

Predicting Proficiency on the Virginia Standards of Learning (VA SOL) Assessments Based on NWEA MAP Growth Scores

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NWEA Psychometrics and Analytics

Linking Study Updates

Date	Description
2014-09	Initial study conducted for Virginia in reading and mathematics in grades 3–8 using Spring 2014 data.
2016-03	Incorporated the 2015 MAP Growth norms using Spring 2014 data.
2020-07-23	New study using Spring 2019 data for the mathematics 3–8 assessments administered for the first time in Spring 2019 based on new standards adopted in September 2016 by the Virginia Board of Education.
2022-03-10	New study using Spring 2021 data for the reading 3–8 assessments administered for the first time in Spring 2021 based on new standards adopted in January 2017 by the Virginia Board of Education. The mathematics 3–8 results from July 2020 remain the same but are included in this report so all Virginia SOL linking study results are in one document.
2022-03-25	Amended a clerical error.
2025-07	Updated the linking study based on the 2025 norms.
2026-08	New study using Spring 2025 data for grades 3–8 mathematics and reading assessments based on the 2025 norms and the EISA mathematics concordance table.

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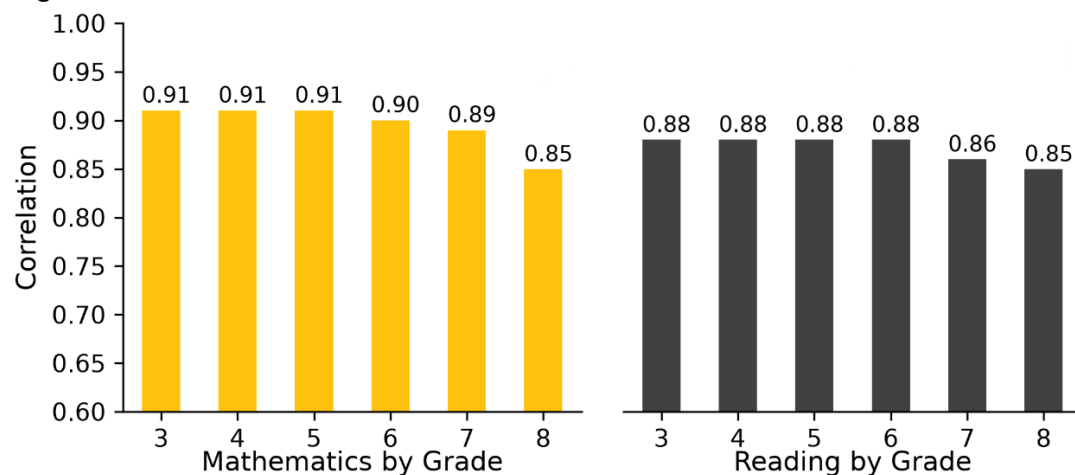
Executive Summary

Linking studies allow partners to use MAP® Growth™ Rasch Unit (RIT) scores throughout the year to predict students' likely performance levels on state summative assessments. This is accomplished through statistical analyses that produce RIT cut scores that correspond to state summative performance levels. A “cut score” is the minimum score a student must get on a test to be placed in a certain performance level. The linking study for the Virginia Standards of Learning (VA SOL) assessment described in this report provides RIT cut scores for the fall, winter, and spring MAP Growth administrations that correspond to the VA SOL performance levels for mathematics and reading in grades 3–8.

The linking study is based on test scores from students in grades 3–8 who took both the MAP Growth and VA SOL assessments in mathematics and reading in Spring 2025. The linking study sample included 44,879 students across 5 districts and 115 schools in Virginia. Scores from both tests were used as the basis for linking the assessments together.

Before the linking analyses began, NWEA confirmed that the MAP Growth and VA SOL assessments are aligned on the same or similar set of content standards to warrant a connection. The link between the two tests was further investigated by calculating the Pearson correlation coefficients that relate the relationship between the specific MAP Growth and VA SOL test scores. A correlation of $r \geq 0.70$ is considered a “high” correlation and acceptable for publishing. This indicates that students who perform well on one assessment also tend to perform well on the other, and vice versa. A perfect positive correlation is 1.00. The correlations between the MAP Growth and VA SOL test scores are all higher than 0.70, as shown in Figure E.1, indicating that MAP Growth is an effective assessment for predicting student performance on the VA SOL tests.

Figure E.1. Correlations Between MAP Growth and VA SOL Test Scores



The equipercentile linking method (Kolen & Brennan, 2004) was used to produce the RIT cut scores for the spring administration that correspond to performance levels on the VA SOL assessment for every subject and grade. MAP Growth cut scores for grade 2, as well as those for the fall and winter administrations of all grades, are also provided so that educators can track grade 2 students' progress on the VA SOL tests by grade 3, alongside all other students, early

in the year. These cut scores were derived from the spring cuts¹ and the growth norms for the adjacent grades (i.e., grades 2 to 3), or fall and winter administrations to the spring administration. While RIT cut scores were generated for every performance level on the VA SOL assessment, Table E.1 presents the *Proficient* cut scores that indicate the minimum score a student must get to be considered proficient (reaching *Proficient* or *Advanced*) for accountability purposes.

Table E.1. MAP Growth RIT Cut Scores for VA SOL Proficiency

Assessment		Proficient Cut Scores by Grade						
		2	3	4	5	6	7	8
Mathematics								
VA SOL Spring		–	443	445	445	433	430	430
MAP Growth Math	Fall	178	189	204	213	220	226	228
	Winter	186	198	212	219	226	230	232
	Spring	192	204	217	223	230	233	235
Reading								
VA SOL Spring		–	444	451	446	449	449	449
MAP Growth Reading	Fall	181	194	204	214	217	221	224
	Winter	187	199	207	216	218	222	225
	Spring	191	202	209	217	219	223	226

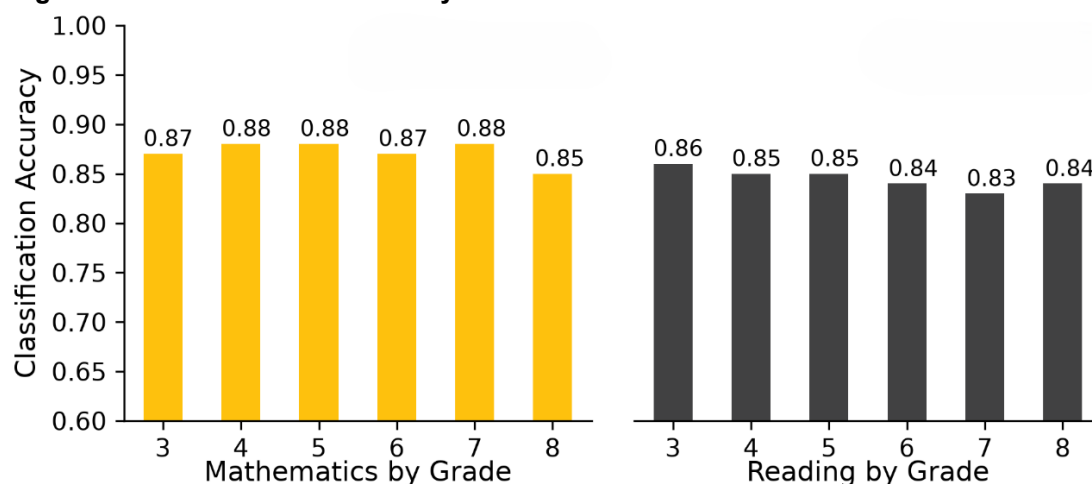
Educators can use these cut scores to determine whether students are on track for proficiency on the state assessment. For example, the *Proficient* cut score on the grade 3 VA SOL mathematics test is 443. A grade 3 student with a MAP Growth Math RIT score of 189 in the fall is likely to meet proficiency on the VA SOL mathematics test in the spring, whereas a grade 3 student with a RIT score lower than 189 in the fall is in jeopardy of not meeting proficiency.

As further evidence that MAP Growth scores can be used to predict students' proficiency on the state tests, NWEA calculated classification accuracy statistics that show how well the RIT scores correctly classified, or predicted, students as proficient on the VA SOL tests.² For example, the grade 3 MAP Growth mathematics *Proficient* cut score has a 0.87 accuracy rate, meaning it accurately predicted student achievement on the state test for 87% of the sample. A high statistic indicates high accuracy. Overall, MAP Growth scores have a high accuracy rate of identifying student proficiency on the VA SOL tests, as illustrated in Figure E.2.

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.

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

Figure E.2. Classification Accuracy of MAP Growth Tests



Please note that the purpose of this report is to explain NWEA's linking study methodology. It is not meant as the main reference for determining a student's likely performance on state summative assessments. The cut scores in this report are based on the default instructional weeks for each term (i.e., Weeks 4, 20, and 32 for fall, winter, and spring, respectively), whereas instructional weeks often vary by district. The cut scores in this report may therefore differ from the results in the NWEA reporting system that reflect the specific instructional weeks set by partners. Partners should therefore reference their MAP Growth score reports instead. Additionally, the RIT cut scores generated in this report are intended to predict students' likely performance on the state summative assessment in spring only, and caution should be exercised when using these cuts to predict performance on summative tests administered in other terms, such as fall and winter.

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 state summative assessments 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 Rasch Unit (RIT) scores from the MAP Growth assessment with scores from the Virginia Standards of Learning (VA SOL) assessment for mathematics and reading in grades 3–8 taken during the Spring 2025 term. MAP Growth cut scores are also included for grade 2 so that educators can track early learners' progress toward proficiency on the VA SOL tests by grade 3. Specifically, this report presents the following results:

1. Student sample demographics
2. Descriptive statistics of test scores
3. MAP Growth cut scores from fall, winter, and spring that correspond to the performance levels on the spring VA SOL assessment
4. Classification accuracy statistics to determine the degree to which MAP Growth accurately predicts student proficiency status on the VA SOL tests
5. The probability of achieving grade-level proficiency on the VA SOL assessment based on MAP Growth RIT scores from fall, winter, and spring

1.2. Assessment Overview

The VA SOL grades 3–8 mathematics and reading tests are Virginia's state summative assessment aligned to the Virginia Standards of Learning. Based on their test scores, students are placed into one of four performance levels: *Below Basic*, *Basic*, *Proficient*, and *Advanced*. The *Proficient* cut score demarks the minimum level of achievement considered to be proficient for accountability purposes.

To support the transition to more rigorous proficiency standards and to avoid a substantial one-year increase in cut scores, the Virginia Board of Education approved a multi-year implementation plan to begin in 2026–2027 and extending through the 2029–2030 school year. During this transition period, a new temporary performance level, *Approaching*, will be added. As a result, grades 3–8 mathematics and reading VA SOL tests will temporarily include five performance levels instead of four. For school accountability purposes, students scoring at the *Approaching*, *Proficient*, or *Advanced* levels are considered to have passed the VA SOL assessment. However, only students achieving the *Proficient* or *Advanced* levels are considered to have demonstrated mastery of Virginia's more rigorous grade-level academic standards.

MAP Growth tests are an adaptive interim assessment 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 to 350. NWEA conducts norming studies of student and school performance on MAP Growth to aid the interpretation of scores. Growth norms provide expected score gains for a test from term to term, such as from fall to spring terms. The most recent norms study was conducted in 2025 (NWEA, 2025).

2. Methods

2.1. Data Collection

This linking study is primarily based on mathematics and reading data from the Spring 2025 administration of the MAP Growth and VA SOL assessments. NWEA requested that Virginia districts recruited to participate in the study share their student and score data for the target term. Districts also permitted NWEA to use their students' 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 based on 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 VA SOL mathematics and reading assessments in Spring 2025 were included in the study sample.

2.2. Post-Stratification Weighting

Post-stratification weights were applied to ensure that the linking study sample represented the state's test-taking student population in terms of race, sex, and performance level. These variables were selected because they are known to be correlated with students' academic achievement and are commonly available in state summative assessment reports. The weighted sample was aligned as closely as possible with the target population for key demographics and performance characteristics.

A raking procedure was used to calculate the post-stratification weights that either compensate for the underrepresentation of certain groups or attenuate the overrepresentation of certain groups. 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 performance 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. Descriptive Statistics

Descriptive statistics are provided to summarize the test scores for the MAP Growth and VA SOL tests, including the test score mean, standard deviation (SD), minimum, and maximum. The mean presents the average test scores across all students in the study sample, and the SD indicates the variability of test scores, revealing how students' scores are distributed around the average score, or mean. Correlation coefficients between the MAP Growth RIT scores and VA SOL scores are also provided to answer the question "How well do the test scores from MAP Growth (that reference the RIT scale) correlate to the scores obtained from the VA SOL tests (that reference some other scale) in the same subject?" The correlations were calculated as follows:

$$r = \frac{\sum (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum (x_i - \bar{x})^2 \sum (y_i - \bar{y})^2}}$$

where r is the correlation coefficient, x_i and y_i are the values of the x- and y-variables in a sample, and $\bar{x}$ and $\bar{y}$ are the mean of the values of the x- and y-variables.

2.4. MAP Growth Cut Scores

MAP Growth cut scores that predict student achievement on the VA SOL assessment are reported for grades 3–8, as well as for grade 2 so that educators can track early learners' progress toward proficiency on the VA SOL tests by grade 3. Percentile ranks based on the 2025 NWEA norms are also provided. These are useful for understanding how students' scores compare with peers nationwide and the relative rigor of a state's performance level designations for its summative assessment.

The equipercentile linking method (Kolen & Brennan, 2004) was used to identify the spring MAP Growth RIT scores for grades 3–8 that correspond to the spring VA SOL performance level cut scores. 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., VA SOL). Its equipercentile 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 VA SOL tests on the scale of MAP Growth, $P(x)$ is the percentile rank of a given score on the VA SOL 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 to spring within the same grade or from spring of a lower grade to spring of the adjacent higher grade. This information was used to calculate the fall and winter cut scores for grades 3–8. The equation below was used to determine the previous term'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 RIT score, and
- g is the expected growth from the previous RIT (e.g., fall or winter) to the spring RIT score.

Students do not take the VA SOL assessment in grade 2. Therefore, the MAP Growth conditional growth norms were also used to estimate the fall, winter, and spring cuts in grade 2 that are needed to meet VA SOL proficiency in grade 3. To derive the grade 2 spring cut scores, the growth score from spring of one year to the next was used (i.e., the growth score from spring of grade 2 to spring of grade 3). The estimations of fall and winter cuts followed the same process as for grades 3–8. For example, the projected growth from fall to spring in grade 2 was used to calculate the fall cuts for grade 2.

2.5. Classification Accuracy

The degree to which MAP Growth predicts student proficiency status on the VA SOL tests can be described using classification accuracy statistics based on the MAP Growth spring RIT cut scores. The results show the proportion of students correctly classified by their RIT scores as proficient or not proficient on the VA SOL tests. Table 2.1 describes the classification accuracy statistics provided in this report (Pommerich et al., 2004).

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
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.

2.6. Proficiency Projections

Given that all test scores contain measurement errors, reaching the *Proficient* RIT cut does not guarantee that the 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 on the VA SOL tests in the spring based on a student’s RIT scores from fall and winter:

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

where:

- Φ is the standard normal cumulative distribution function,
- $RIT_{previous}$ 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 *Proficient* 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 on the VA SOL tests based on their spring RIT score (RIT_{Spring}):

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

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 VA SOL assessments in Spring 2025 for mathematics and reading were included in the sample. The mathematics and reading data were collected from 5 districts and 115 schools in Virginia. Table 3.1 presents the distributions of student race, sex, and performance level in the original unweighted study sample. Table 3.2 presents the distributions of the target population of students who took the VA SOL tests. Since the original study sample is different from the target VA SOL population, post-stratification weights were applied. Table 3.3 presents the demographic distributions of the final analytic sample after weighting, which are almost identical to the VA SOL student population distributions.

Table 3.1. Linking Study Sample Demographics (Unweighted)

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
Mathematics							
Total N		5,098	4,970	4,985	5,839	13,479	5,428
Race	Black	20.9	20.5	19.7	19.9	14.7	22.0
	Hispanic	18.3	18.8	18.1	15.1	5.8	5.5
	Other	16.6	16.4	15.9	21.9	32.8	35.0
	White	44.3	44.3	46.3	43.2	46.7	37.5
Sex	Female	50.0	50.9	48.7	49.0	49.3	47.8
	Male	50.0	49.1	51.3	51.0	50.7	52.2
Performance Level	<i>Fail</i>	22.3	23.0	21.1	28.7	28.3	55.5
	<i>Proficient</i>	65.8	64.2	63.2	66.8	65.6	44.5
	<i>Advanced</i>	11.9	12.8	15.7	4.5	6.1	0.1
Reading							
Total N		5,055	4,921	4,978	4,797	4,734	4,302
Race	Black	21.5	20.6	19.8	21.2	20.6	22.5
	Hispanic	18.1	18.3	17.5	17.1	17.1	12.6
	Other	16.8	16.9	16.6	16.3	16.7	18.4
	White	43.6	44.1	46.1	45.3	45.6	46.4
Sex	Female	49.7	50.7	48.8	49.2	48.9	50.2
	Male	50.3	49.3	51.2	50.8	51.1	49.8
Performance Level	<i>Fail</i>	27.8	21.5	21.5	20.0	17.7	14.4
	<i>Proficient</i>	62.8	64.8	67.8	67.4	69.1	72.1
	<i>Advanced</i>	9.4	13.7	10.7	12.6	13.2	13.5

Note. “Other” includes Asian and Native American. The *Below Basic* and *Basic* performance levels were combined into a single *Fail* category because the state provided student population data only for the combined category rather than for the two separate performance levels.

Table 3.2. VA SOL Student Population Demographics

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
Mathematics							
Total N		102,579	99,842	95,699	88,974	78,172	85,424
Race	Black	22.9	23.1	23.8	25.1	23.2	24.9
	Hispanic	22.9	22.7	22.5	23.3	23.6	23.7
	Other	8.4	8.6	7.9	7.2	8.2	7.1
	White	45.8	45.6	45.8	44.5	45.0	44.3
Sex	Female	49.5	49.6	49.3	49.7	49.0	48.8
	Male	50.5	50.4	50.7	50.3	50.9	51.2
Performance Level	<i>Fail</i>	33.9	34.5	35.6	43.4	45.8	44.2
	<i>Proficient</i>	55.1	52.3	51.6	49.5	46.2	50.8
	<i>Advanced</i>	10.9	13.3	12.9	7.1	7.9	4.9
Reading							
Total N		102,633	97,919	100,065	98,832	99,157	98,813
Race	Black	22.8	23.0	23.1	23.5	23.4	23.5
	Hispanic	22.4	22.3	21.8	21.4	21.4	21.5
	Other	8.3	8.5	8.7	8.7	8.9	8.8
	White	46.4	46.2	46.4	46.4	46.4	46.2
Sex	Female	49.2	49.0	48.9	48.6	48.6	48.6
	Male	50.8	51.0	51.1	51.4	51.4	51.4
Performance Level	<i>Fail</i>	40.1	33.8	35.3	33.8	33.6	32.8
	<i>Proficient</i>	50.7	53.2	54.9	54.4	55.6	55.7
	<i>Advanced</i>	9.2	13.0	9.8	11.7	10.8	11.5

Note. “Other” includes Asian and Native American. Population data were obtained from the Virginia SOL 2024–2025 Technical Report. The *Below Basic* and *Basic* performance levels were combined into a single *Fail* category because the state provided student population data only for the combined category rather than for the two separate performance levels.

Table 3.3. Linking Study Sample Demographics (Weighted)

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
Mathematics							
Total N		5,093	4,975	4,990	5,839	13,466	5,423
Race	Black	22.9	23.1	23.9	25.1	23.2	24.9
	Hispanic	22.9	22.7	22.5	23.3	23.6	23.7
	Other	8.4	8.5	7.9	7.2	8.2	7.1
	White	45.8	45.6	45.8	44.5	45.0	44.3
Sex	Female	49.5	49.6	49.3	49.7	49.0	48.8
	Male	50.5	50.4	50.7	50.3	51.0	51.2
Performance Level	<i>Fail</i>	33.9	34.5	35.6	43.4	45.8	44.2
	<i>Proficient</i>	55.2	52.2	51.5	49.5	46.2	50.9
	<i>Advanced</i>	10.9	13.3	12.9	7.1	7.9	4.9

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
Reading							
Total N		5,055	4,921	4,978	4,792	4,734	4,302
Race	Black	22.8	23.0	23.1	23.5	23.4	23.5
	Hispanic	22.4	22.3	21.8	21.4	21.4	21.5
	Other	8.3	8.5	8.7	8.7	8.9	8.8
	White	46.4	46.2	46.4	46.4	46.4	46.2
Sex	Female	49.2	49.0	48.9	48.6	48.6	48.6
	Male	50.8	51.0	51.1	51.4	51.4	51.4
Performance Level	<i>Fail</i>	40.1	33.8	35.3	33.8	33.6	32.8
	<i>Proficient</i>	50.7	53.2	54.9	54.5	55.6	55.7
	<i>Advanced</i>	9.2	13.0	9.8	11.7	10.8	11.5

Note. "Other" includes Asian and Native American. The *Below Basic* and *Basic* performance levels were combined into a single *Fail* category because the state provided student population data only for the combined category rather than for the two separate performance levels.

3.2. Descriptive Statistics

Table 3.4 presents descriptive statistics of the MAP Growth and VA SOL test scores from Spring 2025 for mathematics and reading, including the correlation coefficients (r) between them. The correlations between the scores range from 0.85 to 0.91 for mathematics and 0.85 to 0.88 for reading. These values indicate a high positive correlation between MAP Growth and VA SOL scores. These findings provide important validity evidence supporting the use of MAP Growth scores as predictors of student performance on the VA SOL test.

Table 3.4. Descriptive Statistics of Test Scores

Grade	N	r	VA SOL				MAP Growth			
			Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
Mathematics										
3	5,093	0.91	423.3	61.5	243	600	199.3	14.9	144	248
4	4,975	0.91	425.7	61.0	264	600	211.4	15.8	160	263
5	4,990	0.91	423.5	63.9	249	600	217.1	16.1	167	266
6	5,839	0.90	408.3	54.6	268	600	222.1	18.0	170	292
7	13,466	0.89	405.5	58.0	260	571	225.0	19.2	163	290
8	5,423	0.85	399.2	47.5	273	518	224.7	21.5	154	293
Reading										
3	5,055	0.88	413.3	63.4	256	589	193.3	17.0	149	238
4	4,921	0.88	425.3	64.6	248	600	202.2	16.9	147	249
5	4,978	0.88	420.1	61.4	238	597	209.5	16.1	152	266
6	4,792	0.88	422.8	63.5	260	586	212.7	15.4	167	249
7	4,734	0.86	424.3	60.8	252	575	216.1	15.7	164	259
8	4,302	0.85	428.6	58.2	254	581	220.2	14.9	166	262

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

3.3. MAP Growth Cut Scores

Table 3.5 and Table 3.6 present the VA SOL scale score ranges and the corresponding MAP Growth RIT cut scores and percentile ranges by content area and grade. Bold numbers indicate the cut scores considered to be proficient for accountability purposes. These tables can be used to predict a student's likely performance level on the VA SOL spring assessment when MAP Growth is taken in the fall, winter, or spring. For example, a grade 3 student who obtained a MAP Growth mathematics RIT score of 189 in the fall is likely to achieve *Proficient* performance on the VA SOL mathematics test. The same is true for a grade 3 student who obtained a MAP Growth mathematics RIT score of 198 in the winter. The winter cut score is higher than the fall cut score because of expected growth during the school year as students receive more instruction.

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 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 substantially 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—Mathematics

VA SOL Mathematics										
Grade	Below Basic		Basic		Approaching		Proficient		Advanced	
3	0–375		376–409		410–442		443–520		521–600	
4	0–383		384–410		411–444		445–517		518–600	
5	0–378		379–410		411–444		445–510		511–600	
6	0–379		380–407		408–432		433–506		507–600	
7	0–387		388–407		408–429		430–507		508–600	
8	0–387		388–407		408–429		430–502		503–600	
MAP Growth Math										
Grade	Below Basic		Basic		Approaching		Proficient		Advanced	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall										
2	100–157	1–16	158–167	17–37	168–177	38–62	178–201	63–96	202–350	97–99
3	100–172	1–23	173–180	24–41	181–188	42–61	189–208	62–94	209–350	95–99
4	100–188	1–30	189–195	31–46	196–203	47–66	204–219	67–92	220–350	93–99
5	100–196	1–27	197–204	28–46	205–212	47–65	213–227	66–90	228–350	91–99
6	100–202	1–32	203–211	33–53	212–219	54–72	220–243	73–97	244–350	98–99
7	100–212	1–39	213–218	40–53	219–225	54–69	226–249	70–96	250–350	97–99
8	100–213	1–32	214–219	33–45	220–227	46–62	228–279	63–98	280–350	99–99
Winter										
2	100–165	1–16	166–175	17–36	176–185	37–61	186–210	62–96	211–350	97–99
3	100–180	1–23	181–188	24–40	189–197	41–62	198–217	63–93	218–350	94–99
4	100–195	1–30	196–202	31–46	203–211	47–66	212–227	67–91	228–350	92–99
5	100–202	1–30	203–210	31–47	211–218	48–65	219–233	66–89	234–350	90–99
6	100–207	1–31	208–217	32–54	218–225	55–71	226–250	72–97	251–350	98–99
7	100–216	1–40	217–222	41–53	223–229	54–68	230–254	69–96	255–350	97–99
8	100–217	1–33	218–223	34–45	224–231	46–61	232–284	62–98	285–350	99–99
Spring										
2	100–173	1–19	174–182	20–38	183–191	39–60	192–213	61–94	214–350	95–99
3	100–187	1–25	188–195	26–42	196–203	43–60	204–222	61–91	223–350	92–99
4	100–201	1–32	202–208	33–47	209–216	48–64	217–232	65–89	233–350	90–99
5	100–206	1–30	207–214	31–47	215–222	48–64	223–237	65–87	238–350	88–99
6	100–212	1–34	213–221	35–53	222–229	54–69	230–254	70–96	255–350	97–99
7	100–219	1–41	220–225	42–53	226–232	54–67	233–256	68–95	257–350	96–99
8	100–220	1–34	221–226	35–45	227–234	46–61	235–285	62–98	286–350	99–99

Table 3.6. MAP Growth Cut Scores—Reading

VA SOL Reading										
Grade	Below Basic		Basic		Approaching		Proficient		Advanced	
3	0–408		409–417		418–443		444–501		502–600	
4	0–414		415–425		426–450		451–513		514–600	
5	0–401		402–413		414–445		446–509		510–600	
6	0–389		390–412		413–448		449–514		515–600	
7	0–375		376–412		413–448		449–510		511–600	
8	0–385		386–412		413–448		449–515		516–600	
MAP Growth Reading										
Grade	Below Basic		Basic		Approaching		Proficient		Advanced	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall										
2	100–167	1–44	168–171	45–54	172–180	55–73	181–199	74–95	200–350	96–99
3	100–183	1–47	184–185	48–52	186–193	53–68	194–209	69–91	210–350	92–99
4	100–194	1–47	195–196	48–51	197–203	52–66	204–220	67–91	221–350	92–99
5	100–200	1–43	201–203	44–50	204–213	51–71	214–228	72–92	229–350	93–99
6	100–202	1–35	203–207	36–47	208–216	48–67	217–231	68–90	232–350	91–99
7	100–203	1–30	204–210	31–46	211–220	47–69	221–234	70–90	235–350	91–99
8	100–206	1–29	207–214	30–47	215–223	48–68	224–238	69–90	239–350	91–99
Winter										
2	100–174	1–45	175–177	46–52	178–186	53–72	187–205	73–95	206–350	96–99
3	100–188	1–47	189–190	48–51	191–198	52–68	199–214	69–91	215–350	92–99
4	100–197	1–46	198–199	47–50	200–206	51–65	207–222	66–90	223–350	91–99
5	100–203	1–44	204–206	45–50	207–215	51–70	216–229	71–91	230–350	92–99
6	100–204	1–36	205–208	37–45	209–217	46–66	218–232	67–90	233–350	91–99
7	100–205	1–31	206–212	32–47	213–221	48–68	222–235	69–90	236–350	91–99
8	100–207	1–29	208–215	30–47	216–224	48–67	225–239	68–90	240–350	91–99
Spring										
2	100–179	1–45	180–182	46–52	183–190	53–69	191–207	70–93	208–350	94–99
3	100–192	1–47	193–194	48–52	195–201	53–66	202–215	67–88	216–350	89–99
4	100–200	1–47	201–202	48–51	203–208	52–64	209–223	65–88	224–350	89–99
5	100–205	1–44	206–208	45–50	209–216	51–68	217–230	69–90	231–350	91–99
6	100–206	1–37	207–210	38–47	211–218	48–65	219–233	66–90	234–350	91–99
7	100–207	1–33	208–213	34–47	214–222	48–67	223–236	68–89	237–350	90–99
8	100–209	1–31	210–216	32–47	217–225	48–67	226–240	68–90	241–350	91–99

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 VA SOL tests, providing insight into the predictive validity of MAP Growth. The overall classification accuracy rates range from 0.85 to 0.88 for mathematics and 0.83 to 0.86 for reading. These values suggest that the RIT cut scores are effective at classifying students as proficient or not proficient on the VA SOL assessment.

Although the results show that MAP Growth scores can be used to predict student proficiency with relatively high accuracy on the VA SOL tests, there is a notable limitation to how these results should be used and interpreted. The VA SOL and MAP Growth assessments are designed for different purposes and measure slightly different constructs even within the same content area. Therefore, scores on these 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	VA SOL		FP	FN				
Mathematics										
3	5,093	204	443	0.87	0.11	0.15	0.85	0.89	0.84	0.87
4	4,975	217	445	0.88	0.12	0.11	0.89	0.88	0.82	0.88
5	4,990	223	445	0.88	0.12	0.14	0.86	0.88	0.82	0.87
6	5,839	230	433	0.87	0.09	0.21	0.79	0.91	0.81	0.85
7	13,466	233	430	0.88	0.10	0.16	0.84	0.90	0.81	0.87
8	5,423	235	430	0.85	0.11	0.32	0.68	0.89	0.64	0.79
Reading										
3	5,055	202	444	0.86	0.11	0.20	0.80	0.89	0.78	0.84
4	4,921	209	451	0.85	0.14	0.17	0.83	0.86	0.79	0.84
5	4,978	217	446	0.85	0.12	0.20	0.80	0.88	0.79	0.84
6	4,792	219	449	0.84	0.14	0.18	0.82	0.86	0.78	0.84
7	4,734	223	449	0.83	0.13	0.22	0.78	0.87	0.79	0.82
8	4,302	226	449	0.84	0.13	0.21	0.79	0.87	0.80	0.83

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 performance on the VA SOL tests based on RIT scores from fall, winter, or spring. Due to measurement error in all test scores, the *Proficient* MAP Growth cuts do not guarantee that a student will reach proficiency on the VA SOL tests. Instead, they indicate a 50% chance that a student will reach a particular performance level. Therefore, these projections further elucidate the *Proficient* cut scores by providing the likelihood of reaching proficiency on the VA SOL assessment in the spring at a given percentile throughout the year.

For example, the spring grade 3 *Proficient* RIT cut score for mathematics is 204, which indicates a 50% chance of achieving proficiency in the spring, as shown in Table 3.8. An educator can also use the table to estimate that a grade 3 student who obtained a MAP Growth mathematics score of 195 in the fall has a 78% probability of reaching *Proficient* or higher on the VA SOL test in the spring.

Table 3.8. Proficiency Projections Based on RIT Scores—Mathematics

Grade	Start Percentile	Spring RIT Cut	Fall			Winter			Spring		
			RIT	Projected Proficiency		RIT	Projected Proficiency		RIT	Projected Proficiency	
				Proficient	Prob.		Proficient	Prob.		Proficient	Prob.
2	5	192	147	No	<0.01	155	No	<0.01	161	No	<0.01
	10	192	153	No	<0.01	161	No	<0.01	167	No	<0.01
	15	192	157	No	0.01	165	No	0.01	171	No	<0.01
	20	192	160	No	0.03	168	No	0.02	174	No	<0.01
	25	192	162	No	0.04	171	No	0.03	177	No	<0.01
	30	192	165	No	0.07	173	No	0.06	179	No	<0.01
	35	192	167	No	0.11	175	No	0.09	181	No	<0.01
	40	192	169	No	0.16	177	No	0.14	183	No	0.01
	45	192	171	No	0.23	179	No	0.18	185	No	0.02
	50	192	173	No	0.31	181	No	0.25	187	No	0.08
	55	192	175	No	0.36	183	No	0.35	189	No	0.2
	60	192	177	No	0.45	185	No	0.45	192	Yes	0.5
	65	192	179	Yes	0.55	187	Yes	0.55	194	Yes	0.72
	70	192	181	Yes	0.64	189	Yes	0.6	196	Yes	0.87
	75	192	183	Yes	0.73	192	Yes	0.75	198	Yes	0.96
	80	192	186	Yes	0.8	194	Yes	0.82	201	Yes	0.99
	85	192	189	Yes	0.89	197	Yes	0.91	204	Yes	>0.99
	90	192	193	Yes	0.94	201	Yes	0.96	208	Yes	>0.99
	95	192	198	Yes	0.99	207	Yes	0.99	214	Yes	>0.99
3	5	204	158	No	<0.01	166	No	<0.01	171	No	<0.01
	10	204	164	No	<0.01	172	No	<0.01	177	No	<0.01
	15	204	168	No	<0.01	176	No	<0.01	181	No	<0.01
	20	204	171	No	0.01	179	No	0.01	185	No	<0.01
	25	204	174	No	0.03	182	No	0.02	188	No	<0.01
	30	204	176	No	0.05	184	No	0.04	190	No	<0.01
	35	204	178	No	0.08	186	No	0.06	193	No	<0.01
	40	204	180	No	0.13	189	No	0.13	195	No	0.01

Grade	Start Percentile	Spring RIT Cut	Fall			Winter			Spring		
			RIT	Projected Proficiency		RIT	Projected Proficiency		RIT	Projected Proficiency	
				Proficient	Prob.		Proficient	Prob.		Proficient	Prob.
	45	204	182	No	0.19	191	No	0.2	197	No	0.02
	50	204	184	No	0.26	193	No	0.24	199	No	0.08
	55	204	186	No	0.35	195	No	0.34	201	No	0.2
	60	204	188	No	0.45	197	No	0.45	203	No	0.39
	65	204	190	Yes	0.55	199	Yes	0.55	206	Yes	0.72
	70	204	192	Yes	0.65	201	Yes	0.66	208	Yes	0.87
	75	204	195	Yes	0.78	204	Yes	0.8	211	Yes	0.98
	80	204	197	Yes	0.85	206	Yes	0.87	213	Yes	0.99
	85	204	200	Yes	0.92	210	Yes	0.94	217	Yes	>0.99
	90	204	204	Yes	0.97	214	Yes	0.98	221	Yes	>0.99
	95	204	210	Yes	0.99	220	Yes	>0.99	227	Yes	>0.99
4	5	217	171	No	<0.01	176	No	<0.01	180	No	<0.01
	10	217	177	No	<0.01	183	No	<0.01	187	No	<0.01
	15	217	181	No	<0.01	187	No	<0.01	191	No	<0.01
	20	217	184	No	0.01	190	No	<0.01	195	No	<0.01
	25	217	186	No	0.01	193	No	0.01	198	No	<0.01
	30	217	189	No	0.03	196	No	0.02	201	No	<0.01
	35	217	191	No	0.05	198	No	0.03	203	No	<0.01
	40	217	193	No	0.09	200	No	0.06	206	No	<0.01
	45	217	195	No	0.13	202	No	0.1	208	No	0.01
	50	217	197	No	0.19	204	No	0.16	210	No	0.02
	55	217	199	No	0.27	207	No	0.28	212	No	0.08
	60	217	201	No	0.35	209	No	0.33	215	No	0.28
	65	217	203	No	0.45	211	No	0.44	217	Yes	0.5
	70	217	205	Yes	0.55	213	Yes	0.56	220	Yes	0.8
	75	217	208	Yes	0.69	216	Yes	0.72	222	Yes	0.92
	80	217	210	Yes	0.77	219	Yes	0.84	225	Yes	0.99
	85	217	214	Yes	0.89	222	Yes	0.92	229	Yes	>0.99

Grade	Start Percentile	Spring RIT Cut	Fall			Winter			Spring		
			RIT	Projected Proficiency		RIT	Projected Proficiency		RIT	Projected Proficiency	
				Proficient	Prob.		Proficient	Prob.		Proficient	Prob.
	90	217	217	Yes	0.95	226	Yes	0.98	233	Yes	>0.99
	95	217	223	Yes	0.99	232	Yes	>0.99	240	Yes	>0.99
5	5	223	180	No	<0.01	183	No	<0.01	186	No	<0.01
	10	223	185	No	<0.01	189	No	<0.01	192	No	<0.01
	15	223	189	No	<0.01	194	No	<0.01	197	No	<0.01
	20	223	193	No	<0.01	197	No	<0.01	200	No	<0.01
	25	223	195	No	0.01	200	No	<0.01	204	No	<0.01
	30	223	198	No	0.03	203	No	0.01	206	No	<0.01
	35	223	200	No	0.05	205	No	0.02	209	No	<0.01
	40	223	202	No	0.08	207	No	0.04	211	No	<0.01
	45	223	204	No	0.12	210	No	0.1	214	No	0.01
	50	223	206	No	0.19	212	No	0.16	216	No	0.02
	55	223	208	No	0.26	214	No	0.24	218	No	0.08
	60	223	210	No	0.35	216	No	0.33	221	No	0.28
	65	223	212	No	0.45	219	Yes	0.5	223	Yes	0.5
	70	223	215	Yes	0.6	221	Yes	0.61	226	Yes	0.8
	75	223	217	Yes	0.7	224	Yes	0.76	228	Yes	0.92
	80	223	220	Yes	0.81	226	Yes	0.84	232	Yes	0.99
	85	223	223	Yes	0.9	230	Yes	0.94	235	Yes	>0.99
	90	223	227	Yes	0.96	234	Yes	0.98	240	Yes	>0.99
	95	223	233	Yes	>0.99	240	Yes	>0.99	246	Yes	>0.99
6	5	230	184	No	<0.01	187	No	<0.01	190	No	<0.01
	10	230	190	No	<0.01	194	No	<0.01	197	No	<0.01
	15	230	194	No	<0.01	198	No	<0.01	201	No	<0.01
	20	230	197	No	<0.01	201	No	<0.01	205	No	<0.01
	25	230	199	No	<0.01	204	No	<0.01	208	No	<0.01
	30	230	202	No	0.01	207	No	0.01	211	No	<0.01
	35	230	204	No	0.02	209	No	0.01	213	No	<0.01

Grade	Start Percentile	Spring RIT Cut	Fall			Winter			Spring		
			RIT	Projected Proficiency		RIT	Projected Proficiency		RIT	Projected Proficiency	
				Proficient	Prob.		Proficient	Prob.		Proficient	Prob.
	40	230	206	No	0.04	212	No	0.03	216	No	<0.01
	45	230	208	No	0.07	214	No	0.05	218	No	<0.01
	50	230	210	No	0.11	216	No	0.09	220	No	<0.01
	55	230	212	No	0.16	218	No	0.14	223	No	0.02
	60	230	214	No	0.23	220	No	0.21	225	No	0.08
	65	230	216	No	0.31	223	No	0.34	227	No	0.2
	70	230	219	No	0.45	225	No	0.45	230	Yes	0.5
	75	230	221	Yes	0.6	228	Yes	0.61	233	Yes	0.8
	80	230	224	Yes	0.73	231	Yes	0.75	236	Yes	0.96
	85	230	227	Yes	0.84	234	Yes	0.86	239	Yes	0.99
	90	230	231	Yes	0.93	238	Yes	0.95	244	Yes	>0.99
	95	230	237	Yes	0.99	245	Yes	>0.99	251	Yes	>0.99
7	5	233	189	No	<0.01	191	No	<0.01	192	No	<0.01
	10	233	195	No	<0.01	197	No	<0.01	199	No	<0.01
	15	233	199	No	<0.01	202	No	<0.01	204	No	<0.01
	20	233	203	No	<0.01	206	No	<0.01	208	No	<0.01
	25	233	206	No	0.01	209	No	<0.01	211	No	<0.01
	30	233	208	No	0.01	211	No	0.01	214	No	<0.01
	35	233	211	No	0.03	214	No	0.02	216	No	<0.01
	40	233	213	No	0.06	216	No	0.03	219	No	<0.01
	45	233	215	No	0.09	219	No	0.07	221	No	<0.01
	50	233	217	No	0.14	221	No	0.12	224	No	0.01
	55	233	219	No	0.2	223	No	0.18	226	No	0.02
	60	233	222	No	0.31	226	No	0.3	229	No	0.13
	65	233	224	No	0.4	228	No	0.4	231	No	0.28
	70	233	226	Yes	0.5	231	Yes	0.5	234	Yes	0.61
	75	233	229	Yes	0.64	233	Yes	0.6	237	Yes	0.87
	80	233	232	Yes	0.77	236	Yes	0.74	240	Yes	0.98

Grade	Start Percentile	Spring RIT Cut	Fall			Winter			Spring		
			RIT	Projected Proficiency		RIT	Projected Proficiency		RIT	Projected Proficiency	
				Proficient	Prob.		Proficient	Prob.		Proficient	Prob.
	85	233	235	Yes	0.86	240	Yes	0.88	244	Yes	>0.99
	90	233	239	Yes	0.94	245	Yes	0.97	249	Yes	>0.99
	95	233	246	Yes	0.99	251	Yes	>0.99	256	Yes	>0.99
8	5	235	192	No	<0.01	194	No	<0.01	196	No	<0.01
	10	235	199	No	<0.01	201	No	<0.01	203	No	<0.01
	15	235	203	No	<0.01	206	No	<0.01	208	No	<0.01
	20	235	207	No	0.01	210	No	<0.01	212	No	<0.01
	25	235	210	No	0.02	213	No	0.01	215	No	<0.01
	30	235	212	No	0.03	216	No	0.02	218	No	<0.01
	35	235	215	No	0.07	219	No	0.05	221	No	<0.01
	40	235	217	No	0.1	221	No	0.08	224	No	<0.01
	45	235	220	No	0.18	224	No	0.16	226	No	0.01
	50	235	222	No	0.25	226	No	0.23	229	No	0.04
	55	235	224	No	0.32	228	No	0.31	231	No	0.13
	60	235	227	No	0.45	231	No	0.45	234	No	0.39
	65	235	229	Yes	0.55	233	Yes	0.55	237	Yes	0.72
	70	235	232	Yes	0.68	236	Yes	0.69	239	Yes	0.87
	75	235	234	Yes	0.75	239	Yes	0.77	242	Yes	0.98
	80	235	237	Yes	0.85	242	Yes	0.87	246	Yes	>0.99
	85	235	241	Yes	0.93	246	Yes	0.95	250	Yes	>0.99
	90	235	246	Yes	0.98	251	Yes	0.99	255	Yes	>0.99
	95	235	252	Yes	>0.99	258	Yes	>0.99	262	Yes	>0.99

Note. Prob. = Probability.

Table 3.9. Proficiency Projections Based on RIT Scores—Reading

Grade	Stat Percentile	Spring RIT Cut	Fall			Winter			Spring		
			RIT	Projected Proficiency		RIT	Projected Proficiency		RIT	Projected Proficiency	
				Proficient	Prob.		Proficient	Prob.		Proficient	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	Stat Percentile	Spring RIT Cut	Fall			Winter			Spring		
			RIT	Projected Proficiency		RIT	Projected Proficiency		RIT	Projected Proficiency	
				Proficient	Prob.		Proficient	Prob.		Proficient	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
4	5	209	166	No	<0.01	170	No	<0.01	173	No	<0.01
	10	209	173	No	<0.01	177	No	<0.01	179	No	<0.01
	15	209	177	No	<0.01	181	No	<0.01	184	No	<0.01
	20	209	181	No	0.01	184	No	<0.01	187	No	<0.01
	25	209	184	No	0.02	187	No	0.01	190	No	<0.01
	30	209	186	No	0.03	190	No	0.03	193	No	<0.01
	35	209	189	No	0.06	193	No	0.05	195	No	<0.01
	40	209	191	No	0.1	195	No	0.08	198	No	<0.01
	45	209	194	No	0.14	197	No	0.13	200	No	0.01
	50	209	196	No	0.2	199	No	0.19	202	No	0.02
	55	209	198	No	0.28	202	No	0.27	204	No	0.08
	60	209	200	No	0.36	204	No	0.35	207	No	0.28
	65	209	203	No	0.45	206	No	0.45	209	Yes	0.5
	70	209	205	Yes	0.55	209	Yes	0.6	211	Yes	0.72
	75	209	208	Yes	0.68	211	Yes	0.65	214	Yes	0.92
	80	209	211	Yes	0.76	214	Yes	0.77	217	Yes	0.99
	85	209	215	Yes	0.88	218	Yes	0.9	220	Yes	>0.99

Grade	Stat Percentile	Spring RIT Cut	Fall			Winter			Spring		
			RIT	Projected Proficiency		RIT	Projected Proficiency		RIT	Projected Proficiency	
				Proficient	Prob.		Proficient	Prob.		Proficient	Prob.
	90	209	219	Yes	0.94	222	Yes	0.96	225	Yes	>0.99
	95	209	226	Yes	0.99	229	Yes	>0.99	231	Yes	>0.99
5	5	217	175	No	<0.01	178	No	<0.01	180	No	<0.01
	10	217	181	No	<0.01	184	No	<0.01	186	No	<0.01
	15	217	186	No	<0.01	189	No	<0.01	191	No	<0.01
	20	217	189	No	0.01	192	No	<0.01	194	No	<0.01
	25	217	192	No	0.01	195	No	0.01	197	No	<0.01
	30	217	195	No	0.03	197	No	0.01	199	No	<0.01
	35	217	197	No	0.04	200	No	0.04	202	No	<0.01
	40	217	199	No	0.06	202	No	0.06	204	No	<0.01
	45	217	201	No	0.09	204	No	0.08	206	No	<0.01
	50	217	204	No	0.16	206	No	0.12	208	No	0.01
	55	217	206	No	0.2	209	No	0.22	211	No	0.04
	60	217	208	No	0.27	211	No	0.26	213	No	0.13
	65	217	210	No	0.36	213	No	0.35	215	No	0.28
	70	217	213	No	0.45	215	No	0.45	217	Yes	0.5
	75	217	215	Yes	0.55	218	Yes	0.6	220	Yes	0.8
	80	217	218	Yes	0.69	221	Yes	0.74	223	Yes	0.96
	85	217	222	Yes	0.8	224	Yes	0.85	226	Yes	0.99
	90	217	226	Yes	0.91	228	Yes	0.94	230	Yes	>0.99
	95	217	232	Yes	0.98	235	Yes	0.99	237	Yes	>0.99
6	5	219	181	No	<0.01	183	No	<0.01	185	No	<0.01
	10	219	187	No	<0.01	189	No	<0.01	191	No	<0.01
	15	219	191	No	<0.01	193	No	<0.01	195	No	<0.01
	20	219	195	No	0.01	197	No	0.01	198	No	<0.01
	25	219	198	No	0.03	199	No	0.02	201	No	<0.01
	30	219	200	No	0.03	202	No	0.03	203	No	<0.01
	35	219	202	No	0.06	204	No	0.05	206	No	<0.01

Grade	Stat Percentile	Spring RIT Cut	Fall			Winter			Spring		
			RIT	Projected Proficiency		RIT	Projected Proficiency		RIT	Projected Proficiency	
				Proficient	Prob.		Proficient	Prob.		Proficient	Prob.
	40	219	205	No	0.11	206	No	0.08	208	No	<0.01
	45	219	207	No	0.14	209	No	0.16	210	No	0.01
	50	219	209	No	0.2	211	No	0.19	212	No	0.02
	55	219	211	No	0.27	213	No	0.26	214	No	0.08
	60	219	213	No	0.36	215	No	0.35	216	No	0.2
	65	219	215	No	0.4	217	No	0.45	218	No	0.39
	70	219	218	Yes	0.55	219	Yes	0.55	221	Yes	0.72
	75	219	220	Yes	0.64	222	Yes	0.69	223	Yes	0.87
	80	219	223	Yes	0.77	225	Yes	0.81	226	Yes	0.98
	85	219	226	Yes	0.86	228	Yes	0.9	229	Yes	>0.99
	90	219	231	Yes	0.96	232	Yes	0.96	233	Yes	>0.99
	95	219	237	Yes	0.99	238	Yes	0.99	239	Yes	>0.99
7	5	223	185	No	<0.01	186	No	<0.01	187	No	<0.01
	10	223	191	No	<0.01	192	No	<0.01	193	No	<0.01
	15	223	195	No	<0.01	196	No	<0.01	197	No	<0.01
	20	223	198	No	0.01	200	No	0.01	201	No	<0.01
	25	223	201	No	0.02	202	No	0.01	203	No	<0.01
	30	223	204	No	0.04	205	No	0.03	206	No	<0.01
	35	223	206	No	0.05	207	No	0.04	208	No	<0.01
	40	223	208	No	0.08	210	No	0.09	211	No	<0.01
	45	223	210	No	0.12	212	No	0.11	213	No	<0.01
	50	223	212	No	0.18	214	No	0.16	215	No	0.01
	55	223	214	No	0.21	216	No	0.23	217	No	0.04
	60	223	217	No	0.32	218	No	0.31	219	No	0.13
	65	223	219	No	0.41	220	No	0.4	221	No	0.28
	70	223	221	Yes	0.5	223	Yes	0.55	224	Yes	0.61
	75	223	224	Yes	0.64	225	Yes	0.64	226	Yes	0.8
	80	223	226	Yes	0.72	228	Yes	0.77	229	Yes	0.96

Grade	Stat Percentile	Spring RIT Cut	Fall			Winter			Spring		
			RIT	Projected Proficiency		RIT	Projected Proficiency		RIT	Projected Proficiency	
				Proficient	Prob.		Proficient	Prob.		Proficient	Prob.
	85	223	230	Yes	0.85	231	Yes	0.86	232	Yes	0.99
	90	223	234	Yes	0.94	235	Yes	0.94	237	Yes	>0.99
	95	223	240	Yes	0.99	241	Yes	0.99	243	Yes	>0.99
8	5	226	188	No	<0.01	189	No	<0.01	190	No	<0.01
	10	226	194	No	<0.01	195	No	<0.01	196	No	<0.01
	15	226	198	No	<0.01	199	No	<0.01	200	No	<0.01
	20	226	201	No	0.01	203	No	0.01	203	No	<0.01
	25	226	204	No	0.02	205	No	0.01	206	No	<0.01
	30	226	207	No	0.04	208	No	0.03	209	No	<0.01
	35	226	209	No	0.06	210	No	0.05	211	No	<0.01
	40	226	211	No	0.09	213	No	0.08	213	No	<0.01
	45	226	214	No	0.13	215	No	0.12	216	No	<0.01
	50	226	216	No	0.18	217	No	0.17	218	No	0.01
	55	226	218	No	0.25	219	No	0.24	220	No	0.04
	60	226	220	No	0.33	221	No	0.32	222	No	0.13
	65	226	222	No	0.41	223	No	0.41	224	No	0.28
	70	226	225	Yes	0.55	226	Yes	0.55	227	Yes	0.61
	75	226	227	Yes	0.63	228	Yes	0.64	229	Yes	0.8
	80	226	230	Yes	0.75	231	Yes	0.76	232	Yes	0.96
	85	226	233	Yes	0.85	235	Yes	0.88	236	Yes	>0.99
	90	226	238	Yes	0.94	239	Yes	0.95	240	Yes	>0.99
	95	226	244	Yes	0.99	245	Yes	0.99	246	Yes	>0.99

Note. Prob. = Probability.

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