Predicting Proficiency on the Florida Assessment of Student Thinking (FAST) Based on NWEA MAP Growth Scores

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NWEA Psychometrics and Analytics

Linking Study Updates

Date	Description
2020-07-24	Initial linking study conducted for the Florida Statewide Assessment (FSA) Program in grades 3–8 for mathematics and English language arts (ELA), as well as the Next Generation Sunshine State Standards (NGSSS) assessments in grades 5 and 8 for science using Spring 2018 data
2024-06-04	Updated the linking study for the Florida Assessment of Student Thinking (FAST) using Spring 2023 data for grades 3–8 in mathematics and grades 3–10 in ELA. The linking study for NGSSS grades 5 and 8 in science was sourced from 2018 data as found in the 2020 FL linking study report.

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Executive Summary

Linking studies allow partners to use MAP® Growth™ Rasch Unit (RIT) scores throughout the year to predict students' achievement levels on state summative assessments. This is accomplished through statistical analyses that produce RIT cut scores that correspond to state summative achievement levels. A "cut score" is the minimum score a student must get on a test to be placed at a certain achievement level. The linking study for the Florida Assessment of Student Thinking (FAST) and the Next Generation Sunshine State Standards (NGSSS) assessments described in this report provides RIT cut scores for the fall, winter, and spring MAP Growth administrations that correspond to the FAST and NGSSS achievement levels for each subject and grade. Educators can use the RIT cut scores for fall and winter to identify students at risk of not meeting state proficiency standards and provide targeted instruction to improve academic outcomes.

The linking study for FAST is based on test scores from students in grades 3–10 for ELA and grades 3–8 for mathematics who took both the MAP Growth and FAST assessments in Spring 2023. In total, this study included 37,791 students from 63 schools within a single district in Florida. Please note that the current linking study data analysis does not incorporate any science data. All linking study results for science grades 5 and 8 were sourced from the 2020 Florida linking study report, which used data from Spring 2018.

Prior to initiating the linking analyses, NWEA confirmed that the content standards used to construct the MAP Growth interim assessment were aligned with those of the FAST and NGSSS summative assessments, thus warranting a connection. Further investigation into the relationship between MAP Growth and FAST, as well as NGSSS, involved calculating correlation coefficients to illustrate the association between the MAP Growth scores and the summative test scores of FAST and NGSSS. A high positive correlation (e.g., ≥ 0.70) shows that students who perform well on one assessment also tend to perform well on the other, and vice versa, with 1.00 being a perfect positive correlation. Although the correlation coefficient between the MAP Growth and FAST test scores for grade 8 mathematics is slightly below 0.70 (as shown in Figure E.1), the correlations between the MAP Growth and FAST—as well as NGSSS—summative test scores in other relevant subjects and grades are all higher than 0.70, indicating that MAP Growth is a good assessment for predicting performance on the FAST and NGSSS spring summative assessments.

Figure E.1. Correlations Between MAP Growth and State Summative Assessment Scores
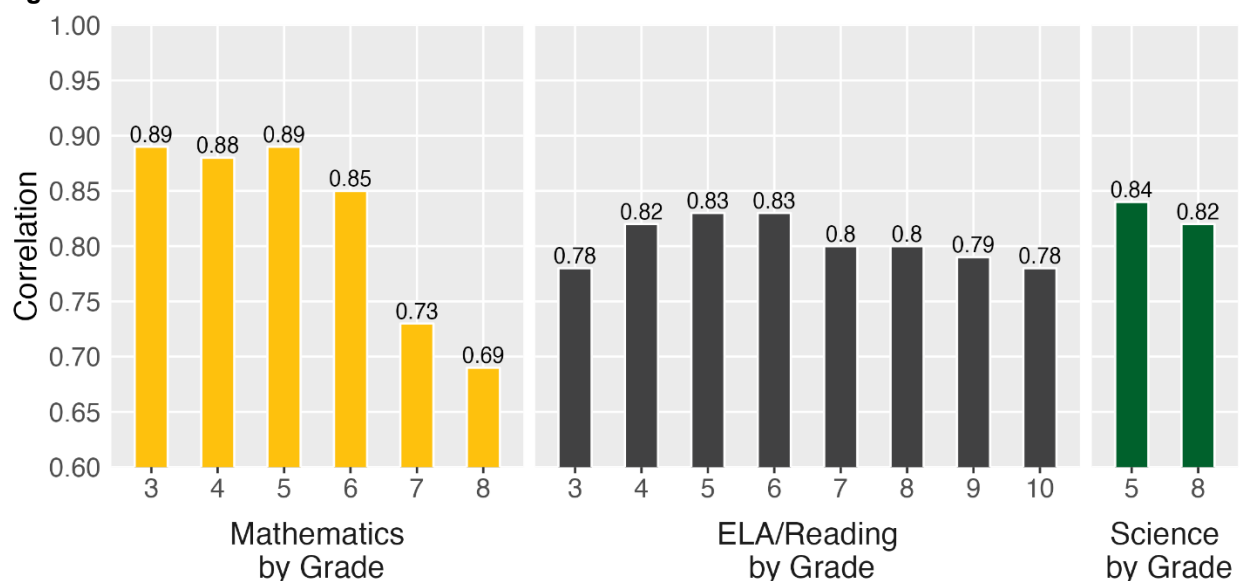
The equipercentile linking method and the 2020 MAP Growth norms (Thum & Kuhfeld, 2020) were then used to produce the RIT cut scores that correspond to achievement levels on the FAST and NGSSS summative assessments for every subject and grade. While RIT cut scores were generated for every achievement level on the FAST and NGSSS summative assessments, Table E.1 presents the *Proficient* cut scores that indicate the minimum score a student must get to be considered proficient.

Table E.1. MAP Growth RIT *Proficient* Level Cut Scores in State Summative Assessments

Assessment		*Proficient* Cut Scores by Grade								
		2	3	4	5	6	7	8	9	10
Mathematics										
FAST Spring		–	198	211	222	229	235	244	–	–
MAP Growth Mathematics	Fall	176	189	202	211	214	217	219	–	–
	Winter	185	197	209	217	219	220	222	–	–
	Spring	190	202	213	221	222	223	224	–	–
ELA/Reading										
FAST Spring		–	201	213	222	225	232	238	242	247
MAP Growth Reading	Fall	177	191	203	210	212	217	222	225	227
	Winter	186	198	208	214	216	220	224	226	228
	Spring	190	201	210	216	217	221	225	227	229
Science										
NGSSS Spring		–	–	–	200	–	–	203	–	–
MAP Growth Science	Fall	–	–	–	207	–	–	215	–	–
	Winter	–	–	–	211	–	–	217	–	–
	Spring	–	–	–	212	–	–	218	–	–

Educators can use these cut scores to determine whether students are on track for proficiency on the state assessments. For example, the *Proficient* cut score on the grade 3 FAST ELA

summative test is 201. A grade 3 student with a MAP Growth Reading RIT score of 191 in the fall is likely to meet proficiency on the FAST ELA summative test in the spring, whereas a grade 3 student with an RIT score lower than 191 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 FAST spring summative assessment by grade 3.

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 FAST and NGSSS summative tests. For example, the grade 3 MAP Growth mathematics *Proficient* cut score has a 0.89 accuracy rate, meaning it accurately predicted student achievement on the state test for 89% of the sample. A high statistic indicates high accuracy. Overall, MAP Growth scores have a high accuracy rate of identifying student proficiency on the FAST and NGSSS summative tests, as illustrated in Figure E.2.

Figure E.2. Accuracy of MAP Growth Classifications
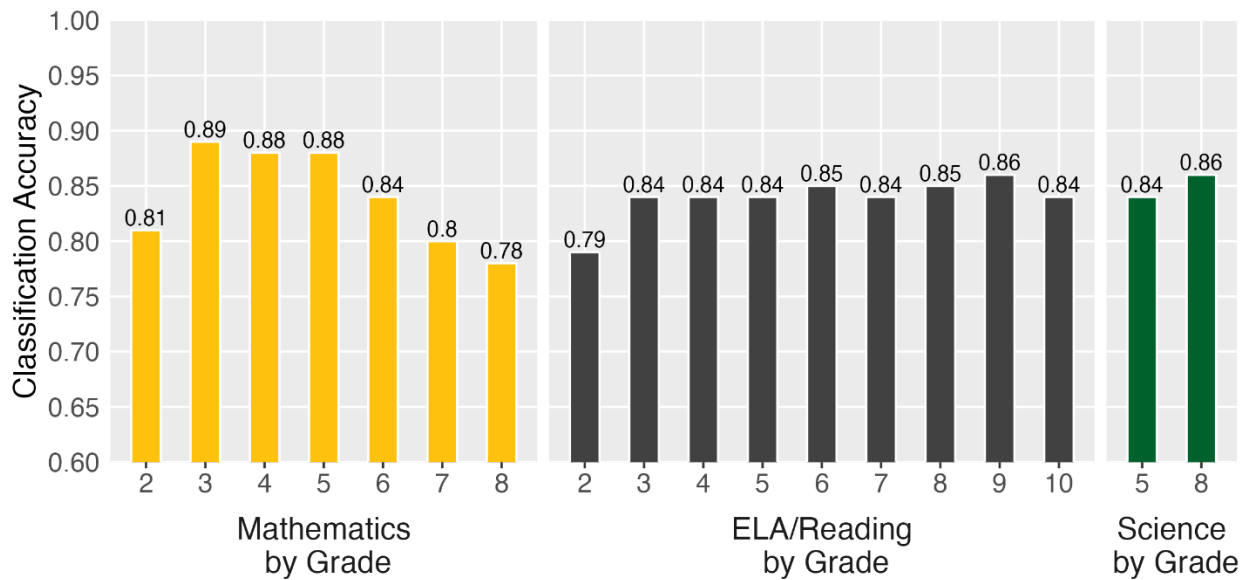
Please note that the purpose of this report is to explain NWEA's linking study methodology. It is not meant as the main reference for determining a student's likely performance on the state summative assessments. The cut scores in this report are based on the default instructional weeks most encountered for each term (i.e., Weeks 4, 20, and 32 for fall, winter, and spring, respectively), 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.

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 outlines findings from a linking study performed by NWEA, aiming to statistically connect the Rasch Unit (RIT) scores obtained from the MAP Growth assessments with the results of the Florida Assessment of Student Thinking (FAST) and Next Generation Sunshine State Standards (NGSSS) spring summative assessments. These assessments cover English language arts (ELA) for grades 3–10, mathematics for grades 3–8, and NGSSS science for grades 5 and 8.[1] The data utilized to generate this report are comprised of the FAST ELA and mathematics test scores collected during Spring 2023, alongside the NGSSS science data gathered in Spring 2018. MAP Growth cut scores are also included for grade 2 so that educators can track early learners' progress toward proficiency on the FAST summative test by grade 3. Specifically, this report presents the following results:

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

1.2. Assessment Overview

The FAST and NGSSS tests are Florida's state summative assessments aligned to Florida's Learning Standards. Based on their test scores, students are placed into one of five achievement levels: Level 1, Level 2, Level 3, Level 4, and Level 5. The *Proficient* 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 to 350. To aid the interpretation of scores, NWEA conducts norming studies of student and school performance on MAP Growth. Growth norms provide expected score gains across test administrations (e.g., the relative evaluation of a student's growth from fall to

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[1] This study only provides MAP Growth cut scores that predict proficiency on FAST tests for grades 3–8 in mathematics and grades 3–10 in ELA, along with NGSSS tests for grades 5 and 8 in science. They represent a higher level of achievement than universal screening cut scores designed to identify students with the most severe learning difficulties who may need intensive intervention. MAP Growth universal screening cut scores for grades K–8 in reading and mathematics are available in a separate report (He & Meyer, 2021).

spring), which are used to conduct the linking studies. The most recent norms study was conducted in 2020 (Thum & Kuhfeld, 2020).

2. Methods

2.1. Data Collection

This linking study is based on data from the Spring 2023 administration of the MAP Growth and FAST summative assessments. 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 have scores on both the MAP Growth and FAST summative assessments in Spring 2023 were included in the study sample. As previously noted, the data analysis in the current linking study focused solely on mathematics and ELA, with no examination of science data. The NGSSS science linking study results included in this report were retrieved from the earlier FL 2020 linking study report to facilitate readers' access.

2.2. Post-Stratification Weighting

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

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 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. Descriptive Statistics

Descriptive statistics are provided to summarize the test scores for the MAP Growth, FAST, and NGSSS assessments, including 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 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 FAST and NGSSS summative tests that reference some other scale in the same subject?" The correlations were calculated as:

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

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 FAST and NGSSS summative assessments are reported for grades 3–10 in ELA, grades 3–8 in mathematics, and grades 5 and 8 in science, as well as for grade 2 in ELA and mathematics so that educators can track early learners' progress toward proficiency on the FAST summative test by grade 3. Percentile ranks based on the 2020 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 achievement 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 3–10 in ELA and grades 3–8 in mathematics, as well as grades 5 and 8 in science, that correspond to the FAST/NGSSS spring summative achievement 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., FAST summative). 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 FAST/NGSSS summative tests on the scale of MAP Growth, $P(x)$ is the percentile rank of a given score on the FAST/NGSSS summative 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 3–10 in ELA, grades 3–8 in mathematics, and grades 5 and 8 in science. 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.

The MAP Growth conditional growth norms were also used to calculate the fall, winter, and spring cuts for grade 2. Students do not begin taking the FAST summative assessment until grade 3. Thus, cut scores for grade 2 were interpolated by obtaining longitudinal data for the grade 3 cohort. For each grade 3 student in the study sample, their MAP Growth data from the prior year when they were in grade 2, during 2021–2022, were obtained. In this way, the data

came from the same cohort of students beginning when they were in grade 2 and continuing through grade 3. 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 of grade 2 to spring of grade 3). The calculation of fall and winter cuts for grade 2 followed the same process as above for the other grades. For example, the growth score from fall to spring in grade 2 was used to calculate the fall cuts for grade 3.

2.5. Classification Accuracy

The degree to which MAP Growth predicts student proficiency status on the FAST/NGSSS summative 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 FAST/NGSSS spring summative tests. A summary of how well the interpolated grade 2 cuts predict grade 3 proficiency status is also reported in the classification accuracy statistics. 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) / (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 a student is proficient on the state test. Instead, it can be claimed that a student meeting the RIT cut score has a 50% chance of reaching proficiency on the state test, with their chances increasing the greater their score is from the cut. The proficiency projections indicate these probabilities for various RIT scores throughout the year.

In addition to calculating the MAP Growth fall and winter cut scores (and the grade 2 cut scores), the MAP Growth conditional growth norms data were also used to calculate the

probability of reaching proficiency on the FAST/NGSSS summative tests based on a student's RIT scores from fall and winter:

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

where:
- Φ is the standard normal cumulative distribution function,
- $RIT_{previous}$ is the student's RIT score in fall or winter (or in spring for grade 2),
- 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 (for grade 2, this is the grade 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 *Proficient* performance on the FAST/NGSSS summative tests based on their spring RIT score (RIT_{Spring}):

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

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

3. Results

3.1. Study Sample

Only students who have scores on both the MAP Growth and FAST summative assessments in Spring 2023, along with NGSSS student data from 2018, were included in the study sample. The ELA and mathematics data used in this study were collected from one district and 63 schools in Florida. Table 3.1 presents the distributions of students by race, sex, and achievement level in the original unweighted study sample. Table 3.2 presents the distributions of the target population of students who took the FAST and NGSSS tests. Since the original study sample is different from the target FAST and NGSSS population, post-stratification weights were applied. Table 3.3 presents the demographic distributions of the sample after weighting, which are almost identical to the FAST and NGSSS student population distributions.

Table 3.1. Linking Study Sample Demographics (Unweighted)

Demographic Subgroup		%Students by Grade							
		3	4	5	6	7	8	9	10
Mathematics									
	Total N	5,681	5,341	5,095	5,667	4,209	2,665	–	–
Race	Asian	3.0	3.8	3.7	2.6	1.8	1.1	–	–
	Black	27.4	27.7	26.6	27.4	26.3	29.5	–	–
	Hispanic	44.8	42.9	44.3	46.9	49.1	50.2	–	–
	Other [a]	0.4	0.6	0.5	0.4	0.6	0.6	–	–
	Two or More Races	3.9	3.3	2.9	2.9	3.3	2.9	–	–
	White	20.6	21.7	21.9	19.8	18.8	15.6	–	–
Sex	Female	51.6	50.8	51.7	50.7	50.4	50.0	–	–
	Male	48.4	49.2	48.3	49.3	49.6	50.0	–	–
Achievement Level	Level 1	18.2	25.1	29.1	22.6	27.0	28.1	–	–
	Level 2	24.1	20.7	27.3	31.9	23.4	31.2	–	–
	Level 3	23.5	21.6	21.0	21.0	25.5	23.8	–	–
	Level 4	23.9	22.9	13.7	18.6	15.8	12.5	–	–
	Level 5	10.3	9.7	8.9	5.9	8.1	4.4	–	–
ELA/Reading									
	Total N	5,685	5,337	5,321	6,231	5,691	5,416	1,989	1,731
Race	Asian	3.0	3.9	3.9	2.9	3.0	3.0	2.7	2.8
	Black	27.3	27.7	26.1	26.2	25.4	25.3	15.8	16.5
	Hispanic	45.0	42.8	44.2	47.1	46.3	46.4	45.6	44.7
	Other [a]	0.4	0.6	0.5	0.4	0.7	0.9	0.6	0.5
	Two or More Races	3.9	3.3	3.0	3.0	3.5	3.2	4.2	3.5
	White	20.4	21.7	22.3	20.3	21.1	21.3	31.2	32.0
Sex	Female	51.3	50.6	51.3	50.2	49.8	49.2	49.5	47.5
	Male	48.7	49.4	48.7	49.8	50.2	50.8	50.5	52.5
Achievement Level	Level 1	24.0	26.6	26.3	22.0	22.2	20.6	19.3	20.1
	Level 2	25.0	24.9	28.1	27.8	29.5	29.1	28.4	28.5
	Level 3	24.4	22.9	19.5	24.5	19.6	24.1	23.2	22.8
	Level 4	17.5	17.7	18.5	18.2	20.5	15.2	18.0	18.0

Demographic Subgroup		%Students by Grade							
		3	4	5	6	7	8	9	10
	Level 5	9.2	7.8	7.6	7.6	8.2	11.1	11.1	10.5
Science									
	Total N	–	–	7,108	–	–	3,727	–	–
Race	Black	–	–	26.0	–	–	27.7	–	–
	Hispanic	–	–	32.3	–	–	38.2	–	–
	Other [a]	–	–	6.6	–	–	8.6	–	–
	White	–	–	35.0	–	–	25.5	–	–
Sex	Female	–	–	50.8	–	–	49.2	–	–
	Male	–	–	49.2	–	–	50.8	–	–
Achievement Level	Level 1	–	–	20.2	–	–	21.0	–	–
	Level 2	–	–	26.9	–	–	32.5	–	–
	Level 3	–	–	29.0	–	–	23.5	–	–
	Level 4	–	–	12.5	–	–	12.8	–	–
	Level 5	–	–	11.4	–	–	10.2	–	–

[a] The "Other" category includes races of American Indian, Pacific Islander, and Not Reported.

Table 3.2. Linking Study Population Demographics

Demographic Subgroup		%Students by Grade							
		3	4	5	6	7	8	9	10
Mathematics									
	Total N	221,011	197,766	206,221	210,747	150,831	170,149	–	–
Race	Asian	2.7	2.9	2.9	2.6	1.7	2.3	–	–
	Black	20.4	19.5	19.8	20.9	22.9	22.3	–	–
	Hispanic	36.6	36.1	36.7	37.6	38.3	38.2	–	–
	Other [a]	1.8	2.0	1.8	1.8	2.2	1.9	–	–
	Two or More Races	4.4	4.3	4.2	3.9	3.8	3.7	–	–
	White	34.2	35.2	34.7	33.2	31.3	31.5	–	–
Sex	Female	48.6	49.0	49.2	48.8	48.9	48.8	–	–
	Male	51.4	51.0	50.8	51.2	51.1	51.2	–	–
Achievement Level	Level 1	24.0	24.0	27.0	23.0	30.0	28.0	–	–
	Level 2	17.0	15.0	18.0	22.0	23.0	17.0	–	–
	Level 3	25.0	24.0	20.0	23.0	26.0	26.0	–	–
	Level 4	23.0	20.0	19.0	21.0	15.0	16.0	–	–
	Level 5	11.0	17.0	16.0	11.0	7.0	14.0	–	–
ELA/Reading									
	Total N	221,504	201,024	207,369	216,018	209,002	214,928	222,102	213,323
Race	Asian	2.7	3.0	2.9	2.8	2.9	2.9	2.9	3.0
	Black	20.4	19.4	19.7	20.7	20.1	20.3	20.2	19.8
	Hispanic	36.5	36.0	36.6	37.4	37.0	37.2	36.7	36.3
	Other [a]	1.8	1.9	1.8	1.7	1.8	1.7	1.7	1.5

Demographic Subgroup		%Students by Grade							
		3	4	5	6	7	8	9	10
	Two or More Races	4.4	4.3	4.2	4.0	3.9	3.8	3.7	3.6
	White	34.2	35.4	34.8	33.4	34.3	34.1	34.8	35.8
Sex	Female	48.6	48.9	49.2	48.7	49.1	49.0	49.3	49.7
	Male	51.4	51.1	50.9	51.3	50.9	51.0	50.7	50.3
Achievement Level	Level 1	27.0	23.0	24.0	31.0	32.0	34.0	31.0	30.0
	Level 2	23.0	19.0	22.0	22.0	21.0	20.0	21.0	20.0
	Level 3	25.0	24.0	24.0	19.0	20.0	21.0	18.0	18.0
	Level 4	18.0	21.0	20.0	18.0	16.0	15.0	18.0	19.0
	Level 5	7.0	12.0	11.0	10.0	11.0	11.0	11.0	12.0
Science									
	Total N	–	–	211,986	–	–	194,389	–	–
Race	Black	–	–	20.9	–	–	21.0	–	–
	Hispanic	–	–	34.4	–	–	33.2	–	–
	Other [a]	–	–	6.9	–	–	6.7	–	–
	White	–	–	37.8	–	–	39.2	–	–
Sex	Female	–	–	49.5	–	–	48.9	–	–
	Male	–	–	50.5	–	–	51.0	–	–
Achievement Level	Level 1	–	–	20.3	–	–	21.8	–	–
	Level 2	–	–	24.7	–	–	28.2	–	–
	Level 3	–	–	28.1	–	–	22.6	–	–
	Level 4	–	–	13.4	–	–	14.6	–	–
	Level 5	–	–	13.5	–	–	12.8	–	–

[a] The "Other" category includes races of American Indian, Pacific Islander, and Not Reported.

Table 3.3. Linking Study Sample Demographics (Weighted)

Demographic Subgroup		%Students by Grade							
		3	4	5	6	7	8	9	10
Mathematics									
	Total N	5,681	5,341	5,095	5,667	4,251	2,692	–	–
Race	Asian	2.6	2.9	2.9	2.6	1.6	2.3	–	–
	Black	20.4	19.5	19.8	20.9	22.9	22.3	–	–
	Hispanic	36.6	36.1	36.7	37.6	38.3	38.2	–	–
	Other [a]	1.8	1.9	1.8	1.8	2.2	1.9	–	–
	Two or More Races	4.4	4.3	4.2	3.9	3.8	3.7	–	–
	White	34.2	35.2	34.7	33.2	31.3	31.5	–	–
Sex	Female	48.6	49.0	49.2	48.8	48.9	48.8	–	–
	Male	51.4	51.0	50.8	51.2	51.1	51.2	–	–
Achievement Level	Level 1	24.0	24.0	27.0	23.0	29.7	27.7	–	–
	Level 2	17.0	15.0	18.0	22.0	22.8	16.8	–	–
	Level 3	25.0	24.0	20.0	23.0	25.7	25.7	–	–

Demographic Subgroup		%Students by Grade							
		3	4	5	6	7	8	9	10
	Level 4	23.0	20.0	19.0	21.0	14.9	15.8	–	–
	Level 5	11.0	17.0	16.0	11.0	6.9	13.9	–	–
ELA/Reading									
	Total N	5,685	5,284	5,374	6,231	5,691	5,470	1,969	1,714
Race	Asian	2.6	3.0	2.9	2.8	2.9	2.9	2.9	3.0
	Black	20.4	19.4	19.7	20.7	20.1	20.3	20.2	19.8
	Hispanic	36.5	36.0	36.6	37.4	37.0	37.2	36.7	36.3
	Other [a]	1.8	1.9	1.8	1.7	1.8	1.7	1.7	1.5
	Two or More Races	4.4	4.3	4.2	4.0	3.9	3.8	3.7	3.6
	White	34.1	35.4	34.8	33.4	34.3	34.1	34.8	35.8
Sex	Female	48.6	48.9	49.2	48.7	49.1	49.0	49.3	49.7
	Male	51.4	51.1	50.8	51.3	50.9	51.0	50.7	50.3
Achievement Level	Level 1	27.0	23.2	23.8	31.0	32.0	33.7	31.3	30.3
	Level 2	23.0	19.2	21.8	22.0	21.0	19.8	21.2	20.2
	Level 3	25.0	24.2	23.8	19.0	20.0	20.8	18.2	18.2
	Level 4	18.0	21.2	19.8	18.0	16.0	14.9	18.2	19.2
	Level 5	7.0	12.1	10.9	10.0	11.0	10.9	11.1	12.1
Science									
	Total N	–	–	7,108	–	–	3,727	–	–
Race	Black	–	–	20.9	–	–	21.0	–	–
	Hispanic	–	–	34.4	–	–	33.2	–	–
	Other [a]	–	–	6.9	–	–	6.7	–	–
	White	–	–	37.8	–	–	39.2	–	–
Sex	Female	–	–	49.5	–	–	48.9	–	–
	Male	–	–	50.5	–	–	51.1	–	–
Achievement Level	Level 1	–	–	20.3	–	–	21.8	–	–
	Level 2	–	–	24.7	–	–	28.2	–	–
	Level 3	–	–	28.1	–	–	22.6	–	–
	Level 4	–	–	13.4	–	–	14.6	–	–
	Level 5	–	–	13.5	–	–	12.8	–	–

[a] The "Other" category includes races of American Indian, Pacific Islander, and Not Reported.

3.2. Descriptive Statistics

Table 3.4 presents descriptive statistics of the MAP Growth and FAST summative test scores from Spring 2023, along with the NGSSS test scores from Spring 2018, including the correlation coefficients (r) between them. The coefficients between the scores range from 0.69 to 0.89 for mathematics, 0.78 to 0.83 for ELA/reading, and 0.82 to 0.84 for science. These values indicate a high positive correlation among the scores (with the exception of grade 8 mathematics), which is important validity evidence for the claim that MAP Growth scores are good predictors of performance on the FAST/NGSSS spring summative assessments.

Table 3.4. Descriptive Statistics of Test Scores

Grade	N	r	State Summative				MAP Growth			
			Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
Mathematics										
3	5,681	0.89	198.8	22.1	140	260	202.2	14.7	131	255
4	5,341	0.88	215.0	23.1	155	273	214.3	14.7	139	263
5	5,095	0.89	221.9	24.6	158	285	221.0	16.2	141	270
6	5,667	0.85	228.4	21.6	168	287	221.9	15.5	168	265
7	4,251	0.73	230.2	21.8	175	288	221.1	14.0	174	274
8	2,692	0.69	239.1	23.5	183	286	222.6	14.0	168	277
ELA/Reading										
3	5,685	0.78	196.8	22.6	140	260	199.1	16.3	135	237
4	5,284	0.82	213.3	21.2	154	270	209.8	14.7	145	248
5	5,374	0.83	220.4	21.4	160	279	214.3	14.5	144	258
6	6,231	0.83	221.0	22.7	161	284	214.0	16.1	158	260
7	5,691	0.80	226.9	23.8	165	292	217.3	16.2	161	279
8	5,470	0.80	232.4	24.6	169	300	221.6	15.6	154	270
9	1,969	0.79	237.3	24.8	174	303	223.7	15.9	162	269
10	1,714	0.78	243.8	23.9	179	308	226.7	15.3	169	270
Science										
5	7,108	0.84	202.0	21.2	140	260	211.7	11.5	149	258
8	3,727	0.82	201.2	21.1	140	260	216.4	13.7	162	258

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

3.3. MAP Growth Cut Scores

Table 3.5 to Table 3.7 present the FAST/NGSSS summative 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 at least proficient for accountability purposes. These tables can be used to predict a student's likely achievement level based on the FAST/NGSSS spring summative assessments when MAP Growth is taken in the fall and winter. 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 FAST summative mathematics test. A grade 3 student who obtained a MAP Growth mathematics RIT score of 197 in the winter is also likely to achieve *Proficient* performance on the FAST spring 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 substantially from the default ones, a student's expected achievement level could be different from the projections presented in this report. Partners are therefore encouraged to use the projected achievement level in students' score reports, since these reflect the specific instructional weeks set by partners.

Table 3.5. MAP Growth Cut Scores—Mathematics

FAST Summative Mathematics				
Grade	**Level 1**	**Level 2**	**Level 3**	**Level 4**	**Level 5**
3	140–182	183–197	**198**–208	209–224	225–260
4	155–199	200–210	**211**–220	221–237	238–273
5	158–206	207–221	**222**–233	234–245	246–285
6	168–212	213–228	**229**–238	239–253	254–287
7	175–222	223–234	**235**–246	247–257	258–288
8	183–226	227–243	**244**–253	254–262	263–291

MAP Growth Mathematics										
Grade	**Level 1**		**Level 2**		**Level 3**		**Level 4**		**Level 5**	
	RIT	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**
Fall										
2	100–164	1–21	165–175	22–52	**176**–183	53–74	184–196	75–94	197–350	95–99
3	100–178	1–23	179–188	24–51	**189**–196	52–73	197–206	74–91	207–350	92–99
4	100–194	1–37	195–201	38–56	**202**–207	57–71	208–216	72–88	217–350	89–99
5	100–201	1–31	202–210	32–54	**211**–218	55–73	219–225	74–86	226–350	87–99
6	100–204	1–26	205–213	27–47	**214**–221	48–66	222–232	67–86	233–350	87–99
7	100–207	1–23	208–216	24–42	**217**–224	43–60	225–235	61–81	236–350	82–99
8	100–208	1–19	209–218	20–37	**219**–227	38–55	228–238	56–76	239–350	77–99
Winter										
2	100–173	1–21	174–184	22–52	**185**–192	53–74	193–203	75–93	204–350	94–99
3	100–186	1–24	187–196	25–51	**197**–203	52–71	204–214	72–91	215–350	92–99
4	100–201	1–38	202–208	39–57	**209**–214	58–72	215–223	73–88	224–350	89–99
5	100–207	1–33	208–216	34–55	**217**–224	56–73	225–231	74–85	232–350	86–99
6	100–209	1–27	210–218	28–48	**219**–226	49–66	227–237	67–85	238–350	86–99
7	100–210	1–22	211–219	23–40	**220**–228	41–60	229–239	61–80	240–350	81–99
8	100–212	1–21	213–221	22–37	**222**–230	38–55	231–241	56–75	242–350	76–99
Spring										
2	100–179	1–23	180–189	24–51	**190**–197	52–73	198–208	74–92	209–350	93–99
3	100–191	1–25	192–201	26–52	**202**–208	53–70	209–218	71–89	219–350	90–99
4	100–205	1–38	206–212	39–55	**213**–218	56–70	219–227	71–86	228–350	87–99
5	100–211	1–33	212–220	34–54	**221**–228	55–72	229–235	73–84	236–350	85–99

Grade	Level 1		Level 2		Level 3		Level 4		Level 5	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
6	100–212	1–28	213–221	29–47	**222**–229	48–65	230–240	66–84	241–350	85–99
7	100–213	1–24	214–222	25–41	**223**–231	42–60	232–242	61–80	243–350	81–99
8	100–214	1–21	215–223	22–37	**224**–232	38–54	233–243	55–74	244–350	75–99

Table 3.6. MAP Growth Cut Scores—ELA/Reading

FAST Summative ELA/Reading				
Grade	Level 1	Level 2	Level 3	Level 4	Level 5
3	140–185	186–200	**201**–212	213–224	225–260
4	154–198	199–212	**213**–223	224–236	237–270
5	160–205	206–221	**222**–231	232–245	246–279
6	161–208	209–224	**225**–236	237–249	250–284
7	165–214	215–231	**232**–241	242–256	257–292
8	169–219	220–237	**238**–250	251–261	262–300
9	174–223	224–241	**242**–253	254–266	267–303
10	179–229	230–246	**247**–257	258–270	271–308

MAP Growth ELA/Reading										
Grade	Level 1		Level 2		Level 3		Level 4		Level 5	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall										
2	100–163	1–28	164–176	29–61	**177**–189	62–87	190–202	88–97	203–350	98–99
3	100–178	1–31	179–190	32–59	**191**–200	60–80	201–212	81–93	213–350	94–99
4	100–191	1–38	192–202	39–64	**203**–210	65–79	211–219	80–91	220–350	92–99
5	100–198	1–36	199–209	37–62	**210**–216	63–77	217–225	78–90	226–350	91–99
6	100–200	1–28	201–211	29–53	**212**–220	54–73	221–230	74–89	231–350	90–99
7	100–205	1–30	206–216	31–56	**217**–223	57–71	224–233	72–87	234–350	88–99
8	100–210	1–33	211–221	34–58	**222**–230	59–77	231–236	78–86	237–350	87–99
9	100–213	1–39	214–224	40–62	**225**–231	63–74	232–239	75–86	240–350	87–99
10	100–216	1–39	217–226	40–61	**227**–233	62–75	234–240	76–85	241–350	86–99
Winter										
2	100–172	1–28	173–185	29–62	**186**–196	63–84	197–209	85–96	210–350	97–99

Grade	Level 1 RIT	Level 1 Percentile	Level 2 RIT	Level 2 Percentile	Level 3 RIT	Level 3 Percentile	Level 4 RIT	Level 4 Percentile	Level 5 RIT	Level 5 Percentile
3	100–186	1–32	187–197	33–59	**198**–206	60–78	207–217	79–92	218–350	93–99
4	100–197	1–38	198–207	39–62	**208**–214	63–77	215–223	78–90	224–350	91–99
5	100–203	1–36	204–213	37–61	**214**–220	62–76	221–228	77–88	229–350	89–99
6	100–204	1–28	205–215	29–54	**216**–223	55–73	224–232	74–88	233–350	89–99
7	100–208	1–30	209–219	31–56	**220**–225	57–70	226–234	71–86	235–350	87–99
8	100–213	1–34	214–223	35–57	**224**–231	58–74	232–237	75–84	238–350	85–99
9	100–215	1–39	216–225	40–61	**226**–232	62–74	233–240	75–85	241–350	86–99
10	100–217	1–38	218–227	39–60	**228**–234	61–74	235–241	75–85	242–350	86–99
Spring										
2	100–177	1–30	178–189	31–60	**190**–200	61–83	201–212	84–95	213–350	96–99
3	100–190	1–34	191–200	35–58	**201**–209	59–78	210–219	79–91	220–350	92–99
4	100–200	1–40	201–209	41–61	**210**–216	62–76	217–224	77–88	225–350	89–99
5	100–205	1–37	206–215	38–61	**216**–221	62–74	222–229	75–87	230–350	88–99
6	100–206	1–29	207–216	30–53	**217**–224	54–72	225–233	73–87	234–350	88–99
7	100–210	1–32	211–220	33–55	**221**–226	56–69	227–235	70–85	236–350	86–99
8	100–214	1–34	215–224	35–57	**225**–232	58–74	233–238	75–84	239–350	85–99
9	100–216	1–40	217–226	41–61	**227**–233	62–74	234–241	75–85	242–350	86–99
10	100–218	1–39	219–228	40–61	**229**–235	62–74	236–242	75–85	243–350	86–99

Table 3.7. MAP Growth Cut Scores—Science

NGSSS Summative Science				
Grade	Level 1	Level 2	Level 3	Level 4	Level 5
5	140–184	185–199	**200**–214	215–224	225–260
8	140–184	185–202	**203**–214	215–224	225–260

MAP Growth Science										
Grade	Level 1 RIT	Level 1 Percentile	Level 2 RIT	Level 2 Percentile	Level 3 RIT	Level 3 Percentile	Level 4 RIT	Level 4 Percentile	Level 5 RIT	Level 5 Percentile
Fall										
5	100–195	1–35	196–206	36–71	**207**–214	72–89	215–219	90–94	220–350	95–99
8	100–201	1–27	202–214	28–65	**215**–222	66–83	223–228	84–92	229–350	93–99

Grade	Level 1		Level 2		Level 3		Level 4		Level 5	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Winter										
5	100–200	1–38	201–210	39–71	**211**–217	72–87	218–221	88–92	222–350	93–99
8	100–205	1–30	206–216	31–63	**217**–223	64–80	224–229	81–90	230–350	91–99
Spring										
5	100–202	1–39	203–211	40–67	**212**–218	68–85	219–222	86–91	223–350	92–99
8	100–206	1–31	207–217	32–62	**218**–224	63–79	225–230	80–89	231–350	90–99

3.4. Classification Accuracy

Table 3.8 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 FAST/NGSSS spring summative tests, providing insight into the predictive validity of MAP Growth. The overall classification accuracy rate ranges from 0.78 to 0.89 for mathematics, 0.79 to 0.86 for ELA/reading, and 0.84 to 0.86 for science. These values suggest that the RIT cut scores are good at classifying students as proficient or not proficient on the FAST/NGSSS summative assessments for most of the subjects and grades. For grade 2, the classification accuracy rate refers to how well the MAP Growth cuts can predict students' proficiency status on the FAST summative test in grade 3.

Although the results show that MAP Growth scores can be used to predict student proficiency on the FAST/NGSSS summative tests with relatively high accuracy, there is a notable limitation to how these results should be used and interpreted. The MAP Growth and FAST/NGSSS summative 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 3.8. Classification Accuracy Results

Grade	N	Cut Score MAP Growth	Cut Score FAST	Class. Accuracy	Rate FP	Rate FN	Sensitivity	Specificity	Precision	AUC
Mathematics										
2	3,418	190	198	0.81	0.16	0.20	0.80	0.84	0.89	0.82
3	5,681	202	198	0.89	0.14	0.10	0.90	0.86	0.90	0.88
4	5,341	213	211	0.88	0.13	0.12	0.88	0.87	0.91	0.87
5	5,095	221	222	0.88	0.12	0.11	0.89	0.88	0.90	0.88
6	5,667	222	229	0.84	0.14	0.16	0.84	0.86	0.88	0.85
7	4,251	223	235	0.80	0.18	0.22	0.78	0.82	0.80	0.80
8	2,692	224	244	0.78	0.17	0.25	0.75	0.83	0.84	0.79
ELA/Reading										
2	3,414	190	201	0.79	0.21	0.21	0.79	0.79	0.83	0.79
3	5,685	201	201	0.84	0.19	0.13	0.87	0.81	0.82	0.84
4	5,284	210	213	0.84	0.19	0.14	0.86	0.81	0.86	0.84
5	5,374	216	222	0.84	0.17	0.15	0.85	0.83	0.86	0.84
6	6,231	217	225	0.85	0.16	0.13	0.87	0.84	0.83	0.85
7	5,691	221	232	0.84	0.15	0.18	0.82	0.85	0.83	0.84
8	5,470	225	238	0.85	0.15	0.16	0.84	0.85	0.83	0.85
9	1,969	227	242	0.86	0.14	0.15	0.85	0.86	0.85	0.86
10	1,714	229	247	0.84	0.17	0.16	0.84	0.83	0.83	0.84
Science										
5	7,108	212	200	0.84	0.15	0.16	0.84	0.85	0.87	0.93
8	3,727	218	203	0.86	0.14	0.14	0.86	0.86	0.86	0.93

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

3.5. Proficiency Projections

Table 3.9 to Table 3.11 present the estimated probability of achieving *Proficient* performance on the FAST/NGSSS summative 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 FAST/NGSSS summative tests. Instead, they indicate a 50% chance that a student will reach a particular achievement level. Therefore, these projections further elucidate the *Proficient* cut scores by providing the likelihood of reaching proficiency on the FAST/NGSSS spring summative assessments at a given percentile throughout the year.

For example, the grade 5 fall *Proficient* RIT cut score for mathematics is 211, which indicates a 50% chance of achieving proficiency in the spring, as shown in Table 3.9. Additionally, an educator can also use the table to estimate that a grade 5 student who obtained a MAP Growth mathematics score of 225 in the winter has a 95% probability of reaching *Proficient* or higher on the FAST mathematics spring summative assessment.

Table 3.9. Proficiency Projections Based on RIT Scores—Mathematics

Grade	Start Percentile	Spring Cut	Fall RIT	Fall Projected Proficiency Proficient	Fall Projected Proficiency Prob.	Winter RIT	Winter Projected Proficiency Proficient	Winter Projected Proficiency Prob.	Spring RIT	Spring Projected Proficiency Proficient	Spring Projected Proficiency Prob.
2	5	190	154	No	<0.01	163	No	<0.01	167	No	<0.01
	10	190	158	No	0.01	167	No	<0.01	172	No	<0.01
	15	190	162	No	0.03	171	No	<0.01	175	No	<0.01
	20	190	164	No	0.04	173	No	0.01	178	No	<0.01
	25	190	166	No	0.08	175	No	0.03	180	No	<0.01
	30	190	168	No	0.14	177	No	0.07	182	No	0.01
	35	190	170	No	0.22	179	No	0.15	184	No	0.04
	40	190	172	No	0.32	181	No	0.2	186	No	0.13
	45	190	173	No	0.38	182	No	0.26	188	No	0.28
	50	190	175	No	0.44	184	No	0.42	189	No	0.39
	55	190	177	Yes	0.56	186	Yes	0.58	191	Yes	0.61
	60	190	178	Yes	0.62	187	Yes	0.66	193	Yes	0.8
	65	190	180	Yes	0.73	189	Yes	0.8	195	Yes	0.92
	70	190	182	Yes	0.82	191	Yes	0.9	196	Yes	0.96
	75	190	184	Yes	0.89	193	Yes	0.95	198	Yes	0.99
	80	190	186	Yes	0.92	195	Yes	0.98	201	Yes	>0.99
	85	190	188	Yes	0.96	198	Yes	>0.99	203	Yes	>0.99
	90	190	192	Yes	0.99	201	Yes	>0.99	207	Yes	>0.99
	95	190	196	Yes	>0.99	205	Yes	>0.99	212	Yes	>0.99
3	5	202	166	No	<0.01	174	No	<0.01	178	No	<0.01
	10	202	171	No	<0.01	179	No	<0.01	183	No	<0.01
	15	202	175	No	0.01	182	No	<0.01	186	No	<0.01
	20	202	177	No	0.03	185	No	0.01	189	No	<0.01
	25	202	179	No	0.05	187	No	0.02	192	No	<0.01
	30	202	181	No	0.1	189	No	0.04	194	No	0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	35	202	183	No	0.17	191	No	0.1	196	No	0.04
	40	202	185	No	0.26	193	No	0.2	198	No	0.13
	45	202	187	No	0.37	195	No	0.33	199	No	0.2
	50	202	188	No	0.44	196	No	0.42	201	No	0.39
	55	202	190	Yes	0.56	198	Yes	0.58	203	Yes	0.61
	60	202	192	Yes	0.63	200	Yes	0.74	205	Yes	0.8
	65	202	194	Yes	0.74	201	Yes	0.8	207	Yes	0.92
	70	202	196	Yes	0.83	203	Yes	0.9	208	Yes	0.96
	75	202	198	Yes	0.9	205	Yes	0.96	211	Yes	0.99
	80	202	200	Yes	0.95	208	Yes	0.99	213	Yes	>0.99
	85	202	202	Yes	0.97	210	Yes	>0.99	216	Yes	>0.99
	90	202	206	Yes	>0.99	214	Yes	>0.99	219	Yes	>0.99
	95	202	211	Yes	>0.99	219	Yes	>0.99	224	Yes	>0.99
	5	213	176	No	<0.01	182	No	<0.01	185	No	<0.01
	10	213	181	No	<0.01	187	No	<0.01	191	No	<0.01
	15	213	185	No	<0.01	191	No	<0.01	194	No	<0.01
	20	213	187	No	0.01	194	No	<0.01	197	No	<0.01
	25	213	190	No	0.03	196	No	<0.01	200	No	<0.01
	30	213	192	No	0.05	198	No	0.01	202	No	<0.01
4	35	213	194	No	0.1	200	No	0.03	205	No	0.01
	40	213	196	No	0.17	202	No	0.07	207	No	0.04
	45	213	198	No	0.26	204	No	0.14	209	No	0.13
	50	213	200	No	0.37	206	No	0.26	211	No	0.28
	55	213	201	No	0.44	208	No	0.42	212	No	0.39
	60	213	203	Yes	0.56	210	Yes	0.58	214	Yes	0.61
	65	213	205	Yes	0.68	212	Yes	0.74	217	Yes	0.87

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	70	213	207	Yes	0.79	214	Yes	0.86	219	Yes	0.96
	75	213	209	Yes	0.87	216	Yes	0.93	221	Yes	0.99
	80	213	212	Yes	0.95	219	Yes	0.98	224	Yes	>0.99
	85	213	214	Yes	0.97	221	Yes	0.99	227	Yes	>0.99
	90	213	218	Yes	0.99	225	Yes	>0.99	230	Yes	>0.99
	95	213	223	Yes	>0.99	231	Yes	>0.99	236	Yes	>0.99
	5	221	184	No	<0.01	189	No	<0.01	191	No	<0.01
	10	221	190	No	<0.01	194	No	<0.01	197	No	<0.01
	15	221	193	No	<0.01	198	No	<0.01	201	No	<0.01
	20	221	196	No	0.01	201	No	<0.01	205	No	<0.01
	25	221	199	No	0.02	204	No	<0.01	207	No	<0.01
	30	221	201	No	0.06	206	No	0.01	210	No	<0.01
	35	221	203	No	0.11	209	No	0.05	212	No	0.01
	40	221	205	No	0.18	211	No	0.1	215	No	0.04
	45	221	207	No	0.27	213	No	0.2	217	No	0.13
5	50	221	209	No	0.38	215	No	0.34	219	No	0.28
	55	221	211	Yes	0.5	217	Yes	0.5	221	Yes	0.5
	60	221	213	Yes	0.62	219	Yes	0.66	223	Yes	0.72
	65	221	215	Yes	0.73	221	Yes	0.8	225	Yes	0.87
	70	221	217	Yes	0.82	223	Yes	0.9	228	Yes	0.98
	75	221	219	Yes	0.89	225	Yes	0.95	230	Yes	0.99
	80	221	222	Yes	0.95	228	Yes	0.99	233	Yes	>0.99
	85	221	225	Yes	0.98	231	Yes	>0.99	236	Yes	>0.99
	90	221	229	Yes	>0.99	235	Yes	>0.99	240	Yes	>0.99
	95	221	234	Yes	>0.99	241	Yes	>0.99	246	Yes	>0.99
6	5	222	188	No	<0.01	192	No	<0.01	194	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	10	222	194	No	<0.01	198	No	<0.01	200	No	<0.01
	15	222	198	No	0.01	202	No	<0.01	205	No	<0.01
	20	222	201	No	0.02	205	No	<0.01	208	No	<0.01
	25	222	204	No	0.06	208	No	0.01	211	No	<0.01
	30	222	206	No	0.1	211	No	0.04	214	No	0.01
	35	222	209	No	0.22	213	No	0.1	216	No	0.04
	40	222	211	No	0.32	215	No	0.2	218	No	0.13
	45	222	213	No	0.44	217	No	0.34	221	No	0.39
	50	222	215	Yes	0.56	220	Yes	0.58	223	Yes	0.61
	55	222	217	Yes	0.68	222	Yes	0.74	225	Yes	0.8
	60	222	219	Yes	0.78	224	Yes	0.86	227	Yes	0.92
	65	222	221	Yes	0.86	226	Yes	0.93	230	Yes	0.99
	70	222	223	Yes	0.92	228	Yes	0.97	232	Yes	>0.99
	75	222	226	Yes	0.97	231	Yes	0.99	235	Yes	>0.99
	80	222	228	Yes	0.99	234	Yes	>0.99	238	Yes	>0.99
	85	222	231	Yes	>0.99	237	Yes	>0.99	241	Yes	>0.99
	90	222	235	Yes	>0.99	241	Yes	>0.99	245	Yes	>0.99
	95	222	241	Yes	>0.99	247	Yes	>0.99	252	Yes	>0.99
7	5	223	192	No	<0.01	194	No	<0.01	196	No	<0.01
	10	223	198	No	<0.01	201	No	<0.01	203	No	<0.01
	15	223	202	No	0.01	205	No	<0.01	207	No	<0.01
	20	223	206	No	0.04	209	No	0.01	211	No	<0.01
	25	223	208	No	0.07	212	No	0.04	214	No	0.01
	30	223	211	No	0.17	215	No	0.14	217	No	0.04
	35	223	213	No	0.26	217	No	0.26	220	No	0.2
	40	223	216	No	0.44	219	No	0.42	222	No	0.39

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	45	223	218	Yes	0.63	222	Yes	0.67	224	Yes	0.61
	50	223	220	Yes	0.74	224	Yes	0.8	227	Yes	0.87
	55	223	222	Yes	0.83	226	Yes	0.9	229	Yes	0.96
	60	223	225	Yes	0.93	229	Yes	0.97	231	Yes	0.99
	65	223	227	Yes	0.96	231	Yes	0.99	234	Yes	>0.99
	70	223	229	Yes	0.98	233	Yes	>0.99	236	Yes	>0.99
	75	223	232	Yes	>0.99	236	Yes	>0.99	239	Yes	>0.99
	80	223	235	Yes	>0.99	239	Yes	>0.99	242	Yes	>0.99
	85	223	238	Yes	>0.99	243	Yes	>0.99	246	Yes	>0.99
	90	223	243	Yes	>0.99	247	Yes	>0.99	251	Yes	>0.99
	95	223	249	Yes	>0.99	254	Yes	>0.99	257	Yes	>0.99
	5	224	194	No	<0.01	196	No	<0.01	197	No	<0.01
	10	224	201	No	0.01	203	No	<0.01	205	No	<0.01
	15	224	205	No	0.03	208	No	<0.01	210	No	<0.01
	20	224	209	No	0.1	212	No	0.02	214	No	<0.01
	25	224	212	No	0.19	215	No	0.07	217	No	0.02
	30	224	215	No	0.33	218	No	0.2	220	No	0.13
	35	224	218	No	0.44	221	No	0.42	223	No	0.39
8	40	224	220	Yes	0.56	223	Yes	0.58	225	Yes	0.61
	45	224	223	Yes	0.72	226	Yes	0.8	228	Yes	0.87
	50	224	225	Yes	0.81	228	Yes	0.89	230	Yes	0.96
	55	224	227	Yes	0.88	231	Yes	0.97	233	Yes	0.99
	60	224	230	Yes	0.94	233	Yes	0.99	235	Yes	>0.99
	65	224	232	Yes	0.97	236	Yes	>0.99	238	Yes	>0.99
	70	224	235	Yes	0.99	238	Yes	>0.99	241	Yes	>0.99
	75	224	238	Yes	>0.99	241	Yes	>0.99	244	Yes	>0.99

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	**Projected Proficiency**		Winter RIT	**Projected Proficiency**		Spring RIT	**Projected Proficiency**	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	80	224	241	Yes	>0.99	244	Yes	>0.99	247	Yes	>0.99
	85	224	245	Yes	>0.99	248	Yes	>0.99	251	Yes	>0.99
	90	224	249	Yes	>0.99	253	Yes	>0.99	256	Yes	>0.99
	95	224	256	Yes	>0.99	260	Yes	>0.99	263	Yes	>0.99

Table 3.10. Proficiency Projections Based on RIT Scores—ELA/Reading

Grade	Start Percentile	Spring Cut	Fall RIT	Projected Proficiency Proficient	Prob.	Winter RIT	Projected Proficiency Proficient	Prob.	Spring RIT	Projected Proficiency Proficient	Prob.
	5	190	147	No	<0.01	156	No	<0.01	160	No	<0.01
	10	190	153	No	<0.01	162	No	<0.01	166	No	<0.01
	15	190	157	No	0.01	166	No	<0.01	170	No	<0.01
	20	190	160	No	0.02	169	No	<0.01	173	No	<0.01
	25	190	162	No	0.03	171	No	<0.01	175	No	<0.01
	30	190	164	No	0.06	173	No	0.01	177	No	<0.01
	35	190	166	No	0.09	175	No	0.03	180	No	<0.01
	40	190	168	No	0.15	177	No	0.07	182	No	0.01
	45	190	170	No	0.18	179	No	0.1	184	No	0.04
2	50	190	172	No	0.25	181	No	0.17	186	No	0.13
	55	190	174	No	0.35	183	No	0.29	188	No	0.28
	60	190	176	No	0.45	185	No	0.43	189	No	0.39
	65	190	178	Yes	0.55	187	Yes	0.57	192	Yes	0.72
	70	190	180	Yes	0.6	189	Yes	0.71	194	Yes	0.87
	75	190	183	Yes	0.75	191	Yes	0.83	196	Yes	0.96
	80	190	185	Yes	0.82	194	Yes	0.93	199	Yes	0.99
	85	190	188	Yes	0.88	197	Yes	0.98	202	Yes	>0.99
	90	190	192	Yes	0.96	200	Yes	>0.99	205	Yes	>0.99
	95	190	197	Yes	0.99	206	Yes	>0.99	211	Yes	>0.99
	5	201	159	No	<0.01	167	No	<0.01	170	No	<0.01
	10	201	165	No	<0.01	173	No	<0.01	176	No	<0.01
3	15	201	169	No	0.01	177	No	<0.01	180	No	<0.01
	20	201	173	No	0.02	180	No	<0.01	183	No	<0.01
	25	201	175	No	0.03	183	No	<0.01	186	No	<0.01
	30	201	178	No	0.07	185	No	0.01	189	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	35	201	180	No	0.09	188	No	0.05	191	No	<0.01
	40	201	182	No	0.14	190	No	0.07	193	No	0.01
	45	201	185	No	0.25	192	No	0.13	195	No	0.04
	50	201	187	No	0.3	194	No	0.23	197	No	0.13
	55	201	189	No	0.39	196	No	0.35	199	No	0.28
	60	201	191	Yes	0.5	198	Yes	0.5	201	Yes	0.5
	65	201	193	Yes	0.61	200	Yes	0.65	203	Yes	0.72
	70	201	195	Yes	0.66	202	Yes	0.77	206	Yes	0.92
	75	201	198	Yes	0.79	205	Yes	0.91	208	Yes	0.98
	80	201	201	Yes	0.89	207	Yes	0.95	211	Yes	>0.99
	85	201	204	Yes	0.93	211	Yes	0.99	214	Yes	>0.99
	90	201	208	Yes	0.98	215	Yes	>0.99	218	Yes	>0.99
	95	201	214	Yes	>0.99	220	Yes	>0.99	224	Yes	>0.99
	5	210	169	No	<0.01	176	No	<0.01	178	No	<0.01
	10	210	175	No	<0.01	182	No	<0.01	184	No	<0.01
	15	210	179	No	<0.01	186	No	<0.01	188	No	<0.01
	20	210	183	No	0.01	189	No	<0.01	191	No	<0.01
	25	210	185	No	0.02	192	No	<0.01	194	No	<0.01
	30	210	188	No	0.04	194	No	0.01	196	No	<0.01
4	35	210	190	No	0.06	196	No	0.02	199	No	<0.01
	40	210	192	No	0.11	198	No	0.04	201	No	0.01
	45	210	195	No	0.17	200	No	0.06	203	No	0.02
	50	210	197	No	0.24	202	No	0.13	205	No	0.08
	55	210	199	No	0.34	205	No	0.28	207	No	0.2
	60	210	201	No	0.44	207	No	0.42	209	No	0.39
	65	210	203	Yes	0.5	209	Yes	0.58	211	Yes	0.61

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
				Fall			**Winter**			**Spring**	
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	70	210	205	Yes	0.61	211	Yes	0.72	213	Yes	0.8
	75	210	208	Yes	0.76	213	Yes	0.83	216	Yes	0.96
	80	210	211	Yes	0.83	216	Yes	0.94	219	Yes	0.99
	85	210	214	Yes	0.92	219	Yes	0.98	222	Yes	>0.99
	90	210	218	Yes	0.96	223	Yes	>0.99	226	Yes	>0.99
	95	210	224	Yes	>0.99	229	Yes	>0.99	232	Yes	>0.99
	5	216	178	No	<0.01	183	No	<0.01	185	No	<0.01
	10	216	183	No	<0.01	189	No	<0.01	191	No	<0.01
	15	216	187	No	<0.01	193	No	<0.01	194	No	<0.01
	20	216	191	No	0.01	196	No	<0.01	198	No	<0.01
	25	216	193	No	0.02	198	No	<0.01	200	No	<0.01
	30	216	196	No	0.05	201	No	0.01	203	No	<0.01
	35	216	198	No	0.06	203	No	0.02	205	No	<0.01
	40	216	200	No	0.11	205	No	0.04	207	No	0.01
	45	216	202	No	0.17	207	No	0.09	209	No	0.02
5	50	216	204	No	0.24	209	No	0.17	211	No	0.08
	55	216	207	No	0.34	211	No	0.28	213	No	0.2
	60	216	209	No	0.44	213	No	0.42	215	No	0.39
	65	216	211	Yes	0.56	215	Yes	0.58	217	Yes	0.61
	70	216	213	Yes	0.61	217	Yes	0.65	219	Yes	0.8
	75	216	216	Yes	0.76	220	Yes	0.83	222	Yes	0.96
	80	216	218	Yes	0.83	222	Yes	0.91	224	Yes	0.99
	85	216	221	Yes	0.89	226	Yes	0.98	228	Yes	>0.99
	90	216	225	Yes	0.96	229	Yes	>0.99	231	Yes	>0.99
	95	216	231	Yes	0.99	235	Yes	>0.99	237	Yes	>0.99
6	5	217	183	No	<0.01	188	No	<0.01	189	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	10	217	189	No	<0.01	193	No	<0.01	195	No	<0.01
	15	217	193	No	0.01	197	No	<0.01	199	No	<0.01
	20	217	196	No	0.02	200	No	<0.01	202	No	<0.01
	25	217	199	No	0.06	203	No	0.01	205	No	<0.01
	30	217	202	No	0.1	205	No	0.03	207	No	<0.01
	35	217	204	No	0.16	208	No	0.09	209	No	0.01
	40	217	206	No	0.24	210	No	0.17	211	No	0.04
	45	217	208	No	0.28	212	No	0.28	213	No	0.13
	50	217	210	No	0.39	214	No	0.42	215	No	0.28
	55	217	212	Yes	0.5	216	Yes	0.5	217	Yes	0.5
	60	217	214	Yes	0.61	218	Yes	0.65	219	Yes	0.72
	65	217	217	Yes	0.72	220	Yes	0.78	222	Yes	0.92
	70	217	219	Yes	0.81	222	Yes	0.88	224	Yes	0.98
	75	217	221	Yes	0.87	225	Yes	0.96	226	Yes	0.99
	80	217	224	Yes	0.92	227	Yes	0.98	229	Yes	>0.99
	85	217	227	Yes	0.97	230	Yes	>0.99	232	Yes	>0.99
	90	217	231	Yes	0.99	234	Yes	>0.99	236	Yes	>0.99
	95	217	237	Yes	>0.99	240	Yes	>0.99	242	Yes	>0.99
7	5	221	187	No	<0.01	190	No	<0.01	191	No	<0.01
	10	221	193	No	<0.01	196	No	<0.01	197	No	<0.01
	15	221	197	No	<0.01	200	No	<0.01	201	No	<0.01
	20	221	200	No	0.02	203	No	<0.01	205	No	<0.01
	25	221	203	No	0.03	206	No	0.01	207	No	<0.01
	30	221	206	No	0.08	209	No	0.03	210	No	<0.01
	35	221	208	No	0.12	211	No	0.06	212	No	0.01
	40	221	210	No	0.19	213	No	0.09	214	No	0.02

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	45	221	212	No	0.24	215	No	0.17	216	No	0.08
	50	221	214	No	0.33	217	No	0.28	218	No	0.2
	55	221	216	No	0.44	219	No	0.42	220	No	0.39
	60	221	218	Yes	0.56	221	Yes	0.58	223	Yes	0.72
	65	221	221	Yes	0.67	223	Yes	0.72	225	Yes	0.87
	70	221	223	Yes	0.76	226	Yes	0.88	227	Yes	0.96
	75	221	225	Yes	0.84	228	Yes	0.94	229	Yes	0.99
	80	221	228	Yes	0.92	231	Yes	0.98	232	Yes	>0.99
	85	221	231	Yes	0.96	234	Yes	>0.99	235	Yes	>0.99
	90	221	235	Yes	0.99	238	Yes	>0.99	239	Yes	>0.99
	95	221	241	Yes	>0.99	244	Yes	>0.99	245	Yes	>0.99
	5	225	190	No	<0.01	193	No	<0.01	194	No	<0.01
	10	225	196	No	<0.01	199	No	<0.01	200	No	<0.01
	15	225	200	No	<0.01	203	No	<0.01	204	No	<0.01
	20	225	204	No	0.01	206	No	<0.01	207	No	<0.01
	25	225	207	No	0.04	209	No	<0.01	210	No	<0.01
	30	225	209	No	0.06	212	No	0.01	213	No	<0.01
	35	225	211	No	0.08	214	No	0.03	215	No	<0.01
8	40	225	214	No	0.17	216	No	0.06	217	No	0.01
	45	225	216	No	0.24	218	No	0.13	220	No	0.08
	50	225	218	No	0.34	221	No	0.28	222	No	0.2
	55	225	220	No	0.39	223	No	0.42	224	No	0.39
	60	225	222	Yes	0.5	225	Yes	0.58	226	Yes	0.61
	65	225	225	Yes	0.66	227	Yes	0.72	228	Yes	0.8
	70	225	227	Yes	0.76	229	Yes	0.83	231	Yes	0.96
	75	225	230	Yes	0.83	232	Yes	0.94	233	Yes	0.99

Grade	Start Percentile	Spring Cut	Fall RIT	Fall Projected Proficiency Proficient	Prob.	Winter RIT	Winter Projected Proficiency Proficient	Prob.	Spring RIT	Spring Projected Proficiency Proficient	Prob.
	80	225	232	Yes	0.89	235	Yes	0.98	236	Yes	>0.99
	85	225	236	Yes	0.96	238	Yes	>0.99	239	Yes	>0.99
	90	225	240	Yes	0.99	242	Yes	>0.99	243	Yes	>0.99
	95	225	246	Yes	>0.99	248	Yes	>0.99	249	Yes	>0.99
	5	227	188	No	<0.01	190	No	<0.01	190	No	<0.01
	10	227	195	No	<0.01	197	No	<0.01	197	No	<0.01
	15	227	199	No	<0.01	201	No	<0.01	202	No	<0.01
	20	227	203	No	0.01	205	No	<0.01	205	No	<0.01
	25	227	206	No	0.02	208	No	<0.01	209	No	<0.01
	30	227	209	No	0.03	211	No	<0.01	211	No	<0.01
	35	227	212	No	0.07	213	No	0.01	214	No	<0.01
	40	227	214	No	0.11	216	No	0.03	217	No	<0.01
	45	227	217	No	0.19	218	No	0.07	219	No	0.01
9	50	227	219	No	0.23	221	No	0.18	221	No	0.04
	55	227	221	No	0.31	223	No	0.29	224	No	0.2
	60	227	224	No	0.45	225	No	0.43	226	No	0.39
	65	227	226	Yes	0.55	228	Yes	0.64	229	Yes	0.72
	70	227	229	Yes	0.69	230	Yes	0.77	231	Yes	0.87
	75	227	232	Yes	0.81	233	Yes	0.9	234	Yes	0.98
	80	227	235	Yes	0.89	236	Yes	0.97	237	Yes	>0.99
	85	227	239	Yes	0.96	240	Yes	0.99	241	Yes	>0.99
	90	227	243	Yes	0.99	245	Yes	>0.99	246	Yes	>0.99
	95	227	250	Yes	>0.99	251	Yes	>0.99	253	Yes	>0.99
	5	229	192	No	<0.01	194	No	<0.01	194	No	<0.01
10	10	229	199	No	<0.01	200	No	<0.01	200	No	<0.01
	15	229	203	No	<0.01	204	No	<0.01	205	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	20	229	206	No	<0.01	208	No	<0.01	208	No	<0.01
	25	229	209	No	0.01	211	No	<0.01	211	No	<0.01
	30	229	212	No	0.03	214	No	<0.01	214	No	<0.01
	35	229	215	No	0.08	216	No	0.01	217	No	<0.01
	40	229	217	No	0.1	218	No	0.03	219	No	<0.01
	45	229	219	No	0.15	221	No	0.1	221	No	0.01
	50	229	221	No	0.22	223	No	0.18	224	No	0.08
	55	229	224	No	0.35	225	No	0.29	226	No	0.2
	60	229	226	No	0.45	227	No	0.43	228	No	0.39
	65	229	228	Yes	0.55	230	Yes	0.65	231	Yes	0.72
	70	229	231	Yes	0.7	232	Yes	0.77	233	Yes	0.87
	75	229	234	Yes	0.82	235	Yes	0.9	236	Yes	0.98
	80	229	237	Yes	0.9	238	Yes	0.97	239	Yes	>0.99
	85	229	240	Yes	0.95	241	Yes	0.99	242	Yes	>0.99
	90	229	244	Yes	0.99	246	Yes	>0.99	247	Yes	>0.99
	95	229	251	Yes	>0.99	252	Yes	>0.99	253	Yes	>0.99

Table 3.11. Proficiency Projections Based on RIT Scores—Science

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.
5	5	212	181	No	<0.01	185	No	<0.01	186	No	<0.01
	10	212	185	No	<0.01	189	No	<0.01	191	No	<0.01
	15	212	188	No	0.01	192	No	<0.01	194	No	<0.01
	20	212	190	No	0.02	194	No	<0.01	196	No	<0.01
	25	212	192	No	0.03	196	No	0.01	198	No	<0.01
	30	212	194	No	0.06	198	No	0.02	200	No	<0.01
	35	212	196	No	0.1	200	No	0.04	202	No	<0.01
	40	212	197	No	0.1	201	No	0.05	203	No	<0.01
	45	212	199	No	0.16	203	No	0.1	205	No	0.02
	50	212	200	No	0.19	204	No	0.14	206	No	0.04
	55	212	202	No	0.28	206	No	0.24	208	No	0.12
	60	212	203	No	0.33	207	No	0.3	209	No	0.19
	65	212	205	No	0.39	209	No	0.36	211	No	0.38
	70	212	206	No	0.44	210	No	0.43	213	Yes	0.62
	75	212	208	Yes	0.56	212	Yes	0.57	214	Yes	0.72
	80	212	210	Yes	0.61	214	Yes	0.7	216	Yes	0.88
	85	212	212	Yes	0.72	216	Yes	0.82	219	Yes	0.98
	90	212	215	Yes	0.84	219	Yes	0.92	222	Yes	>0.99
	95	212	220	Yes	0.94	224	Yes	0.99	226	Yes	>0.99
8	5	218	188	No	<0.01	191	No	<0.01	191	No	<0.01
	10	218	193	No	0.01	196	No	<0.01	196	No	<0.01
	15	218	196	No	0.02	199	No	<0.01	199	No	<0.01
	20	218	198	No	0.02	201	No	<0.01	202	No	<0.01
	25	218	201	No	0.06	204	No	0.02	204	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.
	30	218	203	No	0.09	206	No	0.03	206	No	<0.01
	35	218	205	No	0.12	207	No	0.04	208	No	<0.01
	40	218	206	No	0.15	209	No	0.08	210	No	0.01
	45	218	208	No	0.21	211	No	0.15	212	No	0.04
	50	218	210	No	0.3	212	No	0.19	213	No	0.07
	55	218	211	No	0.35	214	No	0.3	215	No	0.19
	60	218	213	No	0.4	216	No	0.43	217	No	0.38
	65	218	215	Yes	0.5	217	Yes	0.5	219	Yes	0.62
	70	218	217	Yes	0.6	219	Yes	0.64	221	Yes	0.81
	75	218	219	Yes	0.65	221	Yes	0.76	223	Yes	0.93
	80	218	221	Yes	0.75	223	Yes	0.85	225	Yes	0.98
	85	218	223	Yes	0.82	226	Yes	0.94	228	Yes	>0.99
	90	218	227	Yes	0.93	229	Yes	0.98	231	Yes	>0.99
	95	218	231	Yes	0.98	234	Yes	>0.99	236	Yes	>0.99

References

He, W., & Meyer, P. (2021). *MAP Growth universal screening benchmarks: Establishing MAP Growth as an effective universal screener*. NWEA Research Report. NWEA. https://www.nwea.org/content/uploads/2021/05/MAP-Growth-Universal-Screening-Benchmarks-2021-03-12_NWEA_report.pdf

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

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

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

Thum, Y. M., & Kuhfeld, M. (2020). *NWEA 2020 MAP Growth achievement status and growth norms for students and schools*. NWEA Research Report. NWEA. https://teach.mapnwea.org/impl/normsResearchStudy.pdf