Predicting Performance on the Nevada Smarter Balanced Summative Assessments Based on NWEA MAP Growth Scores

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NWEA Psychometrics and Analytics

Linking Study Updates

Date	Description
2021-03	Conducted a linking study for grades 3–8 in mathematics and ELA/literacy based on the 2020 norms and Spring 2019 data.
2025-07	Updated the linking study based on the 2025 norms.

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Executive Summary

To predict student achievement on the Nevada Smarter Balanced Assessment Consortium (NV SBAC) summative assessments in grades 3–8 English language arts/literacy (ELA) and mathematics, NWEA® conducted a linking study using Spring 2019 data to derive Rasch Unit (RIT) cut scores on the MAP® Growth™ assessments that correspond to the NV SBAC achievement levels. With this information, educators can identify students at risk of failing to meet state proficiency standards early in the year and provide tailored educational interventions. The linking study has been updated since the previous version to incorporate the most recent 2025 NWEA MAP Growth norms (NWEA, 2025).

Table E.1 presents the NV SBAC Level 3 achievement level cut scores and the corresponding MAP Growth RIT cut scores that allow teachers to identify students who are on track for proficiency on the state summative test and those who are not. For example, the Level 3 cut score on the NV SBAC grade 3 ELA test is 2432. A grade 3 student with a MAP Growth reading RIT score of 194 in the fall is likely to meet proficiency on the NV SBAC ELA test in the spring, whereas a grade 3 student with a MAP Growth reading RIT score lower than 194 in the fall is in jeopardy of not meeting proficiency. MAP Growth cut scores for grade 2 are also provided so that educators can track early learners' progress toward proficiency on the NV SBAC test by grade 3. These cut scores were derived based on the grade 3 cuts and the 2025 NWEA growth norms for the adjacent grade (i.e., grades 2 to 3).

Table E.1. MAP Growth Cut Scores for NV SBAC Proficiency

Assessment		Level 3 Cut Scores by Grade						
		2	3	4	5	6	7	8
ELA/Reading								
NV SBAC Spring		–	2432	2473	2502	2531	2552	2567
MAP Growth	Fall	181	194	203	208	215	217	221
	Winter	187	199	206	210	216	218	222
	Spring	191	202	208	212	217	219	223
Mathematics								
NV SBAC Spring		–	2436	2485	2528	2552	2567	2586
MAP Growth	Fall	179	190	206	218	220	227	235
	Winter	187	199	214	224	227	232	240
	Spring	193	205	219	228	231	234	242

Please note that the results in this report may differ from those found in the NWEA reporting system for individual districts. The typical growth scores from fall to spring or winter to spring used in this report are based on the default instructional weeks most encountered for each term (i.e., Weeks 4, 20, and 32 for fall, winter, and spring, respectively). However, instructional weeks often vary by district, so the cut scores in this report may differ slightly from the MAP Growth score reports that reflect the specific instructional weeks set by partners.

E.1. Assessment Overview

The NV SBAC grades 3–8 ELA and mathematics tests are Nevada's state summative assessments aligned to the Nevada Academic Content Standards (NVACS). Based on their test scores, students are placed into one of four achievement levels: Level 1: *Minimal Understanding*, Level 2: *Partial Understanding*, Level 3*: Proficient*, and Level 4: *Advanced*. The Level 3 cut score demarks the minimum level of achievement considered to be proficient for accountability purposes. MAP Growth tests are adaptive interim assessments aligned to state-specific content standards and administered in the fall, winter, and spring. Scores are reported on the RIT vertical scale with a range of 100–350.

E.2. Linking Methods

Based on scores from the Spring 2019 test administration, the equipercentile linking method was used to identify the spring MAP Growth scores that correspond to the spring NV SBAC achievement level cut scores. MAP Growth spring cut scores for grade 2 were then derived from the spring cuts for grade 3 and the growth norms for the adjacent grade (i.e., grades 2 to 3). Similarly, the MAP Growth cut scores for the fall and winter administrations of all grades were derived from the spring administration cuts and the growth norms for either fall to spring or winter to spring, respectively. The spring cuts[1] for mathematics were adjusted for score alignment before deriving the cuts for grade 2 spring and for all grades' fall and winter administrations.

E.3. Student Sample

Only students who took both the MAP Growth and NV SBAC assessments in Spring 2019 were included in the study sample. Table E.2 presents the weighted number of Nevada students from 8 districts and 50 schools who were included in the linking study. The linking study sample is voluntary and can only include student scores from partners who share their data. Also, not all students in a state take MAP Growth. The sample may therefore not represent the general student population as well as it should. To ensure that the linking study sample represents the state student population in terms of race, sex, and achievement level, weighting (i.e., a statistical method that matches the distributions of the variables of interest to those of the target population) was applied to the sample. As a result, the RIT cuts derived from the study sample can be generalized to any student from the target population. All analyses in this study for grades 3–8 were conducted based on the weighted sample.

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[1] To enhance content validity, NWEA developed an Enhanced Item-Selection Algorithm (EISA) for the MAP Growth assessment to prioritize grade-level content. A pilot study (Meyer et al., 2023) showed that students taking MAP Growth with EISA demonstrated higher average math scores compared with those taking traditional MAP Growth. To improve score comparability, NWEA (Lewis & Kuhfeld, 2024) developed concordance tables to adjust mathematics scores from traditional assessments to align with scores from MAP Growth with EISA, or vice versa. Given that the data for this study were collected from traditional MAP Growth tests but that the results will be used for MAP Growth with EISA, the spring cuts for mathematics were adjusted using the concordance tables before being used to derive other cut scores. This score adjustment will become unnecessary for future linking studies once the new data from EISA tests are collected.

Table E.2. Linking Study Sample

Grade	# Students	
	ELA/Reading	Mathematics
3	3,000	2,532
4	2,743	2,759
5	3,092	3,094
6	3,064	3,145
7	2,967	3,011
8	2,625	2,547

E.4. Test Score Relationships

Correlations between MAP Growth RIT scores and NV SBAC scores range from 0.83 to 0.91 across content areas, as shown in Figure E.1. These values indicate a strong relationship among the scores, which is important validity evidence for the claim that MAP Growth scores are good predictors of performance on the NV SBAC summative assessments.

Figure E.1. Correlations Between MAP Growth and NV SBAC Test Scores
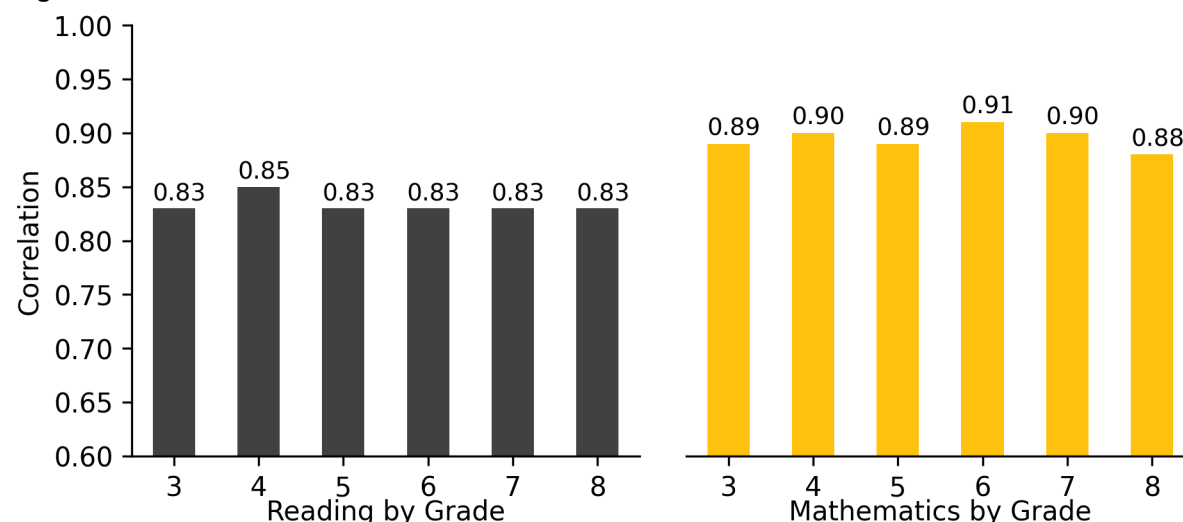
E.5. Accuracy of MAP Growth Classifications

Figure E.2 presents the classification accuracy statistics that show the proportion of students correctly classified by their RIT scores as proficient (Level 3 or Level 4) or not proficient (Level 1 or Level 2) on the NV SBAC summative tests.[2] For example, the MAP Growth reading grade 3 Level 3 cut score has a 0.84 accuracy rate, meaning it accurately classified student achievement on the state test for 84% of the sample. The results range from 0.84 to 0.90 across content areas, indicating that RIT scores have a high accuracy rate of identifying student proficiency (Level 3 or higher) on the NV SBAC summative tests.

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[2] The classification accuracy calculations for the mathematics spring cuts were based on the concorded cut scores.

Figure E.2. Accuracy of MAP Growth Classifications
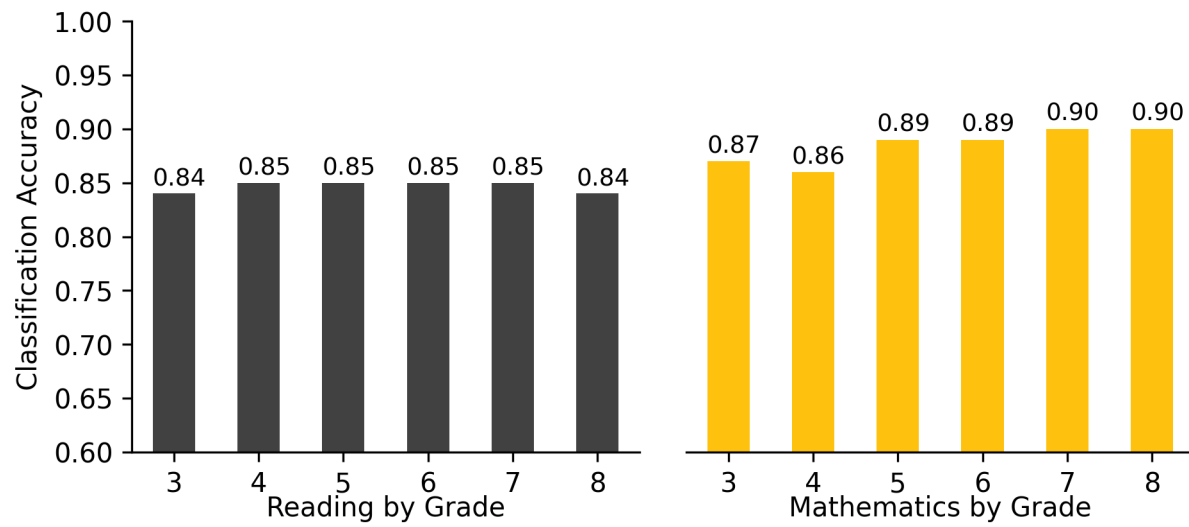
1. Introduction

1.1. Purpose of the Study

NWEA® is committed to providing partners with useful tools to help make inferences about student learning from MAP® Growth™ test scores. One important use of MAP Growth results is to predict a student's performance on the state summative assessment at different times throughout the year. This allows educators and parents to determine if a student is on track in their learning to meet state standards by the end of the year or, given a student's learning profile, is on track to obtain rigorous, realistic growth in their content knowledge and skills.

This report presents results from a linking study conducted by NWEA in March 2021 to statistically connect the scores of the Nevada Smarter Balanced Assessment Consortium (NV SBAC) summative assessments in grades 3–8 English language arts/literacy (ELA) and mathematics with Rasch Unit (RIT) scores from the MAP Growth assessments taken during the Spring 2019 term. The linking study has been updated since the previous version to incorporate the most recent 2025 NWEA MAP Growth norms (NWEA, 2025). In this updated study, MAP Growth cut scores are also included for grade 2 so that educators can track early learners' progress toward proficiency on the NV SBAC summative test by grade 3. This report presents the following results:

1. Student sample demographics
2. Descriptive statistics of test scores
3. MAP Growth cut scores that correspond to the NV SBAC achievement levels using the equipercentile linking procedure for the spring results and the 2025 norms for the fall and winter results
4. Classification accuracy statistics to determine the degree to which MAP Growth accurately predicts student proficiency status (Level 3 or higher) on the NV SBAC summative tests
5. The probability of achieving grade-level proficiency on the NV SBAC assessment based on MAP Growth RIT scores from fall, winter, and spring using the 2025 norms

1.2. Assessment Overview

The NV SBAC grades 3–8 ELA and mathematics summative assessments are aligned to the Nevada Academic Content Standards (NVACS). Each assessment has three cut scores (i.e., the minimum score a student must get on a test to be placed at a certain achievement level) that distinguish between the following achievement levels: Level 1: *Minimal Understanding*, Level 2: *Partial Understanding*, Level 3*: Proficient*, and Level 4: *Advanced*. The Level 3 cut score demarks the minimum level of performance considered to be proficient for accountability purposes.

MAP Growth interim assessments from NWEA are computer adaptive and aligned to state-specific content standards. Scores are reported on the RIT vertical scale with a range of 100–350. Each content area has its own scale. To aid the interpretation of scores, NWEA periodically conducts norming studies of student and school performance on MAP Growth. Achievement status norms show how well a student performed on the MAP Growth test compared with students in the norming group by associating the student's performance on the MAP Growth test, expressed as a RIT score, with a percentile ranking. Growth norms provide expected score gains across test administrations (e.g., the relative evaluation of a student's growth from fall to spring). The most recent norms study was conducted in 2025 (NWEA, 2025).

2. Methods

2.1. Data Collection

This linking study is based on data from the Spring 2019 administrations of the MAP Growth and NV SBAC assessments. NWEA requested that Nevada districts recruited to participate in the study share their student and score data for the target term. Districts also permitted NWEA to access students' associated MAP Growth scores from the NWEA in-house database.[3] Once state score information was available to NWEA, each student's state testing record was matched to their MAP Growth score by using the student's first and last names, date of birth, student ID, and other available identifying information. Only students who took both the MAP Growth and NV SBAC assessments in Spring 2019 were included in the study sample.

2.2. Post-Stratification Weighting

Post-stratification weights were applied to the calculations to ensure that the linking study sample represented the state population in terms of race, sex, and achievement level. These variables were selected because they are correlated with the student's academic achievement within this study and are often provided in the data for the state population. The weighted sample matches the target population as closely as possible for the key demographics and test score characteristics. Specifically, a raking procedure was used to calculate the post-stratification weights and improve the representativeness of the sample. Raking uses iterative procedures to obtain weights that match sample marginal distributions to known population margins. The following steps were taken during this process:

1. Calculate marginal distributions of race, sex, and achievement level for the sample and population.
2. Calculate post-stratification weights with the rake function from the survey package in R (Lumley, 2019).
3. Apply the weights to the sample before conducting the linking study analyses.

2.3. MAP Growth Cut Scores

The equipercentile linking method (Kolen & Brennan, 2004) was used to identify the spring MAP Growth RIT scores that correspond to the spring NV SBAC achievement level cut scores. Spring cuts for grade 2 were derived based on the cuts for grade 3 and the 2025 NWEA growth norms. RIT fall and winter cut scores that predict proficiency on the spring NV SBAC summative test were then projected using the 2025 growth norms. Percentile ranks are also provided that show how a nationally representative sample of students in the same grade scored on MAP Growth for each administration, which is an important interpretation of RIT scores. This is useful for understanding (1) how student scores compared with peers nationwide and (2) the relative rigor of a state's achievement level designations for its summative assessment.

The MAP Growth spring cut scores for grades 3–8 could be calculated using the equipercentile linking method because that data are directly connected to the NV SBAC spring data used in the study. The equipercentile linking procedure matches scores on the two scales that have the same percentile rank (i.e., the proportion of tests at or below each score). For example, let x represent a score on Test X (e.g., NV SBAC). Its equipercentile equivalent score on Test Y

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[3] The exception is Clark County that did its own matching and provided NWEA the merged data file.

(e.g., MAP Growth), $e_y(x)$, can be obtained through a cumulative-distribution-based linking function defined as:

$$e_y(x) = G^{-1}[P(x)]$$

where $e_y(x)$ is the equipercentile equivalent of score x on the NV SBAC tests on the scale of MAP Growth, $P(x)$ is the percentile rank of a given score on the NV SBAC tests, and G^{-1} is the inverse of the percentile rank function for MAP Growth that indicates the score on MAP Growth corresponding to a given percentile. Polynomial loglinear pre-smoothing was applied to reduce irregularities of the score distributions and equipercentile linking curve.

The MAP Growth conditional growth norms provide students' expected score gains across terms, such as growth from fall or winter to spring within the same grade or from spring of a lower grade to the spring of the adjacent higher grade. This information can be used to calculate the fall and winter cut scores for grades 3–8 and the fall, winter, and spring cut scores for grade 2. The equation below was used to determine the previous term's or grade's MAP Growth score needed to reach the spring cut score, considering the expected growth associated with the previous RIT score:

$$RIT_{PredSpring} = RIT_{previous} + g$$

where:
- $RIT_{PredSpring}$ is the predicted MAP Growth spring score,
- $RIT_{previous}$ is the previous term's or grade's RIT score, and
- g is the expected growth from the previous RIT (e.g., fall or winter) to the spring RIT.

To derive the spring cut scores for grade 2, the growth score from spring of one year to the next was used (i.e., the growth score from spring grade 2 to spring grade 3). The calculation of fall and winter cuts for grade 2 followed the same process as the other grades. For example, the growth score from fall to spring in grade 2 was used to calculate the fall cuts for grade 2.

2.4. Classification Accuracy
The degree to which MAP Growth predicts student proficiency status on the NV SBAC tests can be described using classification accuracy statistics based on the MAP Growth spring RIT cut scores that show the proportion of students correctly classified by their RIT scores as proficient (Level 3 or Level 4) or not proficient (Level 1 or Level 2). Table 2.1 describes the classification accuracy statistics provided in this report (Pommerich et al., 2004). The results are based on the Spring 2019 MAP Growth and NV SBAC data for the Level 3 cut score.

Table 2.1. Description of Classification Accuracy Summary Statistics

Statistic	Description	Interpretation
Overall Classification Accuracy Rate	(TP + TN) / (total sample size)	Proportion of the study sample whose proficiency classification on the state test was correctly predicted by MAP Growth cut scores
False Negative (FN) Rate	FN / (FN + TP)	Proportion of students identified by MAP Growth as not proficient in those observed as proficient on the state test
False Positive (FP) Rate	FP / (FP + TN)	Proportion of students identified by MAP Growth as not proficient in those observed as not proficient on the state test
Sensitivity	TP / (TP + FN)	Proportion of students identified by MAP Growth as proficient in those observed as such on the state test
Specificity	TN / (TN + FP)	Proportion of students identified by MAP Growth as not proficient in those observed as such on the state test
Precision	TP / (TP + FP)	Proportion of students observed as proficient on the state test in those identified as such by the MAP Growth test
Area Under the Curve (AUC)	Area under the receiver operating characteristics (ROC) curve	How well MAP Growth cut scores separate the study sample into proficiency categories that match those from the state test cut scores. An AUC at or above 0.80 is considered "good" accuracy.

Note. FP = false positives; FN = false negatives; TP = true positives; TN = true negatives.

2.5. Proficiency Projections

Given that all test scores contain measurement errors, reaching the Level 3 RIT cut does not guarantee that a student is proficient on the state test. Instead, it can be claimed that a student meeting the RIT cut score has a 50% chance of reaching proficiency on the state test, with their chances increasing the greater their score is from the cut. The proficiency projections indicate these probabilities for various RIT scores throughout the year.

In addition to calculating the MAP Growth fall and winter cut scores (and the projected grade 2 cut scores), the MAP Growth conditional growth norms data were also used to calculate the probability of reaching proficiency (Level 3 or higher) on the NV SBAC summative tests based on a student's RIT scores from fall, winter, and spring. The equation below was used to calculate the probability of a student achieving proficiency performance on the NV SBAC summative test based on their fall or winter RIT score:

$$Pr(Achieving\ proficiency\ in\ spring|\ starting\ RIT) = \Phi\left(\frac{RIT_{previous}\ +\ g\ -\ RIT_{SpringCut}}{SD}\right)$$

where:
- Φ is a standardized normal cumulative distribution,
- $RIT_{previous}$ is the student's RIT score in fall or winter,
- g is the expected growth from the previous RIT (e.g., fall or winter) to the spring RIT,
- $RIT_{SpringCut}$ is the MAP Growth Level 3 cut score for spring, and
- SD is the conditional standard deviation of the expected growth, g.

The equation below was used to estimate the probability of a student achieving proficiency (Level 3 or higher) performance on the NV SBAC summative test based on their spring RIT score (RIT_{Spring}):

$$Pr(Achieving\ proficiency\ in\ spring \mid spring\ RIT) = \Phi\left(\frac{RIT_{Spring} - RIT_{SpringCut}}{SE}\right)$$

where SE is the standard error of measurement for MAP Growth.

3. Results

3.1. Study Sample

Only students who took both the MAP Growth and NV SBAC assessments in Spring 2019 were included in the study sample. Data used in this study were collected from 8 districts and 50 schools in Nevada. Table 3.1 presents the demographic distributions of race, sex, and achievement level in the original unweighted study sample. Table 3.2 presents the distributions of the student population who took the Spring 2019 NV SBAC summative tests. Since the unweighted data are different from the general NV SBAC population, post-stratification weights were applied to the linking study sample to improve its representativeness. Table 3.3 presents the demographic distributions of the sample after weighting, which are almost identical to the NV SBAC student population distributions. The analyses in this study were therefore conducted based on the weighted sample.

Table 3.1. Linking Study Sample Demographics (Unweighted)

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
ELA/Reading							
	Total N	3,003	2,746	3,092	3,061	2,967	2,622
Race	AI/AN	2.4	2.2	2.1	1.3	1.6	1.6
	Asian	3.0	3.7	3.0	4.1	3.7	3.5
	Black	3.8	5.4	6.0	5.2	5.7	6.2
	Hispanic	26.6	29.9	31.5	34.5	41.2	39.7
	Multi-Race	8.3	8.3	6.7	6.5	7.4	6.5
	Pacific Islander	2.1	0.6	1.0	1.2	1.0	0.8
	White	53.7	50.0	49.7	47.3	39.3	41.7
Sex	Female	49.3	47.5	47.2	49.2	48.9	49.0
	Male	50.7	52.5	52.8	50.8	51.1	51.0
Achievement Level	Level 1	24.0	27.7	26.2	23.2	21.8	21.0
	Level 2	24.4	22.0	21.1	28.4	26.4	28.5
	Level 3	23.3	26.9	30.4	33.5	38.1	36.4
	Level 4	28.3	23.3	22.3	14.9	13.7	14.2
Mathematics							
	Total N	2,529	2,756	3,091	3,145	3,011	2,544
Race	AI/AN	2.8	2.2	2.2	1.3	1.6	1.6
	Asian	3.5	3.7	3.0	4.1	3.9	3.3
	Black	4.1	5.4	6.0	4.8	5.8	6.4
	Hispanic	27.0	29.8	31.4	34.1	39.6	38.2
	Multi-Race	7.5	8.3	6.8	6.5	7.6	6.7
	Pacific Islander	0.7	0.6	1.0	1.1	1.0	0.9
	White	54.5	49.9	49.6	48.0	40.6	42.9
Sex	Female	49.0	47.4	47.2	49.4	48.5	49.8
	Male	51.0	52.6	52.8	50.6	51.5	50.2
Achievement Level	Level 1	21.9	20.2	32.4	30.0	35.4	42.3
	Level 2	25.2	34.1	29.2	32.8	32.4	28.5

Demographic Subgroup	% Students by Grade					
	3	4	5	6	7	8
Level 3	31.8	29.7	19.5	22.6	20.3	17.1
Level 4	21.1	15.9	18.9	14.6	11.8	12.0

Note. AI/AN = American Indian/Alaska Native.

Table 3.2. Spring 2019 NV SBAC Student Population Demographics

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
ELA							
	Total N	36,431	37,057	38,585	39,077	37,717	36,609
Race	AI/AN	0.8	0.8	0.9	0.8	0.9	0.9
	Asian	5.0	5.1	5.2	5.4	5.5	5.9
	Black	11.8	11.8	11.6	11.1	11.1	11.0
	Hispanic	42.8	43.1	43.1	43.7	43.5	43.4
	Multi-Race	7.3	6.9	6.6	6.7	6.2	6.0
	Pacific Islander	1.4	1.4	1.5	1.5	1.5	1.6
	White	30.9	30.8	31.0	30.7	31.3	31.2
Sex	Female	49.2	48.9	48.4	49.0	48.9	48.8
	Male	50.8	51.1	51.6	51.0	51.1	51.2
Achievement Level	Level 1	27.5	30.0	27.5	27.3	25.2	25.8
	Level 2	26.2	20.7	20.5	26.9	24.9	26.7
	Level 3	23.3	23.9	30.5	31.1	35.1	34.1
	Level 4	22.9	25.3	21.5	14.8	14.8	13.5
Mathematics							
	Total N	36,375	37,015	38,557	39,038	37,706	36,565
Race	AI/AN	0.8	0.8	0.9	0.8	0.9	0.8
	Asian	5.0	5.1	5.2	5.4	5.5	5.9
	Black	11.8	11.8	11.6	11.1	11.1	10.9
	Hispanic	42.8	43.2	43.1	43.7	43.5	43.5
	Multi-Race	7.2	6.9	6.6	6.7	6.2	6.0
	Pacific Islander	1.4	1.4	1.5	1.5	1.5	1.6
	White	30.9	30.9	31.0	30.7	31.2	31.3
Sex	Female	49.2	48.9	48.4	49.0	48.8	48.8
	Male	50.8	51.1	51.6	51.0	51.2	51.2
Achievement Level	Level 1	27.3	23.6	35.3	35.8	39.2	44.1
	Level 2	24.9	32.5	28.0	30.0	28.4	25.6
	Level 3	29.0	27.5	18.1	19.3	19.0	15.2
	Level 4	18.9	16.5	18.7	14.9	13.4	15.2

Note. AI/AN = American Indian/Alaska Native.

Table 3.3. Linking Study Sample Demographics (Weighted)

Demographic Subgroup		% Students by Grade					
		3	**4**	**5**	**6**	**7**	**8**
ELA/Reading							
	Total N	3,000	2,743	3,092	3,064	2,967	2,625
Race	AI/AN	0.8	0.8	0.9	0.8	0.9	0.9
	Asian	5.0	5.1	5.2	5.4	5.5	5.9
	Black	11.8	11.8	11.6	11.1	11.1	11.0
	Hispanic	42.8	43.1	43.1	43.7	43.5	43.4
	Multi-Race	7.3	6.9	6.6	6.7	6.2	6.0
	Pacific Islander	1.4	1.4	1.5	1.5	1.5	1.6
	White	30.9	30.9	31.0	30.7	31.3	31.2
Sex	Female	49.2	48.9	48.4	49.0	48.9	48.8
	Male	50.8	51.1	51.6	51.0	51.1	51.2
Achievement Level	Level 1	27.5	30.0	27.5	27.3	25.2	25.8
	Level 2	26.2	20.7	20.5	26.9	24.9	26.7
	Level 3	23.3	23.9	30.5	31.1	35.1	34.1
	Level 4	22.9	25.3	21.5	14.8	14.8	13.5
Mathematics							
	Total N	2,532	2,759	3,094	3,145	3,011	2,547
Race	AI/AN	0.8	0.8	0.9	0.8	0.9	0.8
	Asian	5.0	5.1	5.2	5.4	5.6	5.9
	Black	11.8	11.8	11.6	11.1	11.1	10.9
	Hispanic	42.8	43.1	43.1	43.8	43.5	43.4
	Multi-Race	7.2	6.9	6.6	6.7	6.2	6.0
	Pacific Islander	1.4	1.4	1.5	1.5	1.5	1.6
	White	30.9	30.9	31.0	30.7	31.3	31.3
Sex	Female	49.2	48.9	48.4	49.0	48.8	48.8
	Male	50.8	51.1	51.6	51.0	51.2	51.2
Achievement Level	Level 1	27.3	23.6	35.3	35.8	39.2	44.1
	Level 2	24.9	32.5	28.0	30.0	28.4	25.6
	Level 3	29.0	27.5	18.1	19.3	19.0	15.2
	Level 4	18.9	16.5	18.7	14.9	13.4	15.2

Note. AI/AN = American Indian/Alaska Native.

3.2. Descriptive Statistics

Table 3.4 presents descriptive statistics of the MAP Growth and NV SBAC test scores from Spring 2019, including the correlation coefficients (*r*) between them. The correlation coefficients between the scores range from 0.83 to 0.85 for ELA/reading and 0.88 to 0.91 for mathematics. These values indicate a strong relationship among the scores, which is important validity evidence for the claim that MAP Growth scores are good predictors of performance on the NV SBAC summative assessments.

Table 3.4. Descriptive Statistics of Test Scores

Grade	N	r	NV SBAC				MAP Growth			
			Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
ELA/Reading										
3	3,000	0.83	2423.4	84.9	2114	2623	198.9	15.1	141	236
4	2,743	0.85	2466.1	88.6	2157	2663	205.3	15.5	147	246
5	3,092	0.83	2502.5	89.5	2208	2701	210.1	15.8	148	257
6	3,064	0.83	2518.8	89.9	2210	2724	213.8	15.2	157	267
7	2,967	0.83	2546.4	92.8	2258	2745	216.8	15.8	157	258
8	2,625	0.83	2556.6	95.7	2288	2769	219.6	16.0	158	262
Mathematics										
3	2,532	0.89	2427.6	81.0	2189	2621	201.4	14.1	139	242
4	2,759	0.90	2468.1	82.7	2204	2659	210.4	15.3	140	253
5	3,094	0.89	2490.6	91.2	2219	2700	217.3	17.7	128	277
6	3,145	0.91	2504.9	98.7	2235	2748	220.7	16.1	159	266
7	3,011	0.90	2514.1	102.1	2250	2778	223.3	17.4	165	277
8	2,547	0.88	2526.1	110.3	2265	2802	228.6	18.3	164	287

Note. SD = standard deviation; Min. = minimum; Max. = maximum.

3.3. MAP Growth Cut Scores

Table 3.5 and Table 3.6 present the NV SBAC scale score ranges and the corresponding MAP Growth RIT cut scores and percentile ranges by content area and grade. These tables can be used to predict a student's likely achievement level on the NV SBAC spring assessment when MAP Growth is taken in the fall, winter, or spring. For example, a grade 3 student who obtained a MAP Growth reading RIT score of 194 in the fall is likely to achieve Level 3 performance on the NV SBAC ELA test. A grade 3 student who obtained a MAP Growth reading RIT score of 199 in the winter is also likely to achieve Level 3 performance on the NV SBAC summative assessment. The winter cut score is higher than the fall cut score because growth is expected between fall and spring as students receive more instruction during the school year.

Within this report, the cut scores for fall and winter are derived from the spring cuts and the typical growth scores from fall-to-spring or winter-to-spring. The typical growth scores are based on the default instructional weeks most encountered for each term (Weeks 4, 20, and 32 for fall, winter, and spring, respectively). Since instructional weeks often vary by district, the cut scores in this report may differ slightly from the MAP Growth score reports that reflect instructional weeks set by partners. If the actual instructional weeks deviate from the default ones, a student's expected performance level could be different from the projections presented in this report. Partners are therefore encouraged to use the projected performance level in students' score reports, since these reflect the specific instructional weeks set by partners.

Table 3.5. MAP Growth Cut Scores—ELA/Reading

Grade	Level 1	Level 2	Level 3	Level 4
	NV SBAC ELA			
3	2114–2366	2367–2431	**2432**–2489	2490–2623
4	2131–2415	2416–2472	**2473**–2532	2533–2663
5	2201–2441	2442–2501	**2502**–2581	2582–2701
6	2210–2456	2457–2530	**2531**–2617	2618–2724
7	2258–2478	2479–2551	**2552**–2648	2649–2745
8	2288–2486	2487–2566	**2567**–2667	2668–2769

MAP Growth Reading

Grade	Level 1		Level 2		Level 3		Level 4	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall								
2	100–165	1–40	166–180	41–73	**181**–191	74–89	192–350	90–99
3	100–180	1–41	181–193	42–68	**194**–202	69–83	203–350	84–99
4	100–191	1–40	192–202	41–64	**203**–211	65–80	212–350	81–99
5	100–195	1–32	196–207	33–59	**208**–220	60–83	221–350	84–99
6	100–200	1–31	201–214	32–63	**215**–226	64–85	227–350	86–99
7	100–202	1–28	203–216	29–60	**217**–230	61–86	231–350	87–99
8	100–206	1–29	207–220	30–61	**221**–233	62–85	234–350	86–99
Winter								
2	100–171	1–38	172–186	39–72	**187**–197	73–88	198–350	89–99
3	100–186	1–43	187–198	44–68	**199**–207	69–83	208–350	84–99
4	100–195	1–41	196–205	42–63	**206**–214	64–80	215–350	81–99
5	100–198	1–32	199–209	33–57	**210**–221	58–81	222–350	82–99
6	100–202	1–31	203–215	32–61	**216**–227	62–84	228–350	85–99
7	100–204	1–29	205–217	30–59	**218**–231	60–85	232–350	86–99
8	100–207	1–29	208–221	30–61	**222**–234	62–85	235–350	86–99
Spring								
2	100–177	1–41	178–190	42–69	**191**–200	70–86	201–350	87–99
3	100–190	1–43	191–201	44–66	**202**–209	67–80	210–350	81–99
4	100–198	1–42	199–207	43–62	**208**–215	63–77	216–350	78–99
5	100–201	1–35	202–211	36–57	**212**–222	58–79	223–350	80–99
6	100–204	1–33	205–216	34–61	**217**–228	62–84	229–350	85–99
7	100–206	1–31	207–218	32–59	**219**–232	60–85	233–350	86–99
8	100–209	1–31	210–222	32–61	**223**–235	62–85	236–350	86–99

Note. Cut scores for fall and winter are derived from the spring cuts and growth norms based on the typical instructional weeks. Spring cut scores for grade 2 were derived from the grade 3 cuts using the growth norms. Bold numbers indicate the cut scores considered to be at least proficient for accountability purposes.

Table 3.6. MAP Growth Cut Scores—Mathematics

NV SBAC Mathematics				
Grade	Level 1	Level 2	Level 3	Level 4
3	2189–2380	2381–2435	**2436**–2500	2501–2621
4	2204–2410	2411–2484	**2485**–2548	2549–2659
5	2219–2454	2455–2527	**2528**–2578	2579–2700
6	2235–2472	2473–2551	**2552**–2609	2610–2748
7	2250–2483	2484–2566	**2567**–2634	2635–2778
8	2265–2503	2504–2585	**2586**–2652	2653–2802

MAP Growth Mathematics								
Grade	Level 1		Level 2		Level 3		Level 4	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall								
2	100–168	1–39	169–178	40–64	**179**–194	65–91	195–350	92–99
3	100–181	1–44	182–189	45–64	**190**–201	65–87	202–350	88–99
4	100–191	1–37	192–205	38–70	**206**–217	71–90	218–350	91–99
5	100–203	1–44	204–217	45–76	**218**–225	77–88	226–350	89–99
6	100–207	1–43	208–219	44–72	**220**–230	73–89	231–350	90–99
7	100–213	1–42	214–226	43–71	**227**–238	72–89	239–350	90–99
8	100–222	1–51	223–234	52–75	**235**–245	76–89	246–350	90–99
Winter								
2	100–176	1–38	177–186	39–63	**187**–202	64–91	203–350	92–99
3	100–189	1–43	190–198	44–64	**199**–211	65–87	212–350	88–99
4	100–198	1–36	199–213	37–70	**214**–225	71–89	226–350	90–99
5	100–209	1–45	210–223	46–75	**224**–231	76–87	232–350	88–99
6	100–213	1–44	214–226	45–73	**227**–237	74–89	238–350	90–99
7	100–217	1–43	218–231	44–72	**232**–243	73–88	244–350	89–99
8	100–226	1–51	227–239	52–76	**240**–250	77–89	251–350	90–99
Spring								
2	100–183	1–40	184–192	41–62	**193**–206	63–88	207–350	89–99
3	100–196	1–44	197–204	45–63	**205**–216	64–84	217–350	85–99
4	100–204	1–38	205–218	39–68	**219**–230	69–87	231–350	88–99
5	103–213	1–45	214–227	46–73	**228**–235	74–85	236–350	86–99
6	102–217	1–44	218–230	45–71	**231**–241	72–87	242–350	88–99
7	105–220	1–43	221–233	44–69	**234**–245	70–86	246–350	87–99
8	105–229	1–51	230–241	52–73	**242**–252	74–87	253–350	88–99

Note. Cut scores for fall and winter are derived from the spring cuts and growth norms based on the typical instructional weeks. Spring cut scores for grade 2 were derived from the grade 3 cuts using the growth norms. Bold numbers indicate the cut scores considered to be at least proficient for accountability purposes.

3.4. Classification Accuracy

Table 3.7 presents the classification accuracy summary statistics, including the overall classification accuracy rates. These results indicate how well MAP Growth spring RIT scores predict proficiency (Level 3 or higher) on the NV SBAC summative tests, providing insight into the predictive validity of MAP Growth. The overall classification accuracy rates range from 0.84 to 0.85 for ELA/reading and 0.86 to 0.90 for mathematics. These values suggest that the RIT cut scores are good at classifying students as proficient or not proficient on the NV SBAC summative assessment.

Although the results show that MAP Growth scores can be used to accurately classify students as likely to be proficient on the NV SBAC summative tests, there is a notable limitation to how these results should be used and interpreted. The NV SBAC and MAP Growth assessments are designed for different purposes and measure slightly different constructs even within the same content area. Therefore, scores on the two tests cannot be assumed to be interchangeable. MAP Growth may not be used as a substitute for the state tests and vice versa.

Table 3.7. Classification Accuracy Results

Grade	N	Cut Score		Class. Accuracy	Rate		Sensitivity	Specificity	Precision	AUC
		MAP Growth	NV SBAC		FP	FN				
ELA/Reading										
3	3,000	202	2432	0.84	0.16	0.16	0.84	0.84	0.82	0.93
4	2,743	208	2473	0.85	0.15	0.14	0.86	0.85	0.84	0.93
5	3,092	212	2502	0.85	0.16	0.14	0.86	0.84	0.85	0.93
6	3,064	217	2531	0.85	0.16	0.15	0.85	0.84	0.82	0.92
7	2,967	219	2552	0.85	0.15	0.15	0.85	0.85	0.85	0.93
8	2,625	223	2567	0.84	0.15	0.17	0.83	0.85	0.83	0.92
Mathematics										
3	2,532	203	2436	0.87	0.16	0.10	0.90	0.84	0.83	0.95
4	2,759	214	2485	0.86	0.15	0.12	0.88	0.85	0.82	0.94
5	3,094	225	2528	0.89	0.09	0.16	0.84	0.91	0.85	0.96
6	3,145	228	2552	0.89	0.09	0.14	0.86	0.91	0.84	0.96
7	3,011	232	2567	0.90	0.08	0.13	0.87	0.92	0.84	0.97
8	2,547	238	2586	0.90	0.08	0.15	0.85	0.92	0.81	0.96

Note. Class. Accuracy = overall classification accuracy rate; FP = false positives; FN = false negatives; AUC = area under the ROC curve.

3.5. Proficiency Projections

Table 3.8 and Table 3.9 present the estimated probability of achieving proficiency (Level 3 or higher) performance on the NV SBAC summative test based on RIT scores from fall, winter, or spring. "Prob." indicates the probability of obtaining proficient status on the NV SBAC summative test in the spring. For example, a grade 3 student who obtained a MAP Growth reading score of 204 in the fall has an 82% chance of reaching proficiency (Level 3 or higher) on the NV SBAC summative test.

Table 3.8. Proficiency Projection Based on RIT Scores—ELA/Reading

Grade	Start Percentile	Spring Cut	Fall RIT	Fall Projected Proficiency Level 3	Fall Prob.	Winter RIT	Winter Projected Proficiency Level 3	Winter Prob.	Spring RIT	Spring Projected Proficiency Level 3	Spring Prob.
2	5	191	142	No	<0.01	149	No	<0.01	153	No	<0.01
	10	191	148	No	<0.01	155	No	<0.01	159	No	<0.01
	15	191	152	No	<0.01	159	No	<0.01	164	No	<0.01
	20	191	156	No	0.01	162	No	<0.01	167	No	<0.01
	25	191	159	No	0.02	165	No	0.01	170	No	<0.01
	30	191	161	No	0.03	168	No	0.02	173	No	<0.01
	35	191	163	No	0.05	170	No	0.04	175	No	<0.01
	40	191	166	No	0.07	172	No	0.06	177	No	<0.01
	45	191	168	No	0.11	175	No	0.09	180	No	<0.01
	50	191	170	No	0.16	177	No	0.14	182	No	0.01
	55	191	172	No	0.19	179	No	0.2	184	No	0.02
	60	191	174	No	0.25	181	No	0.24	186	No	0.08
	65	191	177	No	0.37	183	No	0.32	188	No	0.2
	70	191	179	No	0.41	186	No	0.45	191	Yes	0.5
	75	191	182	Yes	0.54	188	Yes	0.55	193	Yes	0.72
	80	191	184	Yes	0.63	191	Yes	0.64	196	Yes	0.92
	85	191	188	Yes	0.75	194	Yes	0.76	200	Yes	0.99
	90	191	192	Yes	0.87	199	Yes	0.89	204	Yes	>0.99
	95	191	198	Yes	0.95	205	Yes	0.97	210	Yes	>0.99
3	5	202	155	No	<0.01	160	No	<0.01	164	No	<0.01
	10	202	161	No	<0.01	167	No	<0.01	171	No	<0.01
	15	202	166	No	<0.01	171	No	<0.01	175	No	<0.01
	20	202	169	No	0.01	175	No	0.01	179	No	<0.01
	25	202	172	No	0.02	178	No	0.01	182	No	<0.01
	30	202	175	No	0.03	180	No	0.02	184	No	<0.01
	35	202	178	No	0.06	183	No	0.05	187	No	<0.01
	40	202	180	No	0.09	185	No	0.06	189	No	<0.01

Grade	Start Percentile	Spring Cut	Fall	Fall	Fall	Winter	Winter	Winter	Spring	Spring	Spring
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 3	Prob.		Level 3	Prob.		Level 3	Prob.
	45	202	182	No	0.11	188	No	0.12	192	No	<0.01
	50	202	185	No	0.18	190	No	0.17	194	No	0.01
	55	202	187	No	0.25	192	No	0.24	196	No	0.04
	60	202	189	No	0.33	194	No	0.27	198	No	0.13
	65	202	192	No	0.41	197	No	0.41	201	No	0.39
	70	202	194	Yes	0.5	199	Yes	0.5	203	Yes	0.61
	75	202	197	Yes	0.59	202	Yes	0.64	206	Yes	0.87
	80	202	200	Yes	0.71	205	Yes	0.73	209	Yes	0.98
	85	202	204	Yes	0.82	209	Yes	0.86	213	Yes	>0.99
	90	202	208	Yes	0.91	213	Yes	0.92	217	Yes	>0.99
	95	202	215	Yes	0.98	220	Yes	0.99	224	Yes	>0.99
	5	208	166	No	<0.01	170	No	<0.01	173	No	<0.01
	10	208	173	No	<0.01	177	No	<0.01	179	No	<0.01
	15	208	177	No	<0.01	181	No	<0.01	184	No	<0.01
	20	208	181	No	0.01	184	No	0.01	187	No	<0.01
	25	208	184	No	0.03	187	No	0.02	190	No	<0.01
	30	208	186	No	0.04	190	No	0.04	193	No	<0.01
	35	208	189	No	0.08	193	No	0.07	195	No	<0.01
	40	208	191	No	0.12	195	No	0.1	198	No	<0.01
4	45	208	194	No	0.17	197	No	0.16	200	No	0.01
	50	208	196	No	0.24	199	No	0.23	202	No	0.04
	55	208	198	No	0.32	202	No	0.31	204	No	0.13
	60	208	200	No	0.41	204	No	0.4	207	No	0.39
	65	208	203	Yes	0.5	206	Yes	0.5	209	Yes	0.61
	70	208	205	Yes	0.59	209	Yes	0.65	211	Yes	0.8
	75	208	208	Yes	0.72	211	Yes	0.69	214	Yes	0.96
	80	208	211	Yes	0.8	214	Yes	0.81	217	Yes	0.99
	85	208	215	Yes	0.9	218	Yes	0.92	220	Yes	>0.99

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 3	Prob.		Level 3	Prob.		Level 3	Prob.
	90	208	219	Yes	0.95	222	Yes	0.97	225	Yes	>0.99
	95	208	226	Yes	0.99	229	Yes	>0.99	231	Yes	>0.99
	5	212	175	No	<0.01	178	No	<0.01	180	No	<0.01
	10	212	181	No	<0.01	184	No	<0.01	186	No	<0.01
	15	212	186	No	0.01	189	No	0.01	191	No	<0.01
	20	212	189	No	0.03	192	No	0.02	194	No	<0.01
	25	212	192	No	0.04	195	No	0.04	197	No	<0.01
	30	212	195	No	0.09	197	No	0.06	199	No	<0.01
	35	212	197	No	0.14	200	No	0.12	202	No	<0.01
	40	212	199	No	0.16	202	No	0.18	204	No	0.01
	45	212	201	No	0.23	204	No	0.22	206	No	0.04
5	50	212	204	No	0.36	206	No	0.3	208	No	0.13
	55	212	206	No	0.4	209	No	0.45	211	No	0.39
	60	212	208	Yes	0.5	211	Yes	0.5	213	Yes	0.61
	65	212	210	Yes	0.6	213	Yes	0.6	215	Yes	0.8
	70	212	213	Yes	0.69	215	Yes	0.7	217	Yes	0.92
	75	212	215	Yes	0.77	218	Yes	0.82	220	Yes	0.99
	80	212	218	Yes	0.86	221	Yes	0.9	223	Yes	>0.99
	85	212	222	Yes	0.93	224	Yes	0.95	226	Yes	>0.99
	90	212	226	Yes	0.97	228	Yes	0.99	230	Yes	>0.99
	95	212	232	Yes	>0.99	235	Yes	>0.99	237	Yes	>0.99
	5	217	181	No	<0.01	183	No	<0.01	185	No	<0.01
	10	217	187	No	<0.01	189	No	<0.01	191	No	<0.01
	15	217	191	No	0.01	193	No	<0.01	195	No	<0.01
6	20	217	195	No	0.02	197	No	0.02	198	No	<0.01
	25	217	198	No	0.04	199	No	0.03	201	No	<0.01
	30	217	200	No	0.06	202	No	0.05	203	No	<0.01
	35	217	202	No	0.09	204	No	0.08	206	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 3	Prob.		Level 3	Prob.		Level 3	Prob.
	40	217	205	No	0.16	206	No	0.13	208	No	0.01
	45	217	207	No	0.2	209	No	0.22	210	No	0.02
	50	217	209	No	0.27	211	No	0.26	212	No	0.08
	55	217	211	No	0.36	213	No	0.35	214	No	0.2
	60	217	213	No	0.45	215	No	0.45	216	No	0.39
	65	217	215	Yes	0.5	217	Yes	0.55	218	Yes	0.61
	70	217	218	Yes	0.64	219	Yes	0.65	221	Yes	0.87
	75	217	220	Yes	0.73	222	Yes	0.78	223	Yes	0.96
	80	217	223	Yes	0.84	225	Yes	0.87	226	Yes	0.99
	85	217	226	Yes	0.91	228	Yes	0.94	229	Yes	>0.99
	90	217	231	Yes	0.97	232	Yes	0.98	233	Yes	>0.99
	95	217	237	Yes	>0.99	238	Yes	>0.99	239	Yes	>0.99
7	5	219	185	No	<0.01	186	No	<0.01	187	No	<0.01
	10	219	191	No	<0.01	192	No	<0.01	193	No	<0.01
	15	219	195	No	0.01	196	No	0.01	197	No	<0.01
	20	219	198	No	0.02	200	No	0.03	201	No	<0.01
	25	219	201	No	0.05	202	No	0.03	203	No	<0.01
	30	219	204	No	0.1	205	No	0.07	206	No	<0.01
	35	219	206	No	0.12	207	No	0.11	208	No	<0.01
	40	219	208	No	0.18	210	No	0.2	211	No	0.01
	45	219	210	No	0.24	212	No	0.23	213	No	0.04
	50	219	212	No	0.32	214	No	0.31	215	No	0.13
	55	219	214	No	0.36	216	No	0.4	217	No	0.28
	60	219	217	Yes	0.5	218	Yes	0.5	219	Yes	0.5
	65	219	219	Yes	0.59	220	Yes	0.6	221	Yes	0.72
	70	219	221	Yes	0.68	223	Yes	0.73	224	Yes	0.92
	75	219	224	Yes	0.79	225	Yes	0.8	226	Yes	0.98
	80	219	226	Yes	0.85	228	Yes	0.89	229	Yes	>0.99

Grade	Start Percentile	Spring Cut	Fall	Fall		Winter	Winter		Spring	Spring	
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 3	Prob.		Level 3	Prob.		Level 3	Prob.
	85	219	230	Yes	0.94	231	Yes	0.94	232	Yes	>0.99
	90	219	234	Yes	0.98	235	Yes	0.98	237	Yes	>0.99
	95	219	240	Yes	>0.99	241	Yes	>0.99	243	Yes	>0.99
8	5	223	188	No	<0.01	189	No	<0.01	190	No	<0.01
	10	223	194	No	<0.01	195	No	<0.01	196	No	<0.01
	15	223	198	No	0.01	199	No	0.01	200	No	<0.01
	20	223	201	No	0.02	203	No	0.02	203	No	<0.01
	25	223	204	No	0.04	205	No	0.03	206	No	<0.01
	30	223	207	No	0.07	208	No	0.06	209	No	<0.01
	35	223	209	No	0.11	210	No	0.1	211	No	<0.01
	40	223	211	No	0.15	213	No	0.14	213	No	<0.01
	45	223	214	No	0.21	215	No	0.2	216	No	0.02
	50	223	216	No	0.29	217	No	0.28	218	No	0.08
	55	223	218	No	0.37	219	No	0.36	220	No	0.2
	60	223	220	No	0.45	221	No	0.45	222	No	0.39
	65	223	222	Yes	0.55	223	Yes	0.55	224	Yes	0.61
	70	223	225	Yes	0.67	226	Yes	0.68	227	Yes	0.87
	75	223	227	Yes	0.75	228	Yes	0.76	229	Yes	0.96
	80	223	230	Yes	0.85	231	Yes	0.86	232	Yes	0.99
	85	223	233	Yes	0.91	235	Yes	0.94	236	Yes	>0.99
	90	223	238	Yes	0.97	239	Yes	0.98	240	Yes	>0.99
	95	223	244	Yes	>0.99	245	Yes	>0.99	246	Yes	>0.99

Table 3.9. Proficiency Projection Based on RIT Scores—Mathematics

Grade	Start Percentile	Spring Cut	Fall RIT	Fall Projected Proficiency Level 3	Fall Projected Proficiency Prob.	Winter RIT	Winter Projected Proficiency Level 3	Winter Projected Proficiency Prob.	Spring RIT	Spring Projected Proficiency Level 3	Spring Projected Proficiency Prob.
2	5	193	147	No	<0.01	155	No	<0.01	161	No	<0.01
	10	193	153	No	<0.01	161	No	<0.01	167	No	<0.01
	15	193	157	No	0.01	165	No	<0.01	171	No	<0.01
	20	193	160	No	0.02	168	No	0.01	174	No	<0.01
	25	193	162	No	0.03	171	No	0.02	177	No	<0.01
	30	193	165	No	0.06	173	No	0.04	179	No	<0.01
	35	193	167	No	0.09	175	No	0.07	181	No	<0.01
	40	193	169	No	0.14	177	No	0.12	183	No	<0.01
	45	193	171	No	0.2	179	No	0.14	185	No	0.01
	50	193	173	No	0.27	181	No	0.21	187	No	0.04
	55	193	175	No	0.31	183	No	0.3	189	No	0.13
	60	193	177	No	0.4	185	No	0.4	192	No	0.39
	65	193	179	Yes	0.5	187	Yes	0.5	194	Yes	0.61
	70	193	181	Yes	0.6	189	Yes	0.55	196	Yes	0.8
	75	193	183	Yes	0.69	192	Yes	0.7	198	Yes	0.92
	80	193	186	Yes	0.77	194	Yes	0.79	201	Yes	0.99
	85	193	189	Yes	0.86	197	Yes	0.88	204	Yes	>0.99
	90	193	193	Yes	0.93	201	Yes	0.94	208	Yes	>0.99
	95	193	198	Yes	0.98	207	Yes	0.99	214	Yes	>0.99
3	5	205	158	No	<0.01	166	No	<0.01	171	No	<0.01
	10	205	164	No	<0.01	172	No	<0.01	177	No	<0.01
	15	205	168	No	<0.01	176	No	<0.01	181	No	<0.01
	20	205	171	No	0.01	179	No	<0.01	185	No	<0.01
	25	205	174	No	0.02	182	No	0.01	188	No	<0.01
	30	205	176	No	0.04	184	No	0.03	190	No	<0.01
	35	205	178	No	0.06	186	No	0.05	193	No	<0.01
	40	205	180	No	0.1	189	No	0.11	195	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 3	Prob.		Level 3	Prob.		Level 3	Prob.
	45	205	182	No	0.15	191	No	0.17	197	No	0.01
	50	205	184	No	0.22	193	No	0.2	199	No	0.04
	55	205	186	No	0.3	195	No	0.29	201	No	0.13
	60	205	188	No	0.4	197	No	0.39	203	No	0.28
	65	205	190	Yes	0.5	199	Yes	0.5	206	Yes	0.61
	70	205	192	Yes	0.6	201	Yes	0.61	208	Yes	0.8
	75	205	195	Yes	0.74	204	Yes	0.76	211	Yes	0.96
	80	205	197	Yes	0.81	206	Yes	0.83	213	Yes	0.99
	85	205	200	Yes	0.9	210	Yes	0.92	217	Yes	>0.99
	90	205	204	Yes	0.96	214	Yes	0.97	221	Yes	>0.99
	95	205	210	Yes	0.99	220	Yes	>0.99	227	Yes	>0.99
	5	219	171	No	<0.01	176	No	<0.01	180	No	<0.01
	10	219	177	No	<0.01	183	No	<0.01	187	No	<0.01
	15	219	181	No	<0.01	187	No	<0.01	191	No	<0.01
	20	219	184	No	<0.01	190	No	<0.01	195	No	<0.01
	25	219	186	No	0.01	193	No	<0.01	198	No	<0.01
	30	219	189	No	0.02	196	No	0.01	201	No	<0.01
	35	219	191	No	0.03	198	No	0.02	203	No	<0.01
	40	219	193	No	0.05	200	No	0.03	206	No	<0.01
4	45	219	195	No	0.09	202	No	0.06	208	No	<0.01
	50	219	197	No	0.13	204	No	0.1	210	No	0.01
	55	219	199	No	0.19	207	No	0.2	212	No	0.02
	60	219	201	No	0.27	209	No	0.24	215	No	0.13
	65	219	203	No	0.35	211	No	0.33	217	No	0.28
	70	219	205	No	0.45	213	No	0.44	220	Yes	0.61
	75	219	208	Yes	0.6	216	Yes	0.61	222	Yes	0.8
	80	219	210	Yes	0.69	219	Yes	0.76	225	Yes	0.96
	85	219	214	Yes	0.84	222	Yes	0.87	229	Yes	>0.99

Grade	Start Percentile	Spring Cut	Fall RIT	Fall Projected Proficiency Level 3	Prob.	Winter RIT	Winter Projected Proficiency Level 3	Prob.	Spring RIT	Spring Projected Proficiency Level 3	Prob.
	90	219	217	Yes	0.91	226	Yes	0.96	233	Yes	>0.99
	95	219	223	Yes	0.98	232	Yes	0.99	240	Yes	>0.99
5	5	228	180	No	<0.01	183	No	<0.01	186	No	<0.01
	10	228	185	No	<0.01	189	No	<0.01	192	No	<0.01
	15	228	189	No	<0.01	194	No	<0.01	197	No	<0.01
	20	228	193	No	<0.01	197	No	<0.01	200	No	<0.01
	25	228	195	No	<0.01	200	No	<0.01	204	No	<0.01
	30	228	198	No	0.01	203	No	<0.01	206	No	<0.01
	35	228	200	No	0.01	205	No	<0.01	209	No	<0.01
	40	228	202	No	0.02	207	No	0.01	211	No	<0.01
	45	228	204	No	0.04	210	No	0.02	214	No	<0.01
	50	228	206	No	0.06	212	No	0.04	216	No	<0.01
	55	228	208	No	0.1	214	No	0.08	218	No	<0.01
	60	228	210	No	0.15	216	No	0.13	221	No	0.02
	65	228	212	No	0.22	219	No	0.24	223	No	0.08
	70	228	215	No	0.35	221	No	0.33	226	No	0.28
	75	228	217	No	0.45	224	Yes	0.5	228	Yes	0.5
	80	228	220	Yes	0.6	226	Yes	0.61	232	Yes	0.87
	85	228	223	Yes	0.74	230	Yes	0.8	235	Yes	0.98
	90	228	227	Yes	0.88	234	Yes	0.92	240	Yes	>0.99
	95	228	233	Yes	0.98	240	Yes	0.99	246	Yes	>0.99
6	5	231	184	No	<0.01	187	No	<0.01	190	No	<0.01
	10	231	190	No	<0.01	194	No	<0.01	197	No	<0.01
	15	231	194	No	<0.01	198	No	<0.01	201	No	<0.01
	20	231	197	No	<0.01	201	No	<0.01	205	No	<0.01
	25	231	199	No	<0.01	204	No	<0.01	208	No	<0.01
	30	231	202	No	0.01	207	No	<0.01	211	No	<0.01
	35	231	204	No	0.02	209	No	0.01	213	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
				Fall			**Winter**			**Spring**	
			Fall RIT	**Projected Proficiency**		**Winter RIT**	**Projected Proficiency**		**Spring RIT**	**Projected Proficiency**	
				Level 3	**Prob.**		**Level 3**	**Prob.**		**Level 3**	**Prob.**
	40	231	206	No	0.03	212	No	0.02	216	No	<0.01
	45	231	208	No	0.05	214	No	0.04	218	No	<0.01
	50	231	210	No	0.09	216	No	0.07	220	No	<0.01
	55	231	212	No	0.13	218	No	0.11	223	No	0.01
	60	231	214	No	0.19	220	No	0.17	225	No	0.04
	65	231	216	No	0.27	223	No	0.29	227	No	0.13
	70	231	219	No	0.4	225	No	0.39	230	No	0.39
	75	231	221	Yes	0.55	228	Yes	0.55	233	Yes	0.72
	80	231	224	Yes	0.69	231	Yes	0.71	236	Yes	0.92
	85	231	227	Yes	0.81	234	Yes	0.83	239	Yes	0.99
	90	231	231	Yes	0.91	238	Yes	0.93	244	Yes	>0.99
	95	231	237	Yes	0.98	245	Yes	0.99	251	Yes	>0.99
7	5	234	189	No	<0.01	191	No	<0.01	192	No	<0.01
	10	234	195	No	<0.01	197	No	<0.01	199	No	<0.01
	15	234	199	No	<0.01	202	No	<0.01	204	No	<0.01
	20	234	203	No	<0.01	206	No	<0.01	208	No	<0.01
	25	234	206	No	0.01	209	No	<0.01	211	No	<0.01
	30	234	208	No	0.01	211	No	<0.01	214	No	<0.01
	35	234	211	No	0.03	214	No	0.01	216	No	<0.01
	40	234	213	No	0.04	216	No	0.02	219	No	<0.01
	45	234	215	No	0.07	219	No	0.06	221	No	<0.01
	50	234	217	No	0.11	221	No	0.1	224	No	<0.01
	55	234	219	No	0.17	223	No	0.15	226	No	0.01
	60	234	222	No	0.27	226	No	0.26	229	No	0.08
	65	234	224	No	0.36	228	No	0.35	231	No	0.2
	70	234	226	No	0.45	231	No	0.45	234	Yes	0.5
	75	234	229	Yes	0.6	233	Yes	0.55	237	Yes	0.8
	80	234	232	Yes	0.73	236	Yes	0.7	240	Yes	0.96

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 3	Prob.		Level 3	Prob.		Level 3	Prob.
	85	234	235	Yes	0.83	240	Yes	0.85	244	Yes	>0.99
	90	234	239	Yes	0.93	245	Yes	0.96	249	Yes	>0.99
	95	234	246	Yes	0.99	251	Yes	0.99	256	Yes	>0.99
8	5	242	192	No	<0.01	194	No	<0.01	196	No	<0.01
	10	242	199	No	<0.01	201	No	<0.01	203	No	<0.01
	15	242	203	No	<0.01	206	No	<0.01	208	No	<0.01
	20	242	207	No	<0.01	210	No	<0.01	212	No	<0.01
	25	242	210	No	<0.01	213	No	<0.01	215	No	<0.01
	30	242	212	No	<0.01	216	No	<0.01	218	No	<0.01
	35	242	215	No	0.01	219	No	0.01	221	No	<0.01
	40	242	217	No	0.02	221	No	0.01	224	No	<0.01
	45	242	220	No	0.04	224	No	0.03	226	No	<0.01
	50	242	222	No	0.07	226	No	0.05	229	No	<0.01
	55	242	224	No	0.1	228	No	0.08	231	No	<0.01
	60	242	227	No	0.18	231	No	0.16	234	No	0.01
	65	242	229	No	0.25	233	No	0.23	237	No	0.08
	70	242	232	No	0.37	236	No	0.35	239	No	0.2
	75	242	234	No	0.45	239	No	0.45	242	Yes	0.5
	80	242	237	Yes	0.59	242	Yes	0.6	246	Yes	0.87
	85	242	241	Yes	0.75	246	Yes	0.77	250	Yes	0.99
	90	242	246	Yes	0.9	251	Yes	0.92	255	Yes	>0.99
	95	242	252	Yes	0.97	258	Yes	0.99	262	Yes	>0.99

References

Kolen, M. J., & Brennan, R. L. (2004). *Test equating, scaling, and linking: Methods and practices* (2nd ed.). Springer. https://doi.org/10.1007/978-1-4939-0317-7

Lewis, K., & Kuhfeld, M. (2024). *MAP Growth with enhanced item-selection algorithm: Updates on score comparability*. NWEA Research Report. NWEA. https://www.nwea.org/uploads/Research-MAP-Growth-with-enhanced-item-selection-algorithm-updates-on-score-compatibility_NWEA_Research_Guide.pdf

Lumley, T. (2019). *Survey: Analysis of complex survey samples*. (R package version 3.36) [Computer software]. Available from https://CRAN.R-project.org/package=survey.

Meyer, J. P., Hu, A. H., & Li, S. (2023). *Content Proximity Spring 2022 Pilot Study Research Brief.* NWEA Research Report. NWEA. https://www.nwea.org/uploads/Content-Proximity-Project-and-Pilot-Study-Spring-2022-Research-Report.pdf

NWEA. (2025). *MAP Growth achievement status and growth norms for students and schools*. [Tech Rep.]. NWEA.

Pommerich, M., Hanson, B., Harris, D., & Sconing, J. (2004). Issues in conducting linkage between distinct tests. *Applied Psychological Measurement*, *28*(4), 247–273. https://doi.org/10.1177/0146621604265033