Predicting Performance on the Illinois Assessment of Readiness (IAR) Based on NWEA MAP Growth Scores

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NWEA Psychometrics and Analytics

Linking Study Updates

Date	Description
2021-01	Conducted a linking study for grades 3–8 in mathematics and ELA/literacy based on the 2020 norms and Spring 2019 data.
2025-08	Updated the linking study based on the 2025 norms.

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

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Executive Summary

To predict student achievement on the Illinois Assessment of Readiness (IAR) in grades 3–8 English language arts/literacy (ELA/L) and mathematics, NWEA® conducted a linking study using Spring 2019 data to derive Rasch Unit (RIT) cut scores on the MAP® Growth™ assessments that correspond to the IAR performance levels. With this information, educators can identify students at risk of failing to meet state proficiency standards early in the year and provide tailored educational interventions. The linking study has been updated since the previous version to incorporate the most recent 2025 NWEA MAP Growth norms (NWEA, 2025).

Table E.1 presents the IAR Level 4 performance level cut scores and the corresponding MAP Growth RIT cut scores that allow teachers to identify students who are on track for proficiency (Level 4 or higher) on the state summative test and those who are not. For example, the Level 4 cut score on the IAR grade 3 ELA/L test is 750. A grade 3 student with a MAP Growth reading RIT score of 198 in the fall is likely to meet proficiency on the IAR ELA/L test in the spring, whereas a grade 3 student with a MAP Growth reading RIT score lower than 198 in the fall is in jeopardy of not meeting proficiency. MAP Growth cut scores for grade 2 are also provided so that educators can track early learners' progress toward proficiency on the IAR test by grade 3. These cut scores were derived based on the grade 3 cuts and the 2025 NWEA growth norms for the adjacent grade (i.e., grades 2 to 3).

Table E.1. MAP Growth Cut Scores for IAR Proficiency

Assessment		Level 4 Cut Scores by Grade						
		2	3	4	5	6	7	8
ELA-L/Reading								
IAR Spring		–	750	750	750	750	750	750
MAP Growth	Fall	185	198	210	216	223	225	229
	Winter	192	202	213	218	224	226	230
	Spring	195	205	214	219	225	227	231
Mathematics								
IAR Spring		–	750	750	750	750	750	750
MAP Growth	Fall	188	197	215	225	230	236	243
	Winter	196	206	223	231	237	241	248
	Spring	201	212	228	235	241	243	250

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

E.1. Assessment Overview

The IAR grades 3–8 ELA/L and mathematics tests are Illinois' state summative assessments aligned to the Common Core State Standards (CCSS). Based on their test scores, students are placed into one of five performance levels: Level 1: *Did not yet meet expectations*, Level 2: *Partially met expectations*, Level 3: *Approached expectations*, Level 4: *Met expectations*, and Level 5*: Exceeded expectations*. These tests are used to provide evidence of student achievement in ELA and mathematics for various test score uses, such as determining whether students are on track for college and career readiness. The Level 4 cut score demarks the minimum level of achievement considered to be proficient for accountability purposes. MAP Growth tests are adaptive interim assessments aligned to state-specific content standards and administered in the fall, winter, and spring. Scores are reported on the RIT vertical scale with a range of 100–350.

E.2. Linking Methods

Based on scores from the Spring 2019 test administration, the equipercentile linking method was used to identify the spring MAP Growth scores that correspond to the spring IAR performance level cut scores. MAP Growth spring cut scores for grade 2 were then derived from the spring cuts for grade 3 and the growth norms for the adjacent grade (i.e., grades 2 to 3). Similarly, the MAP Growth cut scores for the fall and winter administrations of all grades were derived from the spring administration cuts and the growth norms for either fall to spring or winter to spring, respectively. The spring cuts[1] for mathematics were adjusted for score alignment before deriving the cuts for grade 2 spring and for all grades' fall and winter administrations.

E.3. Student Sample

Only students who took both the MAP Growth and IAR assessments in Spring 2019 were included in the study sample. Table E.2 presents the weighted numbers of Illinois students from 34 districts and 670 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 performance 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.

[1] To enhance content validity, NWEA developed an Enhanced Item-Selection Algorithm (EISA) for the MAP Growth assessment to prioritize grade-level content. A pilot study (Meyer et al., 2023) showed that students taking MAP Growth with EISA demonstrated higher average math scores compared with those taking traditional MAP Growth. To improve score comparability, NWEA (Lewis & Kuhfeld, 2024) developed concordance tables to adjust mathematics scores from traditional assessments to align with scores from MAP Growth with EISA, or vice versa. Given that the data for this study were collected from traditional MAP Growth tests but that the results will be used for MAP Growth with EISA, the spring cuts for mathematics were adjusted using the concordance tables before being used to derive other cut scores. This score adjustment will become unnecessary for future linking studies once the new data from EISA tests are collected.

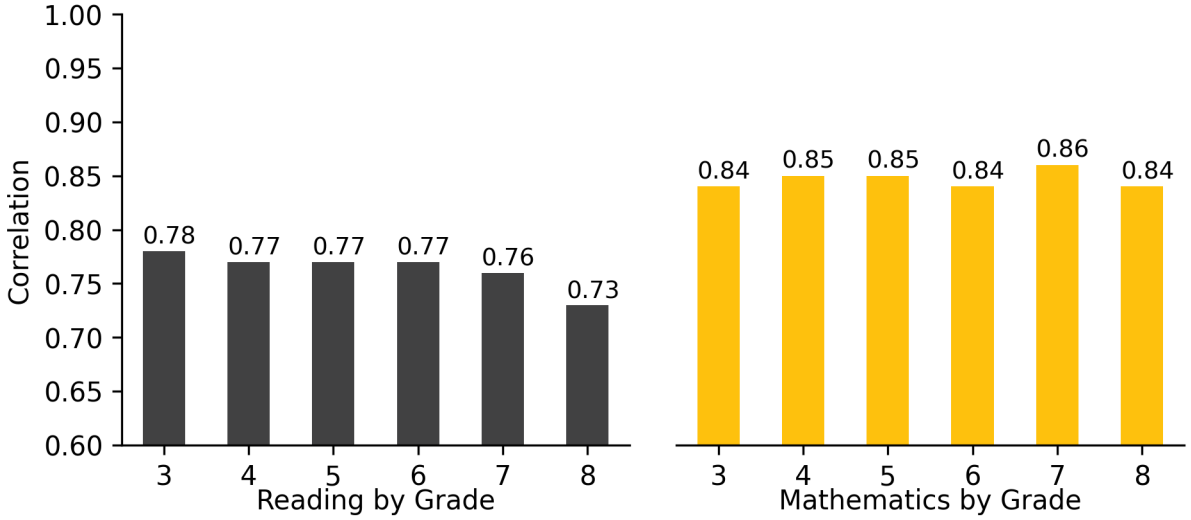
Table E.2. Linking Study Sample

Grade	# Students	
	ELA-L/Reading	Mathematics
3	34,780	34,226
4	35,465	34,722
5	36,243	35,764
6	36,569	36,373
7	34,537	34,208
8	33,549	33,242

E.4. Test Score Relationships

Correlations between MAP Growth RIT scores and IAR scores range from 0.73 to 0.86 across content areas, as shown in Figure E.1. These values indicate a strong relationship among the scores, which is important validity evidence for the claim that MAP Growth scores are good predictors of performance on the IAR assessments.

Figure E.1. Correlations Between MAP Growth and IAR Test Scores

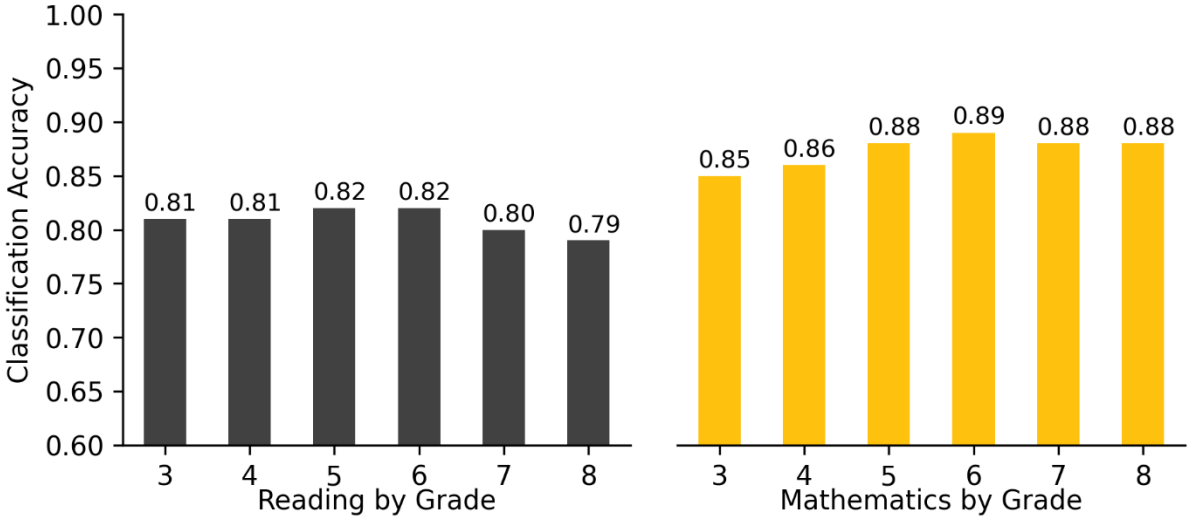


E.5. Accuracy of MAP Growth Classifications

Figure E.2 presents the classification accuracy statistics that show the proportion of students correctly classified by their RIT scores as proficient (Level 4 or higher) or not proficient (lower than Level 4) on the IAR tests.[2] For example, the MAP Growth reading grade 3 Level 4 cut score has a 0.81 accuracy rate, meaning it accurately classified student achievement on the state test for 81% of the sample. The results range from 0.79 to 0.89 across content areas, indicating that RIT scores have a high accuracy rate of identifying student proficiency on the IAR tests.

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

Figure E.2. Accuracy of MAP Growth Classifications



1. Introduction

1.1. Purpose of the Study

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

This report presents results from a linking study conducted by NWEA in January 2021 to statistically connect the scores of the Illinois Assessment of Readiness (IAR) grades 3–8 English language arts/literacy (ELA/L) and mathematics assessments with Rasch Unit (RIT) scores from the MAP Growth assessments taken during the Spring 2019 term. The linking study has been updated since the previous version to incorporate the most recent 2025 NWEA MAP Growth norms (NWEA, 2025). In this updated study, MAP Growth cut scores are also included for grade 2 so that educators can track early learners' progress toward proficiency on the IAR 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 IAR performance levels using the equipercentile linking procedure for the spring results and the 2025 norms for the fall and winter results
4. Classification accuracy statistics to determine the degree to which MAP Growth accurately predicts student proficiency status on the IAR tests
5. The probability of achieving grade-level proficiency on the IAR assessment based on MAP Growth RIT scores from fall, winter, and spring using the 2025 norms

1.2. Assessment Overview

The IAR grades 3–8 ELA/L and mathematics summative assessments are aligned to the Common Core State Standards (CCSS). Each assessment has four cut scores (i.e., the minimum score a student must get on a test to be placed in a certain performance level) that distinguish between the following performance levels: Level 1: *Did not yet meet expectations*, Level 2: *Partially met expectations*, Level 3: *Approached expectations*, Level 4: *Met expectations*, and Level 5: *Exceeded expectations*. The Level 4 cut score demarks the minimum level of performance considered to be proficient for accountability purposes.

MAP Growth interim assessments from NWEA are computer adaptive and aligned to state-specific content standards. Scores are reported on the RIT vertical scale with a range of 100–350. Each content area has its own scale. To aid the interpretation of scores, NWEA periodically conducts norming studies of student and school performance on MAP Growth. Achievement status norms show how well a student performed on the MAP Growth test compared with students in the norming group by associating the student's performance on the MAP Growth test, expressed as a RIT score, with a percentile ranking. Growth norms provide expected score gains across test administrations (e.g., the relative evaluation of a student's growth from fall to spring). The most recent norms study was conducted in 2025 (NWEA, 2025).

2. Methods

2.1. Data Collection

This linking study is based on data from the Spring 2019 administrations of the MAP Growth and IAR assessments. NWEA requested that Illinois districts recruited to participate in the study share their student and score data for the target term. Districts also permitted NWEA to access students' associated MAP Growth scores from the NWEA in-house database. Once state score information was available to NWEA, each student's state testing record was matched to their MAP Growth score by using the student's first and last names, date of birth, student ID, and other available identifying information. Only students who took both the MAP Growth and IAR assessments in Spring 2019 were included in the study sample.

2.2. Post-Stratification Weighting

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

1. Calculate marginal distributions of race, sex, and performance level for the sample and population.
2. Calculate post-stratification weights with the rake function from the survey package in R (Lumley, 2019).
3. Apply the weights to the sample before conducting the linking study analyses.

2.3. MAP Growth Cut Scores

The equipercentile linking method (Kolen & Brennan, 2004) was used to identify the spring MAP Growth RIT scores that correspond to the spring IAR performance level cut scores. Spring cuts for grade 2 were derived based on the cuts for grade 3 and the 2025 NWEA growth norms. RIT fall and winter cut scores that predict proficiency (Level 4 or higher) on the spring IAR test were then projected using the 2025 growth norms. Percentile ranks are also provided that show how a nationally representative sample of students in the same grade scored on MAP Growth for each administration, which is an important interpretation of RIT scores. This is useful for understanding (1) how student scores compare with peers nationwide and (2) the relative rigor of a state's performance level designations for its summative assessment.

The MAP Growth spring cut scores for grades 3–8 could be calculated using the equipercentile linking method because that data are directly connected to the IAR spring data used in the study. 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., IAR). 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 IAR tests on the scale of MAP Growth, $P(x)$ is the percentile rank of a given score on the IAR tests, and G^{-1} is the inverse of the percentile rank function for MAP Growth that indicates the score on MAP Growth corresponding to a given percentile. Polynomial loglinear pre-smoothing was applied to reduce irregularities of the score distributions and equipercentile linking curve.

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

$$RIT_{PredSpring} = RIT_{previous} + g$$

where:

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

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

2.4. Classification Accuracy

The degree to which MAP Growth predicts student proficiency status on the IAR tests can be described using classification accuracy statistics based on the MAP Growth spring RIT cut scores that show the proportion of students correctly classified by their RIT scores as proficient (Level 4 or higher) or not proficient (lower than Level 4). Table 2.1 describes the classification accuracy statistics provided in this report (Pommerich et al., 2004). The results are based on the Spring 2019 MAP Growth and IAR data for the Level 4 cut score.

Table 2.1. Description of Classification Accuracy Summary Statistics

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

Statistic	Description	Interpretation
Specificity	TN / (TN + FP)	Proportion of students identified by MAP Growth as not proficient in those observed as such on the state test
Precision	TP / (TP + FP)	Proportion of students observed as proficient on the state test in those identified as such by the MAP Growth test
Area Under the Curve (AUC)	Area under the receiver operating characteristics (ROC) curve	How well MAP Growth cut scores separate the study sample into proficiency categories that match those from the state test cut scores. An AUC at or above 0.80 is considered "good" accuracy.

Note. FP = false positives; FN = false negatives; TP = true positives; TN = true negatives.

2.5. Proficiency Projections

Given that all test scores contain measurement errors, reaching the Level 4 RIT cut does not guarantee that a student is proficient on the state test. Instead, it can be claimed that a student meeting the RIT cut score has a 50% chance of reaching proficiency (Level 4 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 (and the projected grade 2 cut scores), the MAP Growth conditional growth norms data were also used to calculate the probability of reaching proficiency on the IAR test based on a student's RIT scores from fall, winter, and spring. The equation below was used to calculate the probability of a student achieving proficiency performance on the IAR test based on their fall or winter RIT score:

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

where:

- Φ is a standardized normal cumulative distribution,
- $RIT_{previous}$ is the student's RIT score in fall or winter,
- g is the expected growth from the previous RIT (e.g., fall or winter) to the spring RIT,
- $RIT_{SpringCut}$ is the MAP Growth Level 4 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 IAR test based on their spring RIT score (RIT_{Spring}):

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

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

3. Results

3.1. Study Sample

Only students who took both the MAP Growth and IAR assessments in Spring 2019 were included in the study sample. Data used in this study were collected from 34 districts and 670 schools in Illinois. Table 3.1 presents the demographic distributions of race, sex, and performance level in the original unweighted study sample. Table 3.2 presents the distributions of the student population who took the Spring 2019 IAR tests. Since the unweighted data are different from the general IAR 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 IAR student population distributions. The analyses in this study were therefore conducted based on the weighted sample.

Table 3.1. Linking Study Sample Demographics (Unweighted)

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
ELA-L/Reading							
	Total N	34,780	35,430	36,207	36,569	34,537	33,549
Race	American Indian/Alaskan Native	0.6	0.7	0.9	0.9	1.1	1.1
	Asian	5.9	5.8	5.5	5.4	5.6	5.8
	Black	28.3	25.7	25.9	26.2	25.0	24.8
	Hispanic	39.3	41.6	42.6	43.2	43.1	43.6
	Multi-race	2.0	2.0	1.7	1.6	1.7	1.5
	Native Hawaiian/Pacific Islander	0.1	0.2	0.2	0.3	0.4	0.4
	White	23.8	24.0	23.3	22.3	23.3	22.9
Sex	Female	49.3	49.8	49.4	49.3	49.5	49.2
	Male	50.7	50.2	50.6	50.7	50.5	50.8
Performance Level	Level 1: *Did Not Meet*	25.7	23.6	18.3	18.1	21.5	23.0
	Level 2: *Partially Met*	17.3	23.2	25.4	24.5	21.6	21.3
	Level 3: *Approached*	19.9	24.9	26.7	30.0	25.1	24.7
	Level 4*: Met*	32.0	23.2	27.1	24.1	23.8	25.9
	Level 5: *Exceeded*	5.2	5.1	2.5	3.2	8.1	5.2
Mathematics							
	Total N	34,226	34,722	35,764	36,373	34,208	33,242
Race	American Indian/Alaskan Native	0.5	0.5	0.7	0.9	1.0	1.1
	Asian	6.1	5.9	5.4	5.5	5.6	5.8
	Black	28.5	26.1	26.1	26.3	25.1	24.9
	Hispanic	38.7	41.2	42.6	42.9	42.9	43.3
	Multi-race	2.0	2.0	1.7	1.7	1.7	1.5
	Native Hawaiian/Pacific Islander	0.2	0.2	0.2	0.3	0.4	0.4
	White	23.9	24.0	23.4	22.5	23.3	23.0
Sex	Female	49.4	49.7	49.4	49.3	49.5	49.2
	Male	50.6	50.3	50.6	50.7	50.5	50.8

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
Performance Level	Level 1: *Did Not Meet*	16.2	20.4	16.7	20.5	13.7	30.8
	Level 2: *Partially Met*	22.8	23.6	33.2	33.3	31.8	23.5
	Level 3: *Approached*	24.3	27.3	25.7	24.9	29.6	18.4
	Level 4*: Met*	29.7	26.1	20.6	18.3	20.8	23.5
	Level 5: *Exceeded*	7.1	2.5	3.8	3.0	4.0	3.8

Table 3.2. Spring 2019 IAR Student Population Demographics

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
ELA/L							
	Total N	137,092	140,534	144,713	146,878	143,739	142,244
Race	American Indian/Alaskan Native	0.2	0.2	0.3	0.2	0.2	0.2
	Asian	5.3	5.2	5.1	4.9	5.0	5.2
	Black	17.5	16.8	16.8	16.9	16.4	15.9
	Hispanic	26.1	27.0	27.3	27.6	27.3	27.1
	Multi-race	4.0	3.9	3.8	3.7	3.5	3.3
	Native Hawaiian/Pacific Islander	0.1	0.1	0.1	0.1	0.1	0.1
	White	46.8	46.7	46.6	46.6	47.5	48.1
Sex	Female	48.7	49.1	49.2	49.1	49.1	48.6
	Male	51.3	50.9	50.8	50.9	50.9	51.4
Performance Level	Level 1: *Did Not Meet*	22.4	17.2	13.3	13.2	15.3	16.7
	Level 2: *Partially Met*	18.5	19.9	21.4	20.6	17.9	18.1
	Level 3: *Approached*	22.7	26.1	27.4	31.0	25.3	25.4
	Level 4*: Met*	32.8	29.4	34.5	30.5	29.9	32.5
	Level 5: *Exceeded*	3.6	7.5	3.5	4.7	11.6	7.3
Mathematics							
	Total N	136,938	140,253	144,476	146,399	143,162	141,399
Race	American Indian/Alaskan Native	0.2	0.2	0.3	0.2	0.2	0.2
	Asian	5.3	5.2	5.1	4.9	5.0	5.2
	Black	17.5	16.8	16.7	16.8	16.3	15.8
	Hispanic	26.1	27.0	27.3	27.6	27.3	27.2
	Multi-race	4.0	3.9	3.8	3.7	3.5	3.3
	Native Hawaiian/Pacific Islander	0.1	0.1	0.1	0.1	0.1	0.1
	White	46.8	46.7	46.6	46.7	47.6	48.2
Sex	Female	48.7	49.1	49.2	49.1	49.1	48.6
	Male	51.3	50.9	50.8	50.9	50.9	51.4
Performance Level	Level 1: *Did Not Meet*	14.5	16.5	13.4	16.3	10.8	25.3
	Level 2: *Partially Met*	20.2	21.2	29.9	30.5	27.5	22.0
	Level 3: *Approached*	24.7	28.7	26.8	27.8	31.6	20.0
	Level 4*: Met*	33.0	30.6	25.0	22.1	25.4	28.3

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
	Level 5: *Exceeded*	7.6	3.0	4.9	3.3	4.7	4.4

Table 3.3. Linking Study Sample Demographics (Weighted)

Demographic Subgroup		% Students by Grade					
		3	4	5	6	7	8
ELA-L/Reading							
	Total N	34,780	35,465	36,243	36,569	34,537	33,549
Race	American Indian/Alaskan Native	0.2	0.2	0.3	0.2	0.2	0.2
	Asian	5.3	5.2	5.1	4.9	5.0	5.2
	Black	17.5	16.8	16.8	16.9	16.4	15.9
	Hispanic	26.1	27.0	27.3	27.6	27.3	27.1
	Multi-race	4.0	3.9	3.8	3.7	3.5	3.3
	Native Hawaiian/Pacific Islander	0.1	0.1	0.1	0.1	0.1	0.1
	White	46.8	46.7	46.6	46.6	47.5	48.1
Sex	Female	48.7	49.1	49.2	49.1	49.1	48.6
	Male	51.3	50.9	50.8	50.9	50.9	51.4
Performance Level	Level 1: *Did Not Meet*	22.4	17.2	13.3	13.2	15.3	16.7
	Level 2: *Partially Met*	18.5	19.9	21.4	20.6	17.9	18.1
	Level 3: *Approached*	22.7	26.1	27.4	31.0	25.3	25.4
	Level 4*: Met*	32.8	29.4	34.5	30.5	29.9	32.5
	Level 5: *Exceeded*	3.6	7.5	3.5	4.7	11.6	7.3
Mathematics							
	Total N	34,226	34,722	35,764	36,373	34,208	33,242
Race	American Indian/Alaskan Native	0.2	0.2	0.3	0.2	0.2	0.2
	Asian	5.3	5.2	5.1	4.9	5.0	5.2
	Black	17.5	16.8	16.7	16.8	16.3	15.8
	Hispanic	26.1	27.0	27.3	27.6	27.3	27.2
	Multi-race	4.0	3.9	3.8	3.7	3.5	3.3
	Native Hawaiian/Pacific Islander	0.1	0.1	0.1	0.1	0.1	0.1
	White	46.8	46.7	46.6	46.7	47.6	48.2
Sex	Female	48.7	49.1	49.2	49.1	49.1	48.6
	Male	51.3	50.9	50.8	50.9	50.9	51.4
Performance Level	Level 1: *Did Not Meet*	14.5	16.5	13.4	16.3	10.8	25.3
	Level 2: *Partially Met*	20.2	21.2	29.9	30.5	27.5	22.0
	Level 3: *Approached*	24.7	28.7	26.8	27.8	31.6	20.0
	Level 4*: Met*	33.0	30.6	25.0	22.1	25.4	28.3
	Level 5: *Exceeded*	7.6	3.0	4.9	3.3	4.7	4.4

3.2. Descriptive Statistics

Table 3.4 presents descriptive statistics of the MAP Growth and IAR test scores from Spring 2019, including the correlation coefficients (*r*) between them. The correlation coefficients between the scores range from 0.73 to 0.78 for ELA-L/reading and 0.84 to 0.86 for mathematics. These values indicate a strong relationship among the scores, which is important validity evidence for the claim that MAP Growth scores are good predictors of performance on the IAR assessments.

Table 3.4. Descriptive Statistics of Test Scores

Grade	N	*r*	IAR				MAP Growth			
			Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
ELA-L/Reading										
3	34,780	0.78	734.5	42.8	650	850	198.3	16.5	139	257
4	35,465	0.77	736.4	36.8	650	850	207.6	16.0	138	263
5	36,243	0.77	738.0	34.4	650	850	213.3	15.5	143	273
6	36,569	0.77	737.0	32.0	650	850	218.3	15.0	149	268
7	34,537	0.76	739.7	38.7	650	850	222.6	15.4	154	281
8	33,549	0.73	738.2	38.7	650	850	226.1	15.0	154	290
Mathematics										
3	34,226	0.84	739.5	36.3	650	850	204.3	14.5	131	278
4	34,722	0.85	734.6	34.2	650	850	214.6	16.0	132	287
5	35,764	0.85	733.4	32.1	650	850	222.3	18.0	136	304
6	36,373	0.84	728.8	32.0	650	850	225.5	17.0	161	316
7	34,208	0.86	735.2	30.0	650	850	231.7	18.8	157	323
8	33,242	0.84	730.9	40.5	650	850	237.1	19.8	157	322

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

3.3. MAP Growth Cut Scores

Table 3.5 and Table 3.6 present the IAR 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 performance level on the IAR 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 198 in the fall is likely to achieve Level 4 performance on the IAR ELA/L test. A grade 3 student who obtained a MAP Growth reading RIT score of 202 in the winter is also likely to achieve Level 4 performance on the IAR assessment. The winter cut score is higher than the fall cut score because growth is expected between fall and winter as students receive more instruction during the school year.

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

Table 3.5. MAP Growth Cut Scores—ELA-L/Reading

IAR ELA/L										
Grade	**Level 1: *Did Not Meet***		**Level 2: *Partially Met***		**Level 3: *Approached***		**Level 4: *Met***		**Level 5: *Exceeded***	
3	650–699		700–724		725–749		**750**–809		810–850	
4	650–699		700–724		725–749		**750**–789		790–850	
5	650–699		700–724		725–749		**750**–798		799–850	
6	650–699		700–724		725–749		**750**–789		790–850	
7	650–699		700–724		725–749		**750**–784		785–850	
8	650–699		700–724		725–749		**750**–793		794–850	
MAP Growth Reading										
Grade	**Level 1: *Did Not Meet***		**Level 2: *Partially Met***		**Level 3: *Approached***		**Level 4: *Met***		**Level 5: *Exceeded***	
	RIT	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**
Fall										
2	100–160	1–29	161–172	30–56	173–184	57–80	**185**–211	81–98	212–350	99–99
3	100–177	1–35	178–186	36–54	187–197	55–76	**198**–219	77–96	220–350	97–99
4	100–186	1–30	187–198	31–56	199–209	57–77	**210**–225	78–94	226–350	95–99
5	100–191	1–24	192–203	25–50	204–215	51–75	**216**–234	76–95	235–350	96–99
6	100–196	1–23	197–210	24–54	211–222	55–79	**223**–238	80–95	239–350	96–99
7	100–205	1–34	206–215	35–58	216–224	59–77	**225**–239	78–94	240–350	95–99
8	100–209	1–36	210–220	37–61	221–228	62–77	**229**–243	78–94	244–350	95–99
Winter										
2	100–167	1–30	168–178	31–54	179–191	55–80	**192**–216	81–98	217–350	99–99
3	100–182	1–34	183–191	35–54	192–201	55–74	**202**–222	75–96	223–350	97–99
4	100–189	1–29	190–202	30–57	203–212	58–77	**213**–226	78–93	227–350	94–99
5	100–194	1–24	195–206	25–50	207–217	51–74	**218**–235	75–95	236–350	96–99
6	100–198	1–23	199–212	24–54	213–223	55–78	**224**–239	79–95	240–350	96–99
7	100–206	1–33	207–216	34–57	217–225	58–76	**226**–240	77–94	241–350	95–99
8	100–210	1–35	211–221	36–61	222–229	62–77	**230**–244	78–94	245–350	95–99
Spring										
2	100–173	1–32	174–183	33–54	184–194	55–77	**195**–217	78–97	218–350	98–99
3	100–187	1–36	188–195	37–54	196–204	55–72	**205**–223	73–94	224–350	95–99
4	100–193	1–31	194–204	32–56	205–213	57–74	**214**–227	75–92	228–350	93–99

MAP Growth Reading										
Grade	Level 1: *Did Not Meet*		Level 2: *Partially Met*		Level 3: *Approached*		Level 4: *Met*		Level 5: *Exceeded*	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
5	100–197	1–26	198–208	27–50	209–218	51–72	**219**–236	73–94	237–350	95–99
6	100–201	1–26	202–213	27–54	214–224	55–77	**225**–240	78–95	241–350	96–99
7	100–208	1–36	209–217	37–56	218–226	57–75	**227**–241	76–93	242–350	94–99
8	100–212	1–38	213–222	39–61	223–230	62–77	**231**–245	78–94	246–350	95–99

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

Table 3.6. MAP Growth Cut Scores—Mathematics

IAR Mathematics					
Grade	**Level 1: *Did Not Meet***	**Level 2: *Partially Met***	**Level 3: *Approached***	**Level 4: *Met***	**Level 5: *Exceeded***
3	650–699	700–724	725–749	**750**–789	790–850
4	650–699	700–724	725–749	**750**–795	796–850
5	650–699	700–724	725–749	**750**–789	790–850
6	650–699	700–724	725–749	**750**–787	788–850
7	650–699	700–724	725–749	**750**–785	786–850
8	650–699	700–724	725–749	**750**–800	801–850

MAP Growth Mathematics										
Grade	**Level 1: *Did Not Meet***		**Level 2: *Partially Met***		**Level 3: *Approached***		**Level 4: *Met***		**Level 5: *Exceeded***	
	RIT	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**
Fall										
2	100–159	1–19	160–174	20–54	175–187	55–83	**188**–210	84–98	211–350	99–99
3	100–174	1–27	175–185	28–54	186–196	55–79	**197**–215	80–97	216–350	98–99
4	100–189	1–32	190–201	33–61	202–214	62–86	**215**–234	87–98	235–350	99–99
5	100–195	1–25	196–210	26–61	211–224	62–87	**225**–245	88–98	246–350	99–99
6	100–203	1–34	204–216	35–65	217–229	66–88	**230**–249	89–98	250–350	99–99
7	100–207	1–29	208–220	30–58	221–235	59–85	**236**–259	86–98	260–350	99–99
8	100–219	1–45	220–231	46–70	232–242	71–86	**243**–265	87–98	266–350	99–99
Winter										
2	100–167	1–19	168–182	20–54	183–195	55–82	**196**–218	83–98	219–350	99–99
3	100–182	1–27	183–194	28–55	195–205	56–78	**206**–224	79–97	225–350	98–99
4	100–196	1–32	197–209	33–62	210–222	63–85	**223**–243	86–98	244–350	99–99
5	100–200	1–26	201–216	27–61	217–230	62–85	**231**–253	86–98	254–350	99–99
6	100–209	1–35	210–222	36–65	223–236	66–88	**237**–258	89–98	259–350	99–99
7	100–211	1–30	212–224	31–58	225–240	59–85	**241**–265	86–98	266–350	99–99
8	100–223	1–45	224–235	46–69	236–247	70–86	**248**–270	87–98	271–350	99–99
Spring										
2	100–175	1–23	176–188	24–53	189–200	54–79	**201**–221	80–97	222–350	98–99
3	100–189	1–29	190–200	30–53	201–211	54–77	**212**–229	78–96	230–350	97–99
4	100–202	1–34	203–214	35–60	215–227	61–83	**228**–248	84–97	249–350	98–99

MAP Growth Mathematics										
Grade	Level 1: *Did Not Meet*		Level 2: *Partially Met*		Level 3: *Approached*		Level 4: *Met*		Level 5: *Exceeded*	
	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
5	100–204	1–27	205–220	28–60	221–234	61–84	**235**–256	85–98	257–350	99–99
6	100–213	1–36	214–226	37–63	227–240	64–86	**241**–261	87–98	262–350	99–99
7	100–214	1–31	215–227	32–58	228–242	59–83	**243**–266	84–98	267–350	99–99
8	100–226	1–45	227–238	46–68	239–249	69–84	**250**–271	85–97	272–350	98–99

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

3.4. Classification Accuracy

Table 3.7 presents the classification accuracy summary statistics, including the overall classification accuracy rates. These results indicate how well MAP Growth spring RIT scores predict proficiency on the IAR tests, providing insight into the predictive validity of MAP Growth. The overall classification accuracy rates range from 0.79 to 0.82 for ELA-L/reading and 0.85 to 0.89 for mathematics. These values suggest that the RIT cut scores are good at classifying students as proficient or not proficient on the IAR assessment.

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

Table 3.7. Classification Accuracy Results

Grade	N	Cut Score		Class. Accuracy	Rate		Sensitivity	Specificity	Precision	AUC
		MAP Growth	IAR		FP	FN				
ELA-L/Reading										
3	34,780	205	750	0.81	0.17	0.23	0.77	0.83	0.72	0.89
4	35,465	214	750	0.81	0.17	0.23	0.77	0.83	0.73	0.89
5	36,243	219	750	0.82	0.16	0.22	0.78	0.84	0.75	0.90
6	36,569	225	750	0.82	0.14	0.26	0.74	0.86	0.74	0.89
7	34,537	227	750	0.80	0.18	0.23	0.77	0.82	0.76	0.88
8	33,549	231	750	0.79	0.17	0.26	0.74	0.83	0.74	0.87
Mathematics										
3	34,226	209	750	0.85	0.12	0.18	0.82	0.88	0.82	0.93
4	34,722	222	750	0.86	0.09	0.24	0.76	0.91	0.81	0.93
5	35,764	232	750	0.88	0.08	0.21	0.79	0.92	0.81	0.95
6	36,373	237	750	0.89	0.07	0.20	0.80	0.93	0.79	0.95
7	34,208	241	750	0.88	0.10	0.16	0.84	0.90	0.79	0.95
8	33,242	246	750	0.88	0.09	0.18	0.82	0.91	0.81	0.95

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

3.5. Proficiency Projections

Table 3.8 and Table 3.9 present the estimated probability of achieving proficiency (Level 4 or higher) performance on the IAR test based on RIT scores from fall, winter, or spring. “Prob.” indicates the probability of obtaining proficient status on the IAR test in the spring. For example, a grade 3 student who obtained a MAP Growth reading score of 204 in the fall has a 71% chance of reaching proficiency performance on the IAR ELA/L test in the spring.

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

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 4	Prob.		Level 4	Prob.		Level 4	Prob.
2	5	195	142	No	<0.01	149	No	<0.01	153	No	<0.01
	10	195	148	No	<0.01	155	No	<0.01	159	No	<0.01
	15	195	152	No	<0.01	159	No	<0.01	164	No	<0.01
	20	195	156	No	<0.01	162	No	<0.01	167	No	<0.01
	25	195	159	No	0.01	165	No	<0.01	170	No	<0.01
	30	195	161	No	0.01	168	No	0.01	173	No	<0.01
	35	195	163	No	0.02	170	No	0.01	175	No	<0.01
	40	195	166	No	0.03	172	No	0.02	177	No	<0.01
	45	195	168	No	0.05	175	No	0.04	180	No	<0.01
	50	195	170	No	0.07	177	No	0.06	182	No	<0.01
	55	195	172	No	0.09	179	No	0.09	184	No	<0.01
	60	195	174	No	0.13	181	No	0.11	186	No	0.01
	65	195	177	No	0.22	183	No	0.17	188	No	0.02
	70	195	179	No	0.25	186	No	0.27	191	No	0.13
	75	195	182	No	0.37	188	No	0.36	193	No	0.28
	80	195	184	No	0.46	191	No	0.45	196	Yes	0.61
	85	195	188	Yes	0.59	194	Yes	0.59	200	Yes	0.92
	90	195	192	Yes	0.75	199	Yes	0.76	204	Yes	0.99
	95	195	198	Yes	0.89	205	Yes	0.93	210	Yes	>0.99
3	5	205	155	No	<0.01	160	No	<0.01	164	No	<0.01
	10	205	161	No	<0.01	167	No	<0.01	171	No	<0.01
	15	205	166	No	<0.01	171	No	<0.01	175	No	<0.01
	20	205	169	No	<0.01	175	No	<0.01	179	No	<0.01
	25	205	172	No	0.01	178	No	<0.01	182	No	<0.01
	30	205	175	No	0.01	180	No	0.01	184	No	<0.01
	35	205	178	No	0.03	183	No	0.02	187	No	<0.01
	40	205	180	No	0.05	185	No	0.03	189	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 4	Prob.		Level 4	Prob.		Level 4	Prob.
	45	205	182	No	0.06	188	No	0.06	192	No	<0.01
	50	205	185	No	0.11	190	No	0.09	194	No	<0.01
	55	205	187	No	0.16	192	No	0.14	196	No	0.01
	60	205	189	No	0.22	194	No	0.17	198	No	0.02
	65	205	192	No	0.29	197	No	0.27	201	No	0.13
	70	205	194	No	0.37	199	No	0.36	203	No	0.28
	75	205	197	No	0.46	202	Yes	0.5	206	Yes	0.61
	80	205	200	Yes	0.59	205	Yes	0.59	209	Yes	0.87
	85	205	204	Yes	0.71	209	Yes	0.76	213	Yes	0.99
	90	205	208	Yes	0.84	213	Yes	0.86	217	Yes	>0.99
	95	205	215	Yes	0.95	220	Yes	0.97	224	Yes	>0.99
	5	214	166	No	<0.01	170	No	<0.01	173	No	<0.01
	10	214	173	No	<0.01	177	No	<0.01	179	No	<0.01
	15	214	177	No	<0.01	181	No	<0.01	184	No	<0.01
	20	214	181	No	<0.01	184	No	<0.01	187	No	<0.01
	25	214	184	No	<0.01	187	No	<0.01	190	No	<0.01
	30	214	186	No	0.01	190	No	0.01	193	No	<0.01
	35	214	189	No	0.02	193	No	0.01	195	No	<0.01
	40	214	191	No	0.03	195	No	0.02	198	No	<0.01
4	45	214	194	No	0.05	197	No	0.04	200	No	<0.01
	50	214	196	No	0.08	199	No	0.07	202	No	<0.01
	55	214	198	No	0.12	202	No	0.1	204	No	<0.01
	60	214	200	No	0.17	204	No	0.16	207	No	0.02
	65	214	203	No	0.24	206	No	0.23	209	No	0.08
	70	214	205	No	0.32	209	No	0.35	211	No	0.2
	75	214	208	No	0.45	211	No	0.4	214	Yes	0.5
	80	214	211	Yes	0.55	214	Yes	0.55	217	Yes	0.8
	85	214	215	Yes	0.72	218	Yes	0.73	220	Yes	0.96

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 4	Prob.		Level 4	Prob.		Level 4	Prob.
	90	214	219	Yes	0.83	222	Yes	0.87	225	Yes	>0.99
	95	214	226	Yes	0.95	229	Yes	0.98	231	Yes	>0.99
5	5	219	175	No	<0.01	178	No	<0.01	180	No	<0.01
	10	219	181	No	<0.01	184	No	<0.01	186	No	<0.01
	15	219	186	No	<0.01	189	No	<0.01	191	No	<0.01
	20	219	189	No	<0.01	192	No	<0.01	194	No	<0.01
	25	219	192	No	0.01	195	No	<0.01	197	No	<0.01
	30	219	195	No	0.01	197	No	0.01	199	No	<0.01
	35	219	197	No	0.03	200	No	0.02	202	No	<0.01
	40	219	199	No	0.03	202	No	0.04	204	No	<0.01
	45	219	201	No	0.06	204	No	0.05	206	No	<0.01
	50	219	204	No	0.11	206	No	0.08	208	No	<0.01
	55	219	206	No	0.14	209	No	0.15	211	No	0.01
	60	219	208	No	0.2	211	No	0.18	213	No	0.04
	65	219	210	No	0.27	213	No	0.26	215	No	0.13
	70	219	213	No	0.36	215	No	0.35	217	No	0.28
	75	219	215	No	0.45	218	Yes	0.5	220	Yes	0.61
	80	219	218	Yes	0.6	221	Yes	0.65	223	Yes	0.87
	85	219	222	Yes	0.73	224	Yes	0.78	226	Yes	0.98
	90	219	226	Yes	0.86	228	Yes	0.9	230	Yes	>0.99
	95	219	232	Yes	0.97	235	Yes	0.99	237	Yes	>0.99
6	5	225	181	No	<0.01	183	No	<0.01	185	No	<0.01
	10	225	187	No	<0.01	189	No	<0.01	191	No	<0.01
	15	225	191	No	<0.01	193	No	<0.01	195	No	<0.01
	20	225	195	No	<0.01	197	No	<0.01	198	No	<0.01
	25	225	198	No	<0.01	199	No	<0.01	201	No	<0.01
	30	225	200	No	0.01	202	No	<0.01	203	No	<0.01
	35	225	202	No	0.01	204	No	0.01	206	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 4	Prob.		Level 4	Prob.		Level 4	Prob.
	40	225	205	No	0.03	206	No	0.02	208	No	<0.01
	45	225	207	No	0.03	209	No	0.04	210	No	<0.01
	50	225	209	No	0.06	211	No	0.05	212	No	<0.01
	55	225	211	No	0.09	213	No	0.08	214	No	<0.01
	60	225	213	No	0.14	215	No	0.13	216	No	0.01
	65	225	215	No	0.16	217	No	0.19	218	No	0.02
	70	225	218	No	0.27	219	No	0.26	221	No	0.13
	75	225	220	No	0.36	222	No	0.4	223	No	0.28
	80	225	223	Yes	0.5	225	Yes	0.55	226	Yes	0.61
	85	225	226	Yes	0.64	228	Yes	0.69	229	Yes	0.87
	90	225	231	Yes	0.84	232	Yes	0.84	233	Yes	0.99
	95	225	237	Yes	0.96	238	Yes	0.96	239	Yes	>0.99
7	5	227	185	No	<0.01	186	No	<0.01	187	No	<0.01
	10	227	191	No	<0.01	192	No	<0.01	193	No	<0.01
	15	227	195	No	<0.01	196	No	<0.01	197	No	<0.01
	20	227	198	No	<0.01	200	No	<0.01	201	No	<0.01
	25	227	201	No	0.01	202	No	<0.01	203	No	<0.01
	30	227	204	No	0.01	205	No	0.01	206	No	<0.01
	35	227	206	No	0.02	207	No	0.01	208	No	<0.01
	40	227	208	No	0.03	210	No	0.03	211	No	<0.01
	45	227	210	No	0.05	212	No	0.04	213	No	<0.01
	50	227	212	No	0.08	214	No	0.07	215	No	<0.01
	55	227	214	No	0.1	216	No	0.11	217	No	<0.01
	60	227	217	No	0.18	218	No	0.16	219	No	0.01
	65	227	219	No	0.24	220	No	0.23	221	No	0.04
	70	227	221	No	0.32	223	No	0.36	224	No	0.2
	75	227	224	No	0.45	225	No	0.45	226	No	0.39
	80	227	226	Yes	0.55	228	Yes	0.6	229	Yes	0.72

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 4	Prob.		Level 4	Prob.		Level 4	Prob.
	85	227	230	Yes	0.72	231	Yes	0.73	232	Yes	0.92
	90	227	234	Yes	0.85	235	Yes	0.86	237	Yes	>0.99
	95	227	240	Yes	0.96	241	Yes	0.97	243	Yes	>0.99
8	5	231	188	No	<0.01	189	No	<0.01	190	No	<0.01
	10	231	194	No	<0.01	195	No	<0.01	196	No	<0.01
	15	231	198	No	<0.01	199	No	<0.01	200	No	<0.01
	20	231	201	No	<0.01	203	No	<0.01	203	No	<0.01
	25	231	204	No	<0.01	205	No	<0.01	206	No	<0.01
	30	231	207	No	0.01	208	No	0.01	209	No	<0.01
	35	231	209	No	0.02	210	No	0.01	211	No	<0.01
	40	231	211	No	0.03	213	No	0.02	213	No	<0.01
	45	231	214	No	0.04	215	No	0.04	216	No	<0.01
	50	231	216	No	0.07	217	No	0.06	218	No	<0.01
	55	231	218	No	0.11	219	No	0.1	220	No	<0.01
	60	231	220	No	0.15	221	No	0.14	222	No	0.01
	65	231	222	No	0.21	223	No	0.2	224	No	0.02
	70	231	225	No	0.33	226	No	0.32	227	No	0.13
	75	231	227	No	0.41	228	No	0.41	229	No	0.28
	80	231	230	Yes	0.55	231	Yes	0.55	232	Yes	0.61
	85	231	233	Yes	0.67	235	Yes	0.72	236	Yes	0.92
	90	231	238	Yes	0.85	239	Yes	0.86	240	Yes	0.99
	95	231	244	Yes	0.96	245	Yes	0.96	246	Yes	>0.99

Table 3.9. Proficiency Projection Based on RIT Scores—Mathematics

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 4	Prob.		Level 4	Prob.		Level 4	Prob.
2	5	201	147	No	<0.01	155	No	<0.01	161	No	<0.01
	10	201	153	No	<0.01	161	No	<0.01	167	No	<0.01
	15	201	157	No	<0.01	165	No	<0.01	171	No	<0.01
	20	201	160	No	<0.01	168	No	<0.01	174	No	<0.01
	25	201	162	No	<0.01	171	No	<0.01	177	No	<0.01
	30	201	165	No	0.01	173	No	<0.01	179	No	<0.01
	35	201	167	No	0.01	175	No	0.01	181	No	<0.01
	40	201	169	No	0.02	177	No	0.01	183	No	<0.01
	45	201	171	No	0.03	179	No	0.02	185	No	<0.01
	50	201	173	No	0.06	181	No	0.03	187	No	<0.01
	55	201	175	No	0.07	183	No	0.06	189	No	<0.01
	60	201	177	No	0.11	185	No	0.09	192	No	0.01
	65	201	179	No	0.16	187	No	0.14	194	No	0.02
	70	201	181	No	0.23	189	No	0.18	196	No	0.08
	75	201	183	No	0.31	192	No	0.3	198	No	0.2
	80	201	186	No	0.4	194	No	0.4	201	Yes	0.5
	85	201	189	Yes	0.55	197	Yes	0.55	204	Yes	0.8
	90	201	193	Yes	0.69	201	Yes	0.7	208	Yes	0.98
	95	201	198	Yes	0.86	207	Yes	0.91	214	Yes	>0.99
3	5	212	158	No	<0.01	166	No	<0.01	171	No	<0.01
	10	212	164	No	<0.01	172	No	<0.01	177	No	<0.01
	15	212	168	No	<0.01	176	No	<0.01	181	No	<0.01
	20	212	171	No	<0.01	179	No	<0.01	185	No	<0.01
	25	212	174	No	<0.01	182	No	<0.01	188	No	<0.01
	30	212	176	No	<0.01	184	No	<0.01	190	No	<0.01
	35	212	178	No	0.01	186	No	<0.01	193	No	<0.01
	40	212	180	No	0.01	189	No	0.01	195	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 4	Prob.		Level 4	Prob.		Level 4	Prob.
	45	212	182	No	0.03	191	No	0.03	197	No	<0.01
	50	212	184	No	0.05	193	No	0.04	199	No	<0.01
	55	212	186	No	0.08	195	No	0.06	201	No	<0.01
	60	212	188	No	0.13	197	No	0.11	203	No	0.01
	65	212	190	No	0.19	199	No	0.17	206	No	0.04
	70	212	192	No	0.26	201	No	0.24	208	No	0.13
	75	212	195	No	0.4	204	No	0.39	211	No	0.39
	80	212	197	Yes	0.5	206	Yes	0.5	213	Yes	0.61
	85	212	200	Yes	0.65	210	Yes	0.66	217	Yes	0.92
	90	212	204	Yes	0.81	214	Yes	0.83	221	Yes	0.99
	95	212	210	Yes	0.94	220	Yes	0.96	227	Yes	>0.99
	5	228	171	No	<0.01	176	No	<0.01	180	No	<0.01
	10	228	177	No	<0.01	183	No	<0.01	187	No	<0.01
	15	228	181	No	<0.01	187	No	<0.01	191	No	<0.01
	20	228	184	No	<0.01	190	No	<0.01	195	No	<0.01
	25	228	186	No	<0.01	193	No	<0.01	198	No	<0.01
	30	228	189	No	<0.01	196	No	<0.01	201	No	<0.01
	35	228	191	No	<0.01	198	No	<0.01	203	No	<0.01
	40	228	193	No	<0.01	200	No	<0.01	206	No	<0.01
4	45	228	195	No	0.01	202	No	<0.01	208	No	<0.01
	50	228	197	No	0.01	204	No	0.01	210	No	<0.01
	55	228	199	No	0.02	207	No	0.02	212	No	<0.01
	60	228	201	No	0.04	209	No	0.02	215	No	<0.01
	65	228	203	No	0.07	211	No	0.04	217	No	<0.01
	70	228	205	No	0.11	213	No	0.08	220	No	0.01
	75	228	208	No	0.19	216	No	0.16	222	No	0.04
	80	228	210	No	0.27	219	No	0.28	225	No	0.2
	85	228	214	No	0.45	222	No	0.44	229	Yes	0.61

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 4	Prob.		Level 4	Prob.		Level 4	Prob.
	90	228	217	Yes	0.6	226	Yes	0.67	233	Yes	0.92
	95	228	223	Yes	0.84	232	Yes	0.9	240	Yes	>0.99
5	5	235	180	No	<0.01	183	No	<0.01	186	No	<0.01
	10	235	185	No	<0.01	189	No	<0.01	192	No	<0.01
	15	235	189	No	<0.01	194	No	<0.01	197	No	<0.01
	20	235	193	No	<0.01	197	No	<0.01	200	No	<0.01
	25	235	195	No	<0.01	200	No	<0.01	204	No	<0.01
	30	235	198	No	<0.01	203	No	<0.01	206	No	<0.01
	35	235	200	No	<0.01	205	No	<0.01	209	No	<0.01
	40	235	202	No	<0.01	207	No	<0.01	211	No	<0.01
	45	235	204	No	<0.01	210	No	<0.01	214	No	<0.01
	50	235	206	No	0.01	212	No	<0.01	216	No	<0.01
	55	235	208	No	0.01	214	No	0.01	218	No	<0.01
	60	235	210	No	0.03	216	No	0.02	221	No	<0.01
	65	235	212	No	0.05	219	No	0.04	223	No	<0.01
	70	235	215	No	0.1	221	No	0.08	226	No	0.01
	75	235	217	No	0.15	224	No	0.16	228	No	0.02
	80	235	220	No	0.26	226	No	0.24	232	No	0.2
	85	235	223	No	0.4	230	No	0.44	235	Yes	0.5
	90	235	227	Yes	0.6	234	Yes	0.67	240	Yes	0.92
	95	235	233	Yes	0.88	240	Yes	0.9	246	Yes	>0.99
6	5	241	184	No	<0.01	187	No	<0.01	190	No	<0.01
	10	241	190	No	<0.01	194	No	<0.01	197	No	<0.01
	15	241	194	No	<0.01	198	No	<0.01	201	No	<0.01
	20	241	197	No	<0.01	201	No	<0.01	205	No	<0.01
	25	241	199	No	<0.01	204	No	<0.01	208	No	<0.01
	30	241	202	No	<0.01	207	No	<0.01	211	No	<0.01
	35	241	204	No	<0.01	209	No	<0.01	213	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 4	Prob.		Level 4	Prob.		Level 4	Prob.
	40	241	206	No	<0.01	212	No	<0.01	216	No	<0.01
	45	241	208	No	<0.01	214	No	<0.01	218	No	<0.01
	50	241	210	No	<0.01	216	No	<0.01	220	No	<0.01
	55	241	212	No	0.01	218	No	<0.01	223	No	<0.01
	60	241	214	No	0.02	220	No	0.01	225	No	<0.01
	65	241	216	No	0.03	223	No	0.03	227	No	<0.01
	70	241	219	No	0.07	225	No	0.05	230	No	<0.01
	75	241	221	No	0.13	228	No	0.11	233	No	0.01
	80	241	224	No	0.23	231	No	0.21	236	No	0.08
	85	241	227	No	0.36	234	No	0.34	239	No	0.28
	90	241	231	Yes	0.55	238	Yes	0.55	244	Yes	0.8
	95	241	237	Yes	0.81	245	Yes	0.86	251	Yes	>0.99
7	5	243	189	No	<0.01	191	No	<0.01	192	No	<0.01
	10	243	195	No	<0.01	197	No	<0.01	199	No	<0.01
	15	243	199	No	<0.01	202	No	<0.01	204	No	<0.01
	20	243	203	No	<0.01	206	No	<0.01	208	No	<0.01
	25	243	206	No	<0.01	209	No	<0.01	211	No	<0.01
	30	243	208	No	<0.01	211	No	<0.01	214	No	<0.01
	35	243	211	No	<0.01	214	No	<0.01	216	No	<0.01
	40	243	213	No	<0.01	216	No	<0.01	219	No	<0.01
	45	243	215	No	0.01	219	No	<0.01	221	No	<0.01
	50	243	217	No	0.01	221	No	0.01	224	No	<0.01
	55	243	219	No	0.02	223	No	0.01	226	No	<0.01
	60	243	222	No	0.04	226	No	0.03	229	No	<0.01
	65	243	224	No	0.07	228	No	0.06	231	No	<0.01
	70	243	226	No	0.11	231	No	0.1	234	No	0.01
	75	243	229	No	0.2	233	No	0.15	237	No	0.04
	80	243	232	No	0.31	236	No	0.26	240	No	0.2

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Level 4	Prob.		Level 4	Prob.		Level 4	Prob.
	85	243	235	No	0.45	240	No	0.45	244	Yes	0.61
	90	243	239	Yes	0.64	245	Yes	0.7	249	Yes	0.96
	95	243	246	Yes	0.89	251	Yes	0.9	256	Yes	>0.99
8	5	250	192	No	<0.01	194	No	<0.01	196	No	<0.01
	10	250	199	No	<0.01	201	No	<0.01	203	No	<0.01
	15	250	203	No	<0.01	206	No	<0.01	208	No	<0.01
	20	250	207	No	<0.01	210	No	<0.01	212	No	<0.01
	25	250	210	No	<0.01	213	No	<0.01	215	No	<0.01
	30	250	212	No	<0.01	216	No	<0.01	218	No	<0.01
	35	250	215	No	<0.01	219	No	<0.01	221	No	<0.01
	40	250	217	No	<0.01	221	No	<0.01	224	No	<0.01
	45	250	220	No	<0.01	224	No	<0.01	226	No	<0.01
	50	250	222	No	0.01	226	No	<0.01	229	No	<0.01
	55	250	224	No	0.01	228	No	0.01	231	No	<0.01
	60	250	227	No	0.03	231	No	0.02	234	No	<0.01
	65	250	229	No	0.05	233	No	0.04	237	No	<0.01
	70	250	232	No	0.1	236	No	0.08	239	No	<0.01
	75	250	234	No	0.15	239	No	0.13	242	No	0.01
	80	250	237	No	0.25	242	No	0.23	246	No	0.13
	85	250	241	No	0.41	246	No	0.4	250	Yes	0.5
	90	250	246	Yes	0.63	251	Yes	0.65	255	Yes	0.92
	95	250	252	Yes	0.85	258	Yes	0.9	262	Yes	>0.99

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