

# **Predicting Proficiency on the South Carolina End-of-Course Examination Program in Algebra 1 Based on NWEA MAP Growth Scores**

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NWEA Psychometrics and Analytics

## Linking Study Updates

Date	Description
2026-04	Conducted a linking study for the South Carolina End-of-Course Examination Program in Algebra 1 using Spring 2024 data.

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## Executive Summary

Linking studies allow partners to use MAP® Growth™ Rasch Unit (RIT) scores throughout the year to predict students’ performance levels on state spring summative assessments. This is accomplished through statistical analyses that produce RIT cut scores that correspond to state spring summative performance levels. A “cut score” is the minimum score a student must get on a test to be placed at a certain performance level. The linking study for the spring South Carolina (SC) End-of-Course Examination Program (EOCEP) in Algebra 1 described in this report provides RIT cut scores for the fall, winter, and spring MAP Growth administrations that correspond to the letter grades (A, B, C, D, and F) on the spring SC EOCEP Algebra 1 test. Educators can use the RIT cut scores to identify students at risk of not meeting state proficiency standards and provide targeted instruction to improve academic outcomes.

The linking study is based on test scores from students who participated in both the MAP Growth Math 6+ and the SC EOCEP Algebra 1 assessments in Spring 2024. Due to an insufficient number of students who took both the MAP Growth Algebra 1 and SC EOCEP Algebra 1 assessments, as well as both the MAP Growth Reading 6+ and SC EOCEP English 2 assessments, the corresponding linking studies for those tests were excluded from this analysis. Additionally, the linking analysis between the MAP Growth course-specific Science and SC EOCEP Biology 1 assessments was excluded here due to content misalignment. In total, this study included 1,407 students from 37 schools within 4 districts in South Carolina.

Prior to initiating the linking study, NWEA’s content team confirmed that the content standards used to construct the MAP Growth interim assessment were aligned with those of the SC EOCEP in Algebra 1, thus warranting a connection. Further investigation into the relationship between the MAP Growth Math 6+ and SC EOCEP Algebra 1 assessments involved calculating correlation coefficients to confirm the alignment between the MAP Growth scores and the spring summative test scores of the SC EOCEP in Algebra 1. A high positive correlation (e.g.,  $\geq 0.70$ ) 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. The correlation between the MAP Growth and SC EOCEP Algebra 1 test scores is 0.79, which is higher than 0.70, indicating that MAP Growth is a good assessment for predicting performance on the spring SC EOCEP Algebra 1 test.

The equipercentile linking method (Kolen & Brennan, 2004) was used to produce the RIT cut scores for the spring administration that correspond to letter grades on the spring SC EOCEP in Algebra 1. These cut scores were derived from the spring cuts and the growth norms for the fall and winter administrations to the spring administration. While RIT cut scores were generated for every letter grade on the spring SC EOCEP in Algebra 1, Table E.1 presents the *Letter Grade C* cut scores that indicate the minimum score a student must get to be considered proficient for accountability purposes.

**Table E.1. MAP Growth RIT Cut Scores Linked to SC EOCEP Algebra 1 Letter Grade C Cut Scores**

Assessment		Letter Grade C Cut Scores by Grade				
		6	7	8	9	10
SC EOCEP Algebra 1 Spring		70				
MAP Growth Math 6+	Fall	227	231	231	235	234
	Winter	234	236	235	237	237
	Spring	238	238	238	238	238

Educators can use these cut scores to determine whether students are on track for proficiency (*Letter Grade C* or higher) on the spring state assessment. For example, the *Letter Grade C* cut score on the spring SC EOCEP Algebra 1 test is 70. A grade 6 student with a MAP Growth Math 6+ RIT score of 227 in the fall is likely to meet proficiency on the SC EOCEP Algebra 1 test in the spring, whereas a grade 6 student with a RIT score lower than 227 in the fall is in jeopardy of not meeting proficiency on the spring SC EOCEP Algebra 1 test.

As further evidence that MAP Growth scores can be used to predict students' proficiency on state spring tests, NWEA calculated classification accuracy statistics that show how well the RIT scores correctly classified, or predicted, students as proficient (*Letter Grade C* or higher) on the spring SC EOCEP Algebra 1 test. The MAP Growth Math 6+ *Letter Grade C* cut score has a 0.84 accuracy rate, meaning it accurately predicted student performance on the spring state test for 84% of the sample. A high statistic indicates high accuracy. Therefore, MAP Growth scores have a high accuracy rate of identifying student proficiency on the spring SC EOCEP Algebra 1 test.

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

## 1. Introduction

### 1.1. Purpose of the Study

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

This report presents findings from a linking study performed by NWEA aiming to statistically connect the Rasch Unit (RIT) scores obtained from the MAP Growth assessment with the results of the spring SC EOCEP in Algebra 1. The data utilized to generate this report are comprised of the SC EOCEP Algebra 1 test scores collected during Spring 2024. Specifically, this report presents the following results:

1. Student sample demographics
2. Descriptive statistics of test scores
3. MAP Growth cut scores from fall, winter, and spring that correspond to the letter grades on the spring SC EOCEP in Algebra 1
4. Classification accuracy statistics to determine the degree to which MAP Growth accurately predicts student proficiency status on the spring SC EOCEP in Algebra 1
5. The probability of achieving proficiency on the spring SC EOCEP in Algebra 1 based on MAP Growth RIT scores from fall, winter, and spring

### 1.2. Assessment Overview

The SC EOCEP Algebra 1 test is South Carolina's state summative assessment aligned to the *South Carolina College- and Career-Ready Standards for Mathematics*. Based on their test scores, students are placed into one of five letter grades: *Letter Grade F*, *Letter Grade D*, *Letter Grade C*, *Letter Grade B*, and *Letter Grade A*. The *Letter Grade C* cut score demarks the minimum level of performance considered to be proficient for accountability purposes.

MAP Growth tests are an adaptive interim assessment aligned to state-specific content standards and administered in the fall, winter, and spring. Scores are reported on the RIT vertical scale with a range of 100 to 350. 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 spring), which are used to conduct the linking studies. The most recent norms study was conducted in 2025 (NWEA, 2025) for the general mathematics, reading, language arts, and science tests.

## 2. Methods

### 2.1. Data Collection

This linking study is based on data from the Spring 2024 administration of the MAP Growth assessment in Math 6+ and the SC EOCEP in Algebra 1. Each student's state testing record was matched to their MAP Growth scores 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 Math 6+ and SC EOCEP Algebra 1 assessments in Spring 2024 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's test-taking student population in terms of race, sex, and SC EOCEP letter grades. 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 SC EOCEP letter grades 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 Math 6+ and SC EOCEP in Algebra 1, 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 the MAP Growth Math 6+ (that reference the RIT scale) correlate to the scores obtained from the SC EOCEP Algebra 1 test (that references some other scale)?" 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 spring SC EOCEP Algebra 1 test are reported so that educators can track learners' progress toward proficiency on the spring SC EOCEP Algebra 1 summative test. Percentile ranks based on the most recent NWEA norms are also provided. These are useful for understanding how students' scores compare with peers

nationwide and the relative rigor of a state’s performance level designations for its summative assessment.

The equipercentile linking method (Kolen & Brennan, 2004) was used to identify the MAP Growth RIT scores for MAP Growth Math 6+ that correspond to the spring SC EOCEP in Algebra 1 letter grade 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., spring SC EOCEP Algebra 1 test). 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 spring SC EOCEP Algebra 1 test on the scale of MAP Growth,  $P(x)$  is the percentile rank of a given score on the spring SC EOCEP Algebra 1 test, 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. This information was used to calculate the fall and winter cut scores for MAP Growth Math 6+ in grades 6–10. 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 score (e.g., fall or winter) to the spring RIT score.

## 2.5. Classification Accuracy

The degree to which MAP Growth predicts student proficiency status on the spring SC EOCEP Algebra 1 summative test 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 (*Letter Grade C* or higher) or not proficient (lower than *Letter Grade C*) on the spring SC EOCEP Algebra 1 summative test. Table 2.1 describes the classification accuracy statistics provided in this report (Pommerich et al., 2004).

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

Statistic	Description	Interpretation
Overall Classification Accuracy Rate	$(TP + TN) / (\text{total sample size})$	Proportion of the study sample whose proficiency classification on the state test was correctly predicted by MAP Growth cut scores
False Negative (FN) Rate	$FN / (FN + TP)$	Proportion of students identified by MAP Growth as not proficient in those observed as proficient on the state test

Statistic	Description	Interpretation
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 *Letter Grade C* RIT cut score 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 (*Letter Grade C* or higher) 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, the MAP Growth conditional growth norms data were also used to calculate the probability of reaching proficiency on the spring SC EOCEP Algebra 1 summative test based on a student's RIT scores from fall and winter:

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

where:

- $\Phi$  is the standard normal cumulative distribution function,
- $RIT_{previous}$  is the student's RIT score in fall or winter,
- $g$  is the expected growth from the previous RIT (e.g., fall or winter) to the spring RIT,
- $RIT_{SpringCut}$  is the MAP Growth *Letter Grade C* cut score for spring, and
- $SD$  is the conditional standard deviation of the expected growth,  $g$ .

The equation below was used to estimate the probability of a student achieving proficiency performance on the spring SC EOCEP Algebra 1 summative test based on their spring RIT score ( $RIT_{Spring}$ ):

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

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

### 3. Results

#### 3.1. Study Sample

Only students who have scores on both the MAP Growth Math 6+ and the SC EOCEP in Algebra 1 assessments during Spring 2024 were included in the study sample. The spring SC EOCEP Algebra 1 data used in this study were collected from 37 schools within 4 districts in South Carolina. Table 3.1 presents the distributions of students by race, sex, and letter grade in the original unweighted study sample, the target population, and the post-stratification weighted study sample. The demographic distributions of the sample after weighting are almost identical to the student population distributions for the spring SC EOCEP in Algebra 1.

**Table 3.1. Linking Study Sample Demographics (Unweighted/Population/Weighted)**

Demographic Subgroup		% Students		
		Unweighted	Population	Weighted
Total N		1,407	67,580	1,407
Race	Black or African American	12.6	31.7	31.8
	Hispanic or Latino	9.3	13.9	13.9
	Other <sup>a</sup>	3.5	2.1	2.1
	Two or more races	3.1	5.3	5.3
	White	71.6	47.0	46.9
Sex	Female	47.8	48.3	48.4
	Male	52.2	51.7	51.6
Letter Grade	<i>Letter Grade F</i>	8.2	27.5	27.5
	<i>Letter Grade D</i>	9.0	21.8	21.8
	<i>Letter Grade C</i>	18.5	22.4	22.4
	<i>Letter Grade B</i>	25.5	15.0	15.1
	<i>Letter Grade A</i>	38.8	13.3	13.3

<sup>a</sup> The “Other” category includes races of Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, and Not Reported.

#### 3.2. Descriptive Statistics

Table 3.2 presents descriptive statistics of the MAP Growth Math 6+ and SC EOCEP Algebra 1 test scores from Spring 2024, including the correlation coefficient ( $r$ ) between them. The coefficient between the scores is 0.79. This value indicates a high positive correlation among the scores, which is important validity evidence for the claim that MAP Growth Math 6+ scores are good predictors of performance on the spring SC EOCEP in Algebra 1.

**Table 3.2. Descriptive Statistics of Test Scores**

Assessment	N	$r$	Mean	SD	Min.	Max.
MAP Growth Math 6+	1,407	0.79	235.5	24.8	146	304
SC EOCEP Algebra 1			70.8	16.0	34	100

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

### 3.3. MAP Growth Cut Scores

Table 3.3 presents the spring SC EOCEP Algebra 1 scale score ranges and the corresponding MAP Growth Math 6+ RIT cut scores and percentile ranges by 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 letter grade on the spring SC EOCEP Algebra 1 summative test when MAP Growth Math 6+ is taken in the fall, winter, and spring. For example, a grade 6 student who obtained a MAP Growth Math 6+ RIT score of 227 in the fall is likely to achieve *Letter Grade C* on the spring SC EOCEP Algebra 1 test. A grade 6 student who obtained a MAP Growth Math 6+ RIT score of 234 in the winter is also likely to achieve *Letter Grade C* on the spring SC EOCEP Algebra 1 test. 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 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 letter grade could be different from the projections presented in this report. Partners are therefore encouraged to use the projected letter grade in students' score reports, since these reflect the specific instructional weeks set by partners.

**Table 3.3. MAP Growth Cut Scores—MAP Growth Math 6+ & SC EOCEP Algebra 1**

SC EOCEP Algebra 1										
Level	Letter Grade F		Letter Grade D		Letter Grade C		Letter Grade B		Letter Grade A	
Scale Score	0–59		60–69		70–79		80–89		90–100	
MAP Growth Math 6+										
Grade	Letter Grade F		Letter Grade D		Letter Grade C		Letter Grade B		Letter Grade A	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
<b>Fall</b>										
6	100–213	1–58	214–226	59–84	<b>227</b> –237	85–95	238–246	96–98	247–350	99–99
7	100–216	1–49	217–230	50–78	<b>231</b> –241	79–92	242–251	93–97	252–350	98–99
8	100–216	1–38	217–230	39–68	<b>231</b> –241	69–85	242–251	86–94	252–350	95–99
9	100–218	1–36	219–234	37–71	<b>235</b> –246	72–88	247–256	89–96	257–350	97–99
10	100–217	1–31	218–233	32–64	<b>234</b> –246	65–85	247–256	86–94	257–350	95–99
<b>Winter</b>										
6	100–219	1–58	220–233	59–84	<b>234</b> –244	85–94	245–255	95–98	256–350	99–99
7	100–220	1–49	221–235	50–78	<b>236</b> –246	79–91	247–256	92–97	257–350	98–99
8	100–220	1–39	221–234	40–67	<b>235</b> –246	68–85	247–256	86–94	257–350	95–99
9	100–221	1–38	222–236	39–69	<b>237</b> –247	70–85	248–257	86–94	258–350	95–99
10	100–220	1–33	221–236	34–64	<b>237</b> –247	65–81	248–257	82–91	258–350	92–99
<b>Spring</b>										
6	100–223	1–57	224–237	58–82	<b>238</b> –248	83–93	249–258	94–97	259–350	98–99
7	100–223	1–49	224–237	50–76	<b>238</b> –248	77–89	249–258	90–96	259–350	97–99
8	100–223	1–39	224–237	40–66	<b>238</b> –248	67–83	249–258	84–92	259–350	93–99
9	100–223	1–40	224–237	41–66	<b>238</b> –248	67–82	249–258	83–91	259–350	92–99
10	100–223	1–36	224–237	37–61	<b>238</b> –248	62–78	249–258	79–88	259–350	89–99

Note. Bold numbers indicate the cut scores considered to be at least proficient for accountability purposes.

### 3.4. Classification Accuracy

Table 3.4 presents the classification accuracy summary statistics, including the overall classification accuracy rate. These results indicate how well MAP Growth Math 6+ spring RIT scores predict proficiency on the spring SC EOCEP Algebra 1 summative test, providing insight into the predictive validity of MAP Growth. The overall classification accuracy rate is 0.84 for the prediction from the MAP Growth Math 6+ test. This value suggests that the RIT cut scores are good at classifying students as proficient (*Letter Grade C* or higher) or not proficient (lower than *Letter Grade C*) on the spring SC EOCEP in Algebra 1.

Although the results show that MAP Growth scores can be used to predict student proficiency on the spring SC EOCEP Algebra 1 test with relatively high accuracy, there is a notable limitation to how these results should be used and interpreted. The MAP Growth and SC EOCEP Algebra 1 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 3.4. Classification Accuracy Results**

N	Cut Score		Class. Accuracy	Rate		Sensitivity	Specificity	Precision	AUC
	MAP Growth Math 6+	SC EOCEP Algebra 1		FP	FN				
1,407	238	70	0.84	0.18	0.15	0.85	0.82	0.83	0.84

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

### 3.5. Proficiency Projections

Table 3.5 presents the estimated probabilities of achieving proficiency performance (*Letter Grade C* or higher) on the spring SC EOCEP Algebra 1 test based on RIT scores from fall, winter, or spring. Due to measurement error in all test scores, the *Letter Grade C* MAP Growth cuts do not guarantee that a student will reach proficiency on the spring SC EOCEP Algebra 1 test. Instead, they indicate a 50% chance that a student will reach a particular performance level. Therefore, these projections further elucidate the *Letter Grade C* cut scores by providing the likelihood of reaching proficiency on the spring SC EOCEP Algebra 1 test at a given percentile throughout the year.

For example, a grade 6 student at percentile 90 who obtained a MAP Growth Math 6+ score of 231 in the fall has a 69% chance of reaching proficiency on the SC EOCEP Algebra 1 test in spring. Additionally, an educator can also use the table to estimate that a grade 6 student who obtained a MAP Growth Math 6+ score of 245 in the winter has a 93% probability of reaching proficiency on the spring SC EOCEP Algebra 1 test.

**Table 3.5. Proficiency Projections Based on RIT Scores—MAP Growth Math 6+ & SC EOCEP Algebra 1**

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.
6	5	238	184	No	<0.01	187	No	<0.01	190	No	<0.01
	10	238	190	No	<0.01	194	No	<0.01	197	No	<0.01
	15	238	194	No	<0.01	198	No	<0.01	201	No	<0.01
	20	238	197	No	<0.01	201	No	<0.01	205	No	<0.01
	25	238	199	No	<0.01	204	No	<0.01	208	No	<0.01
	30	238	202	No	<0.01	207	No	<0.01	211	No	<0.01
	35	238	204	No	<0.01	209	No	<0.01	213	No	<0.01
	40	238	206	No	<0.01	212	No	<0.01	216	No	<0.01
	45	238	208	No	0.01	214	No	<0.01	218	No	<0.01
	50	238	210	No	0.01	216	No	0.01	220	No	<0.01
	55	238	212	No	0.02	218	No	0.01	223	No	<0.01
	60	238	214	No	0.04	220	No	0.03	225	No	<0.01
	65	238	216	No	0.07	223	No	0.07	227	No	<0.01
	70	238	219	No	0.13	225	No	0.11	230	No	0.01
	75	238	221	No	0.23	228	No	0.21	233	No	0.08
	80	238	224	No	0.36	231	No	0.34	236	No	0.28
85	238	227	Yes	0.50	234	Yes	0.50	239	Yes	0.61	
90	238	231	Yes	0.69	238	Yes	0.71	244	Yes	0.96	
95	238	237	Yes	0.89	245	Yes	0.93	251	Yes	>0.99	
7	5	238	189	No	<0.01	191	No	<0.01	192	No	<0.01
	10	238	195	No	<0.01	197	No	<0.01	199	No	<0.01
	15	238	199	No	<0.01	202	No	<0.01	204	No	<0.01
	20	238	203	No	<0.01	206	No	<0.01	208	No	<0.01
	25	238	206	No	<0.01	209	No	<0.01	211	No	<0.01
	30	238	208	No	<0.01	211	No	<0.01	214	No	<0.01
	35	238	211	No	0.01	214	No	<0.01	216	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.
	40	238	213	No	0.01	216	No	0.01	219	No	<0.01
	45	238	215	No	0.03	219	No	0.02	221	No	<0.01
	50	238	217	No	0.04	221	No	0.03	224	No	<0.01
	55	238	219	No	0.07	223	No	0.06	226	No	<0.01
	60	238	222	No	0.14	226	No	0.12	229	No	0.01
	65	238	224	No	0.20	228	No	0.18	231	No	0.02
	70	238	226	No	0.27	231	No	0.26	234	No	0.13
	75	238	229	No	0.40	233	No	0.35	237	No	0.39
	80	238	232	Yes	0.55	236	Yes	0.50	240	Yes	0.72
	85	238	235	Yes	0.69	240	Yes	0.70	244	Yes	0.96
	90	238	239	Yes	0.83	245	Yes	0.88	249	Yes	>0.99
	95	238	246	Yes	0.97	251	Yes	0.98	256	Yes	>0.99
8	5	238	192	No	<0.01	194	No	<0.01	196	No	<0.01
	10	238	199	No	<0.01	201	No	<0.01	203	No	<0.01
	15	238	203	No	<0.01	206	No	<0.01	208	No	<0.01
	20	238	207	No	<0.01	210	No	<0.01	212	No	<0.01
	25	238	210	No	0.01	213	No	<0.01	215	No	<0.01
	30	238	212	No	0.01	216	No	0.01	218	No	<0.01
	35	238	215	No	0.03	219	No	0.02	221	No	<0.01
	40	238	217	No	0.05	221	No	0.04	224	No	<0.01
	45	238	220	No	0.10	224	No	0.08	226	No	<0.01
	50	238	222	No	0.15	226	No	0.13	229	No	0.01
	55	238	224	No	0.21	228	No	0.19	231	No	0.02
	60	238	227	No	0.32	231	No	0.31	234	No	0.13
	65	238	229	No	0.41	233	No	0.40	237	No	0.39
	70	238	232	Yes	0.55	236	Yes	0.55	239	Yes	0.61
	75	238	234	Yes	0.63	239	Yes	0.65	242	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.
	80	238	237	Yes	0.75	242	Yes	0.77	246	Yes	0.99
	85	238	241	Yes	0.87	246	Yes	0.90	250	Yes	>0.99
	90	238	246	Yes	0.96	251	Yes	0.97	255	Yes	>0.99
	95	238	252	Yes	0.99	258	Yes	>0.99	262	Yes	>0.99
9	5	238	196	No	0.01	196	No	<0.01	194	No	<0.01
	10	238	202	No	0.02	203	No	0.01	202	No	<0.01
	15	238	207	No	0.04	207	No	0.01	207	No	<0.01
	20	238	210	No	0.06	211	No	0.02	211	No	<0.01
	25	238	213	No	0.10	214	No	0.04	215	No	<0.01
	30	238	216	No	0.12	217	No	0.07	218	No	<0.01
	35	238	218	No	0.15	220	No	0.09	221	No	<0.01
	40	238	220	No	0.19	222	No	0.12	223	No	<0.01
	45	238	223	No	0.22	225	No	0.18	226	No	<0.01
	50	238	225	No	0.27	227	No	0.23	229	No	0.01
	55	238	227	No	0.31	230	No	0.28	231	No	0.02
	60	238	229	No	0.34	232	No	0.34	234	No	0.13
	65	238	232	No	0.42	235	No	0.43	237	No	0.39
	70	238	234	No	0.47	237	Yes	0.50	240	Yes	0.72
	75	238	237	Yes	0.53	240	Yes	0.60	243	Yes	0.92
	80	238	240	Yes	0.61	243	Yes	0.69	247	Yes	0.99
85	238	243	Yes	0.69	247	Yes	0.80	251	Yes	>0.99	
90	238	248	Yes	0.80	252	Yes	0.89	256	Yes	>0.99	
95	238	254	Yes	0.89	259	Yes	0.97	263	Yes	>0.99	
10	5	238	196	No	0.02	196	No	<0.01	195	No	<0.01
	10	238	203	No	0.04	204	No	0.01	203	No	<0.01
	15	238	208	No	0.07	208	No	0.02	208	No	<0.01
	20	238	211	No	0.10	212	No	0.05	213	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.
	25	238	214	No	0.12	216	No	0.07	216	No	<0.01
	30	238	217	No	0.17	219	No	0.11	220	No	<0.01
	35	238	220	No	0.22	222	No	0.16	223	No	<0.01
	40	238	222	No	0.24	224	No	0.20	226	No	<0.01
	45	238	224	No	0.28	227	No	0.24	229	No	0.01
	50	238	227	No	0.35	229	No	0.30	231	No	0.02
	55	238	229	No	0.37	232	No	0.38	234	No	0.13
	60	238	232	No	0.45	235	No	0.44	237	No	0.39
	65	238	234	Yes	0.50	237	Yes	0.50	240	Yes	0.72
	70	238	237	Yes	0.55	240	Yes	0.59	243	Yes	0.92
	75	238	239	Yes	0.60	243	Yes	0.68	246	Yes	0.99
	80	238	242	Yes	0.65	246	Yes	0.76	250	Yes	>0.99
	85	238	246	Yes	0.74	250	Yes	0.84	254	Yes	>0.99
	90	238	251	Yes	0.83	255	Yes	0.92	260	Yes	>0.99
	95	238	257	Yes	0.91	263	Yes	0.98	268	Yes	>0.99

Note. Prob. = Probability.

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