.83	12.84
	2020-21	127	169.24	12.23	184.62	14.13
Asian	2018-19	26	175.65	17.43	197.62	17.04
	2020-21	29	189.24	15.21	204.07	16.79
Black	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**
Hispanic	2018-19	18	165.06	8.71	183.00	12.92
	2020-21	30	168.37	9.10	185.20	13.47
Two or more races	2018-19	12	173.33	10.79	196.58	18.94
	2020-21	13	160.54	13.49	177.38	14.49
White	2018-19	234	168.46	11.68	189.75	12.31
	2020-21	206	168.59	10.37	185.56	11.67
FRL	2018-19	31	162.71	9.38	182.55	10.30
	2020-21	42	164.29	13.36	179.95	14.57
SPED	2018-19	27	156.96	16.51	178.11	17.66
	2020-21	31	160.61	12.00	179.19	14.96
ELL	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**

Note: ** Fewer than 10 students who met these criteria were tested; 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; Gender unknown for 61 first grade students in 2018-2019

Table 5. – *2018-2019 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	2018-19	299	162.40	168.80	180.80	189.91	18.40	21.11	6.88
Male	2018-19	122	162.40	167.83	180.80	190.78	18.40	22.95	7.48
Female	2018-19	116	162.40	169.10	180.80	188.83	18.40	19.73	6.43
Asian	2018-19	26	162.40	175.65	180.80	197.62	18.40	21.97	7.16
Black	2018-19	**	162.40	**	180.80	**	18.40	**	**
Hispanic	2018-19	18	162.40	165.06	180.80	183.00	18.40	17.94	5.85
Two or more races	2018-19	12	162.40	173.33	180.80	196.58	18.40	23.25	7.58
White	2018-19	234	162.40	168.46	180.80	189.75	18.40	21.29	6.94
FRL	2018-19	31	162.40	162.71	180.80	182.55	18.40	19.84	6.47
SPED	2018-19	27	162.40	156.96	180.80	178.11	18.40	21.14	6.89
ELL	2018-19	**	162.40	**	180.80	**	18.40	**	**
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 10 students who met these criteria were tested; 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 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	281	160.05	170.22	176.40	186.92	16.35	16.70	6.13
Male	2020-21	154	160.05	171.03	176.40	188.80	16.35	17.77	6.52
Female	2020-21	127	160.05	169.24	176.40	184.62	16.35	15.38	5.64
Asian	2020-21	29	160.05	189.24	176.40	204.07	16.35	14.83	5.44
Black	2020-21	**	160.05	**	176.40	**	16.35	**	**
Hispanic	2020-21	30	160.05	168.37	176.40	185.20	16.35	16.83	6.18
Two or more races	2020-21	13	160.05	160.54	176.40	177.38	16.35	16.84	6.18
White	2020-21	206	160.05	168.59	176.40	185.56	16.35	16.59	6.23
FRL	2020-21	42	160.05	164.29	176.40	179.95	16.35	15.66	5.75
SPED	2020-21	31	160.05	160.61	176.40	179.19	16.35	18.58	6.82
ELL	2020-21	**	160.05	**	176.40	**	16.35	**	**
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 10 students who met these criteria were tested; 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. – *2018-2019 and 2020-2021 MAP Scores Descriptive Data – Grade 2*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2018-19	293	183.89	12.92	201.55	12.27
	2020-21	278	180.77	11.21	197.47	12.28
Male	2018-19	122	185.47	13.44	203.32	12.60
	2020-21	135	181.34	12.09	198.34	12.15
Female	2018-19	121	182.98	11.14	199.93	10.52
	2020-21	143	180.22	10.34	196.65	12.40
Asian	2018-19	28	191.04	8.54	208.50	9.62
	2020-21	22	186.86	16.32	200.27	17.10
Black	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**
Hispanic	2018-19	31	179.94	13.19	198.29	11.73
	2020-21	19	178.84	14.14	193.72	10.76
Two or more races	2018-19	16	182.44	10.09	196.63	11.97
	2020-21	**	**	**	**	**
White	2018-19	210	183.72	13.27	201.51	12.42
	2020-21	224	180.90	10.00	197.73	11.86
FRL	2018-19	36	178.11	15.40	195.62	14.90
	2020-21	38	175.68	12.93	190.68	12.99
SPED	2018-19	31	168.61	16.82	186.32	18.16
	2020-21	29	172.17	12.16	189.31	15.24
ELL	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**

Note: ** Fewer than 10 students who met these criteria were tested; 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; Gender is unknown for 50 second grade students in 2018-2019

Table 8. – *2018-2019 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	2018-19	293	176.90	183.89	192.10	201.55	15.20	17.66	6.97
Male	2018-19	122	176.90	185.47	192.10	203.32	15.20	17.85	7.05
Female	2018-19	121	176.90	182.98	192.10	199.93	15.20	16.95	6.69
Asian	2018-19	28	176.90	191.04	192.10	208.50	15.20	17.46	6.89
Black	2018-19	**	176.90	**	192.10	**	15.20	**	**
Hispanic	2018-19	31	176.90	179.94	192.10	198.29	15.20	18.35	7.24
Two or more races	2018-19	16	176.90	182.44	192.10	196.63	15.20	14.19	5.60
White	2018-19	210	176.90	183.72	192.10	201.51	15.20	17.79	7.02
FRL	2018-19	36	176.90	178.11	192.10	195.62	15.20	17.51	6.91
SPED	2018-19	31	176.90	168.61	192.10	186.32	15.20	17.71	6.99
ELL	2018-19	**	176.90	**	192.10	**	15.20	**	**
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 10 students who met these criteria were tested; 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 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	278	175.04	180.77	189.42	197.47	14.38	16.70	6.97
Male	2020-21	135	175.04	181.34	189.42	198.34	14.38	17.00	7.09
Female	2020-21	143	175.04	180.22	189.42	196.65	14.38	16.43	6.86
Asian	2020-21	22	175.04	186.86	189.42	200.27	14.38	13.41	5.60
Black	2020-21	**	175.04	**	189.42	**	14.38	**	**
Hispanic	2020-21	19	175.04	178.84	189.42	193.72	14.38	14.88	6.21
Two or more races	2020-21	**	175.04	**	189.42	**	14.38	**	**
White	2020-21	224	175.04	180.90	189.42	197.73	14.38	16.83	7.02
FRL	2020-21	38	175.04	175.68	189.42	190.68	14.38	15.00	6.26
SPED	2020-21	29	175.04	172.17	189.42	189.31	14.38	17.14	7.15
ELL	2020-21	**	175.04	**	189.42	**	14.38	**	**
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 10 students who met these criteria were tested; 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. – *2018-2019 and 2020-2021 MAP Scores Descriptive Data – Grade 3*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2018-19	270	197.58	11.93	213.09	11.43
	2020-21	296	193.86	12.48	207.55	11.68
Male	2018-19	115	198.26	12.90	213.93	12.09
	2020-21	151	193.42	13.99	207.59	13.21
Female	2018-19	101	196.03	10.62	211.24	10.19
	2020-21	145	194.31	10.70	207.51	9.85
Asian	2018-19	16	203.38	15.06	220.31	12.27
	2020-21	24	206.92	18.90	213.29	18.10
Black	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**
Hispanic	2018-19	17	194.59	10.76	208.94	8.88
	2020-21	22	194.68	12.78	206.59	10.34
Two or more races	2018-19	11	189.45	14.29	208.00	12.16
	2020-21	11	197.45	15.13	211.45	11.48
White	2018-19	222	197.99	11.37	213.39	11.19
	2020-21	233	192.48	10.61	207.30	10.33
FRL	2018-19	39	193.64	13.21	210.10	13.31
	2020-21	31	188.74	9.19	204.38	13.15
SPED	2018-19	19	183.74	11.76	199.89	10.28
	2020-21	25	182.16	13.44	196.08	15.55
ELL	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**

Note: ** Fewer than 10 students who met these criteria were tested; 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; Gender is unknown for 54 third grade students in 2018-2019

Table 11. – *2018-2019 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	2018-19	270	190.40	197.58	203.40	213.09	13.00	15.51	7.16
Male	2018-19	115	190.40	198.26	203.40	213.93	13.00	15.67	7.23
Female	2018-19	101	190.40	196.03	203.40	211.24	13.00	15.21	7.02
Asian	2018-19	16	190.40	203.38	203.40	220.31	13.00	16.93	7.81
Black	2018-19	**	190.40	**	203.40	**	13.00	**	**
Hispanic	2018-19	17	190.40	194.59	203.40	208.94	13.00	14.35	6.62
Two or more races	2018-19	11	190.40	189.45	203.40	208.00	13.00	18.55	8.56
White	2018-19	222	190.40	197.99	203.40	213.39	13.00	15.40	6.47
FRL	2018-19	39	190.40	193.64	203.40	210.10	13.00	16.46	7.60
SPED	2018-19	19	190.40	183.74	203.40	199.89	13.00	16.15	7.45
ELL	2018-19	**	190.40	**	203.40	**	13.00	**	**
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 10 students who these criteria were tested; 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 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	296	188.48	193.86	201.08	207.55	12.60	13.69	6.52
Male	2020-21	151	188.48	193.42	201.08	207.59	12.60	14.17	6.75
Female	2020-21	145	188.48	194.31	201.08	207.51	12.60	13.20	6.29
Asian	2020-21	24	188.48	206.92	201.08	213.29	12.60	6.37	3.03
Black	2020-21	**	188.48	**	201.08	**	12.60	**	**
Hispanic	2020-21	22	188.48	194.68	201.08	206.59	12.60	11.91	5.67
Two or more races	2020-21	11	188.48	197.45	201.08	211.45	12.60	14.00	6.67
White	2020-21	233	188.48	192.48	201.08	207.30	12.60	14.82	7.06
FRL	2020-21	31	188.48	188.74	201.08	204.38	12.60	15.64	7.45
SPED	2020-21	25	188.48	182.16	201.08	196.08	12.60	13.92	6.63
ELL	2020-21	**	188.48	**	201.081	**	12.60	**	**
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 10 students who met these criteria were tested; 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. – *2018-2019 and 2020-2021 MAP Scores Descriptive Data – Grade 4*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2018-19	305	209.15	12.46	219.59	12.78
	2020-21	313	206.18	12.77	219.44	15.39
Male	2018-19	140	209.36	13.67	219.94	13.98
	2020-21	164	208.09	13.04	221.74	16.26
Female	2018-19	109	209.10	10.81	219.72	10.84
	2020-21	149	204.09	12.17	216.92	14.45
Asian	2018-19	27	209.89	18.08	220.69	18.93
	2020-21	28	214.36	16.81	227.36	20.74
Black	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**
Hispanic	2018-19	24	205.04	13.55	214.75	13.82
	2020-21	34	202.76	9.56	215.09	13.40
Two or more races	2018-19	**	**	**	**	**
	2020-21	17	206.35	13.24	215.82	17.23
White	2018-19	245	209.72	11.54	220.23	11.66
	2020-21	226	205.60	12.32	219.49	14.79
FRL	2018-19	36	202.72	13.88	212.33	14.95
	2020-21	41	201.59	12.57	211.66	14.45
SPED	2018-19	25	195.76	14.82	207.16	12.61
	2020-21	30	195.23	15.45	207.03	18.34
ELL	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**

Note: ** Fewer than 10 students who met these criteria were tested; 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; Gender is unknown for 56 fourth grade students in 2018-2019.

Table 14. – *2018-2019 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	2018-19	305	201.90	209.15	213.50	219.59	11.60	10.44	5.40
Male	2018-19	140	201.90	209.36	213.50	219.94	11.60	10.58	5.47
Female	2018-19	109	201.90	209.10	213.50	219.72	11.60	10.62	5.49
Asian	2018-19	27	201.90	209.89	213.50	220.69	11.60	10.80	5.59
Black	2018-19	**	201.90	**	213.50	**	11.60	**	**
Hispanic	2018-19	24	201.90	205.04	213.50	214.75	11.60	9.71	5.02
Two or more races	2018-19	**	201.90	**	213.50	**	11.60	**	**
White	2018-19	245	201.90	209.72	213.50	220.23	11.60	10.61	5.49
FRL	2018-19	36	201.90	202.72	213.50	212.33	11.60	9.61	4.97
SPED	2018-19	25	201.90	195.76	213.50	207.16	11.60	11.40	5.90
ELL	2018-19	**	201.90	**	213.50	**	11.60	**	**
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 10 students who these criteria were tested; 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 15. – *2020-2021 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	313	199.55	206.18	210.51	219.44	10.96	13.26	7.26
Male	2020-21	164	199.55	208.09	210.51	221.74	10.96	13.65	7.47
Female	2020-21	149	199.55	204.09	210.51	216.92	10.96	12.83	7.02
Asian	2020-21	28	199.55	214.36	210.51	227.36	10.96	13.00	7.12
Black	2020-21	**	199.55	**	210.51	**	10.96	**	**
Hispanic	2020-21	34	199.55	202.76	210.51	215.09	10.96	12.33	6.75
Two or more races	2020-21	17	199.55	206.35	210.51	215.82	10.96	9.47	5.18
White	2020-21	226	199.55	205.60	210.51	219.49	10.96	13.89	7.60
FRL	2020-21	41	199.55	201.59	210.51	211.66	10.96	10.07	5.51
SPED	2020-21	30	199.55	195.23	210.51	207.03	10.96	11.48	6.28
ELL	2020-21	**	199.55	**	210.51	**	10.96	**	**
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 10 students who these criteria were tested; 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 16. – *2018-2019 and 2020-2021 MAP Scores Descriptive Data – Grade 5*

	Year	N	Fall Mean	Fall SD	Spring Mean	Spring SD
All Students	2018-19	300	218.37	14.11	229.05	15.76
	2020-21	283	214.02	14.41	227.77	16.56
Male	2018-19	105	218.81	15.10	229.60	17.14
	2020-21	140	215.19	14.92	229.54	17.02
Female	2018-19	137	217.69	12.60	227.85	14.91
	2020-21	143	212.89	13.84	226.03	15.96
Asian	2018-19	21	225.00	20.19	237.48	19.45
	2020-21	23	225.70	15.94	239.30	19.05
Black	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**
Hispanic	2018-19	14	218.50	13.50	227.00	17.55
	2020-21	20	209.05	16.55	221.45	17.01
Two or more races	2018-19	10	211.90	13.09	222.50	15.09
	2020-21	12	205.42	14.57	221.17	21.89
White	2018-19	249	218.19	13.55	228.71	15.25
	2020-21	225	213.84	13.46	227.73	15.40
FRL	2018-19	42	214.60	14.64	225.12	16.89
	2020-21	43	207.53	14.09	219.84	18.99
SPED	2018-19	18	198.56	20.73	208.94	20.72
	2020-21	19	193.42	13.18	204.53	14.93
ELL	2018-19	**	**	**	**	**
	2020-21	**	**	**	**	**

Note: ** Fewer than 10 students who these criteria were tested; 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; Gender is unknown for 58 fifth grade students in 2018-2019.

Table 17. – *2018-2019 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	2018-19	300	211.40	218.37	221.40	229.05	9.90	10.68	6.47
Male	2018-19	105	211.40	218.81	221.40	229.60	9.90	10.79	6.54
Female	2018-19	137	211.40	217.69	221.40	227.85	9.90	10.16	6.16
Asian	2018-19	21	211.40	225.00	221.40	237.48	9.90	12.48	7.56
Black	2018-19	**	211.40	**	221.40	**	9.90	**	**
Hispanic	2018-19	14	211.40	218.50	221.40	227.00	9.90	8.50	5.15
Two or more races	2018-19	10	211.40	211.90	221.40	222.50	9.90	10.60	6.42
White	2018-19	249	211.40	218.19	221.40	228.71	9.90	10.52	6.38
FRL	2018-19	42	211.40	214.60	221.40	225.12	9.90	10.52	6.38
SPED	2018-19	18	211.40	198.56	221.40	208.94	9.90	10.38	6.29
ELL	2018-19	**	211.40	**	221.40	**	9.90	**	**
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 10 students who met these criteria were tested; 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 18. – *2020-2021 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	283	209.13	214.02	218.75	227.77	9.61	13.75	8.58
Male	2020-21	140	209.13	215.19	218.75	229.54	9.61	14.35	8.96
Female	2020-21	143	209.13	212.89	218.75	226.03	9.61	13.14	8.20
Asian	2020-21	23	209.13	225.70	218.75	239.30	9.61	13.60	8.49
Black	2020-21	**	209.13	**	218.75	**	9.61	**	**
Hispanic	2020-21	20	209.13	209.05	218.75	221.45	9.61	12.40	7.74
Two or more races	2020-21	12	209.13	205.42	218.75	221.17	9.61	15.75	9.83
White	2020-21	225	209.13	213.84	218.75	227.73	9.61	13.89	8.67
FRL	2020-21	43	209.13	207.53	218.75	219.84	9.61	12.31	7.69
SPED	2020-21	19	209.13	193.42	218.75	204.53	9.61	11.11	6.94
ELL	2020-21	**	209.13	**	218.75	**	9.61	**	**
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: ** Fewer than 10 students who met these criteria were tested; 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 three key findings:

1. Fall-to-spring student growth exceeded the normative data for both academic years tested, including the 2020-2021 school year which occurred during the COVID-19 pandemic, breaking with national trends.

2. Fall-to-spring growth exceeded normative data for students receiving free and reduced lunch as well as for students receiving special education services for every grade level except for grade 4.

3. Fourth grade students performed much better during the 2020-2021 school year compared to normative data, after the implementation of the McGraw Hill curriculum and during COVID-19, than they did during the 2018-2019 school year.

Overall, the participating district is a strong academically performing school district. Nationally, academic performance during the COVID-19 pandemic suffered (e.g., Halloran, 2021); however, students in the participating district mostly performed above the normative data – data which was normed prior to the pandemic. Of note is the strong performance of those who historically have underperformed on tests, including students receiving special education services and low-income students (DeMatthews & Knight, 2019; Koretz, 2008; Tavassolie & Winsler, 2019). Students meeting these criteria outperformed normative growth in all cases except for the fourth grade (FRL). 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. Future evaluation work might also seek to understand the impact that *Reveal Math* is having on historically underperforming populations and why they outperformed peers enrolled elsewhere.

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