

# **Predicting Performance on the South Dakota 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 ELA/literacy and mathematics based on the 2020 norms and Spring 2019 data.
2025-08	Updated the linking study based on the 2025 norms.

**Acknowledgements:** This report was made possible with the contributions of Yan Zhou, Ann Hu, Justin Schreiber, Christopher Wells, and Derek May. We appreciate our colleagues at NWEA and all our partners who provided data for the study.

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## Executive Summary

To predict student achievement on the South Dakota Smarter Balanced Assessment Consortium (SD 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 SD 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 SD 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 (Level 3 or higher) on the state summative tests and those who are not. For example, the Level 3 cut score on the SD SBAC grade 3 ELA test is 2432. A grade 3 student with a MAP Growth reading RIT score of 192 in the fall is likely to meet proficiency on the SD SBAC ELA test in the spring, whereas a grade 3 student with a MAP Growth reading RIT score lower than 192 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 SD SBAC tests 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 SD SBAC Proficiency**

Assessment		Level 3 Cut Scores by Grade						
		2	3	4	5	6	7	8
<b>ELA/Reading</b>								
SD SBAC Spring		–	2432	2473	2502	2531	2552	2567
MAP Growth	Fall	178	192	202	207	215	217	221
	Winter	185	197	205	209	216	218	222
	Spring	189	200	207	211	217	219	223
<b>Mathematics</b>								
SD SBAC Spring		–	2436	2485	2528	2552	2567	2586
MAP Growth	Fall	179	190	206	218	221	228	236
	Winter	187	199	214	224	228	233	241
	Spring	193	205	219	228	232	235	243

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 SD SBAC grades 3–8 ELA and mathematics tests are South Dakota’s state summative assessments aligned to the South Dakota Content Standards. Based on their test scores, students are placed into one of four achievement levels: Level 1, Level 2, Level 3, and Level 4. 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 SD 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<sup>1</sup> 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 SD SBAC assessments in Spring 2019 were included in the study sample. Table E.2 presents the weighted numbers of South Dakota students from 5 districts and 62 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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<sup>1</sup> 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.

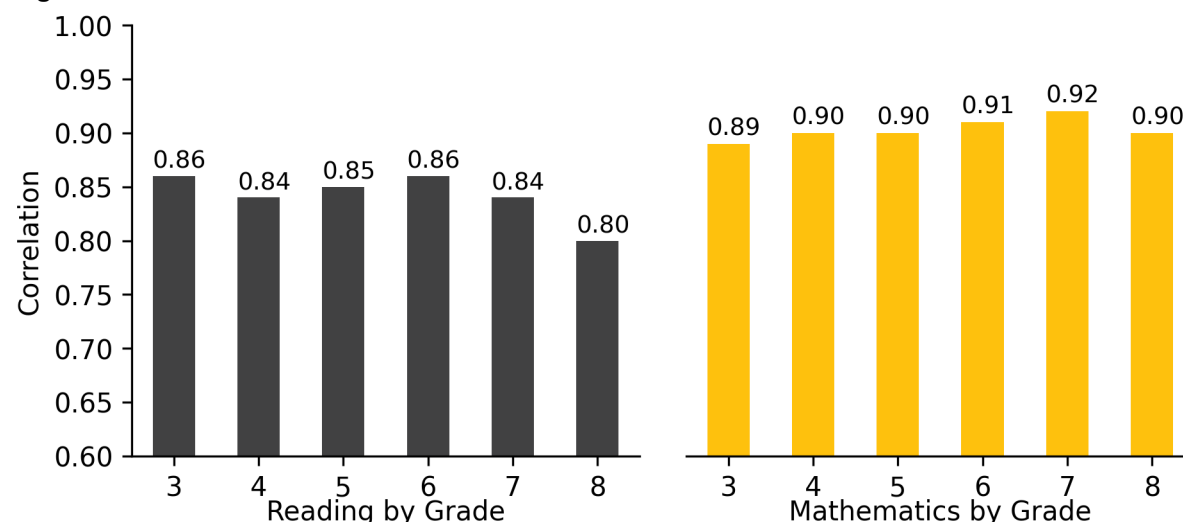
**Table E.2. Linking Study Sample**

Grade	# Students	
	ELA/Reading	Mathematics
3	2,913	2,951
4	2,923	2,956
5	2,868	2,862
6	2,801	2,823
7	2,721	2,731
8	2,506	2,355

#### **E.4. Test Score Relationships**

Correlations between MAP Growth RIT scores and SD SBAC scores range from 0.80 to 0.92 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 SD SBAC summative assessment.

**Figure E.1. Correlations Between MAP Growth and SD SBAC Test Scores**

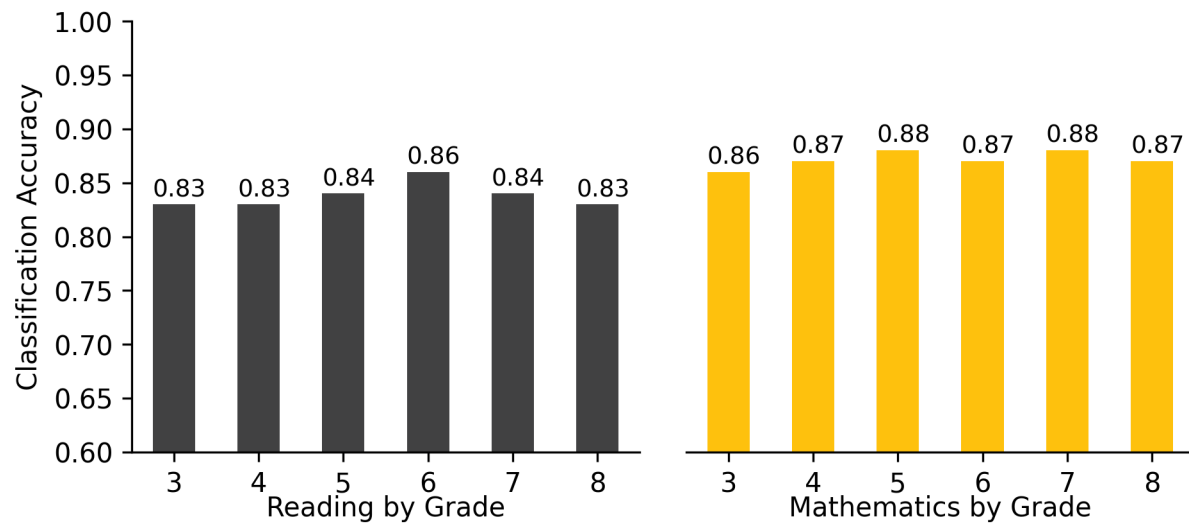


#### **E.5. Accuracy of MAP Growth Classifications**

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 higher) or not proficient (lower than Level 3) on the SD SBAC summative tests.<sup>2</sup> For example, the MAP Growth reading grade 3 Level 3 cut score has a 0.83 accuracy rate, meaning it accurately classified student achievement on the state tests for 83% of the sample. The results range from 0.83 to 0.88 across content areas, indicating that RIT scores have a high accuracy rate of identifying student proficiency on the SD SBAC summative tests.

<sup>2</sup> 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 to statistically connect the scores of the South Dakota Smarter Balanced Assessment Consortium (SD SBAC) grades 3–8 English language arts/literacy (ELA) and mathematics assessments 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 SD SBAC summative assessment 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 SD 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 on the SD SBAC summative tests
5. The probability of achieving grade-level proficiency on the SD SBAC assessment based on MAP Growth RIT scores from fall, winter, and spring using the 2025 norms

### **1.2. Assessment Overview**

The SD SBAC grades 3–8 ELA and mathematics summative assessments are aligned to the South Dakota Content Standards. Each assessment has three cut scores (i.e., the minimum score a student must get on a test to be placed in a certain achievement level) that distinguish between the following achievement levels: Level 1, Level 2, Level 3, and Level 4. 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 SD SBAC assessments. NWEA requested that South Dakota 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. 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 SD 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 equipercntile linking method (Kolen & Brennan, 2004) was used to identify the spring MAP Growth RIT scores that correspond to the spring SD 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 SD SBAC summative tests 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 compare 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 equipercntile linking method because that data are directly connected to the SD SBAC spring data used in the study. The equipercntile 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., SD SBAC). Its equipercntile equivalent score on Test  $Y$  (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 SD SBAC tests on the scale of MAP Growth,  $P(x)$  is the percentile rank of a given score on the SD 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 SD 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 higher) or not proficient (lower than Level 3). 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 SD SBAC data for the Level 3 cut score.

**Table 2.1. Description of Classification Accuracy Summary Statistics**

Statistic	Description	Interpretation
Overall Classification Accuracy Rate	$(TP + TN) / (\text{total sample size})$	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

Statistic	Description	Interpretation
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 tests. Instead, it can be claimed that a student meeting the RIT cut score has a 50% chance of reaching proficiency (Level 3 or higher) on the state tests, 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 on the SD 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 on the SD SBAC summative tests based on their fall or winter RIT score:

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

where:

- $\Phi$  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 performance on the SD SBAC summative tests based on their spring RIT score ( $RIT_{Spring}$ ):

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

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 SD SBAC assessments in Spring 2019 were included in the study sample. Data used in this study were collected from 5 districts and 62 schools in South Dakota. 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 SD SBAC summative assessment. Since the unweighted data are different from the general SD 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 SD 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
<b>ELA/Reading</b>							
Total N		2,913	2,923	2,868	2,801	2,721	2,506
Race	AI/AN	3.1	3.1	3.3	2.9	3.1	2.8
	Asian	1.9	2.2	2.4	2.4	2.8	2.8
	Black	8.1	7.9	8.2	7.7	8.2	8.1
	Hispanic	9.0	9.0	8.9	9.5	7.5	9.8
	Multi-Race	7.5	6.9	5.7	6.3	4.3	4.8
	NH/PI	0.3	0.3	0.1	0.4	0.4	0.3
	White	70.1	70.6	71.3	70.8	73.7	71.5
Sex	Female	48.8	50.5	50.3	48.3	49.0	48.2
	Male	51.2	49.5	49.7	51.7	51.0	51.8
Achievement Level	Level 1	25.5	27.7	23.3	20.8	18.8	17.8
	Level 2	25.0	21.0	21.2	26.5	24.7	27.4
	Level 3	24.5	26.2	33.9	34.7	37.9	37.5
	Level 4	25.0	25.1	21.6	18.0	18.5	17.3
<b>Mathematics</b>							
Total N		2,951	2,927	2,862	2,823	2,731	2,379
Race	AI/AN	3.2	3.1	3.3	2.8	3.0	2.9
	Asian	2.0	2.1	2.4	2.4	2.8	2.7
	Black	8.3	8.0	8.4	7.8	8.3	8.7
	Hispanic	9.5	9.3	9.2	9.6	7.6	10.6
	Multi-Race	7.5	6.8	5.7	6.2	4.5	4.8
	NH/PI	0.3	0.3	0.1	0.4	0.3	0.1
	White	69.4	70.3	70.9	70.7	73.6	70.3
Sex	Female	48.7	50.6	50.1	48.2	48.6	48.8
	Male	51.3	49.4	49.9	51.8	51.4	51.2
Achievement Level	Level 1	23.3	20.7	29.1	27.5	23.8	24.8
	Level 2	23.1	30.7	29.6	32.8	25.2	26.1

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
	Level 3	30.1	30.4	22.6	22.0	27.5	22.7
	Level 4	23.4	18.2	18.7	17.7	23.5	26.3

Note. AI/AN = American Indian/Alaska Native; NH/PI = Native Hawaiian or Other Pacific Islander.

**Table 3.2. Spring 2019 SD SBAC Student Population Demographics**

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
<b>ELA</b>							
Total N		11,161	11,295	11,434	11,427	11,049	10,817
Race	AI/AN	14.5	14.5	14.7	14.6	14.4	14.3
	Asian	1.4	1.4	1.5	1.4	1.6	1.5
	Black	3.0	2.8	2.9	2.9	2.9	2.8
	Hispanic	6.7	6.6	6.3	6.5	5.7	6.2
	Multi-Race	5.7	4.9	5.1	4.6	4.3	3.7
	NH/PI	0.1	0.1	0.1	0.1	0.1	0.1
	White	68.5	69.8	69.5	69.8	71.0	71.4
Sex	Female	48.9	49.0	49.4	48.9	48.7	48.5
	Male	51.1	51.0	50.6	51.1	51.3	51.5
Achievement Level	Level 1	27.0	30.0	26.0	24.0	23.0	22.0
	Level 2	25.0	21.0	21.0	26.0	24.0	27.0
	Level 3	24.0	25.0	32.0	35.0	38.0	37.0
	Level 4	24.0	24.0	21.0	15.0	15.0	14.0
<b>Mathematics</b>							
Total N		11,194	11,301	11,454	11,470	11,066	10,840
Race	AI/AN	14.5	14.5	14.6	14.5	14.3	14.3
	Asian	1.5	1.4	1.5	1.5	1.7	1.5
	Black	3.1	2.9	3.0	2.9	3.0	2.8
	Hispanic	6.8	6.9	6.4	6.7	5.9	6.4
	Multi-Race	5.7	4.8	5.1	4.6	4.2	3.7
	NH/PI	0.1	0.1	0.1	0.1	0.1	0.1
	White	68.3	69.5	69.3	69.6	70.9	71.2
Sex	Female	48.8	49.0	49.3	49.0	48.8	48.5
	Male	51.2	51.0	50.7	51.0	51.2	51.5
Achievement Level	Level 1	24.0	22.0	31.0	29.0	28.0	31.0
	Level 2	24.0	31.0	29.0	31.0	28.0	26.0
	Level 3	31.0	30.0	21.0	23.0	25.0	21.0
	Level 4	21.0	18.0	19.0	17.0	19.0	21.0

Note. AI/AN = American Indian/Alaska Native; NH/PI = Native Hawaiian or Other Pacific Islander.

**Table 3.3. Linking Study Sample Demographics (Weighted)**

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
<b>ELA/Reading</b>							
Total N		2,913	2,923	2,868	2,801	2,721	2,506
Race	AI/AN	14.5	14.5	14.7	14.6	14.4	14.3
	Asian	1.4	1.4	1.5	1.4	1.7	1.5
	Black	3.0	2.8	3.0	2.9	2.9	2.8
	Hispanic	6.7	6.6	6.3	6.5	5.7	6.2
	Multi-Race	5.7	4.9	5.1	4.6	4.3	3.7
	NH/PI	0.1	0.1	0.1	0.1	0.1	0.1
	White	68.5	69.8	69.5	69.8	71.0	71.4
Sex	Female	48.9	49.0	49.4	48.9	48.7	48.5
	Male	51.1	51.0	50.6	51.1	51.3	51.5
Achievement Level	Level 1	27.0	30.0	26.0	24.0	23.0	22.0
	Level 2	25.0	21.0	21.0	26.0	24.0	27.0
	Level 3	24.0	25.0	32.0	35.0	38.0	37.0
	Level 4	24.0	24.0	21.0	15.0	15.0	14.0
<b>Mathematics</b>							
Total N		2,951	2,956	2,862	2,823	2,731	2,355
Race	AI/AN	14.5	14.4	14.6	14.5	14.3	14.3
	Asian	1.5	1.4	1.5	1.5	1.7	1.5
	Black	3.1	2.9	3.0	2.9	3.0	2.8
	Hispanic	6.8	6.9	6.4	6.7	5.9	6.4
	Multi-Race	5.7	4.8	5.1	4.6	4.3	3.7
	NH/PI	0.1	0.1	0.1	0.1	0.1	0.1
	White	68.3	69.5	69.4	69.6	70.9	71.2
Sex	Female	48.8	49.0	49.3	48.9	48.7	48.5
	Male	51.2	51.0	50.7	51.1	51.3	51.5
Achievement Level	Level 1	24.0	21.8	31.0	29.0	28.0	31.3
	Level 2	24.0	30.7	29.0	31.0	28.0	26.3
	Level 3	31.0	29.7	21.0	23.0	25.0	21.2
	Level 4	21.0	17.8	19.0	17.0	19.0	21.2

Note. AI/AN = American Indian/Alaska Native; NH/PI = Native Hawaiian or Other Pacific Islander.

### 3.2. Descriptive Statistics

Table 3.4 presents descriptive statistics of the MAP Growth and SD SBAC test scores from Spring 2019, including the correlation coefficients ( $r$ ) between them. The correlation coefficients between the scores range from 0.80 to 0.86 for ELA/reading and 0.89 to 0.92 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 SD SBAC summative assessment.

**Table 3.4. Descriptive Statistics of Test Scores**

Grade	N	r	SD SBAC				MAP Growth			
			Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
ELA/Reading										
3	2,913	0.86	2422.8	87.3	2119	2685	197.6	15.8	146	240
4	2,923	0.84	2465.8	89.2	2181	2742	205.3	15.1	144	256
5	2,868	0.85	2503.6	91.5	2155	2787	210.7	15.0	150	255
6	2,801	0.86	2523.6	94.1	2230	2793	215.3	15.3	155	262
7	2,721	0.84	2551.3	95.7	2254	2823	218.5	15.1	160	261
8	2,506	0.80	2564.2	97.4	2164	2874	221.9	15.6	155	264
Mathematics										
3	2,951	0.89	2435.0	81.2	2106	2762	202.1	13.6	141	271
4	2,956	0.90	2475.5	79.1	2090	2719	212.1	14.8	131	275
5	2,862	0.90	2499.0	86.4	2234	2775	219.6	16.7	144	281
6	2,823	0.91	2519.1	100.8	2103	2880	223.9	16.5	163	284
7	2,731	0.92	2541.8	105.8	2126	2869	228.8	18.0	168	291
8	2,355	0.90	2558.3	115.5	2113	2976	233.2	20.0	164	292

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

### 3.3. MAP Growth Cut Scores

Table 3.5 and Table 3.6 present the SD 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 SD 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 192 in the fall is likely to achieve Level 3 performance on the SD SBAC ELA tests. A grade 3 student who obtained a MAP Growth reading RIT score of 197 in the winter is also likely to achieve Level 3 performance on the SD SBAC summative assessment. The winter cut score is higher than the fall cut score because growth is expected between fall and winter 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 projected achievement level could be different from the generic projection presented in this document. Partners are therefore encouraged to use the projected achievement level in students' score reports since they reflect the specific instructional weeks set by partners.

**Table 3.5. MAP Growth Cut Scores—ELA/Reading**

SD SBAC ELA									
Grade	Level 1		Level 2		Level 3		Level 4		
3	2001–2366		2367–2431		2432–2489		2490–2811		
4	2032–2415		2416–2472		2473–2532		2533–2867		
5	2056–2441		2442–2501		2502–2581		2582–2916		
6	2079–2456		2457–2530		2531–2617		2618–2937		
7	2082–2478		2479–2551		2552–2648		2649–2964		
8	2097–2486		2487–2566		2567–2667		2668–2989		
MAP Growth Reading									
Grade	Level 1		Level 2		Level 3		Level 4		
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	
Fall									
2	100–160	1–29	161–177	30–67	178–191	68–89	192–350	90–99	
3	100–177	1–35	178–191	36–65	192–202	66–83	203–350	84–99	
4	100–190	1–38	191–201	39–62	202–212	63–82	213–350	83–99	
5	100–195	1–32	196–206	33–57	207–220	58–83	221–350	84–99	
6	100–201	1–33	202–214	34–63	215–227	64–86	228–350	87–99	
7	100–203	1–30	204–216	31–60	217–230	61–86	231–350	87–99	
8	100–207	1–32	208–220	33–61	221–235	62–87	236–350	88–99	
Winter									
2	100–167	1–30	168–184	31–68	185–197	69–88	198–350	89–99	
3	100–182	1–34	183–196	35–64	197–207	65–83	208–350	84–99	
4	100–194	1–39	195–204	40–61	205–215	62–81	216–350	82–99	
5	100–198	1–32	199–208	33–55	209–221	56–81	222–350	82–99	
6	100–203	1–33	204–215	34–61	216–228	62–85	229–350	86–99	
7	100–205	1–31	206–217	32–59	218–231	60–85	232–350	86–99	
8	100–208	1–31	209–221	32–61	222–236	62–87	237–350	88–99	
Spring									
2	100–173	1–32	174–188	33–65	189–200	66–86	201–350	87–99	
3	100–187	1–36	188–199	37–62	200–209	63–80	210–350	81–99	
4	100–197	1–40	198–206	41–60	207–216	61–79	217–350	80–99	
5	100–201	1–35	202–210	36–55	211–222	56–79	223–350	80–99	
6	100–205	1–35	206–216	36–61	217–229	62–85	230–350	86–99	
7	100–207	1–33	208–218	34–59	219–232	60–85	233–350	86–99	
8	100–210	1–34	211–222	35–61	223–237	62–87	238–350	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.



**Table 3.6. MAP Growth Cut Scores—Mathematics**

SD SBAC Mathematics								
Grade	Level 1		Level 2		Level 3		Level 4	
3	2071–2380		2381–2435		<b>2436</b> –2500		2501–2762	
4	2090–2410		2411–2484		<b>2485</b> –2548		2549–2834	
5	2095–2454		2455–2527		<b>2528</b> –2578		2579–2891	
6	2103–2472		2473–2551		<b>2552</b> –2609		2610–2911	
7	2108–2483		2484–2566		<b>2567</b> –2634		2635–2964	
8	2113–2503		2504–2585		<b>2586</b> –2652		2653–2993	
MAP Growth Mathematics								
Grade	Level 1		Level 2		Level 3		Level 4	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall								
2	100–166	1–34	167–178	35–64	<b>179</b> –194	65–91	195–350	92–99
3	100–179	1–39	180–189	40–64	<b>190</b> –201	65–87	202–350	88–99
4	100–190	1–34	191–205	35–70	<b>206</b> –218	71–91	219–350	92–99
5	100–203	1–44	204–217	45–76	<b>218</b> –228	77–91	229–350	92–99
6	100–208	1–46	209–220	47–74	<b>221</b> –231	75–90	232–350	91–99
7	100–213	1–42	214–227	43–72	<b>228</b> –240	73–91	241–350	92–99
8	100–221	1–49	222–235	50–77	<b>236</b> –246	78–90	247–350	91–99
Winter								
2	100–174	1–34	175–186	35–63	<b>187</b> –202	64–91	203–350	92–99
3	100–187	1–38	188–198	39–64	<b>199</b> –211	65–87	212–350	88–99
4	100–197	1–34	198–213	35–70	<b>214</b> –226	71–90	227–350	91–99
5	100–209	1–45	210–223	46–75	<b>224</b> –234	76–90	235–350	91–99
6	100–214	1–47	215–227	48–75	<b>228</b> –238	76–90	239–350	91–99
7	100–217	1–43	218–232	44–73	<b>233</b> –245	74–90	246–350	91–99
8	100–225	1–49	226–240	50–77	<b>241</b> –251	78–90	252–350	91–99
Spring								
2	100–181	1–36	182–192	37–62	<b>193</b> –206	63–88	207–350	89–99
3	100–194	1–39	195–204	40–63	<b>205</b> –216	64–84	217–350	85–99
4	100–203	1–36	204–218	37–68	<b>219</b> –231	69–88	232–350	89–99
5	100–213	1–45	214–227	46–73	<b>228</b> –238	74–88	239–350	89–99
6	100–218	1–46	219–231	47–73	<b>232</b> –242	74–88	243–350	89–99
7	100–220	1–43	221–234	44–71	<b>235</b> –247	72–88	248–350	89–99
8	100–228	1–49	229–242	50–75	<b>243</b> –253	76–88	254–350	89–99

*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 on the SD SBAC summative tests, providing insight into the predictive validity of MAP Growth. The overall classification accuracy rates range from 0.83 to 0.86 for ELA/reading and 0.86 to 0.88 for mathematics. These values suggest that the RIT cut scores are good at classifying students as proficient (Level 3 or higher) or not proficient (lower than Level 3) on the SD 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 SD SBAC summative tests, there is a notable limitation to how these results should be used and interpreted. The SD 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	SD SBAC		FP	FN				
ELA/Reading										
3	2,913	200	2432	0.83	0.19	0.14	0.86	0.81	0.80	0.92
4	2,923	207	2473	0.83	0.19	0.15	0.85	0.81	0.81	0.92
5	2,868	211	2502	0.84	0.20	0.13	0.87	0.80	0.83	0.93
6	2,801	217	2531	0.86	0.15	0.13	0.87	0.85	0.85	0.94
7	2,721	219	2552	0.84	0.19	0.14	0.86	0.81	0.84	0.92
8	2,506	223	2567	0.83	0.20	0.14	0.86	0.80	0.82	0.91
Mathematics										
3	2,951	203	2436	0.86	0.14	0.14	0.86	0.86	0.87	0.94
4	2,956	214	2485	0.87	0.14	0.11	0.89	0.86	0.85	0.95
5	2,862	225	2528	0.88	0.10	0.14	0.86	0.90	0.85	0.96
6	2,823	229	2552	0.87	0.12	0.14	0.86	0.88	0.83	0.95
7	2,731	233	2567	0.88	0.11	0.12	0.88	0.89	0.86	0.96
8	2,355	239	2586	0.87	0.11	0.16	0.84	0.89	0.85	0.95

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 SD SBAC summative tests based on RIT scores from fall, winter, or spring. “Prob.” indicates the probability of obtaining proficiency status on the SD SBAC summative tests in the spring. For example, a grade 3 student who obtained a MAP Growth reading score of 200 in the fall has a 78% chance of reaching proficiency on the SD SBAC summative tests.

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

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.
2	5	189	142	No	<0.01	149	No	<0.01	153	No	<0.01
	10	189	148	No	<0.01	155	No	<0.01	159	No	<0.01
	15	189	152	No	0.01	159	No	<0.01	164	No	<0.01
	20	189	156	No	0.02	162	No	0.01	167	No	<0.01
	25	189	159	No	0.03	165	No	0.02	170	No	<0.01
	30	189	161	No	0.05	168	No	0.04	173	No	<0.01
	35	189	163	No	0.07	170	No	0.06	175	No	<0.01
	40	189	166	No	0.11	172	No	0.09	177	No	<0.01
	45	189	168	No	0.16	175	No	0.14	180	No	0.01
	50	189	170	No	0.22	177	No	0.2	182	No	0.02
	55	189	172	No	0.25	179	No	0.27	184	No	0.08
	60	189	174	No	0.33	181	No	0.32	186	No	0.2
	65	189	177	No	0.46	183	No	0.41	188	No	0.39
	70	189	179	Yes	0.5	186	Yes	0.55	191	Yes	0.72
	75	189	182	Yes	0.63	188	Yes	0.64	193	Yes	0.87
	80	189	184	Yes	0.71	191	Yes	0.73	196	Yes	0.98
	85	189	188	Yes	0.81	194	Yes	0.83	200	Yes	>0.99
	90	189	192	Yes	0.91	199	Yes	0.93	204	Yes	>0.99
	95	189	198	Yes	0.97	205	Yes	0.98	210	Yes	>0.99
3	5	200	155	No	<0.01	160	No	<0.01	164	No	<0.01
	10	200	161	No	<0.01	167	No	<0.01	171	No	<0.01
	15	200	166	No	0.01	171	No	<0.01	175	No	<0.01
	20	200	169	No	0.01	175	No	0.01	179	No	<0.01
	25	200	172	No	0.03	178	No	0.02	182	No	<0.01
	30	200	175	No	0.05	180	No	0.04	184	No	<0.01
	35	200	178	No	0.09	183	No	0.08	187	No	<0.01
	40	200	180	No	0.13	185	No	0.09	189	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	200	182	No	0.16	188	No	0.17	192	No	0.01
	50	200	185	No	0.25	190	No	0.24	194	No	0.04
	55	200	187	No	0.33	192	No	0.32	196	No	0.13
	60	200	189	No	0.41	194	No	0.36	198	No	0.28
	65	200	192	Yes	0.5	197	Yes	0.5	201	Yes	0.61
	70	200	194	Yes	0.59	199	Yes	0.59	203	Yes	0.8
	75	200	197	Yes	0.67	202	Yes	0.73	206	Yes	0.96
	80	200	200	Yes	0.78	205	Yes	0.8	209	Yes	0.99
	85	200	204	Yes	0.87	209	Yes	0.91	213	Yes	>0.99
	90	200	208	Yes	0.94	213	Yes	0.95	217	Yes	>0.99
	95	200	215	Yes	0.99	220	Yes	0.99	224	Yes	>0.99
4	5	207	166	No	<0.01	170	No	<0.01	173	No	<0.01
	10	207	173	No	<0.01	177	No	<0.01	179	No	<0.01
	15	207	177	No	0.01	181	No	<0.01	184	No	<0.01
	20	207	181	No	0.02	184	No	0.01	187	No	<0.01
	25	207	184	No	0.04	187	No	0.02	190	No	<0.01
	30	207	186	No	0.05	190	No	0.05	193	No	<0.01
	35	207	189	No	0.1	193	No	0.08	195	No	<0.01
	40	207	191	No	0.14	195	No	0.13	198	No	0.01
	45	207	194	No	0.2	197	No	0.19	200	No	0.02
	50	207	196	No	0.28	199	No	0.27	202	No	0.08
	55	207	198	No	0.36	202	No	0.35	204	No	0.2
	60	207	200	No	0.45	204	No	0.45	207	Yes	0.5
	65	207	203	Yes	0.55	206	Yes	0.55	209	Yes	0.72
	70	207	205	Yes	0.64	209	Yes	0.69	211	Yes	0.87
	75	207	208	Yes	0.76	211	Yes	0.73	214	Yes	0.98
	80	207	211	Yes	0.83	214	Yes	0.84	217	Yes	>0.99
	85	207	215	Yes	0.92	218	Yes	0.93	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	207	219	Yes	0.96	222	Yes	0.98	225	Yes	>0.99
	95	207	226	Yes	0.99	229	Yes	>0.99	231	Yes	>0.99
5	5	211	175	No	<0.01	178	No	<0.01	180	No	<0.01
	10	211	181	No	<0.01	184	No	<0.01	186	No	<0.01
	15	211	186	No	0.01	189	No	0.01	191	No	<0.01
	20	211	189	No	0.03	192	No	0.03	194	No	<0.01
	25	211	192	No	0.06	195	No	0.05	197	No	<0.01
	30	211	195	No	0.11	197	No	0.08	199	No	<0.01
	35	211	197	No	0.16	200	No	0.15	202	No	0.01
	40	211	199	No	0.2	202	No	0.22	204	No	0.02
	45	211	201	No	0.27	204	No	0.26	206	No	0.08
	50	211	204	No	0.4	206	No	0.35	208	No	0.2
	55	211	206	No	0.45	209	Yes	0.5	211	Yes	0.5
	60	211	208	Yes	0.55	211	Yes	0.55	213	Yes	0.72
	65	211	210	Yes	0.64	213	Yes	0.65	215	Yes	0.87
	70	211	213	Yes	0.73	215	Yes	0.74	217	Yes	0.96
	75	211	215	Yes	0.8	218	Yes	0.85	220	Yes	0.99
	80	211	218	Yes	0.89	221	Yes	0.92	223	Yes	>0.99
	85	211	222	Yes	0.94	224	Yes	0.96	226	Yes	>0.99
	90	211	226	Yes	0.98	228	Yes	0.99	230	Yes	>0.99
	95	211	232	Yes	>0.99	235	Yes	>0.99	237	Yes	>0.99
6	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
	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			Winter			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			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 3	Prob.		Level 3	Prob.		Level 3	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
4	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
	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			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 3	Prob.		Level 3	Prob.		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	232	184	No	<0.01	187	No	<0.01	190	No	<0.01
	10	232	190	No	<0.01	194	No	<0.01	197	No	<0.01
	15	232	194	No	<0.01	198	No	<0.01	201	No	<0.01
	20	232	197	No	<0.01	201	No	<0.01	205	No	<0.01
	25	232	199	No	<0.01	204	No	<0.01	208	No	<0.01
	30	232	202	No	0.01	207	No	<0.01	211	No	<0.01
	35	232	204	No	0.01	209	No	<0.01	213	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	232	206	No	0.02	212	No	0.01	216	No	<0.01
	45	232	208	No	0.04	214	No	0.03	218	No	<0.01
	50	232	210	No	0.07	216	No	0.05	220	No	<0.01
	55	232	212	No	0.11	218	No	0.09	223	No	0.01
	60	232	214	No	0.16	220	No	0.14	225	No	0.02
	65	232	216	No	0.23	223	No	0.25	227	No	0.08
	70	232	219	No	0.36	225	No	0.34	230	No	0.28
	75	232	221	Yes	0.5	228	Yes	0.5	233	Yes	0.61
	80	232	224	Yes	0.64	231	Yes	0.66	236	Yes	0.87
	85	232	227	Yes	0.77	234	Yes	0.79	239	Yes	0.98
	90	232	231	Yes	0.89	238	Yes	0.91	244	Yes	>0.99
	95	232	237	Yes	0.98	245	Yes	0.99	251	Yes	>0.99
7	5	235	189	No	<0.01	191	No	<0.01	192	No	<0.01
	10	235	195	No	<0.01	197	No	<0.01	199	No	<0.01
	15	235	199	No	<0.01	202	No	<0.01	204	No	<0.01
	20	235	203	No	<0.01	206	No	<0.01	208	No	<0.01
	25	235	206	No	<0.01	209	No	<0.01	211	No	<0.01
	30	235	208	No	0.01	211	No	<0.01	214	No	<0.01
	35	235	211	No	0.02	214	No	0.01	216	No	<0.01
	40	235	213	No	0.03	216	No	0.02	219	No	<0.01
	45	235	215	No	0.06	219	No	0.04	221	No	<0.01
	50	235	217	No	0.09	221	No	0.07	224	No	<0.01
	55	235	219	No	0.14	223	No	0.12	226	No	0.01
	60	235	222	No	0.23	226	No	0.22	229	No	0.04
	65	235	224	No	0.31	228	No	0.3	231	No	0.13
	70	235	226	No	0.4	231	No	0.4	234	No	0.39
	75	235	229	Yes	0.55	233	Yes	0.5	237	Yes	0.72
	80	235	232	Yes	0.69	236	Yes	0.65	240	Yes	0.92

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	235	235	Yes	0.8	240	Yes	0.82	244	Yes	0.99
	90	235	239	Yes	0.91	245	Yes	0.94	249	Yes	>0.99
	95	235	246	Yes	0.99	251	Yes	0.99	256	Yes	>0.99
8	5	243	192	No	<0.01	194	No	<0.01	196	No	<0.01
	10	243	199	No	<0.01	201	No	<0.01	203	No	<0.01
	15	243	203	No	<0.01	206	No	<0.01	208	No	<0.01
	20	243	207	No	<0.01	210	No	<0.01	212	No	<0.01
	25	243	210	No	<0.01	213	No	<0.01	215	No	<0.01
	30	243	212	No	<0.01	216	No	<0.01	218	No	<0.01
	35	243	215	No	0.01	219	No	<0.01	221	No	<0.01
	40	243	217	No	0.01	221	No	0.01	224	No	<0.01
	45	243	220	No	0.03	224	No	0.02	226	No	<0.01
	50	243	222	No	0.05	226	No	0.04	229	No	<0.01
	55	243	224	No	0.08	228	No	0.07	231	No	<0.01
	60	243	227	No	0.15	231	No	0.13	234	No	0.01
	65	243	229	No	0.21	233	No	0.19	237	No	0.04
	70	243	232	No	0.32	236	No	0.31	239	No	0.13
	75	243	234	No	0.41	239	No	0.4	242	No	0.39
	80	243	237	Yes	0.55	242	Yes	0.55	246	Yes	0.8
	85	243	241	Yes	0.72	246	Yes	0.74	250	Yes	0.98
	90	243	246	Yes	0.87	251	Yes	0.9	255	Yes	>0.99
	95	243	252	Yes	0.97	258	Yes	0.98	262	Yes	>0.99

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