Linking Study Report: Predicting Performance on the Indiana Learning Evaluation Readiness Network (ILEARN) based on NWEA MAP Growth Scores

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NWEA Psychometric Solutions

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Executive Summary

To predict student achievement on the Indiana Learning Evaluation Readiness Network (ILEARN) assessments in Grades 3–8 English Language Arts (ELA) and Mathematics and Grades 4 and 6 Science, 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 ILEARN 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 published in March 2020 to incorporate the new 2020 NWEA MAP Growth norms (Thum & Kuhfeld, 2020).

Table E.1 presents the ILEARN *At Proficiency* performance 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 *At Proficiency* cut score on the ILEARN Grade 3 ELA test is 5460. A Grade 3 student with a MAP Growth Reading RIT score of 193 in the fall is likely to meet proficiency on the ILEARN ELA test in the spring, whereas a Grade 3 student with a MAP Growth Reading RIT score lower than 193 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 ILEARN 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 ILEARN Proficiency

Assessment		*At Proficiency* Cut Scores by Grade						
		2	3	4	5	6	7	8
ELA/Reading								
ILEARN Spring		–	5460	5493	5524	5544	5568	5577
MAP Growth	Fall	181	193	203	208	214	217	221
	Winter	189	200	208	212	218	220	223
	Spring	193	203	210	214	219	221	224
Mathematics								
ILEARN Spring		–	6425	6474	6510	6545	6562	6590
MAP Growth	Fall	176	189	202	214	221	229	238
	Winter	185	197	209	220	226	233	241
	Spring	190	202	213	224	229	236	243
Science								
ILEARN Spring		–	–	7506	–	7504	–	–
MAP Growth	Fall	–	–	198	–	208	–	–
	Winter	–	–	202	–	211	–	–
	Spring	–	–	204	–	212	–	–

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 ILEARN Grades 3–8 ELA and Mathematics and Grades 4 and 6 Science tests are Indiana's state summative assessments aligned to the Indiana Academic Standards. Based on their test scores, students are placed into one of four performance levels: *Below Proficiency*, *Approaching Proficiency*, *At Proficiency*, and *Above Proficiency.* These tests are used to provide evidence of student achievement in ELA, Mathematics, and Science for various test score uses such as meeting state and federal accountability requirements. The *At Proficiency* cut score demarks the minimum level of achievement considered to be proficient. 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 ILEARN performance 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 ILEARN test 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 ILEARN assessments in Spring 2019 were included in the study sample. Table E.2 presents the weighted number of Indiana students from 199 districts and 869 schools who were included in the linking study. The linking study sample is voluntary, so the data 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.

Table E.2. Linking Study Sample

Grade	#Students		
	ELA/Reading	Mathematics	Science
3	40,699	40,103	–
4	41,109	40,457	1,112
5	41,928	41,410	–
6	41,224	40,638	2,808
7	40,209	40,047	–
8	38,868	38,438	–

E.4. Test Score Relationships

Correlations between MAP Growth RIT scores and ILEARN scores range from 0.79 to 0.91 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 the ILEARN assessments.

Figure E.1. Correlations between MAP Growth and ILEARN
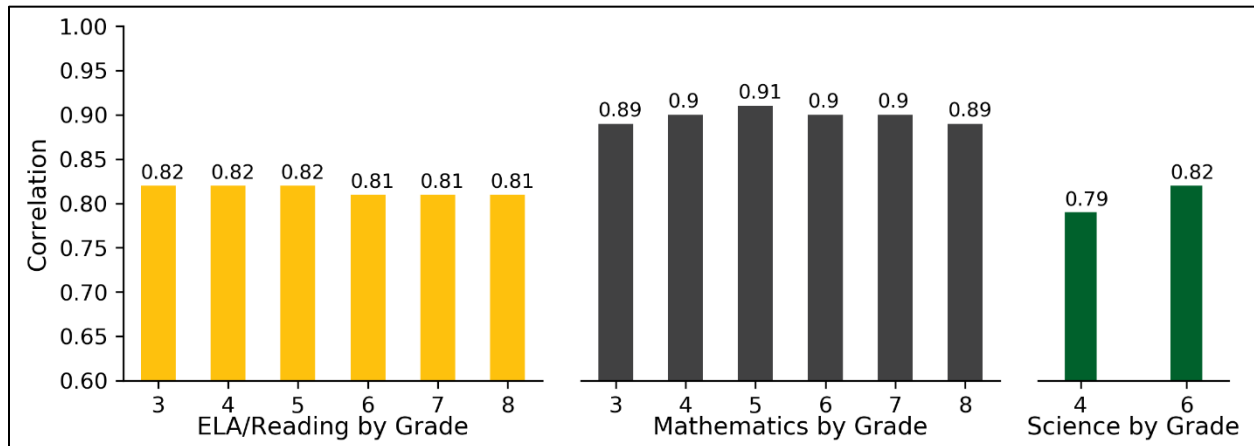
E.5. Accuracy of MAP Growth Classifications

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 the ILEARN tests. For example, the MAP Growth Reading Grade 3 *At Proficiency* cut score has a 0.83 accuracy rate, meaning it accurately classified student achievement on the state test for 83% of the sample. The results range from 0.80 to 0.89 across all content areas, indicating that RIT scores have a high accuracy rate of identifying student proficiency on the ILEARN tests.

Figure E.2. Accuracy of MAP Growth Classifications
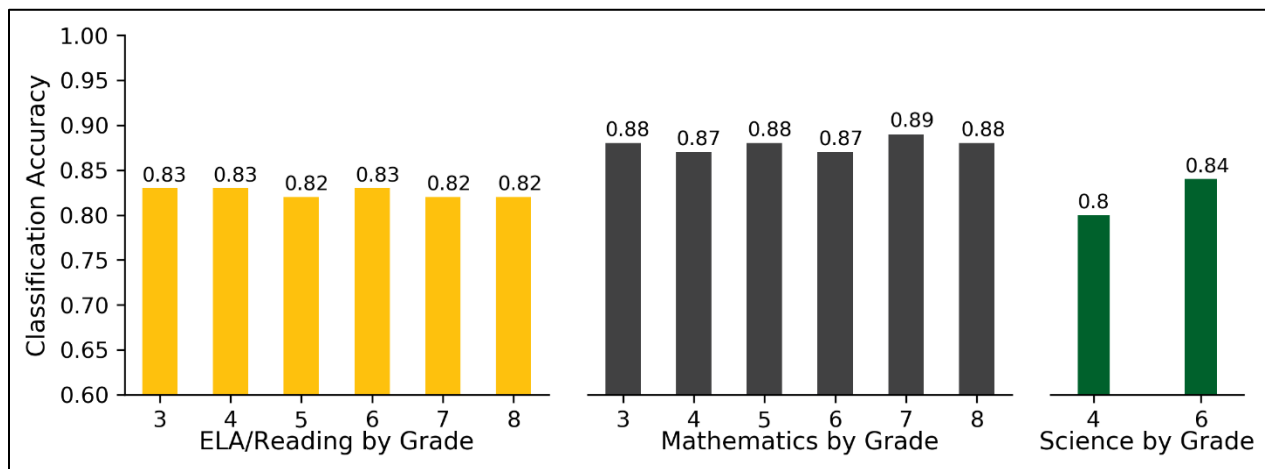
1. Introduction

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 Indiana Learning Evaluation Readiness Network (ILEARN) assessments in Grades 3–8 English Language Arts (ELA) and Mathematics and Grades 4 and 6 Science 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 published in March 2020 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 ILEARN 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 ILEARN performance levels 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 the ILEARN tests
5. The probability of achieving grade-level proficiency on the ILEARN assessment based on MAP Growth RIT scores from fall, winter, and spring using the 2020 norms

1.2. Assessment Overview

The ILEARN Grades 3–8 ELA and Mathematics and Grades 4 and 6 Science summative assessments are aligned to the Indiana Academic Standards. Each assessment has three 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: *Below Proficiency*, *Approaching Proficiency*, *At Proficiency*, and *Above Proficiency.* The *At Proficiency* 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 2019 administrations of the MAP Growth and ILEARN assessments. NWEA recruited Indiana 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 Indiana 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 ILEARN 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 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 performance 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 equipercentile linking method (Kolen & Brennan, 2004) was used to identify the spring RIT scores that correspond to the spring ILEARN performance 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 ILEARN 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 test scores. This is useful information for understanding (1) how student scores compare to 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 ILEARN 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., ILEARN). 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 in Equation 1:

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

where $e_y(x)$ is the equipercentile equivalent of score x on ILEARN on the scale of MAP Growth, $P(x)$ is the percentile rank of a given score on ILEARN, 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:

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

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 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 ILEARN tests 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 (*At Proficiency* or *Above Proficiency*) or not proficient (*Below Proficiency* or *Approaching Proficiency*). Table 2.1 describes the classification accuracy statistics provided in this report(Pommerich, Hanson, Harris, & Sconing, 2004). The results are based on the Spring 2019 MAP Growth and ILEARN data for the *At Proficiency* cut score.

Since Indiana students do not begin taking the ILEARN assessment until Grade 3, longitudinal data were collected for the 2018–2019 Grade 3 cohort in order to link the ILEARN assessment to MAP Growth for Grade 2 to calculate the classification accuracy statistics. To accomplish this, 2018–2019 ILEARN Grade 3 results were linked to MAP Growth data from Grade 3 students in 2018–2019 and Grade 2 students in 2017–2018. 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) / (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 the ILEARN test based on a student's RIT scores from fall, winter, and spring. Equation 3 was used to calculate the probability of a student achieving *At Proficiency* on the ILEARN test based on their fall or winter RIT score:

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

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.
- $RIT_{SpringCut}$ is the MAP Growth *At Proficiency* 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 *At Proficiency* on the ILEARN test based on their spring RIT score (RIT_{Spring}):

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

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 ILEARN assessments in Spring 2019 were included in the study sample. Data used in this study were collected from 199 districts and 869 schools in ILEARN. 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 that took the Spring 2019 ILEARN tests (IDOE, 2019). Since the unweighted data are different from the general ILEARN 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 ILEARN 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)						
	%Students by Grade					
Demographic Subgroup	**3**	**4**	**5**	**6**	**7**	**8**
ELA/Reading						
Total N	40,699	41,109	41,928	41,224	40,209	38,868
Race — Asian	1.9	1.7	1.7	1.5	1.8	1.6
Race — Black	12.7	12.5	12.5	12.2	12.4	12.0
Race — Hispanic	14.0	14.2	14.6	14.5	14.0	13.8
Race — Multiracial	5.2	5.0	5.1	4.8	4.8	4.5
Race — Other	0.3	0.3	0.2	0.2	0.2	0.3
Race — White	65.9	66.3	65.9	66.8	66.8	67.8
Sex — Female	48.2	49.3	49.1	48.9	49.0	48.9
Sex — Male	51.8	50.7	50.9	51.1	51.0	51.1
Performance Level — *Below Proficiency*	32.7	32.2	31.1	28.5	25.6	21.5
Performance Level — *Approaching Proficiency*	23.1	24.5	24.6	26.0	27.0	29.7
Performance Level — *At Proficiency*	27.2	25.0	30.6	29.1	28.3	28.5
Performance Level — *Above Proficiency*	17.0	18.4	13.7	16.4	19.0	20.3
Mathematics						
Total N	40,103	40,457	41,410	40,638	40,047	38,438
Race — Asian	1.9	1.8	1.8	1.5	1.8	1.6
Race — Black	12.8	12.6	12.7	12.2	12.5	12.2
Race — Hispanic	14.1	14.3	14.7	14.6	14.1	14.0
Race — Multiracial	5.2	5.0	5.1	4.8	4.8	4.5
Race — Other	0.3	0.3	0.2	0.3	0.2	0.3
Race — White	65.6	66.0	65.5	66.6	66.7	67.5
Sex — Female	48.2	49.2	49.0	48.9	49.0	48.7
Sex — Male	51.8	50.8	51.0	51.1	51.0	51.3
Performance Level — *Below Proficiency*	24.3	26.6	29.0	31.8	32.6	35.0
Performance Level — *Approaching Proficiency*	18.7	20.9	25.4	24.2	27.1	28.4
Performance Level — *At Proficiency*	32.1	32.2	24.4	24.9	22.8	19.1
Performance Level — *Above Proficiency*	25.0	20.3	21.2	19.2	17.5	17.5

Linking Study Sample (Unweighted)							
		%Students by Grade					
Demographic Subgroup		**3**	**4**	**5**	**6**	**7**	**8**
Science							
	Total N	–	1,112	–	2,808	–	–
Race	Asian	–	0.4	–	1.2	–	–
	Black	–	2.4	–	3.8	–	–
	Hispanic	–	12.1	–	13.0	–	–
	Multiracial	–	5.8	–	4.4	–	–
	Other	–	0.1	–	0.2	–	–
	White	–	79.1	–	77.3	–	–
Sex	Female	–	46.1	–	49.7	–	–
	Male	–	53.9	–	50.3	–	–
Performance Level	*Below Proficiency*	–	23.8	–	21.8	–	–
	Approaching Proficiency	–	19.7	–	24.8	–	–
	At Proficiency	–	25.3	–	31.7	–	–
	Above Proficiency	–	31.2	–	21.7	–	–

Table 3.2. Spring 2019 ILEARN Student Population Demographics

Spring 2019 ILEARN Population							
		%Students by Grade					
Demographic Subgroup		**3**	**4**	**5**	**6**	**7**	**8**
ELA							
	Total N	83,072	84,147	86,381	85,832	84,590	82,991
Race	Asian	2.8	2.6	2.5	2.3	2.5	2.3
	Black	12.6	12.5	12.5	12.2	12.1	11.7
	Hispanic	13.1	13.3	13.3	13.3	12.8	12.4
	Multiracial	5.4	5.2	5.2	5.0	4.9	4.7
	Other	0.2	0.2	0.2	0.3	0.3	0.3
	White	65.9	66.1	66.3	66.9	67.5	68.6
Sex	Female	48.7	49.2	49.1	49.1	48.8	48.9
	Male	51.3	50.8	50.9	50.9	51.2	51.1
Performance Level	*Below Proficiency*	31.0	30.5	29.0	27.0	24.7	21.2
	Approaching Proficiency	23.2	24.1	24.0	25.6	26.2	28.7
	At Proficiency	27.9	25.6	31.8	29.8	28.8	28.6
	Above Proficiency	17.9	19.7	15.2	17.5	20.2	21.5
Mathematics							
	Total N	83,079	84,144	86,368	85,812	84,578	82,990
Race	Asian	2.8	2.6	2.5	2.3	2.5	2.3
	Black	12.6	12.5	12.6	12.2	12.0	11.7
	Hispanic	13.1	13.3	13.3	13.3	12.8	12.4
	Multiracial	5.4	5.2	5.1	5.0	4.9	4.7
	Other	0.2	0.2	0.2	0.3	0.3	0.3
	White	65.9	66.1	66.3	66.9	67.5	68.6

Spring 2019 ILEARN Population							
		%Students by Grade					
Demographic Subgroup		**3**	**4**	**5**	**6**	**7**	**8**
Sex	Female	48.7	49.2	49.1	49.1	48.8	48.9
	Male	51.3	50.8	50.9	50.9	51.2	51.1
Performance Level	*Below Proficiency*	23.2	25.8	27.3	30.3	31.9	34.8
	Approaching Proficiency	18.7	20.7	25.3	23.9	26.7	27.8
	At Proficiency	32.6	32.8	25.3	25.6	22.9	19.1
	Above Proficiency	25.5	20.6	22.1	20.2	18.4	18.3
Science							
	Total N	–	84,064	–	85,653	–	–
Race	Asian	–	2.6	–	2.3	–	–
	Black	–	12.5	–	12.2	–	–
	Hispanic	–	13.3	–	13.3	–	–
	Multiracial	–	5.2	–	5.0	–	–
	Other	–	0.2	–	0.3	–	–
	White	–	66.1	–	67.0	–	–
Sex	Female	–	49.2	–	49.1	–	–
	Male	–	50.8	–	50.9	–	–
Performance Level	*Below Proficiency*	–	34.9	–	26.5	–	–
	Approaching Proficiency	–	19.3	–	25.4	–	–
	At Proficiency	–	21.7	–	28.8	–	–
	Above Proficiency	–	24.1	–	19.3	–	–

Table 3.3. Linking Study Sample Demographics (Weighted)

Linking Study Sample (Weighted)							
		%Students by Grade					
Demographic Subgroup		**3**	**4**	**5**	**6**	**7**	**8**
ELA/Reading							
	Total N	40,699	41,109	41,928	41,224	40,209	38,868
Race	Asian	2.8	2.6	2.5	2.3	2.5	2.3
	Black	12.6	12.5	12.5	12.2	12.1	11.7
	Hispanic	13.1	13.3	13.3	13.3	12.8	12.4
	Multiracial	5.4	5.2	5.2	5.0	4.9	4.7
	Other	0.2	0.2	0.2	0.3	0.3	0.3
	White	65.9	66.1	66.3	66.9	67.5	68.6
Sex	Female	48.7	49.2	49.1	49.1	48.8	48.9
	Male	51.3	50.8	50.9	50.9	51.2	51.1
Performance Level	*Below Proficiency*	31.0	30.5	29.0	27.0	24.7	21.2
	Approaching Proficiency	23.2	24.1	24.0	25.6	26.2	28.7
	At Proficiency	27.9	25.6	31.8	29.8	28.8	28.6
	Above Proficiency	17.9	19.7	15.2	17.5	20.2	21.5

Linking Study Sample (Weighted)						
	%Students by Grade					
Demographic Subgroup	3	4	5	6	7	8
Mathematics						
Total N	40,103	40,457	41,410	40,638	40,047	38,438
Race — Asian	2.8	2.6	2.5	2.3	2.5	2.3
Race — Black	12.6	12.5	12.6	12.2	12.0	11.7
Race — Hispanic	13.1	13.3	13.3	13.3	12.8	12.4
Race — Multiracial	5.4	5.2	5.1	5.0	4.9	4.7
Race — Other	0.2	0.2	0.2	0.3	0.3	0.3
Race — White	65.9	66.1	66.3	66.9	67.6	68.6
Sex — Female	48.7	49.2	49.1	49.1	48.8	48.9
Sex — Male	51.3	50.8	50.9	50.9	51.2	51.1
Performance Level — *Below Proficiency*	23.2	25.8	27.3	30.3	31.9	34.8
Performance Level — *Approaching Proficiency*	18.7	20.7	25.3	23.9	26.7	27.8
Performance Level — *At Proficiency*	32.6	32.8	25.3	25.6	22.9	19.1
Performance Level — *Above Proficiency*	25.5	20.6	22.1	20.2	18.4	18.3
Science						
Total N	–	1,112	–	2,808	–	–
Race — Asian	–	2.6	–	2.3	–	–
Race — Black	–	12.5	–	12.2	–	–
Race — Hispanic	–	13.3	–	13.3	–	–
Race — Multiracial	–	5.2	–	5.0	–	–
Race — Other	–	0.2	–	0.3	–	–
Race — White	–	66.1	–	67.0	–	–
Sex — Female	–	49.2	–	49.1	–	–
Sex — Male	–	50.8	–	50.9	–	–
Performance Level — *Below Proficiency*	–	34.9	–	26.5	–	–
Performance Level — *Approaching Proficiency*	–	19.3	–	25.4	–	–
Performance Level — *At Proficiency*	–	21.7	–	28.8	–	–
Performance Level — *Above Proficiency*	–	24.1	–	19.3	–	–

3.2. Descriptive Statistics

Table 3.4 presents descriptive statistics of the MAP Growth and ILEARN test scores from Spring 2019, including the correlation coefficient (r) between them. The correlation coefficients between the scores range from 0.81 to 0.82 for ELA/Reading, 0.89 to 0.91 for Mathematics, and 0.79 to 0.82 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 the ILEARN assessments.

Table 3.4. Descriptive Statistics of Test Scores

Grade	N	r	ILEARN*				MAP Growth*			
			Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
ELA/Reading										
3	40,699	0.82	5449.4	69.0	5087	5750	199.6	15.6	138	244
4	41,109	0.82	5480.9	75.3	5090	5810	206.5	15.3	140	253
5	41,928	0.82	5512.8	79.6	5110	5825	211.5	15.1	139	256
6	41,224	0.81	5534.2	73.2	5130	5865	215.8	15.1	152	261
7	40,209	0.81	5560.1	81.6	5130	5890	219.3	15.2	149	263
8	38,868	0.81	5572.9	78.5	5150	5902	222.3	15.4	151	271
Mathematics										
3	40,103	0.89	6437.2	76.0	6104	6730	203.1	13.7	131	270
4	40,457	0.90	6476.8	78.0	6100	6800	213.1	15.2	138	287
5	41,410	0.91	6500.9	84.8	6110	6850	222.0	17.5	135	294
6	40,638	0.90	6527.0	93.1	6110	6870	225.8	16.8	141	311
7	40,047	0.90	6535.9	96.7	6120	6920	231.2	18.0	142	300
8	38,438	0.89	6550.5	107.1	6120	6950	235.7	19.1	142	313
Science										
5	1,112	0.79	7501.5	43.8	7358	7650	201.9	11.1	161	236
8	2,808	0.82	7500.8	51.1	7371	7650	210.0	11.2	171	244

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

3.3. MAP Growth Cut Scores

Table 3.5, Table 3.6, and **Error! Reference source not found.** present the ILEARN 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 ILEARN 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 193 in the fall is likely to reach *At Proficiency* on the ILEARN ELA test. A Grade 3 student who obtained a MAP Growth Reading RIT score of 203 in the spring is also likely to reach *At Proficiency* on the ILEARN. 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 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' 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

ILEARN ELA			
Grade	*Below Proficiency*	*Approaching Proficiency*	*At Proficiency*	*Above Proficiency*
3	5060–5415	5416–5459	**5460**–5514	5515–5760
4	5090–5443	5444–5492	**5493**–5546	5547–5810
5	5110–5471	5472–5523	**5524**–5594	5595–5850
6	5130–5491	5492–5543	**5544**–5603	5604–5870
7	5130–5506	5507–5567	**5568**–5628	5629–5890
8	5150–5510	5511–5576	**5577**–5637	5638–5920

MAP Growth Reading*								
	Below Proficiency		*Approaching Proficiency*		*At Proficiency*		*Above Proficiency*	
Grade	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall								
2	100–167	1–38	168–180	39–71	**181**–194	72–92	195–350	93–99
3	100–182	1–40	183–192	41–64	**193**–205	65–87	206–350	88–99
4	100–191	1–38	192–202	39–64	**203**–212	65–82	213–350	83–99
5	100–197	1–34	198–207	35–58	**208**–221	59–85	222–350	86–99
6	100–201	1–30	202–213	31–58	**214**–226	59–84	227–350	85–99
7	100–205	1–30	206–216	31–56	**217**–228	57–80	229–350	81–99
8	100–206	1–25	207–220	26–56	**221**–232	57–80	233–350	81–99
Winter								
2	100–176	1–38	177–188	39–69	**189**–201	70–91	202–350	92–99
3	100–190	1–42	191–199	43–64	**200**–211	65–86	212–350	87–99
4	100–197	1–38	198–207	39–62	**208**–216	63–80	217–350	81–99
5	100–202	1–34	203–211	35–56	**212**–224	57–83	225–350	84–99
6	100–205	1–30	206–217	31–59	**218**–228	60–82	229–350	83–99
7	100–208	1–30	209–219	31–56	**220**–230	57–79	231–350	80–99
8	100–209	1–25	210–222	26–55	**223**–233	56–78	234–350	79–99
Spring								
2	100–181	1–40	182–192	41–67	**193**–205	68–90	206–350	91–99
3	100–193	1–41	194–202	42–63	**203**–213	64–84	214–350	85–99
4	100–200	1–40	201–209	41–61	**210**–218	62–80	219–350	81–99
5	100–204	1–34	205–213	35–56	**214**–225	57–82	226–350	83–99
6	100–207	1–31	208–218	32–58	**219**–229	59–81	230–350	82–99
7	100–210	1–32	211–220	33–55	**221**–231	56–79	232–350	80–99
8	100–211	1–27	212–223	28–55	**224**–234	56–78	235–350	79–99

*Cut scores for fall and winter are derived from the spring cuts and growth scores based on the typical instructional weeks. Spring cut scores for Grade 2 were derived from the Grade 3 cuts using the 2020 MAP Growth conditional 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

ILEARN Mathematics							
Grade	*Below Proficiency*		*Approaching Proficiency*		*At Proficiency*		*Above Proficiency*
3	6080–6381		6382–6424		**6425**–6487		6488–6730
4	6100–6428		6429–6473		**6474**–6540		6541–6800
5	6110–6452		6453–6509		**6510**–6565		6566–6850
6	6110–6487		6488–6544		**6545**–6604		6605–6870
7	6120–6492		6493–6561		**6562**–6624		6625–6920
8	6120–6508		6509–6589		**6590**–6650		6651–6950

MAP Growth Mathematics*								
	Below Proficiency		*Approaching Proficiency*		*At Proficiency*		*Above Proficiency*	
Grade	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall								
2	100–166	1–26	167–175	27–52	**176**–187	53–83	188–350	84–99
3	100–180	1–28	181–188	29–51	**189**–199	52–79	200–350	80–99
4	100–192	1–31	193–201	32–56	**202**–214	57–85	215–350	86–99
5	100–202	1–33	203–213	34–62	**214**–224	63–84	225–350	85–99
6	100–210	1–40	211–220	41–64	**221**–231	65–85	232–350	86–99
7	100–216	1–42	217–228	43–68	**229**–240	69–87	241–350	88–99
8	100–223	1–47	224–237	48–75	**238**–247	76–88	248–350	89–99
Winter								
2	100–175	1–26	176–184	27–52	**185**–195	53–81	196–350	82–99
3	100–188	1–29	189–196	30–51	**197**–206	52–78	207–350	79–99
4	100–199	1–33	200–208	34–57	**209**–221	58–85	222–350	86–99
5	100–208	1–35	209–219	36–62	**220**–230	63–84	231–350	85–99
6	100–215	1–41	216–225	42–64	**226**–236	65–84	237–350	85–99
7	100–220	1–42	221–232	43–68	**233**–244	69–87	245–350	88–99
8	100–226	1–47	227–240	48–74	**241**–250	75–87	251–350	88–99
Spring								
2	100–181	1–28	182–189	29–51	**190**–200	52–80	201–350	81–99
3	100–193	1–30	194–201	31–52	**202**–211	53–77	212–350	78–99
4	100–203	1–33	204–212	34–55	**213**–225	56–83	226–350	84–99
5	100–212	1–36	213–223	37–61	**224**–234	62–82	235–350	83–99
6	100–218	1–40	219–228	41–63	**229**–239	64–83	240–350	84–99
7	100–223	1–43	224–235	44–68	**236**–247	69–86	248–350	87–99
8	100–228	1–46	229–242	47–73	**243**–252	74–86	253–350	87–99

*Cut scores for fall and winter are derived from the spring cuts and growth scores based on the typical instructional weeks. Spring cut scores for Grade 2 were derived from the Grade 3 cuts using the 2020 MAP Growth conditional 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

	ILEARN Science			
Grade	*Below Proficiency*	*Approaching Proficiency*	*At Proficiency*	*Above Proficiency*
4	7350–7481	7482–7505	**7506**–7534	7535–7650
6	7350–7465	7466–7503	**7504**–7544	7545–7650
	MAP Growth Science*							
	Below Proficiency		*Approaching Proficiency*		*At Proficiency*		*Above Proficiency*	
Grade	RIT	Percentile	RIT	Percentile	RIT	Percentile	RIT	Percentile
Fall								
4	100–190	1–37	191–197	38–60	**198**–205	61–82	206–350	83–99
6	100–196	1–27	197–207	28–62	**208**–216	63–85	217–350	86–99
Winter								
4	100–195	1–38	196–201	39–59	**202**–209	60–82	210–350	83–99
6	100–200	1–29	201–210	30–61	**211**–218	62–83	219–350	84–99
Spring								
4	100–197	1–38	198–203	39–58	**204**–210	59–79	211–350	80–99
6	100–202	1–32	203–211	33–60	**212**–219	61–81	220–350	82–99

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

3.4. Classification Accuracy

Table 3.8 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 ILEARN tests, providing insight into the predictive validity of MAP Growth. The overall classification accuracy rate ranges from 0.79 to 0.83 for ELA/Reading, 0.82 to 0.89 for Mathematics, and 0.80 to 0.84 for Science. These values suggest that the RIT cut scores are good at classifying students as proficient or not proficient on the ILEARN assessment. For Grade 2, the classification accuracy rate refers to how well the MAP Growth cuts can predict students' proficiency status on ILEARN in Grade 3.

Although the results show that MAP Growth scores can be used to accurately classify students as likely to be proficient on the ILEARN tests, there is a notable limitation to how these results should be used and interpreted. ILEARN 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 3.8. Classification Accuracy Results

| Grade | N | Cut Score | | Class. Accuracy* | Rate* | | Sensitivity | Specificity | Precision | AUC* |
		MAP Growth	ILEARN		FP	FN				
ELA/Reading										
2	33,086	193	5460	0.79	0.17	0.25	0.75	0.83	0.79	0.88
3	40,699	203	5460	0.83	0.17	0.16	0.84	0.83	0.81	0.92
4	41,109	210	5493	0.83	0.17	0.17	0.83	0.83	0.80	0.92
5	41,928	214	5524	0.82	0.19	0.15	0.85	0.81	0.79	0.91
6	41,224	219	5544	0.83	0.16	0.18	0.82	0.84	0.82	0.91
7	40,209	221	5568	0.82	0.20	0.16	0.84	0.80	0.80	0.91
8	38,868	224	5577	0.82	0.19	0.17	0.83	0.81	0.81	0.91
Mathematics										
2	32,698	190	6425	0.82	0.25	0.13	0.87	0.75	0.84	0.90
3	40,103	202	6425	0.88	0.17	0.09	0.91	0.83	0.88	0.95
4	40,457	213	6474	0.87	0.15	0.11	0.89	0.85	0.87	0.95
5	41,410	224	6510	0.88	0.12	0.12	0.88	0.88	0.87	0.96
6	40,638	229	6545	0.87	0.13	0.13	0.87	0.87	0.85	0.95
7	40,047	236	6562	0.89	0.11	0.11	0.89	0.89	0.85	0.96
8	38,438	243	6590	0.88	0.10	0.15	0.85	0.90	0.84	0.96
Science										
4	1,112	204	7506	0.80	0.18	0.23	0.77	0.82	0.78	0.89
6	2,808	212	7504	0.84	0.13	0.19	0.81	0.87	0.85	0.92

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

3.5. Proficiency Projection

Table 3.9, Table 3.10, and Table 3.11 present the estimated probability of achieving *At Proficiency* performance on the ILEARN test based on RIT scores from fall, winter, or spring. For example, a Grade 3 student who obtained a MAP Growth Reading score of 201 in the fall has an 83% chance of reaching *At Proficiency* or higher on the ILEARN test. "Prob." indicates the probability of obtaining proficient status on the ILEARN test in the spring.

Table 3.9. Proficiency Projection based on RIT Scores—ELA/Reading

Grade	Start %ile	Spring Cut	Fall	Fall RIT	Projected Proficiency At Proficiency	Prob.	Winter	Winter RIT	Projected Proficiency At Proficiency	Prob.	Spring	Spring RIT	Projected Proficiency At Proficiency	Prob.
ELA/Reading														

Grade	Start %ile	Spring Cut	Fall RIT	At Proficiency	Prob.	Winter RIT	At Proficiency	Prob.	Spring RIT	At Proficiency	Prob.
2	5	193	147	No	<0.01	156	No	<0.01	160	No	<0.01
	10	193	153	No	<0.01	162	No	<0.01	166	No	<0.01
	15	193	157	No	<0.01	166	No	<0.01	170	No	<0.01
	20	193	160	No	0.01	169	No	<0.01	173	No	<0.01
	25	193	162	No	0.01	171	No	<0.01	175	No	<0.01
	30	193	164	No	0.02	173	No	<0.01	177	No	<0.01
	35	193	166	No	0.04	175	No	0.01	180	No	<0.01
	40	193	168	No	0.07	177	No	0.02	182	No	<0.01
	45	193	170	No	0.09	179	No	0.03	184	No	<0.01
	50	193	172	No	0.15	181	No	0.07	186	No	0.01
	55	193	174	No	0.21	183	No	0.13	188	No	0.06
	60	193	176	No	0.30	185	No	0.23	189	No	0.11
	65	193	178	No	0.40	187	No	0.35	192	No	0.38
	70	193	180	No	0.45	189	Yes	0.50	194	Yes	0.62
	75	193	183	Yes	0.60	191	Yes	0.65	196	Yes	0.83
	80	193	185	Yes	0.70	194	Yes	0.83	199	Yes	0.97
	85	193	188	Yes	0.79	197	Yes	0.93	202	Yes	>0.99
	90	193	192	Yes	0.91	200	Yes	0.98	205	Yes	>0.99
	95	193	197	Yes	0.97	206	Yes	>0.99	211	Yes	>0.99
3	5	203	159	No	<0.01	167	No	<0.01	170	No	<0.01
	10	203	165	No	<0.01	173	No	<0.01	176	No	<0.01
	15	203	169	No	<0.01	177	No	<0.01	180	No	<0.01
	20	203	173	No	0.01	180	No	<0.01	183	No	<0.01
	25	203	175	No	0.02	183	No	<0.01	186	No	<0.01
	30	203	178	No	0.04	185	No	<0.01	189	No	<0.01
	35	203	180	No	0.05	188	No	0.02	191	No	<0.01
	40	203	182	No	0.09	190	No	0.03	193	No	<0.01
	45	203	185	No	0.17	192	No	0.07	195	No	0.01
	50	203	187	No	0.21	194	No	0.13	197	No	0.03
	55	203	189	No	0.30	196	No	0.23	199	No	0.11
	60	203	191	No	0.39	198	No	0.35	201	No	0.27
	65	203	193	Yes	0.50	200	Yes	0.50	203	Yes	0.50
	70	203	195	Yes	0.55	202	Yes	0.65	206	Yes	0.83
	75	203	198	Yes	0.70	205	Yes	0.83	208	Yes	0.94
	80	203	201	Yes	0.83	207	Yes	0.91	211	Yes	0.99
	85	203	204	Yes	0.89	211	Yes	0.97	214	Yes	>0.99
	90	203	208	Yes	0.96	215	Yes	>0.99	218	Yes	>0.99
	95	203	214	Yes	0.99	220	Yes	>0.99	224	Yes	>0.99

ELA/Reading											
			Fall			**Winter**			**Spring**		
				Projected Proficiency			**Projected Proficiency**			**Projected Proficiency**	
Grade	**Start %ile**	**Spring Cut**	**Fall RIT**	*At Proficiency*	**Prob.**	**Winter RIT**	*At Proficiency*	**Prob.**	**Spring RIT**	*At Proficiency*	**Prob.**
4	5	210	169	No	<0.01	176	No	<0.01	178	No	<0.01
	10	210	175	No	<0.01	182	No	<0.01	184	No	<0.01
	15	210	179	No	<0.01	186	No	<0.01	188	No	<0.01
	20	210	183	No	0.01	189	No	<0.01	191	No	<0.01
	25	210	185	No	0.02	192	No	<0.01	194	No	<0.01
	30	210	188	No	0.04	194	No	0.01	196	No	<0.01
	35	210	190	No	0.06	196	No	0.02	199	No	<0.01
	40	210	192	No	0.11	198	No	0.04	201	No	<0.01
	45	210	195	No	0.17	200	No	0.06	203	No	0.01
	50	210	197	No	0.24	202	No	0.13	205	No	0.06
	55	210	199	No	0.34	205	No	0.28	207	No	0.17
	60	210	201	No	0.44	207	No	0.42	209	No	0.38
	65	210	203	Yes	0.50	209	Yes	0.58	211	Yes	0.62
	70	210	205	Yes	0.61	211	Yes	0.72	213	Yes	0.83
	75	210	208	Yes	0.76	213	Yes	0.83	216	Yes	0.97
	80	210	211	Yes	0.83	216	Yes	0.94	219	Yes	>0.99
	85	210	214	Yes	0.92	219	Yes	0.98	222	Yes	>0.99
	90	210	218	Yes	0.96	223	Yes	>0.99	226	Yes	>0.99
	95	210	224	Yes	>0.99	229	Yes	>0.99	232	Yes	>0.99
5	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

			ELA/Reading								
			Fall			Winter			Spring		
				Projected Proficiency			Projected Proficiency			Projected Proficiency	
Grade	Start %ile	Spring Cut	Fall RIT	*At Proficiency*	Prob.	Winter RIT	*At Proficiency*	Prob.	Spring RIT	*At Proficiency*	Prob.
	5	219	183	No	<0.01	188	No	<0.01	189	No	<0.01
	10	219	189	No	<0.01	193	No	<0.01	195	No	<0.01
	15	219	193	No	<0.01	197	No	<0.01	199	No	<0.01
	20	219	196	No	0.01	200	No	<0.01	202	No	<0.01
	25	219	199	No	0.03	203	No	<0.01	205	No	<0.01
	30	219	202	No	0.06	205	No	0.01	207	No	<0.01
	35	219	204	No	0.10	208	No	0.04	209	No	<0.01
	40	219	206	No	0.16	210	No	0.09	211	No	0.01
	45	219	208	No	0.19	212	No	0.17	213	No	0.03
6	50	219	210	No	0.28	214	No	0.28	215	No	0.11
	55	219	212	No	0.39	216	No	0.35	217	No	0.27
	60	219	214	Yes	0.50	218	Yes	0.50	219	Yes	0.50
	65	219	217	Yes	0.61	220	Yes	0.65	222	Yes	0.83
	70	219	219	Yes	0.72	222	Yes	0.78	224	Yes	0.94
	75	219	221	Yes	0.81	225	Yes	0.91	226	Yes	0.99
	80	219	224	Yes	0.87	227	Yes	0.96	229	Yes	>0.99
	85	219	227	Yes	0.94	230	Yes	0.99	232	Yes	>0.99
	90	219	231	Yes	0.98	234	Yes	>0.99	236	Yes	>0.99
	95	219	237	Yes	>0.99	240	Yes	>0.99	242	Yes	>0.99
	5	221	187	No	<0.01	190	No	<0.01	191	No	<0.01
	10	221	193	No	<0.01	196	No	<0.01	197	No	<0.01
	15	221	197	No	<0.01	200	No	<0.01	201	No	<0.01
	20	221	200	No	0.02	203	No	<0.01	205	No	<0.01
	25	221	203	No	0.03	206	No	0.01	207	No	<0.01
	30	221	206	No	0.08	209	No	0.03	210	No	<0.01
	35	221	208	No	0.12	211	No	0.06	212	No	<0.01
	40	221	210	No	0.19	213	No	0.09	214	No	0.01
	45	221	212	No	0.24	215	No	0.17	216	No	0.06
7	50	221	214	No	0.33	217	No	0.28	218	No	0.17
	55	221	216	No	0.44	219	No	0.42	220	No	0.38
	60	221	218	Yes	0.56	221	Yes	0.58	223	Yes	0.73
	65	221	221	Yes	0.67	223	Yes	0.72	225	Yes	0.89
	70	221	223	Yes	0.76	226	Yes	0.88	227	Yes	0.97
	75	221	225	Yes	0.84	228	Yes	0.94	229	Yes	0.99
	80	221	228	Yes	0.92	231	Yes	0.98	232	Yes	>0.99
	85	221	231	Yes	0.96	234	Yes	>0.99	235	Yes	>0.99
	90	221	235	Yes	0.99	238	Yes	>0.99	239	Yes	>0.99
	95	221	241	Yes	>0.99	244	Yes	>0.99	245	Yes	>0.99

ELA/Reading												
			Fall			Winter			Spring			
				Projected Proficiency			Projected Proficiency			Projected Proficiency		
Grade	Start %ile	Spring Cut	Fall RIT	*At Proficiency*	Prob.	Winter RIT	*At Proficiency*	Prob.	Spring RIT	*At Proficiency*	Prob.		
	5	224	190	No	<0.01	193	No	<0.01	194	No	<0.01		
	10	224	196	No	<0.01	199	No	<0.01	200	No	<0.01		
	15	224	200	No	0.01	203	No	<0.01	204	No	<0.01		
	20	224	204	No	0.02	206	No	<0.01	207	No	<0.01		
	25	224	207	No	0.05	209	No	0.01	210	No	<0.01		
	30	224	209	No	0.08	212	No	0.02	213	No	<0.01		
	35	224	211	No	0.11	214	No	0.04	215	No	<0.01		
	40	224	214	No	0.20	216	No	0.09	217	No	0.01		
	45	224	216	No	0.29	218	No	0.17	220	No	0.11		
8	50	224	218	No	0.39	221	No	0.35	222	No	0.27		
	55	224	220	No	0.45	223	Yes	0.50	224	Yes	0.50		
	60	224	222	Yes	0.55	225	Yes	0.65	226	Yes	0.73		
	65	224	225	Yes	0.71	227	Yes	0.78	228	Yes	0.89		
	70	224	227	Yes	0.80	229	Yes	0.87	231	Yes	0.99		
	75	224	230	Yes	0.87	232	Yes	0.96	233	Yes	>0.99		
	80	224	232	Yes	0.92	235	Yes	0.99	236	Yes	>0.99		
	85	224	236	Yes	0.97	238	Yes	>0.99	239	Yes	>0.99		
	90	224	240	Yes	0.99	242	Yes	>0.99	243	Yes	>0.99		
	95	224	246	Yes	>0.99	248	Yes	>0.99	249	Yes	>0.99		

Table 3.10. Proficiency Projection based on RIT Scores—Mathematics

			Fall			Winter			Spring		
				Projected Proficiency			Projected Proficiency			Projected Proficiency	
Grade	Start %ile	Spring Cut	Fall RIT	*At Proficiency*	Prob.	Winter RIT	*At Proficiency*	Prob.	Spring RIT	*At Proficiency*	Prob.
	5	190	154	No	<0.01	163	No	<0.01	167	No	<0.01
	10	190	158	No	0.01	167	No	<0.01	172	No	<0.01
	15	190	162	No	0.03	171	No	<0.01	175	No	<0.01
	20	190	164	No	0.04	173	No	0.01	178	No	<0.01
	25	190	166	No	0.08	175	No	0.03	180	No	<0.01
	30	190	168	No	0.14	177	No	0.07	182	No	<0.01
	35	190	170	No	0.22	179	No	0.15	184	No	0.02
	40	190	172	No	0.32	181	No	0.20	186	No	0.08
	45	190	173	No	0.38	182	No	0.26	188	No	0.25
2	50	190	175	No	0.44	184	No	0.42	189	No	0.37
	55	190	177	Yes	0.56	186	Yes	0.58	191	Yes	0.63
	60	190	178	Yes	0.62	187	Yes	0.66	193	Yes	0.85
	65	190	180	Yes	0.73	189	Yes	0.80	195	Yes	0.96
	70	190	182	Yes	0.82	191	Yes	0.90	196	Yes	0.98
	75	190	184	Yes	0.89	193	Yes	0.95	198	Yes	>0.99
	80	190	186	Yes	0.92	195	Yes	0.98	201	Yes	>0.99
	85	190	188	Yes	0.96	198	Yes	>0.99	203	Yes	>0.99
	90	190	192	Yes	0.99	201	Yes	>0.99	207	Yes	>0.99
	95	190	196	Yes	>0.99	205	Yes	>0.99	212	Yes	>0.99
	5	202	166	No	<0.01	174	No	<0.01	178	No	<0.01
	10	202	171	No	<0.01	179	No	<0.01	183	No	<0.01
	15	202	175	No	0.01	182	No	<0.01	186	No	<0.01
	20	202	177	No	0.03	185	No	0.01	189	No	<0.01
	25	202	179	No	0.05	187	No	0.02	192	No	<0.01
	30	202	181	No	0.10	189	No	0.04	194	No	<0.01
	35	202	183	No	0.17	191	No	0.10	196	No	0.02
	40	202	185	No	0.26	193	No	0.20	198	No	0.08
	45	202	187	No	0.37	195	No	0.33	199	No	0.15
3	50	202	188	No	0.44	196	No	0.42	201	No	0.37
	55	202	190	Yes	0.56	198	Yes	0.58	203	Yes	0.63
	60	202	192	Yes	0.63	200	Yes	0.74	205	Yes	0.85
	65	202	194	Yes	0.74	201	Yes	0.80	207	Yes	0.96
	70	202	196	Yes	0.83	203	Yes	0.90	208	Yes	0.98
	75	202	198	Yes	0.90	205	Yes	0.96	211	Yes	>0.99
	80	202	200	Yes	0.95	208	Yes	0.99	213	Yes	>0.99
	85	202	202	Yes	0.97	210	Yes	>0.99	216	Yes	>0.99
	90	202	206	Yes	>0.99	214	Yes	>0.99	219	Yes	>0.99
	95	202	211	Yes	>0.99	219	Yes	>0.99	224	Yes	>0.99

			Fall			Winter			Spring		
				Projected Proficiency			Projected Proficiency			Projected Proficiency	
Grade	Start %ile	Spring Cut	Fall RIT	*At Proficiency*	Prob.	Winter RIT	*At Proficiency*	Prob.	Spring RIT	*At Proficiency*	Prob.
	5	213	176	No	<0.01	182	No	<0.01	185	No	<0.01
	10	213	181	No	<0.01	187	No	<0.01	191	No	<0.01
	15	213	185	No	<0.01	191	No	<0.01	194	No	<0.01
	20	213	187	No	0.01	194	No	<0.01	197	No	<0.01
	25	213	190	No	0.03	196	No	<0.01	200	No	<0.01
	30	213	192	No	0.05	198	No	0.01	202	No	<0.01
	35	213	194	No	0.10	200	No	0.03	205	No	<0.01
	40	213	196	No	0.17	202	No	0.07	207	No	0.02
	45	213	198	No	0.26	204	No	0.14	209	No	0.08
4	50	213	200	No	0.37	206	No	0.26	211	No	0.25
	55	213	201	No	0.44	208	No	0.42	212	No	0.37
	60	213	203	Yes	0.56	210	Yes	0.58	214	Yes	0.63
	65	213	205	Yes	0.68	212	Yes	0.74	217	Yes	0.92
	70	213	207	Yes	0.79	214	Yes	0.86	219	Yes	0.98
	75	213	209	Yes	0.87	216	Yes	0.93	221	Yes	>0.99
	80	213	212	Yes	0.95	219	Yes	0.98	224	Yes	>0.99
	85	213	214	Yes	0.97	221	Yes	0.99	227	Yes	>0.99
	90	213	218	Yes	0.99	225	Yes	>0.99	230	Yes	>0.99
	95	213	223	Yes	>0.99	231	Yes	>0.99	236	Yes	>0.99
	5	224	184	No	<0.01	189	No	<0.01	191	No	<0.01
	10	224	190	No	<0.01	194	No	<0.01	197	No	<0.01
	15	224	193	No	<0.01	198	No	<0.01	201	No	<0.01
	20	224	196	No	<0.01	201	No	<0.01	205	No	<0.01
	25	224	199	No	0.01	204	No	<0.01	207	No	<0.01
	30	224	201	No	0.02	206	No	<0.01	210	No	<0.01
	35	224	203	No	0.05	209	No	0.01	212	No	<0.01
	40	224	205	No	0.08	211	No	0.03	215	No	<0.01
	45	224	207	No	0.14	213	No	0.07	217	No	0.01
5	50	224	209	No	0.22	215	No	0.15	219	No	0.04
	55	224	211	No	0.32	217	No	0.26	221	No	0.15
	60	224	213	No	0.44	219	No	0.42	223	No	0.37
	65	224	215	Yes	0.56	221	Yes	0.58	225	Yes	0.63
	70	224	217	Yes	0.68	223	Yes	0.74	228	Yes	0.92
	75	224	219	Yes	0.78	225	Yes	0.85	230	Yes	0.98
	80	224	222	Yes	0.89	228	Yes	0.95	233	Yes	>0.99
	85	224	225	Yes	0.95	231	Yes	0.99	236	Yes	>0.99
	90	224	229	Yes	0.99	235	Yes	>0.99	240	Yes	>0.99
	95	224	234	Yes	>0.99	241	Yes	>0.99	246	Yes	>0.99

Mathematics

			Fall			Winter			Spring		
Mathematics											
			Fall			**Winter**			**Spring**		
			Projected Proficiency				**Projected Proficiency**			**Projected Proficiency**	
Grade	**Start %ile**	**Spring Cut**	**Fall RIT**	*At Proficiency*	**Prob.**	**Winter RIT**	*At Proficiency*	**Prob.**	**Spring RIT**	*At Proficiency*	**Prob.**
	5	229	188	No	<0.01	192	No	<0.01	194	No	<0.01
	10	229	194	No	<0.01	198	No	<0.01	200	No	<0.01
	15	229	198	No	<0.01	202	No	<0.01	205	No	<0.01
	20	229	201	No	<0.01	205	No	<0.01	208	No	<0.01
	25	229	204	No	<0.01	208	No	<0.01	211	No	<0.01
	30	229	206	No	0.01	211	No	<0.01	214	No	<0.01
	35	229	209	No	0.03	213	No	<0.01	216	No	<0.01
	40	229	211	No	0.06	215	No	0.01	218	No	<0.01
	45	229	213	No	0.10	217	No	0.03	221	No	<0.01
6	50	229	215	No	0.17	220	No	0.10	223	No	0.02
	55	229	217	No	0.27	222	No	0.20	225	No	0.08
	60	229	219	No	0.38	224	No	0.34	227	No	0.25
	65	229	221	Yes	0.50	226	Yes	0.50	230	Yes	0.63
	70	229	223	Yes	0.62	228	Yes	0.66	232	Yes	0.85
	75	229	226	Yes	0.78	231	Yes	0.86	235	Yes	0.98
	80	229	228	Yes	0.86	234	Yes	0.96	238	Yes	>0.99
	85	229	231	Yes	0.94	237	Yes	0.99	241	Yes	>0.99
	90	229	235	Yes	0.99	241	Yes	>0.99	245	Yes	>0.99
	95	229	241	Yes	>0.99	247	Yes	>0.99	252	Yes	>0.99
	5	236	192	No	<0.01	194	No	<0.01	196	No	<0.01
	10	236	198	No	<0.01	201	No	<0.01	203	No	<0.01
	15	236	202	No	<0.01	205	No	<0.01	207	No	<0.01
	20	236	206	No	<0.01	209	No	<0.01	211	No	<0.01
	25	236	208	No	<0.01	212	No	<0.01	214	No	<0.01
	30	236	211	No	<0.01	215	No	<0.01	217	No	<0.01
	35	236	213	No	<0.01	217	No	<0.01	220	No	<0.01
	40	236	216	No	0.01	219	No	<0.01	222	No	<0.01
	45	236	218	No	0.04	222	No	0.01	224	No	<0.01
7	50	236	220	No	0.07	224	No	0.03	227	No	<0.01
	55	236	222	No	0.13	226	No	0.07	229	No	0.01
	60	236	225	No	0.26	229	No	0.20	231	No	0.04
	65	236	227	No	0.37	231	No	0.33	234	No	0.25
	70	236	229	Yes	0.50	233	Yes	0.50	236	Yes	0.50
	75	236	232	Yes	0.69	236	Yes	0.74	239	Yes	0.85
	80	236	235	Yes	0.83	239	Yes	0.90	242	Yes	0.98
	85	236	238	Yes	0.93	243	Yes	0.98	246	Yes	>0.99
	90	236	243	Yes	0.99	247	Yes	>0.99	251	Yes	>0.99
	95	236	249	Yes	>0.99	254	Yes	>0.99	257	Yes	>0.99

Mathematics												
			Fall			Winter			Spring			
				Projected Proficiency			Projected Proficiency			Projected Proficiency		
Grade	Start %ile	Spring Cut	Fall RIT	*At Proficiency*	Prob.	Winter RIT	*At Proficiency*	Prob.	Spring RIT	*At Proficiency*	Prob.
	5	243	194	No	<0.01	196	No	<0.01	197	No	<0.01
	10	243	201	No	<0.01	203	No	<0.01	205	No	<0.01
	15	243	205	No	<0.01	208	No	<0.01	210	No	<0.01
	20	243	209	No	<0.01	212	No	<0.01	214	No	<0.01
	25	243	212	No	<0.01	215	No	<0.01	217	No	<0.01
	30	243	215	No	<0.01	218	No	<0.01	220	No	<0.01
	35	243	218	No	<0.01	221	No	<0.01	223	No	<0.01
	40	243	220	No	<0.01	223	No	<0.01	225	No	<0.01
	45	243	223	No	0.02	226	No	<0.01	228	No	<0.01
8	50	243	225	No	0.03	228	No	<0.01	230	No	<0.01
	55	243	227	No	0.06	231	No	0.02	233	No	<0.01
	60	243	230	No	0.12	233	No	0.05	235	No	<0.01
	65	243	232	No	0.19	236	No	0.15	238	No	0.04
	70	243	235	No	0.33	238	No	0.27	241	No	0.25
	75	243	238	Yes	0.50	241	Yes	0.50	244	Yes	0.63
	80	243	241	Yes	0.67	244	Yes	0.73	247	Yes	0.92
	85	243	245	Yes	0.84	248	Yes	0.93	251	Yes	>0.99
	90	243	249	Yes	0.94	253	Yes	0.99	256	Yes	>0.99
	95	243	256	Yes	>0.99	260	Yes	>0.99	263	Yes	>0.99

Table 3.11 Proficiency Projection based on RIT Scores—Science

Grade	Start %ile	Spring Cut	Fall	Fall		Winter	Winter		Spring	Spring	
				Projected Proficiency			Projected Proficiency			Projected Proficiency	
			Fall RIT	*At Proficiency*	Prob.	Winter RIT	*At Proficiency*	Prob.	Spring RIT	*At Proficiency*	Prob.
4	5	204	175	No	<0.01	180	No	<0.01	182	No	<0.01
	10	204	180	No	0.01	184	No	<0.01	186	No	<0.01
	15	204	183	No	0.04	187	No	0.01	189	No	<0.01
	20	204	185	No	0.05	189	No	0.01	191	No	<0.01
	25	204	187	No	0.09	191	No	0.03	193	No	<0.01
	30	204	189	No	0.15	193	No	0.07	195	No	<0.01
	35	204	190	No	0.15	195	No	0.10	197	No	0.02
	40	204	192	No	0.23	196	No	0.14	198	No	0.04
	45	204	193	No	0.27	198	No	0.23	200	No	0.12
	50	204	195	No	0.38	199	No	0.29	201	No	0.19
	55	204	196	No	0.38	201	No	0.43	203	No	0.38
	60	204	198	Yes	0.50	202	Yes	0.50	204	Yes	0.50
	65	204	199	Yes	0.56	204	Yes	0.64	206	Yes	0.72
	70	204	201	Yes	0.62	205	Yes	0.71	207	Yes	0.81
	75	204	203	Yes	0.73	207	Yes	0.77	209	Yes	0.93
	80	204	204	Yes	0.77	209	Yes	0.86	211	Yes	0.98
	85	204	207	Yes	0.85	211	Yes	0.93	213	Yes	>0.99
	90	204	210	Yes	0.93	214	Yes	0.98	216	Yes	>0.99
	95	204	214	Yes	0.97	218	Yes	>0.99	221	Yes	>0.99
6	5	212	184	No	<0.01	187	No	<0.01	188	No	<0.01
	10	212	188	No	0.01	192	No	<0.01	193	No	<0.01
	15	212	191	No	0.01	195	No	<0.01	196	No	<0.01
	20	212	194	No	0.04	197	No	0.01	198	No	<0.01
	25	212	196	No	0.07	199	No	0.02	200	No	<0.01
	30	212	198	No	0.10	201	No	0.05	202	No	<0.01
	35	212	199	No	0.12	203	No	0.10	204	No	0.01
	40	212	201	No	0.19	204	No	0.10	205	No	0.02
	45	212	202	No	0.23	206	No	0.18	207	No	0.07
	50	212	204	No	0.33	207	No	0.24	208	No	0.12
	55	212	205	No	0.33	209	No	0.36	210	No	0.28
	60	212	207	No	0.44	210	No	0.43	212	Yes	0.50
	65	212	209	Yes	0.56	212	Yes	0.57	213	Yes	0.62
	70	212	210	Yes	0.61	214	Yes	0.71	215	Yes	0.81
	75	212	212	Yes	0.67	215	Yes	0.76	217	Yes	0.93
	80	212	214	Yes	0.77	217	Yes	0.86	219	Yes	0.98
	85	212	216	Yes	0.85	220	Yes	0.95	221	Yes	>0.99
	90	212	219	Yes	0.90	223	Yes	0.98	224	Yes	>0.99
	95	212	224	Yes	0.98	227	Yes	>0.99	229	Yes	>0.99

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