

Linking Study Report: Predicting Performance on the Florida Statewide Assessment Program based on NWEA MAP Growth Scores

July 2020

NWEA Psychometric Solutions

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Executive Summary

To predict student achievement on Florida’s Statewide Assessment Program in Grades 3–8, NWEA® conducted a linking study using Spring 2018 data to derive Rasch Unit (RIT) cut scores on the MAP® Growth™ assessments that correspond to the Florida achievement levels. The Florida Statewide Assessment Program includes the Florida Standards Assessments (FSA) in Grades 3–8 English Language Arts (ELA) and Mathematics and the Next Generation Sunshine State Standards (NGSSS) Assessments in Grades 5 and 8 Science. With this information, educators can identify students at risk of failing to meet state proficiency standards early in the year and provide tailored educational interventions. The linking study has been updated since the previous version published in July 2019 to incorporate the new 2020 NWEA MAP Growth norms (Thum & Kuhfeld, 2020).

Table E.1 presents the Florida *Level 3* achievement level cut scores and the corresponding MAP Growth RIT cut scores that allow teachers to identify students who are on track for proficiency on the state summative test and those who are not. For example, the *Level 3* cut score on the FSA Grade 3 ELA test is 300. A Grade 3 student with a MAP Growth Reading RIT score of 189 in the fall is likely to meet proficiency on the FSA ELA test in the spring, whereas a Grade 3 student with a MAP Growth Reading RIT score lower than 189 in the fall is in jeopardy of not meeting proficiency. MAP Growth cut scores for Grade 2 are also provided so educators can track early learners’ progress toward proficiency on the FSA test by Grade 3. These cut scores were derived based on the Grade 3 cuts and the 2020 NWEA growth norms for the adjacent grade (i.e., Grades 2 to 3).

Table E.1. MAP Growth Cut Scores for Proficiency on Florida’s Statewide Assessments

Assessment		Level 3 Cut Scores by Grade						
		2	3	4	5	6	7	8
ELA/Reading								
FSA Spring		–	300	311	321	326	333	337
MAP Growth	Fall	175	189	199	208	212	215	216
	Winter	184	196	205	212	216	218	219
	Spring	188	199	207	214	217	219	220
Mathematics								
FSA Spring		–	297	310	320	325	330	337
MAP Growth	Fall	173	187	201	210	214	217	219
	Winter	183	195	208	216	219	220	222
	Spring	188	200	212	220	222	223	224
Science								
NGSSS Spring		–	–	–	200	–	–	203
MAP Growth	Fall	–	–	–	207	–	–	215
	Winter	–	–	–	211	–	–	217
	Spring	–	–	–	212	–	–	218

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

E.1. Assessment Overview

The FSA tests are aligned to the Florida Standards in Grades 3–8 ELA and Mathematics, and the NGSSS Assessments are aligned to the NGSSS in Grades 5 and 8 Science. 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*. These tests are used to provide evidence of student achievement in ELA, Mathematics, and Science for various test score uses such as meeting the requirements of the state’s accountability system. The *Level 3* cut score demarks the minimum level of achievement considered to be satisfactory. MAP Growth tests are adaptive interim assessments aligned to state-specific content standards and administered in the fall, winter, and spring. Scores are reported on the RIT vertical scale with a range of 100–350.

E.2. Linking Methods

Based on scores from Spring 2018, the equipercentile linking method was used to identify the spring MAP Growth scores that correspond to the spring Florida achievement level cut scores. Spring cuts for Grade 2 were derived based on the cuts for Grade 3 and the 2020 NWEA growth norms. MAP Growth fall and winter cut scores that predict proficiency on the spring Florida statewide assessment were then projected using the 2020 NWEA growth norms that provide expected score gains across test administrations.

E.3. Student Sample

Only students who took both the MAP Growth and Florida statewide assessments in Spring 2018 were included in the study sample. Table E.2 presents the weighted number of Florida students from five districts and 204 schools who were included in the linking study. The linking study sample is voluntary and can only include student scores from partners who share their data. Also, not all students in a state take MAP Growth. The sample may therefore not represent the general student population as well as it should. To ensure that the linking study sample represents the state student population in terms of race, sex, and achievement level, weighting (i.e., a statistical method that matches the distributions of the variables of interest to those of the target population) was applied to the sample. As a result, the RIT cuts derived from the study sample can be generalized to any student from the target population. All analyses in this study for Grades 3–8 were conducted based on the weighted sample.

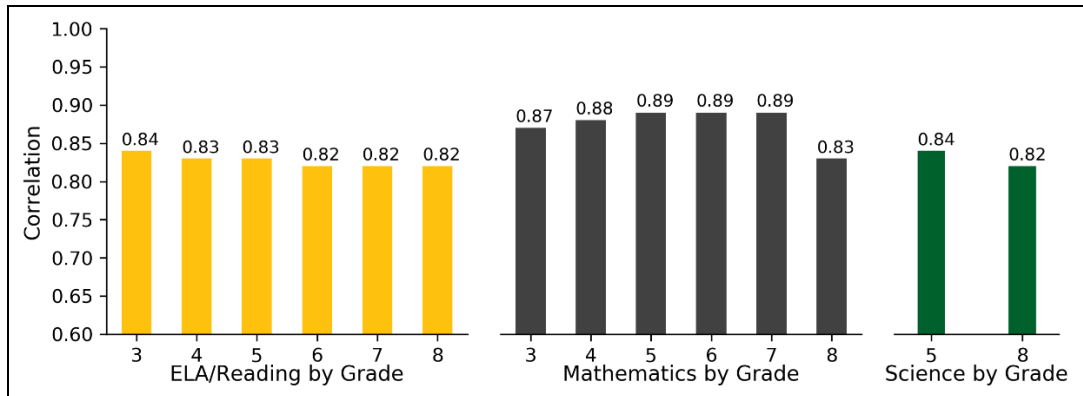
Table E.2. Linking Study Sample

Grade	#Students		
	ELA/Reading	Mathematics	Science
3	14,222	13,014	–
4	11,970	11,996	–
5	11,218	11,041	7,108
6	7,608	7,436	–
7	6,397	5,444	–
8	5,443	3,620	3,727

E.4. Test Score Relationships

Correlations between MAP Growth RIT scores and Florida’s statewide assessment scores range from 0.82 to 0.89 across all content areas, as shown in Figure E.1. These values indicate a strong relationship among the scores, which is important validity evidence for the claim that MAP Growth scores are good predictors of performance on Florida’s statewide assessments.

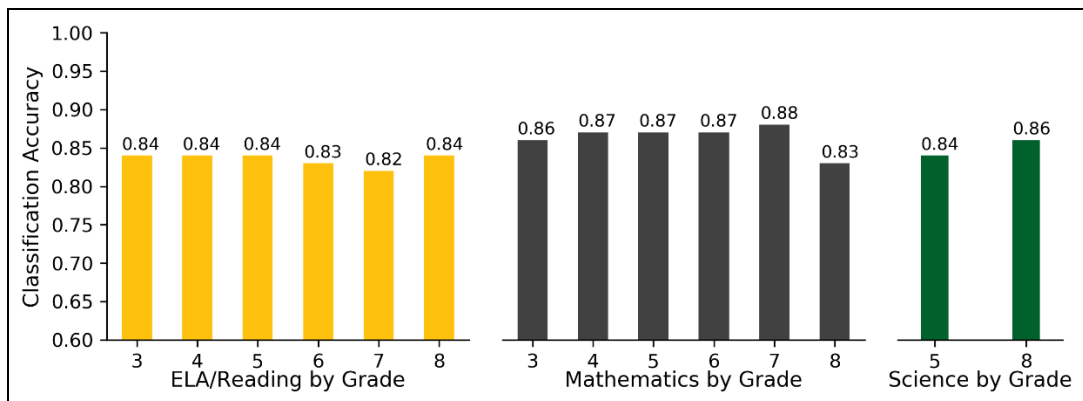
Figure E.1. Correlations between MAP Growth and Florida’s Statewide Assessments



E.5. Accuracy of MAP Growth Classifications

Figure E.2 presents the classification accuracy statistics that show the proportion of students correctly classified by their RIT scores as proficient or not proficient on Florida’s statewide assessments. For example, the MAP Growth Reading Grade 3 *Level 3* cut score has a 0.84 accuracy rate, meaning it accurately classified student achievement on the state test for 84% of the sample. The results range from 0.82 to 0.88 across all content areas, indicating that RIT scores have a high accuracy rate of identifying student proficiency on Florida’s statewide assessments.

Figure E.2. Accuracy of MAP Growth Classifications



1. Introduction

1.1. Purpose of the Study

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

This document presents results from a linking study conducted by NWEA in July 2020 to statistically connect the scores of the Florida Statewide Assessment Program with Rasch Unit (RIT) scores from the MAP Growth assessments taken during the Spring 2018 term. The Florida Statewide Assessment Program includes the Florida Standards Assessments (FSA) in Grades 3–8 English Language Arts (ELA) and Mathematics and the Next Generation Sunshine State Standards (NGSSS) Assessments in Grades 5 and 8 Science. The linking study has been updated since the previous version published in July 2019 to incorporate the new 2020 NWEA MAP Growth norms (Thum & Kuhfeld, 2020). In this updated study, MAP Growth cut scores are also included for Grade 2 so educators can track early learners' progress toward proficiency on the Florida statewide test by Grade 3. This report presents the following results:

1. Student sample demographics
2. Descriptive statistics of test scores
3. MAP Growth cut scores that correspond to the Florida achievement levels and learning gains sublevels using the equipercentile linking procedure for the spring results and the 2020 norms for the fall and winter results
4. Classification accuracy statistics to determine the degree to which MAP Growth accurately predicts student proficiency status on Florida's statewide assessments
5. The probability of achieving grade-level proficiency on the Florida statewide test based on MAP Growth RIT scores from fall, winter, and spring using the 2020 norms

1.2. Assessment Overview

The Florida Statewide Assessment Program includes the FSA tests in Grades 3–8 ELA and Mathematics aligned to the Florida Standards and the NGSSS Assessments in Grades 5 and 8 Science. Each assessment has four cut scores (i.e., the minimum score a student must get on a test to be placed in a certain achievement level) that distinguish between the following achievement levels: *Level 1*, *Level 2*, *Level 3*, *Level 4*, and *Level 5*. The *Level 3* cut score demarks the minimum level of performance considered to be proficient for accountability purposes.

MAP Growth interim assessments from NWEA are computer adaptive and aligned to state-specific content standards. Scores are reported on the RIT vertical scale with a range of 100–350. Each content area has its own scale. To aid the interpretation of scores, NWEA periodically conducts norming studies of student and school performance on MAP Growth. Achievement status norms show how well a student performed on the MAP Growth test compared to students in the norming group by associating the student's performance on the MAP Growth test, expressed as a RIT score, with a percentile ranking. Growth norms provide expected score gains across test administrations (e.g., the relative evaluation of a student's growth from fall to spring). The most recent norms study was conducted in 2020 (Thum & Kuhfeld, 2020).

2. Methods

2.1. Data Collection

This linking study is based on data from the Spring 2018 administrations of the MAP Growth and Florida statewide assessments. NWEA recruited Florida districts to participate in the study by sharing their student and score data for the target term. Districts also gave NWEA permission to access students' associated MAP Growth scores from the NWEA in-house database. Once Florida state score information was received by NWEA, each student's state testing record was matched to their MAP Growth score by using the student's first and last names, date of birth, student ID, and other available identifying information. Only students who took both the MAP Growth and Florida statewide assessments in Spring 2018 were included in the study sample.

2.2. Post-Stratification Weighting

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

- Calculate marginal distributions of race, sex, and achievement level for the sample and population.
- Calculate post-stratification weights with the rake function from the survey package in R (Lumley, 2019).
- Trim the weight if it is not in the range of 0.3 to 3.0.
- Apply the weights to the sample before conducting the linking study analyses.

2.3. MAP Growth Cut Scores

The equipercntile linking method (Kolen & Brennan, 2004) was used to identify the spring MAP Growth RIT scores that correspond to the spring Florida achievement level cut scores. Spring cuts for Grade 2 were derived based on the cuts for Grade 3 and the 2020 NWEA growth norms. RIT fall and winter cut scores that predict proficiency on the spring Florida statewide test were then projected using the 2020 growth norms. Percentile ranks are also provided that show how a nationally representative sample of students in the same grade scored on MAP Growth for each administration, which is an important interpretation of RIT scores. This is useful for understanding (1) how student scores compare to peers nationwide and (2) the relative rigor of a state's achievement level designations for its summative assessment.

The MAP Growth spring cut scores for Grades 3–8 could be calculated using the equipercntile linking method because that data are directly connected to the Florida spring data used in the study. The equipercntile linking procedure matches scores on the two scales that have the same percentile rank (i.e., the proportion of tests at or below each score). For example, let x represent a score on Test X (e.g., FSA). Its equipercntile equivalent score on Test Y (e.g., MAP Growth), $e_y(x)$, can be obtained through a cumulative-distribution-based linking function defined in Equation 1:

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

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

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

$$RIT_{PredSpring} = RIT_{previous} + g \quad (2)$$

where:

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

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

2.4. Classification Accuracy

The degree to which MAP Growth predicts student proficiency status on Florida's statewide assessments can be described using classification accuracy statistics based on the MAP Growth spring cut scores that show the proportion of students correctly classified by their RIT scores as proficient (*Level 3*, *Level 4*, or *Level 5*) or not proficient (*Level 1* or *Level 2*). Table 2.1 describes the classification accuracy statistics provided in this report (Pommerich, Hanson, Harris, & Sconing, 2004). The results are based on the Spring 2018 MAP Growth and Florida statewide assessment data for the *Level 3* cut score.

Since Florida students do not begin taking the FSA until Grade 3, longitudinal data were collected for the Grade 3 cohort in order to link the FSA to MAP Growth for Grade 2 to calculate the classification accuracy statistics. To accomplish this, 2017–2018 FSA Grade 3 results were linked to MAP Growth data from Grade 3 students in 2017–2018 and Grade 2 students in 2016–2017. In this way, the data came from the same cohort of students beginning when they were in Grade 2 and continuing through Grade 3.

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 not-proficient students identified by MAP Growth in those observed as proficient on the state test
False Positive (FP) Rate	$FP / (FP + TN)$	Proportion of proficient students identified by MAP Growth in those observed as not proficient on the state test
Sensitivity	$TP / (TP + FN)$	Proportion of proficient students identified by MAP Growth in those observed as such on the state test
Specificity	$TN / (TN + FP)$	Proportion of not-proficient students identified by MAP Growth in those observed as such on the state test
Precision	$TP / (TP + FP)$	Proportion of observed proficient students 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.

*FP = false positives. FN = false negatives. TP = true positives. TN = true negatives.

2.5. Proficiency Projection

In addition to calculating the MAP Growth fall and winter cut scores, the MAP Growth conditional growth norms data were also used to calculate the probability of reaching proficiency on Florida’s statewide assessments based on a student’s RIT scores from fall, winter, and spring. Equation 3 was used to calculate the probability of a student achieving *Level 3* proficiency on the Florida statewide test based on their fall or winter RIT score:

$$Pr(\text{Achieving Level 3 in spring} | \text{starting RIT}) = \Phi \left(\frac{RIT_{\text{previous}} + g - RIT_{\text{SpringCut}}}{SD} \right) \quad (3)$$

where:

- Φ is a standardized normal cumulative distribution.
- RIT_{previous} is the student’s RIT score in fall or winter (or in spring of Grade 2).
- g is the expected growth from the previous RIT (e.g., fall or winter) to the spring RIT.
- $RIT_{\text{SpringCut}}$ is the MAP Growth *Level 3* cut score for spring. For Grade 2, this is the Grade 3 cut score for spring.
- SD is the conditional standard deviation of the expected growth, g .

Equation 4 was used to estimate the probability of a student achieving *Level 3* proficiency on the Florida statewide test based on their spring RIT score (RIT_{Spring}):

$$Pr(\text{Achieving Level 3 in spring} | \text{spring RIT}) = \Phi \left(\frac{RIT_{\text{Spring}} - RIT_{\text{SpringCut}}}{SE} \right) \quad (4)$$

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 Florida statewide assessments in Spring 2018 were included in the study sample. Data used in this study were collected from five districts and 204 schools in Florida. Table 3.1 presents the demographic distributions of race, sex, and achievement level in the original unweighted study sample. Table 3.2 presents the distributions of the student population that took the Spring 2018 FSA and NGSSS Assessments (Florida Department of Education, 2018a, 2018b, 2018c). Since the unweighted data are different from the general Florida statewide assessment population, post-stratification weights were applied to the linking study sample to improve its representativeness. Table 3.3 presents the demographic distributions of the sample after weighting, which are almost identical to the Florida statewide assessment student population distributions. The analyses in this study were therefore conducted based on the weighted sample.

Table 3.1. Linking Study Sample Demographics (Unweighted)

		Linking Study Sample (Unweighted)					
Demographic Subgroup		%Students by Grade					
		3	4	5	6	7	8
ELA/Reading							
Total N		14,081	11,970	11,218	7,608	6,397	5,443
Race	Black	24.3	24.5	23.6	27.5	28.0	28.1
	Hispanic	25.1	26.8	27.7	32.1	32.9	32.8
	Other	8.4	8.6	8.0	7.3	8.0	8.9
	White	42.2	40.1	40.7	33.1	31.1	30.2
Sex	Female	48.6	49.9	50.4	50.3	50.6	49.9
	Male	51.4	50.1	49.6	49.7	49.4	50.1
Achievement Level	<i>Level 1</i>	21.4	23.9	22.1	24.2	25.7	20.1
	<i>Level 2</i>	24.5	25.4	27.4	26.9	25.2	24.7
	<i>Level 3</i>	28.5	26.4	25.7	22.3	24.0	27.6
	<i>Level 4</i>	18.3	18.6	17.4	19.6	15.9	18.5
	<i>Level 5</i>	7.4	5.8	7.3	7.0	9.3	9.1
Mathematics							
Total N		13,014	11,996	11,153	7,436	5,499	3,657
Race	Black	24.5	24.8	23.8	27.9	28.6	31.1
	Hispanic	25.9	26.5	27.8	32.0	33.3	32.4
	Other	8.2	8.6	7.9	7.3	7.2	7.7
	White	41.4	40.2	40.5	32.7	31.0	28.8
Sex	Female	48.6	50.0	50.4	49.9	51.1	49.8
	Male	51.4	50.0	49.6	50.1	48.9	50.2
Achievement Level	<i>Level 1</i>	19.3	24.5	21.6	25.2	27.4	32.7
	<i>Level 2</i>	19.2	17.8	20.7	26.9	24.1	27.5
	<i>Level 3</i>	28.0	27.3	23.9	25.3	28.7	27.0
	<i>Level 4</i>	22.8	19.7	21.2	16.9	14.3	9.1
	<i>Level 5</i>	10.7	10.7	12.7	5.7	5.5	3.7

Linking Study Sample (Unweighted)							
Demographic Subgroup		%Students by Grade					
		3	4	5	6	7	8
Science							
Total N		–	–	7,108	–	–	3,727
Race	Black	–	–	26.0	–	–	27.7
	Hispanic	–	–	32.3	–	–	38.2
	Other	–	–	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

Table 3.2. Spring 2018 Florida Student Population Demographics

Spring 2018 Florida Student Population							
Demographic Subgroup		%Students by Grade					
		3	4	5	6	7	8
ELA							
Total N		221,883	215,827	211,086	211,279	201,439	202,500
Race	Black	22.8	21.5	20.9	21.5	21.2	20.9
	Hispanic	34.5	34.3	34.3	34.3	33.7	33.6
	Other	6.8	7.0	6.9	6.7	6.7	6.7
	White	35.9	37.2	37.9	37.5	38.5	38.8
Sex	Female	48.6	48.9	49.5	49.2	49.4	49.2
	Male	51.5	51.1	50.5	50.8	50.6	50.8
Achievement Level	Level 1	20.0	21.0	20.0	24.0	26.0	21.0
	Level 2	23.0	23.0	25.0	24.0	23.0	21.0
	Level 3	29.0	27.0	26.0	21.0	22.0	26.0
	Level 4	20.0	21.0	20.0	21.0	18.0	19.0
	Level 5	9.0	8.0	9.0	10.0	11.0	13.0
Mathematics							
Total N		222,913	217,434	213,499	203,162	180,892	131,055
Race	Black	22.8	21.6	20.9	22.0	22.0	25.0
	Hispanic	34.6	34.5	34.4	34.8	34.0	35.0
	Other	6.8	6.8	6.9	6.4	6.4	6.0
	White	35.8	37.1	37.8	36.8	37.6	34.0
Sex	Female	48.5	48.9	49.5	49.2	48.9	47.9
	Male	51.5	51.2	50.6	50.8	51.1	52.1

Spring 2018 Florida Student Population							
Demographic Subgroup		%Students by Grade					
		3	4	5	6	7	8
Achievement Level	Level 1	19.0	22.0	20.0	25.0	23.0	20.0
	Level 2	19.0	16.0	19.0	23.0	18.0	17.0
	Level 3	28.0	27.0	24.0	24.0	26.0	27.0
	Level 4	23.0	22.0	22.0	20.0	18.0	17.0
	Level 5	11.0	13.0	14.0	8.0	14.0	18.0
Science							
Total N		–	–	211,986	–	–	194,389
Race	Black	–	–	20.9	–	–	21.0
	Hispanic	–	–	34.4	–	–	33.2
	Other	–	–	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

Table 3.3. Linking Study Sample Demographics (Weighted)

Linking Study Sample (Weighted)							
Demographic Subgroup		%Students by Grade					
		3	4	5	6	7	8
ELA/Reading							
Total N		14,222	11,970	11,218	7,608	6,397	5,443
Race	Black	22.8	21.5	20.9	21.5	21.2	20.9
	Hispanic	34.5	34.3	34.3	34.3	33.7	33.6
	Other	6.8	7.0	6.9	6.7	6.7	6.7
	White	35.9	37.2	37.9	37.5	38.5	38.8
Sex	Female	48.6	48.9	49.5	49.2	49.4	49.2
	Male	51.4	51.1	50.5	50.8	50.6	50.8
Achievement Level	Level 1	19.8	21.0	20.0	24.0	26.0	21.0
	Level 2	22.8	23.0	25.0	24.0	23.0	21.0
	Level 3	28.7	27.0	26.0	21.0	22.0	26.0
	Level 4	19.8	21.0	20.0	21.0	18.0	19.0
	Level 5	8.9	8.0	9.0	10.0	11.0	13.0

Linking Study Sample (Weighted)							
Demographic Subgroup		%Students by Grade					
		3	4	5	6	7	8
Mathematics							
Total N		13,014	11,996	11,041	7,436	5,444	3,620
Race	Black	22.8	21.6	20.9	22.0	22.0	25.0
	Hispanic	34.6	34.5	34.4	34.8	34.0	35.0
	Other	6.8	6.8	6.9	6.4	6.4	6.0
	White	35.8	37.1	37.8	36.8	37.6	34.0
Sex	Female	48.5	48.9	49.5	49.2	48.9	47.9
	Male	51.5	51.1	50.5	50.8	51.1	52.1
Achievement	Level 1	19.0	22.0	20.2	25.0	23.2	20.2
	Level 2	19.0	16.0	19.2	23.0	18.2	17.2
	Level 3	28.0	27.0	24.2	24.0	26.3	27.3
	Level 4	23.0	22.0	22.2	20.0	18.2	17.2
	Level 5	11.0	13.0	14.1	8.0	14.1	18.2
Science							
Total N		–	–	7,108	–	–	3,727
Race	Black	–	–	20.9	–	–	21.0
	Hispanic	–	–	34.4	–	–	33.2
	Other	–	–	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

3.2. Descriptive Statistics

Table 3.4 presents descriptive statistics of the MAP Growth and Florida test scores from Spring 2018, including the correlation coefficient (r) between them. The correlation coefficients between the scores range from 0.82 to 0.84 for ELA/Reading, 0.83 to 0.89 for Mathematics, and 0.82 to 0.84 for Science. These values indicate a strong relationship among the scores, which is important validity evidence for the claim that MAP Growth scores are good predictors of performance on Florida's statewide assessments.

Table 3.4. Descriptive Statistics of Test Scores

Grade	N	r	Florida Statewide Tests*				MAP Growth*			
			Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
ELA/Reading										
3	14,222	0.84	302.1	21.2	240	360	199.8	15.0	139	239
4	11,970	0.83	312.3	20.2	251	372	207.4	14.1	144	259
5	11,218	0.83	322.0	22.6	257	385	213.8	13.4	148	267
6	7,608	0.82	325.2	23.9	259	391	215.4	15.2	150	265
7	6,397	0.82	331.6	23.4	267	397	217.9	15.7	150	259
8	5,443	0.82	339.9	22.9	274	403	220.7	16.2	152	263
Mathematics										
3	13,014	0.87	301.8	21.2	240	360	202.7	12.7	144	258
4	11,996	0.88	314.9	23.3	251	376	214.3	13.6	148	275
5	11,041	0.89	324.6	24.0	256	388	223.1	15.4	146	276
6	7,436	0.89	324.3	23.4	260	390	221.6	16.1	148	273
7	5,444	0.89	332.9	24.1	269	391	225.7	17.3	137	269
8	3,620	0.83	341.0	23.8	273	393	226.4	15.9	143	273
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

*SD = standard deviation. Min. = minimum. Max. = maximum.

3.3. MAP Growth Cut Scores

Table 3.5, Table 3.6, and Table 3.7 present the Florida scale score ranges and the corresponding MAP Growth RIT cut scores and percentile ranges by content area and grade. These tables can be used to predict a student's likely achievement level on the Florida spring assessment when MAP Growth is taken in the fall, winter, or spring. For example, a Grade 3 student who obtained a MAP Growth Reading RIT score of 189 in the fall is likely to reach *Level 3* proficiency on the FSA ELA test. A Grade 3 student who obtained a MAP Growth Reading RIT score of 199 in the spring is also likely to reach *Level 3* proficiency on the FSA ELA spring test. The spring cut score is higher than the fall cut score because growth is expected between fall and spring as students receive more instruction during the school year.

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

Table 3.5. MAP Growth Cut Scores—ELA/Reading

FSA ELA										
Grade	Level 1		Level 2		Level 3		Level 4		Level 5	
3	240–284		285–299		300–314		315–329		330–360	
4	251–296		297–310		311–324		325–339		340–372	
5	257–303		304–320		321–335		336–351		352–385	
6	259–308		309–325		326–338		339–355		356–391	
7	267–317		318–332		333–345		346–359		360–397	
8	274–321		322–336		337–351		352–365		366–403	
MAP Growth Reading*										
Grade	Level 1		Level 2		Level 3		Level 4		Level 5	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall										
2	100–161	1–24	162–174	25–56	175–188	57–85	189–201	86–96	202–350	97–99
3	100–176	1–27	177–188	28–55	189–199	56–78	200–211	79–93	212–350	94–99
4	100–188	1–31	189–198	32–55	199–208	56–76	209–220	77–92	221–350	93–99
5	100–195	1–29	196–207	30–58	208–216	59–77	217–225	78–90	226–350	91–99
6	100–200	1–28	201–211	29–53	212–219	54–71	220–229	72–88	230–350	89–99
7	100–204	1–28	205–214	29–51	215–223	52–71	224–233	72–87	234–350	88–99
8	100–205	1–23	206–215	24–44	216–225	45–67	226–235	68–84	236–350	85–99
Winter										
2	100–170	1–24	171–183	25–56	184–195	57–83	196–208	84–96	209–350	97–99
3	100–184	1–28	185–195	29–54	196–205	55–76	206–216	77–91	217–350	92–99
4	100–194	1–31	195–204	32–55	205–213	56–75	214–224	76–91	225–350	92–99
5	100–201	1–32	202–211	33–56	212–220	57–76	221–228	77–88	229–350	89–99
6	100–204	1–28	205–215	29–54	216–222	55–71	223–231	72–86	232–350	87–99
7	100–207	1–28	208–217	29–51	218–225	52–70	226–234	71–86	235–350	87–99
8	100–208	1–24	209–218	25–45	219–227	46–66	228–236	67–83	237–350	84–99
Spring										
2	100–175	1–26	176–187	27–55	188–199	56–81	200–211	82–95	212–350	96–99
3	100–188	1–30	189–198	31–54	199–208	55–76	209–218	77–90	219–350	91–99
4	100–197	1–33	198–206	34–54	207–215	55–74	216–225	75–89	226–350	90–99
5	100–203	1–32	204–213	33–56	214–221	57–74	222–229	75–87	230–350	88–99
6	100–206	1–29	207–216	30–53	217–223	54–70	224–232	71–85	233–350	86–99
7	100–209	1–29	210–218	30–51	219–226	52–69	227–235	70–85	236–350	86–99
8	100–210	1–25	211–219	26–45	220–228	46–66	229–237	67–82	238–350	83–99

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

Table 3.6. MAP Growth Cut Scores—Mathematics

FSA Mathematics										
Grade	Level 1		Level 2		Level 3		Level 4		Level 5	
3	240–284		285–296		297–310		311–326		327–360	
4	251–298		299–309		310–324		325–339		340–376	
5	256–305		306–319		320–333		334–349		350–388	
6	260–309		310–324		325–338		339–355		356–390	
7	269–315		316–329		330–345		346–359		360–391	
8	273–321		322–336		337–352		353–364		365–393	
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	100–165	1–23	166–172	24–43	173–182	44–72	183–193	73–92	194–350	93–99
3	100–179	1–25	180–186	26–45	187–195	46–70	196–204	71–88	205–350	89–99
4	100–193	1–34	194–200	35–53	201–208	54–73	209–217	74–89	218–350	90–99
5	100–201	1–31	202–209	32–51	210–218	52–73	219–228	74–89	229–350	90–99
6	100–204	1–26	205–213	27–47	214–222	48–69	223–234	70–89	235–350	90–99
7	100–207	1–23	208–216	24–42	217–227	43–66	228–237	67–84	238–350	85–99
8	100–208	1–19	209–218	20–37	219–230	38–62	231–240	63–79	241–350	80–99
Winter										
2	100–174	1–23	175–182	24–46	183–191	47–72	192–201	73–91	202–350	92–99
3	100–187	1–26	188–194	27–45	195–202	46–68	203–212	69–88	213–350	89–99
4	100–200	1–36	201–207	37–54	208–215	55–74	216–224	75–89	225–350	90–99
5	100–207	1–33	208–215	34–52	216–224	53–73	225–234	74–89	235–350	90–99
6	100–209	1–27	210–218	28–48	219–227	49–68	228–239	69–88	240–350	89–99
7	100–210	1–22	211–219	23–40	220–231	41–66	232–241	67–83	242–350	84–99
8	100v212	1–21	213–221	22–37	222–233	38–61	234–243	62–78	244–350	79–99
Spring										
2	100–180	1–26	181–187	27–45	188–196	46–70	197–206	71–89	207–350	90–99
3	100–192	1–27	193–199	28–46	200–207	47–68	208–216	69–86	217–350	87–99
4	100–204	1–35	205–211	36–53	212–219	54–72	220–228	73–87	229–350	88–99
5	100–211	1–33	212–219	34–52	220–228	53–72	229–238	73–88	239–350	89–99
6	100–212	1–28	213–221	29–47	222–230	48–67	231–242	68–87	243–350	88–99
7	100–213	1–24	214–222	25–41	223–234	42–66	235–244	67–83	245–350	84–99
8	100–214	1–21	215–223	22–37	224–235	38–60	236–245	61–77	246–350	78–99

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

Table 3.7. MAP Growth Cut Scores—Science

NGSSS 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		Level 2		Level 3		Level 4		Level 5	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	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
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

*Cut scores for fall and winter are derived from the spring cuts and growth norms based on the typical instructional weeks. Bolded numbers indicate the cut scores considered to be at least proficient for accountability purposes.

3.4. Learning Gains

A student’s achievement level changes from one year to the next in ELA and Mathematics are also taken into consideration as part of Florida’s school grading system based on student success measures including achievement, learning gains, graduation, acceleration success, and maintaining a focus on students who need the most support (Florida Department of Education, 2017). Learning gains are a measure of students’ growth from one year to the next that are used to measure the performance of a school. A school gains points if they meet the state’s prescribed criteria for learning gains. Growth must sufficiently meet the state’s prescribed criteria (provided below) in order to count toward a school’s grade. To support the calculation of learning gains, *Level 1* has three sublevels (low, middle, high), and *Level 2* has two sublevels (low, high). MAP Growth score predictions can be used to determine the RIT score required to achieve a learning gain in all achievement levels and sublevels, allowing teachers to provide the needed support to ensure that all students can grow.

There are four learning gains components in the Florida school grading system: learning gains in ELA and Mathematics (components 1 and 2) and learning gains for the lowest 25% of students in the ELA and Mathematics (components 3 and 4). The points earned for each component are added together and divided by the total number of available points to determine the percentage of points earned. Each learning gains component is worth 100 points and is based on the percentage of students who meet one of the following learning gains criteria from the prior year to the current year on the FSA in the same content area (Florida Department of Education, 2017):

1. Students who increased at least one achievement level (e.g., from *Level 1* to *Level 2*).
2. Students who scored below *Level 3* and increased at least one sublevel with *Level 1* or *Level 2* (e.g., from *Level 1 low* to *Level 1 middle*).
3. Students whose score remained at *Level 3* or *Level 4* but with increased scale scores.

4. Students who took an FSA End-of-Course (EOC) assessment and remained at *Level 3* or *Level 4*.¹
5. Students whose score remained at *Level 5*.

Table 3.8 and Table 3.9 present the MAP Growth score predictions for the *Level 1* and *Level 2* sublevels. Together, Table 3.5 – Table 3.9 can be used to predict a student’s learning gains in ELA and Mathematics across school years by following the steps below:

1. Find the student’s score from a prior FSA test and identify the corresponding MAP Growth RIT score.
2. Identify the achievement level needed to achieve a learning gain and find the corresponding MAP Growth score.
3. Calculate the difference between the initial and final MAP Growth scores to find out how much a student must grow to show a learning gain.

Although these tables provide the projected RIT score ranges that correspond to different achievement levels on Florida’s statewide assessments, in practice one needs to be aware of different sources of measurement error that could lead to an incorrect classification. The reasons for the misclassification may include the following:

1. Measurement errors of state scale scores and RIT scores. For example, if a RIT score is 200 and its SEM is 5, the student score is more likely to be in the range of 195 and 205 if this student took the test again.
2. The imperfect correlation between the state scale scores and RIT scores (i.e., the correlation is not equal to 1).
3. Conditional growth measurement errors in the growth norms when projecting the score ranges in the fall and winter from the scores in the spring.
4. The actual instructional weeks of each school district may differ from the standard default instructional weeks used in this study to estimate the growth from fall or winter to spring, which can impact the classification accuracy of the fall and winter cut scores.
5. The score distribution of the study sample may not represent the distribution of the population perfectly, although the post-stratification is applied to improve the sex, ethnicity, and achievement level distributions correlated with the score distribution.
6. Score distribution irregularities can cause problems in the linking study results (Livingston, 2004). In other words, when no students receive a particular RIT score or range of RIT scores, this can cause problems for equating. The irregularities become worse at the lower and higher ends of the study sample, although a polynomial loglinear pre-smoothing is used to reduce the irregularities in this study. As a result, the RIT score ranges may result in less accurate classification of students into different sublevels.

¹ Given the small sample size, this linking study was not conducted for the EOC assessments.

Table 3.8. MAP Growth Cut Scores for Level 1 and Level 2 Sublevels—ELA/Reading

FSA ELA										
Grade	Level 1						Level 2			
	Low		Middle		High		Low		High	
3	240–254		255–269		270–284		285–292		293–299	
4	251–266		267–281		282–296		297–303		304–310	
5	257–272		273–288		289–303		304–312		313–320	
6	259–275		276–292		293–308		309–317		318–325	
7	267–283		284–300		301–317		318–325		326–332	
8	274–289		290–305		306–321		322–329		330–336	
MAP Growth Reading*										
Grade	Level 1						Level 2			
	Low		Middle		High		Low		High	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall										
2	100–127	1–1	128–145	1–3	146–161	4–24	162–167	25–38	168–174	39–56
3	100–147	1–1	148–162	1–7	163–176	8–27	177–182	28–40	183–188	41–55
4	100–161	1–1	162–176	2–11	177–188	12–31	189–192	32–40	193–198	41–55
5	100–172	1–2	173–186	3–13	187–195	14–29	196–201	30–43	202–207	44–58
6	100–174	1–1	175–188	2–9	189–200	10–28	201–205	29–39	206–211	40–53
7	100–177	1–1	178–193	1–10	194–204	11–28	205–209	29–39	210–214	40–51
8	100–178	1–1	179–194	1–8	195–205	9–23	206–211	24–35	212–215	36–44
Winter										
2	100–139	1–1	140–156	1–4	157–170	5–24	171–176	25–38	177–183	39–56
3	100–158	1–1	159–172	2–9	173–184	10–28	185–190	29–42	191–195	43–54
4	100–170	1–2	171–184	3–13	185–194	14–31	195–198	32–40	199–204	41–55
5	100–180	1–3	181–192	4–15	193–201	16–32	202–206	33–44	207–211	45–56
6	100–181	1–1	182–193	2–10	194–204	11–28	205–209	29–40	210–215	41–54
7	100–182	1–1	183–197	2–11	198–207	12–28	208–213	29–41	214–217	42–51
8	100–183	1–1	184–198	1–9	199–208	10–24	209–214	25–36	215–218	37–45
Spring										
2	100–145	1–1	146–161	1–5	162–175	6–26	176–181	27–40	182–187	41–55
3	100–163	1–1	164–176	2–10	177–188	11–30	189–193	31–41	194–198	42–54
4	100–174	1–2	175–187	3–14	188–197	15–33	198–201	34–42	202–206	43–54
5	100–183	1–4	184–195	5–16	196–203	17–32	204–208	33–44	209–213	45–56
6	100–184	1–2	185–196	3–12	197–206	13–29	207–211	30–41	212–216	42–53
7	100–185	1–1	186–199	2–12	200–209	13–29	210–214	30–41	215–218	42–51
8	100–186	1–1	187–200	2–10	201–210	11–25	211–215	26–36	216–219	37–45

*Cut scores for fall and winter are derived from the spring cuts and growth norms based on the typical instructional weeks. Spring cut scores for Grade 2 were derived from the Grade 3 cuts using the growth norms.

Table 3.9. MAP Growth Cut Scores for Level 1 and Level 2 Sublevels—Mathematics

FSA Mathematics										
Grade	Level 1						Level 2			
	Low		Middle		High		Low		High	
3	240–254		255–269		270–284		285–290		291–296	
4	251–266		267–282		283–298		299–304		305–309	
5	256–272		273–289		290–305		306–312		313–319	
6	260–276		277–293		294–309		310–317		318–324	
7	269–284		285–300		301–315		316–322		323–329	
8	273–289		290–305		306–321		322–329		330–336	
MAP Growth Mathematics*										
Grade	Level 1						Level 2			
	Low		Middle		High		Low		High	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall										
2	100–141	1–1	142–154	1–5	155–165	6–23	166–169	24–34	170–172	35–43
3	100–158	1–1	159–169	1–7	170–179	8–25	180–183	26–36	184–186	37–45
4	100–175	1–4	176–185	5–16	186–193	17–34	194–197	35–45	198–200	46–53
5	100–180	1–2	181–192	3–13	193–201	14–31	202–205	32–41	206–209	42–51
6	100–182	1–1	183–194	2–10	195–204	11–26	205–208	27–35	209–213	36–47
7	100–186	1–2	187–197	3–9	198–207	10–23	208–212	24–33	213–216	34–42
8	100–188	1–2	189–198	3–8	199–208	9–19	209–213	20–27	214–218	28–37
Winter										
2	100–152	1–1	153–164	1–6	165–174	7–23	175–178	24–34	179–182	35–46
3	100–166	1–1	167–178	2–9	179–187	10–26	188–191	27–37	192–194	38–45
4	100–181	1–4	182–191	5–16	192–200	17–36	201–204	37–46	205–207	47–54
5	100–185	1–3	186–197	4–14	198–207	15–33	208–211	34–42	212–215	43–52
6	100–187	1–2	188–199	3–11	200–209	12–27	210–213	28–36	214–218	37–48
7	100–189	1–2	190–200	3–9	201–210	10–22	211–215	23–32	216–219	33–40
8	100–192	1–2	193–202	3–9	203–212	10–21	213–217	22–29	218–221	30–37
Spring										
2	100–158	1–1	159–170	1–8	171–180	9–26	181–184	27–36	185–187	37–45
3	100–172	1–1	173–183	2–10	184–192	11–27	193–196	28–38	197–199	39–46
4	100–186	1–6	187–196	7–18	197–204	19–35	205–208	36–45	209–211	46–53
5	100–189	1–3	190–201	4–15	202–211	16–33	212–215	34–42	216–219	43–52
6	100–190	1–2	191–202	3–12	203–212	13–28	213–216	29–36	217–221	37–47
7	100–192	1–2	193–203	3–10	204–213	11–24	214–218	25–33	219–222	34–41
8	100–194	1–3	195–204	4–9	205–214	10–21	215–219	22–29	220–223	30–37

*Cut scores for fall and winter are derived from the spring cuts and growth norms based on the typical instructional weeks. Spring cut scores for Grade 2 were derived from the Grade 3 cuts using the growth norms.

3.5. Classification Accuracy

Table 3.10 presents the classification accuracy summary statistics, including the overall classification accuracy rate. These results indicate how well MAP Growth spring RIT scores predict proficiency on the Florida statewide tests, providing insight into the predictive validity of MAP Growth. The overall classification accuracy rate ranges from 0.81 to 0.84 for ELA/Reading, 0.82 to 0.88 for Mathematics, 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 Florida statewide assessment. For Grade 2, the classification accuracy rate refers to how well the MAP Growth cuts can predict students' proficiency status on the Florida statewide assessment in Grade 3.

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

Table 3.10. Classification Accuracy Results

Grade	N	Cut Score		Class. Accuracy*	Rate*		Sensitivity	Specificity	Precision	AUC*
		MAP Growth	Florida		FP	FN				
ELA/Reading										
2	6,989	188	300	0.81	0.21	0.18	0.82	0.79	0.84	0.89
3	14,222	199	300	0.84	0.19	0.13	0.87	0.81	0.86	0.92
4	11,970	207	311	0.84	0.20	0.14	0.86	0.80	0.85	0.92
5	11,218	214	321	0.84	0.18	0.14	0.86	0.82	0.85	0.92
6	7,608	217	326	0.83	0.18	0.15	0.85	0.82	0.83	0.92
7	6,397	219	333	0.82	0.22	0.14	0.86	0.78	0.80	0.91
8	5,443	220	337	0.84	0.20	0.13	0.87	0.80	0.86	0.92
Mathematics										
2	6,895	188	297	0.82	0.29	0.12	0.88	0.71	0.84	0.89
3	13,014	200	297	0.86	0.20	0.11	0.89	0.80	0.88	0.93
4	11,996	212	310	0.87	0.17	0.11	0.89	0.83	0.90	0.94
5	11,041	220	320	0.87	0.17	0.10	0.90	0.83	0.89	0.95
6	7,436	222	325	0.87	0.15	0.12	0.88	0.85	0.87	0.95
7	5,444	223	330	0.88	0.17	0.09	0.91	0.83	0.89	0.95
8	3,620	224	337	0.83	0.20	0.15	0.85	0.80	0.87	0.91
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

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

3.6. Proficiency Projection

Table 3.11, Table 3.12, and Table 3.13 present the estimated probability of achieving *Level 3* performance on Florida’s statewide assessments based on RIT scores from fall, winter, or spring. For example, a Grade 3 student who obtained a MAP Growth Reading score of 204 in the fall has a 96% chance of reaching *Level 3* proficiency or higher on the FSA test. “Prob.” indicates the probability of obtaining proficient status on the Florida statewide test in the spring.

Table 3.11. Proficiency Projection based on RIT Scores—ELA/Reading

ELA/Reading											
Grade	Start %ile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 3	Prob.		Level 3	Prob.		Level 3	Prob.
2	5	188	147	No	<0.01	156	No	<0.01	160	No	<0.01
	10	188	153	No	<0.01	162	No	<0.01	166	No	<0.01
	15	188	157	No	0.02	166	No	<0.01	170	No	<0.01
	20	188	160	No	0.04	169	No	<0.01	173	No	<0.01
	25	188	162	No	0.06	171	No	0.01	175	No	<0.01
	30	188	164	No	0.09	173	No	0.03	177	No	<0.01
	35	188	166	No	0.15	175	No	0.07	180	No	0.01
	40	188	168	No	0.21	177	No	0.13	182	No	0.03
	45	188	170	No	0.25	179	No	0.17	184	No	0.11
	50	188	172	No	0.35	181	No	0.29	186	No	0.27
	55	188	174	No	0.45	183	No	0.43	188	Yes	0.50
	60	188	176	Yes	0.55	185	Yes	0.57	189	Yes	0.62
	65	188	178	Yes	0.65	187	Yes	0.71	192	Yes	0.89
	70	188	180	Yes	0.70	189	Yes	0.83	194	Yes	0.97
	75	188	183	Yes	0.82	191	Yes	0.90	196	Yes	0.99
	80	188	185	Yes	0.88	194	Yes	0.97	199	Yes	>0.99
	85	188	188	Yes	0.93	197	Yes	0.99	202	Yes	>0.99
90	188	192	Yes	0.98	200	Yes	>0.99	205	Yes	>0.99	
95	188	197	Yes	0.99	206	Yes	>0.99	211	Yes	>0.99	

ELA/Reading											
Grade	Start %ile	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.
3	5	199	159	No	<0.01	167	No	<0.01	170	No	<0.01
	10	199	165	No	<0.01	173	No	<0.01	176	No	<0.01
	15	199	169	No	0.01	177	No	<0.01	180	No	<0.01
	20	199	173	No	0.03	180	No	<0.01	183	No	<0.01
	25	199	175	No	0.05	183	No	0.01	186	No	<0.01
	30	199	178	No	0.11	185	No	0.03	189	No	<0.01
	35	199	180	No	0.14	188	No	0.09	191	No	0.01
	40	199	182	No	0.21	190	No	0.13	193	No	0.03
	45	199	185	No	0.34	192	No	0.23	195	No	0.11
	50	199	187	No	0.39	194	No	0.35	197	No	0.27
	55	199	189	Yes	0.50	196	Yes	0.50	199	Yes	0.50
	60	199	191	Yes	0.61	198	Yes	0.65	201	Yes	0.73
	65	199	193	Yes	0.70	200	Yes	0.77	203	Yes	0.89
	70	199	195	Yes	0.75	202	Yes	0.87	206	Yes	0.99
	75	199	198	Yes	0.86	205	Yes	0.95	208	Yes	>0.99
	80	199	201	Yes	0.93	207	Yes	0.98	211	Yes	>0.99
85	199	204	Yes	0.96	211	Yes	>0.99	214	Yes	>0.99	
90	199	208	Yes	0.99	215	Yes	>0.99	218	Yes	>0.99	
95	199	214	Yes	>0.99	220	Yes	>0.99	224	Yes	>0.99	
4	5	207	169	No	<0.01	176	No	<0.01	178	No	<0.01
	10	207	175	No	<0.01	182	No	<0.01	184	No	<0.01
	15	207	179	No	0.01	186	No	<0.01	188	No	<0.01
	20	207	183	No	0.03	189	No	<0.01	191	No	<0.01
	25	207	185	No	0.05	192	No	0.01	194	No	<0.01
	30	207	188	No	0.08	194	No	0.03	196	No	<0.01
	35	207	190	No	0.13	196	No	0.06	199	No	0.01
	40	207	192	No	0.20	198	No	0.13	201	No	0.03
	45	207	195	No	0.29	200	No	0.17	203	No	0.11
	50	207	197	No	0.39	202	No	0.28	205	No	0.27
	55	207	199	Yes	0.50	205	Yes	0.50	207	Yes	0.50
	60	207	201	Yes	0.61	207	Yes	0.65	209	Yes	0.73
	65	207	203	Yes	0.66	209	Yes	0.78	211	Yes	0.89
	70	207	205	Yes	0.76	211	Yes	0.87	213	Yes	0.97
	75	207	208	Yes	0.87	213	Yes	0.94	216	Yes	>0.99
	80	207	211	Yes	0.92	216	Yes	0.98	219	Yes	>0.99
85	207	214	Yes	0.96	219	Yes	>0.99	222	Yes	>0.99	
90	207	218	Yes	0.99	223	Yes	>0.99	226	Yes	>0.99	
95	207	224	Yes	>0.99	229	Yes	>0.99	232	Yes	>0.99	

ELA/Reading											
Grade	Start %ile	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	214	178	No	<0.01	183	No	<0.01	185	No	<0.01
	10	214	183	No	<0.01	189	No	<0.01	191	No	<0.01
	15	214	187	No	0.01	193	No	<0.01	194	No	<0.01
	20	214	191	No	0.02	196	No	<0.01	198	No	<0.01
	25	214	193	No	0.04	198	No	<0.01	200	No	<0.01
	30	214	196	No	0.08	201	No	0.02	203	No	<0.01
	35	214	198	No	0.11	203	No	0.04	205	No	<0.01
	40	214	200	No	0.17	205	No	0.09	207	No	0.01
	45	214	202	No	0.24	207	No	0.17	209	No	0.06
	50	214	204	No	0.34	209	No	0.28	211	No	0.17
	55	214	207	No	0.44	211	No	0.42	213	No	0.38
	60	214	209	Yes	0.56	213	Yes	0.58	215	Yes	0.62
	65	214	211	Yes	0.66	215	Yes	0.72	217	Yes	0.83
	70	214	213	Yes	0.71	217	Yes	0.78	219	Yes	0.94
	75	214	216	Yes	0.83	220	Yes	0.91	222	Yes	0.99
	80	214	218	Yes	0.89	222	Yes	0.96	224	Yes	>0.99
	85	214	221	Yes	0.94	226	Yes	0.99	228	Yes	>0.99
90	214	225	Yes	0.98	229	Yes	>0.99	231	Yes	>0.99	
95	214	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
	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	0.10	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	0.03
	45	217	208	No	0.28	212	No	0.28	213	No	0.11
	50	217	210	No	0.39	214	No	0.42	215	No	0.27
	55	217	212	Yes	0.50	216	Yes	0.50	217	Yes	0.50
	60	217	214	Yes	0.61	218	Yes	0.65	219	Yes	0.73
	65	217	217	Yes	0.72	220	Yes	0.78	222	Yes	0.94
	70	217	219	Yes	0.81	222	Yes	0.88	224	Yes	0.99
	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	

ELA/Reading											
Grade	Start %ile	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.
7	5	219	187	No	<0.01	190	No	<0.01	191	No	<0.01
	10	219	193	No	<0.01	196	No	<0.01	197	No	<0.01
	15	219	197	No	0.01	200	No	<0.01	201	No	<0.01
	20	219	200	No	0.03	203	No	<0.01	205	No	<0.01
	25	219	203	No	0.06	206	No	0.02	207	No	<0.01
	30	219	206	No	0.12	209	No	0.06	210	No	<0.01
	35	219	208	No	0.19	211	No	0.12	212	No	0.01
	40	219	210	No	0.28	213	No	0.17	214	No	0.06
	45	219	212	No	0.33	215	No	0.28	216	No	0.17
	50	219	214	No	0.44	217	No	0.42	218	No	0.38
	55	219	216	Yes	0.56	219	Yes	0.58	220	Yes	0.62
	60	219	218	Yes	0.67	221	Yes	0.72	223	Yes	0.89
	65	219	221	Yes	0.76	223	Yes	0.83	225	Yes	0.97
	70	219	223	Yes	0.84	226	Yes	0.94	227	Yes	0.99
	75	219	225	Yes	0.90	228	Yes	0.97	229	Yes	>0.99
	80	219	228	Yes	0.96	231	Yes	0.99	232	Yes	>0.99
85	219	231	Yes	0.98	234	Yes	>0.99	235	Yes	>0.99	
90	219	235	Yes	>0.99	238	Yes	>0.99	239	Yes	>0.99	
95	219	241	Yes	>0.99	244	Yes	>0.99	245	Yes	>0.99	
8	5	220	190	No	<0.01	193	No	<0.01	194	No	<0.01
	10	220	196	No	0.01	199	No	<0.01	200	No	<0.01
	15	220	200	No	0.03	203	No	<0.01	204	No	<0.01
	20	220	204	No	0.06	206	No	0.01	207	No	<0.01
	25	220	207	No	0.13	209	No	0.04	210	No	<0.01
	30	220	209	No	0.20	212	No	0.09	213	No	0.01
	35	220	211	No	0.24	214	No	0.17	215	No	0.06
	40	220	214	No	0.39	216	No	0.28	217	No	0.17
	45	220	216	Yes	0.50	218	No	0.42	220	Yes	0.50
	50	220	218	Yes	0.61	221	Yes	0.65	222	Yes	0.73
	55	220	220	Yes	0.66	223	Yes	0.78	224	Yes	0.89
	60	220	222	Yes	0.76	225	Yes	0.87	226	Yes	0.97
	65	220	225	Yes	0.87	227	Yes	0.94	228	Yes	0.99
	70	220	227	Yes	0.92	229	Yes	0.97	231	Yes	>0.99
	75	220	230	Yes	0.95	232	Yes	0.99	233	Yes	>0.99
	80	220	232	Yes	0.97	235	Yes	>0.99	236	Yes	>0.99
85	220	236	Yes	0.99	238	Yes	>0.99	239	Yes	>0.99	
90	220	240	Yes	>0.99	242	Yes	>0.99	243	Yes	>0.99	
95	220	246	Yes	>0.99	248	Yes	>0.99	249	Yes	>0.99	

Table 3.12. Proficiency Projection based on RIT Scores—Mathematics

Mathematics											
Grade	Start %ile	Spring Cut	Fall		Winter			Spring			
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 3	Prob.		Level 3	Prob.		Level 3	Prob.
2	5	188	154	No	<0.01	163	No	<0.01	167	No	<0.01
	10	188	158	No	0.01	167	No	<0.01	172	No	<0.01
	15	188	162	No	0.06	171	No	0.01	175	No	<0.01
	20	188	164	No	0.08	173	No	0.03	178	No	<0.01
	25	188	166	No	0.14	175	No	0.07	180	No	<0.01
	30	188	168	No	0.22	177	No	0.15	182	No	0.02
	35	188	170	No	0.32	179	No	0.26	184	No	0.08
	40	188	172	No	0.44	181	No	0.34	186	No	0.25
	45	188	173	Yes	0.50	182	No	0.42	188	Yes	0.50
	50	188	175	Yes	0.56	184	Yes	0.58	189	Yes	0.63
	55	188	177	Yes	0.68	186	Yes	0.74	191	Yes	0.85
	60	188	178	Yes	0.73	187	Yes	0.80	193	Yes	0.96
	65	188	180	Yes	0.82	189	Yes	0.90	195	Yes	0.99
	70	188	182	Yes	0.89	191	Yes	0.95	196	Yes	>0.99
	75	188	184	Yes	0.94	193	Yes	0.98	198	Yes	>0.99
	80	188	186	Yes	0.96	195	Yes	0.99	201	Yes	>0.99
	85	188	188	Yes	0.98	198	Yes	>0.99	203	Yes	>0.99
90	188	192	Yes	>0.99	201	Yes	>0.99	207	Yes	>0.99	
95	188	196	Yes	>0.99	205	Yes	>0.99	212	Yes	>0.99	
3	5	200	166	No	<0.01	174	No	<0.01	178	No	<0.01
	10	200	171	No	0.01	179	No	<0.01	183	No	<0.01
	15	200	175	No	0.03	182	No	<0.01	186	No	<0.01
	20	200	177	No	0.05	185	No	0.02	189	No	<0.01
	25	200	179	No	0.10	187	No	0.04	192	No	<0.01
	30	200	181	No	0.17	189	No	0.10	194	No	0.02
	35	200	183	No	0.26	191	No	0.20	196	No	0.08
	40	200	185	No	0.37	193	No	0.33	198	No	0.25
	45	200	187	Yes	0.50	195	Yes	0.50	199	No	0.37
	50	200	188	Yes	0.56	196	Yes	0.58	201	Yes	0.63
	55	200	190	Yes	0.69	198	Yes	0.74	203	Yes	0.85
	60	200	192	Yes	0.74	200	Yes	0.86	205	Yes	0.96
	65	200	194	Yes	0.83	201	Yes	0.90	207	Yes	0.99
	70	200	196	Yes	0.90	203	Yes	0.96	208	Yes	>0.99
	75	200	198	Yes	0.95	205	Yes	0.98	211	Yes	>0.99
	80	200	200	Yes	0.97	208	Yes	>0.99	213	Yes	>0.99
	85	200	202	Yes	0.99	210	Yes	>0.99	216	Yes	>0.99
90	200	206	Yes	>0.99	214	Yes	>0.99	219	Yes	>0.99	
95	200	211	Yes	>0.99	219	Yes	>0.99	224	Yes	>0.99	

Mathematics											
Grade	Start %ile	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.
4	5	212	176	No	<0.01	182	No	<0.01	185	No	<0.01
	10	212	181	No	<0.01	187	No	<0.01	191	No	<0.01
	15	212	185	No	0.01	191	No	<0.01	194	No	<0.01
	20	212	187	No	0.01	194	No	<0.01	197	No	<0.01
	25	212	190	No	0.04	196	No	0.01	200	No	<0.01
	30	212	192	No	0.07	198	No	0.02	202	No	<0.01
	35	212	194	No	0.13	200	No	0.04	205	No	0.01
	40	212	196	No	0.21	202	No	0.10	207	No	0.04
	45	212	198	No	0.32	204	No	0.20	209	No	0.15
	50	212	200	No	0.44	206	No	0.33	211	No	0.37
	55	212	201	Yes	0.50	208	Yes	0.50	212	Yes	0.50
	60	212	203	Yes	0.63	210	Yes	0.67	214	Yes	0.75
	65	212	205	Yes	0.74	212	Yes	0.80	217	Yes	0.96
	70	212	207	Yes	0.83	214	Yes	0.90	219	Yes	0.99
	75	212	209	Yes	0.90	216	Yes	0.96	221	Yes	>0.99
	80	212	212	Yes	0.96	219	Yes	0.99	224	Yes	>0.99
85	212	214	Yes	0.98	221	Yes	>0.99	227	Yes	>0.99	
90	212	218	Yes	>0.99	225	Yes	>0.99	230	Yes	>0.99	
95	212	223	Yes	>0.99	231	Yes	>0.99	236	Yes	>0.99	
5	5	220	184	No	<0.01	189	No	<0.01	191	No	<0.01
	10	220	190	No	<0.01	194	No	<0.01	197	No	<0.01
	15	220	193	No	<0.01	198	No	<0.01	201	No	<0.01
	20	220	196	No	0.01	201	No	<0.01	205	No	<0.01
	25	220	199	No	0.03	204	No	0.01	207	No	<0.01
	30	220	201	No	0.08	206	No	0.02	210	No	<0.01
	35	220	203	No	0.14	209	No	0.07	212	No	<0.01
	40	220	205	No	0.22	211	No	0.15	215	No	0.04
	45	220	207	No	0.32	213	No	0.26	217	No	0.15
	50	220	209	No	0.44	215	No	0.42	219	No	0.37
	55	220	211	Yes	0.56	217	Yes	0.58	221	Yes	0.63
	60	220	213	Yes	0.68	219	Yes	0.74	223	Yes	0.85
	65	220	215	Yes	0.78	221	Yes	0.85	225	Yes	0.96
	70	220	217	Yes	0.86	223	Yes	0.93	228	Yes	>0.99
	75	220	219	Yes	0.92	225	Yes	0.97	230	Yes	>0.99
	80	220	222	Yes	0.97	228	Yes	0.99	233	Yes	>0.99
85	220	225	Yes	0.99	231	Yes	>0.99	236	Yes	>0.99	
90	220	229	Yes	>0.99	235	Yes	>0.99	240	Yes	>0.99	
95	220	234	Yes	>0.99	241	Yes	>0.99	246	Yes	>0.99	

Mathematics											
Grade	Start %ile	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.
6	5	222	188	No	<0.01	192	No	<0.01	194	No	<0.01
	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	0.10	211	No	0.04	214	No	<0.01
	35	222	209	No	0.22	213	No	0.10	216	No	0.02
	40	222	211	No	0.32	215	No	0.20	218	No	0.08
	45	222	213	No	0.44	217	No	0.34	221	No	0.37
	50	222	215	Yes	0.56	220	Yes	0.58	223	Yes	0.63
	55	222	217	Yes	0.68	222	Yes	0.74	225	Yes	0.85
	60	222	219	Yes	0.78	224	Yes	0.86	227	Yes	0.96
	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	0.02
	35	223	213	No	0.26	217	No	0.26	220	No	0.15
	40	223	216	No	0.44	219	No	0.42	222	No	0.37
	45	223	218	Yes	0.63	222	Yes	0.67	224	Yes	0.63
	50	223	220	Yes	0.74	224	Yes	0.80	227	Yes	0.92
	55	223	222	Yes	0.83	226	Yes	0.90	229	Yes	0.98
	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	

Mathematics											
Grade	Start %ile	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.
8	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	0.10	212	No	0.02	214	No	<0.01
	25	224	212	No	0.19	215	No	0.07	217	No	0.01
	30	224	215	No	0.33	218	No	0.20	220	No	0.08
	35	224	218	No	0.44	221	No	0.42	223	No	0.37
	40	224	220	Yes	0.56	223	Yes	0.58	225	Yes	0.63
	45	224	223	Yes	0.72	226	Yes	0.80	228	Yes	0.92
	50	224	225	Yes	0.81	228	Yes	0.89	230	Yes	0.98
	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
	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 3.13. Proficiency Projection based on RIT Scores—Science

Science											
Grade	Start %ile	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	0.10	200	No	0.04	202	No	<0.01
	40	212	197	No	0.10	201	No	0.05	203	No	<0.01
	45	212	199	No	0.16	203	No	0.10	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	0.30	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	0.70	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
	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	0.30	212	No	0.19	213	No	0.07
	55	218	211	No	0.35	214	No	0.30	215	No	0.19
	60	218	213	No	0.40	216	No	0.43	217	No	0.38
	65	218	215	Yes	0.50	217	Yes	0.50	219	Yes	0.62
	70	218	217	Yes	0.60	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	

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