Predicting Proficiency on Alaska System of Academic Readiness (AK STAR) Based on NWEA MAP Growth Scores

August 2025

NWEA Psychometrics and Analytics

Linking Study Updates

Date	Description
2016–02	Initial linking study conducted for the Alaska Measures of Progress (AMP) assessments in grades 3–10 for ELA and mathematics using Spring 2015 data
2018–06–26	Updated the linking study for the Performance Evaluation for Alaska's Schools (PEAKS) assessment in grades 3–8 for ELA and mathematics using Spring 2017 data
2020–07–02	Incorporated the 2020 MAP Growth norms using Spring 2017 data
2022–09–15	Updated the linking study for the new Alaska System of Academic Readiness (AK STAR) spring summative assessment in grades 3–9 for ELA and mathematics using Spring 2022 data
2024–01–26	Updated the linking study for the new Alaska System of Academic Readiness (AK STAR) spring summative assessment in grades 3–9 for ELA and mathematics using Spring 2023 data and new cut scores
2024–02–27	Eliminated the school district labeled "ZZZ DEED USE ONLY" and revised the linking study results accordingly by excluding this district.
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

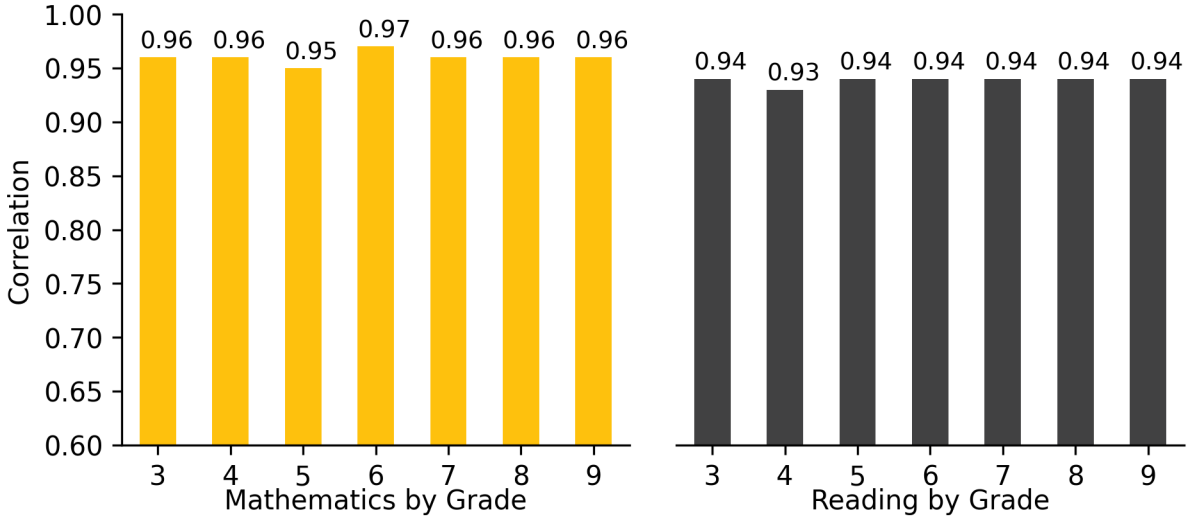
Linking studies allow partners to use MAP® Growth™ Rasch Unit (RIT) scores throughout the year to predict students' achievement levels on state summative assessments. This is accomplished through statistical analyses that produce RIT cut scores that correspond to the state summative achievement levels.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

AK STAR is a connected interim and summative assessment system that administers MAP Growth in the fall and winter and an end-of-year summative test in the spring for mathematics and English language arts (ELA) in grades 3–9. In Year 1 of the AK STAR connected solution (2021–2022), students took the MAP Growth mathematics and ELA assessments in the fall, winter, and spring along with the AK STAR summative end-of-year assessment in the spring in order to link the two test scales. MAP Growth scores are reported on the Rasch Unit (RIT) vertical scale that ranges from about 100 to 350. In Year 2 (2022–2023) and beyond, students took the MAP Growth standalone assessment in the fall and winter and AK STAR in the spring. The spring AK STAR includes both a summative assessment component and a MAP Growth component, producing a summative proficiency score, an overall RIT score, and instructional area RIT scores. The MAP Growth reports include a RIT score along with a projected proficiency score based on the results of this linking study to help inform instruction throughout the year.

The linking study is based on test scores from students in grades 3–9 who took both the MAP Growth and AK STAR spring summative assessments in mathematics and ELA/reading in Spring 2023. The linking study sample included 57,049 students across 54 districts and 479 schools in Alaska. The test scores from both tests were used as the basis for linking the two assessments together.

Before the linking analyses began, NWEA confirmed that the MAP Growth interim and AK STAR summative assessments were constructed based on the same or similar set of content standards to warrant a connection. The link between the two tests was further investigated by calculating correlation coefficients that indicate the relationship between the MAP Growth and AK STAR summative test scores. A high positive correlation (e.g., ≥ 0.70) shows that students who perform well on one assessment also tend to perform well on the other, and vice versa, with 1.00 being a perfect positive correlation. The correlations between the MAP Growth and AK STAR summative test scores from Spring 2023, as shown in Figure E.1, are consistent with linking study expectations, indicating that MAP Growth is a good assessment for predicting performance on the AK STAR spring summative assessment.

Figure E.1. Correlations Between MAP Growth and AK STAR Scores



The equipercentile linking method (Kolen & Brennan, 2004) was used to produce the RIT cut scores for the spring administration that correspond to achievement levels on the AK STAR summative assessments for every subject and grade. MAP Growth cut scores for grade 2, as well as those for the fall and winter administrations of all grades, are also provided so that educators can track grade 2 students' progress on the AK STAR test by grade 3, alongside all other students, early in the year. These cut scores were derived from the spring cuts[1] and the growth norms for the adjacent grades (i.e., grades 2 to 3), or fall and winter administrations to the spring administration. While RIT cut scores were generated for every achievement level on the AK STAR summative assessments, Table E.1 presents the *Proficient* cut scores that indicate the minimum score a student must get to be considered proficient for accountability purposes.

[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.1. MAP Growth RIT Cut Scores for AK STAR Proficiency

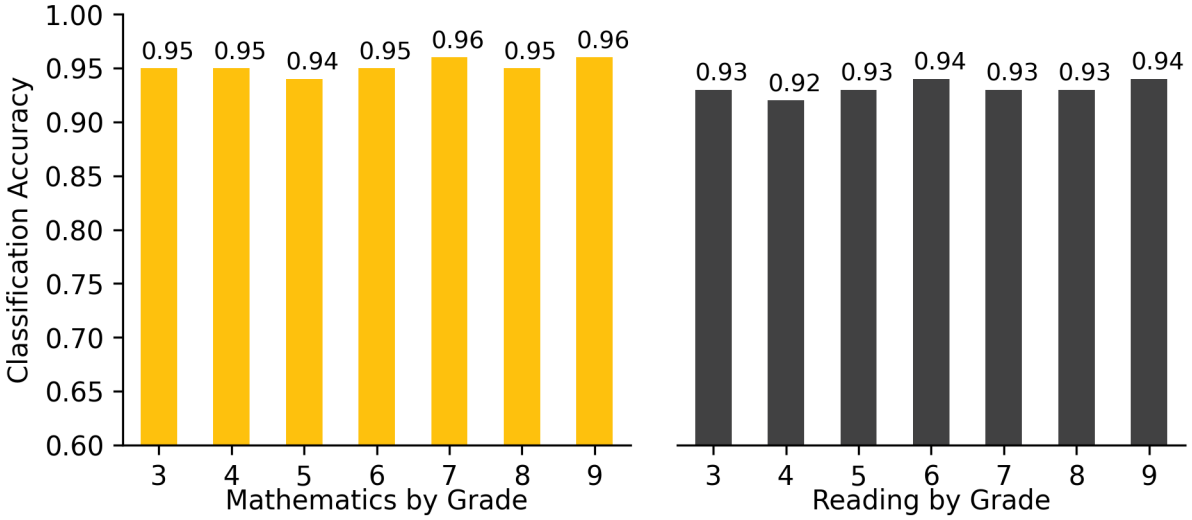
Assessment		*Proficient* Cut Scores by Grade							
		2	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Mathematics									
AK STAR Spring		–	1524	1538	1544	1563	1570	1580	1590
MAP Growth Mathematics	Fall	181	191	207	213	218	225	232	240
	Winter	190	200	215	219	224	229	236	241
	Spring	195	206	220	223	228	232	239	242
ELA/Reading									
AK STAR Spring		–	1582	1589	1596	1605	1610	1615	1619
MAP Growth Reading	Fall	180	193	202	209	216	220	223	224
	Winter	186	198	205	212	217	221	224	225
	Spring	190	201	207	213	218	222	225	226

Educators can use these cut scores to determine whether students are on track for proficiency (*Proficient* or higher) on the state assessment. For example, the *Proficient* cut score on the grade 3 AK STAR mathematics summative test is 1524. A grade 3 student with a MAP Growth mathematics RIT score of 191 in the fall is likely to meet proficiency on the AK STAR mathematics summative test in the spring, whereas a grade 3 student with a RIT score lower than 191 in the fall is in jeopardy of not meeting proficiency. MAP Growth cut scores for grade 2 are also provided so that educators can track early learners' progress toward proficiency on the AK STAR spring summative assessment by grade 3.

As further evidence that MAP Growth scores can be used to predict students' proficiency on the state test, NWEA calculated classification accuracy statistics that show how well the RIT scores correctly classified, or predicted, students as proficient on the AK STAR summative tests.[2] For example, the grade 3 MAP Growth mathematics *Proficient* cut score has a 0.95 accuracy rate, meaning it accurately predicted student achievement on the state test for 95% of the sample. A high statistic indicates high accuracy. Overall, MAP Growth scores have a high accuracy rate of identifying student proficiency on the AK STAR summative tests, as illustrated in Figure E.2.

[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



Please note that the purpose of this report is to explain NWEA's linking study methodology. It is not meant as the main reference for determining a student's likely performance on the state summative assessments. The cut scores in this report are based on the default instructional weeks most encountered for each term (i.e., Weeks 4, 20, and 32 for fall, winter, and spring, respectively), whereas instructional weeks often vary by district. The cut scores in this report may therefore differ from the results in the NWEA reporting system that reflect the specific instructional weeks set by partners. Partners should therefore reference their MAP Growth score reports instead.

1. Introduction

1.1. Purpose of the Study

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

This report presents results from a linking study conducted by NWEA to statistically connect Rasch Unit (RIT) scores from the MAP Growth assessments with scores from the Alaska System of Academic Readiness (AK STAR) spring summative assessments in grades 3–9 in mathematics and English language arts (ELA) taken during the Spring 2023 term. MAP Growth cut scores are also included for grade 2 so that educators can track early learners' progress toward proficiency on the AK STAR summative test by grade 3. Specifically, this report presents the following results:

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

1.2. Assessment Overview

AK STAR is Alaska's connected interim and summative assessment system for mathematics and ELA in grades 3–9 aligned to the Alaska ELA and Mathematics Standards adopted in 2012. It was administered for the first time in 2021–2022. This solution administers MAP Growth in the fall and winter and an end-of-year summative assessment in the spring, offering coherence across the interim and summative assessments and reducing the number of yearly test events. Based on their spring summative test scores, students are placed into one of four achievement levels: *Needs Support*, *Approaching Proficient*, *Proficient*, and *Advanced*. The *Proficient* cut score demarks the minimum level of achievement considered to be proficient for accountability purposes.

MAP Growth tests are adaptive interim assessments aligned to state-specific content standards and administered in the fall, winter, and spring. Scores are reported on the RIT vertical scale with a range of 100 to 350. To aid the interpretation of scores, NWEA conducts norming studies of student and school performance on MAP Growth. Growth norms provide expected score gains across test administrations (e.g., the relative evaluation of a student's growth from fall to spring), which are used to conduct the linking studies. 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 2023 administration of the MAP Growth and AK STAR summative assessments. Each student's state testing record was matched to their MAP Growth score based on the student's first and last names, date of birth, student ID, and other available identifying information. Only students who have scores on both the MAP Growth and AK STAR summative assessments in Spring 2023 were included in the study sample.

2.2. Descriptive Statistics

Descriptive statistics are provided to summarize the test scores for both the MAP Growth and AK STAR summative assessments, including the test score mean, standard deviation (SD), minimum, and maximum. The mean presents the average test scores across all students in the study sample, and the SD indicates the variability of test scores, revealing how students' scores are distributed around the average score, or mean. Correlation coefficients between the MAP Growth RIT scores and AK STAR summative scores are also provided to answer the question "How well do the test scores from MAP Growth (that reference the RIT scale) correlate to the scores obtained from the AK STAR summative test (that references some other scale) in the same subject?" The correlations were calculated as:

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

where r is the correlation coefficient, x_i and y_i are the values of the *x*- and *y*-variables in a sample, and $\overline{x}$ and $\overline{y}$ are the mean of the values of the *x*- and *y*-variables.

2.3. MAP Growth Cut Scores

MAP Growth cut scores that predict student achievement on the AK STAR summative assessment are reported for grades 3–9, as well as for grade 2 so that educators can track early learners' progress toward proficiency (*Proficient* or higher) on the AK STAR summative test by grade 3. Percentile ranks based on the 2025 NWEA norms are also provided. These are useful for understanding how students' scores compare with peers nationwide and the relative rigor of a state's achievement level designations for its summative assessment.

The equipercentile linking method (Kolen & Brennan, 2004) was used to identify the spring MAP Growth RIT scores for grades 3–9 that correspond to the AK STAR spring summative achievement level cut scores. The equipercentile linking procedure matches scores on the two scales that have the same percentile rank (i.e., the proportion of tests at or below each score). For example, let x represent a score on Test X (e.g., AK STAR summative). Its equipercentile equivalent score on Test Y (e.g., MAP Growth), $e_y(x)$, can be obtained through a cumulative-distribution-based linking function defined as:

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

where $e_y(x)$ is the equipercentile equivalent of score x on the AK STAR summative tests on the scale of MAP Growth, $P(x)$ is the percentile rank of a given score on the AK STAR summative tests, and G^{-1} is the inverse of the percentile rank function for MAP Growth that indicates the

score on MAP Growth corresponding to a given percentile. Polynomial loglinear pre-smoothing was applied to reduce irregularities of the score distributions and equipercentile linking curve.

The MAP Growth conditional growth norms provide students' expected score gains across terms, such as growth from fall to spring within the same grade or from spring of a lower grade to spring of the adjacent higher grade. This information was used to calculate the fall and winter cut scores for grades 3–9. The equation below was used to determine the previous term's MAP Growth score needed to reach the spring cut score, considering the expected growth associated with the previous RIT score:

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

where:

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

The most recent MAP Growth conditional growth norms were also used to calculate the fall, winter, and spring cuts for grade 2. Students do not begin taking the AK STAR summative assessment until grade 3. Thus, to derive the spring cut scores for grade 2, the growth score from spring of one year to the next was used (i.e., the growth score from spring of grade 2 to spring of grade 3). The calculation of fall and winter cuts for grade 2 followed the same process as for the other grades. For example, the growth score from fall to spring in grade 2 was used to calculate the fall cuts for this grade.

2.4. Classification Accuracy

The degree to which MAP Growth predicts student proficiency (*Proficient* or higher) status on the AK STAR summative test can be described using classification accuracy statistics based on the MAP Growth spring RIT cut scores. The results show the proportion of students correctly classified by their RIT scores as proficient or not proficient on the AK STAR spring summative test. Table 2.1 describes the classification accuracy statistics provided in this report (Pommerich et al., 2004).

Table 2.1. Description of Classification Accuracy Summary Statistics

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

Statistic	Description	Interpretation
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 *Proficient* RIT cut does not guarantee that a student is proficient on the state test. Instead, it can be claimed that a student meeting the RIT cut score has a 50% chance of reaching proficiency on the state test, with their chances increasing the greater their score is from the cut. The proficiency projections indicate these probabilities for various RIT scores throughout the year.

In addition to calculating the MAP Growth fall and winter cut scores (and the projected grade 2 cut scores), the MAP Growth conditional growth norms data were also used to calculate the probability of reaching proficiency (*Proficient* or higher) on the AK STAR summative test based on a student's RIT scores from fall and winter:

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

where:

- Φ is the standard normal cumulative distribution function,
- $RIT_{previous}$ is the student's RIT score in fall or winter,
- g is the expected growth from the previous RIT (e.g., fall or winter) to the spring RIT,
- $RIT_{SpringCut}$ is the MAP Growth *Proficient* cut score for spring, 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 (*Proficient* or higher) performance on the AK STAR summative test based on their spring RIT score (RIT_{Spring}):

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

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

3. Results

3.1. Study Sample

Only students who have scores on both the MAP Growth and AK STAR summative assessments in Spring 2023 were included in the study sample. Data used in this study were collected from 54 districts and 479 schools in Alaska. Table 3.1 presents the demographic distributions of race, sex, and achievement level of students.

Table 3.1. Linking Study Sample Demographics

Demographic Subgroup		% Students by Grade						
		3	4	5	6	7	8	9
Mathematics								
	Total N	8,400	8,307	8,385	8,157	7,966	7,909	7,100
Race	African American	2.3	2.0	1.9	2.4	2.1	2.3	2.5
	Alaska Native	21.9	21.5	22.1	22.4	23.2	23.3	25.0
	American Indian	0.7	0.6	0.7	0.6	0.5	0.6	0.6
	Asian	4.9	5.5	5.1	5.2	5.7	5.7	6.6
	Hispanic	7.9	7.6	8.3	8.3	7.6	8.1	7.2
	NH/PI	3.7	3.6	3.5	3.0	3.1	3.0	2.7
	Two or More Races	14.2	14.5	15.1	13.9	13.1	13.4	12.9
	White (Caucasian)	44.4	44.8	43.1	44.2	44.7	43.5	42.5
Sex	Female	49.2	48.9	49.2	48.5	49.0	47.1	45.5
	Male	50.8	51.1	50.8	51.5	51.0	52.9	54.5
Achievement Level	*Needs Support*	47.2	49.4	48.5	46.5	51.6	49.5	53.3
	Approaching Proficient	19.8	18.5	14.6	20.8	15.5	18.3	20.1
	Proficient	24.6	21.1	28.0	24.2	24.3	24.5	18.4
	Advanced	8.3	10.9	8.8	8.5	8.5	7.7	8.3
ELA/Reading								
	Total N	8,361	8,275	8,363	8,131	7,977	7,931	7,091
Race	African American	2.3	1.9	1.9	2.4	2.0	2.3	2.4
	Alaska Native	22.0	21.7	22.2	22.6	23.2	23.3	25.0
	American Indian	0.7	0.6	0.7	0.6	0.5	0.6	0.7
	Asian	4.9	5.4	5.2	5.2	5.7	5.6	6.5
	Hispanic	7.9	7.5	8.3	8.2	7.5	8.0	7.4
	NH/PI	3.7	3.5	3.5	3.0	3.2	3.0	2.6
	Two or More Races	14.2	14.5	15.2	14.0	13.2	13.5	12.9
	White (Caucasian)	44.4	44.8	43.1	44.1	44.6	43.8	42.5
Sex	Female	49.2	48.9	49.3	48.5	48.9	47.4	45.7
	Male	50.8	51.1	50.7	51.5	51.1	52.6	54.3
Achievement Level	*Needs Support*	38.9	38.5	40.2	31.5	41.8	44.0	42.7
	Approaching Proficient	33.7	29.6	24.4	32.6	28.4	25.6	25.2
	Proficient	17.6	21.4	24.8	23.4	21.5	20.6	24.5
	Advanced	9.7	10.5	10.6	12.5	8.3	9.8	7.6

Note. NH/PI = Native Hawaiian or Other Pacific Islander.

3.2. Descriptive Statistics

Table 3.2 presents descriptive statistics of the MAP Growth and AK STAR summative test scores from Spring 2023, including the correlation coefficients (*r*) between them. The coefficients between the scores range from 0.95 to 0.97 for mathematics and 0.93 to 0.94 for ELA/reading. These values indicate a high positive correlation among the scores, which is important validity evidence for the claim that MAP Growth scores are good predictors of performance on the AK STAR spring summative assessments.

Table 3.2. Descriptive Statistics of Test Scores

Grade	N	*r*	AK STAR Summative				MAP Growth			
			Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
Mathematics										
3	8,400	0.96	1511.9	23.9	1400	1607	195.7	17.1	138	269
4	8,307	0.96	1525.5	25.3	1410	1707	205.7	17.1	139	268
5	8,385	0.95	1534.2	29.4	1437	1683	213.0	17.6	144	281
6	8,157	0.97	1547.6	32.8	1452	1700	217.2	16.3	164	282
7	7,966	0.96	1553.5	36.9	1440	1790	222.2	17.4	165	302
8	7,909	0.96	1562.4	41.4	1450	1838	226.2	18.0	157	297
9	7,100	0.96	1566.9	39.8	1452	1850	228.6	16.4	164	300
ELA/Reading										
3	8,361	0.94	1570.1	20.1	1494	1675	192.4	13.5	141	239
4	8,275	0.93	1578.4	25.1	1497	1742	200.7	13.3	150	249
5	8,363	0.94	1586.5	29.3	1480	1780	206.7	14.0	151	259
6	8,131	0.94	1595.2	33.0	1490	1800	212.8	13.2	163	265
7	7,977	0.94	1594.0	34.4	1506	1755	214.2	13.7	156	260
8	7,931	0.94	1597.5	39.1	1481	1840	217.7	13.2	172	263
9	7,091	0.94	1602.8	41.1	1467	1773	219.6	12.6	163	271

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

3.3. MAP Growth Cut Scores

Table 3.3 and Table 3.4 present the AK STAR summative scale score ranges and the corresponding MAP Growth RIT cut scores and percentile ranges by content area and grade. Bold numbers indicate the cut scores considered to be at least proficient (*Proficiency* or higher) for accountability purposes. These tables can be used to predict a student's likely achievement level on the AK STAR spring summative assessment when MAP Growth is taken in the fall and winter. For example, a grade 3 student who obtained a MAP Growth mathematics RIT score of 191 in the fall is likely to achieve *Proficient* performance on the AK STAR summative mathematics test. A grade 3 student who obtained a MAP Growth mathematics RIT score of 200 in the winter is also likely to achieve *Proficient* performance on the AK STAR spring summative assessment. The winter cut score is higher than the fall cut score because growth is expected between fall and winter as students receive more instruction during the school year.

Prediction for spring is not needed because the MAP Growth assessment in spring is embedded in the AK STAR summative assessment and students will receive their RIT scores and AK STAR scores and achievement levels at the same time. The achievement levels based on the summative scores should be used if they are different from the predicted achievement levels in spring.

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

Table 3.3. MAP Growth Cut Scores—Mathematics

AK STAR Summative Mathematics				
Grade	***Needs Support***	***Approaching Proficient***	***Proficient***	***Advanced***
3	1400–1509	1510–1523	**1524**–1545	1546–1720
4	1410–1523	1524–1537	**1538**–1557	1558–1750
5	1420–1530	1531–1543	**1544**–1576	1577–1780
6	1430–1542	1543–1562	**1563**–1593	1594–1800
7	1440–1550	1551–1569	**1570**–1608	1609–1820
8	1450–1558	1559–1579	**1580**–1622	1623–1840
9	1450–1563	1564–1589	**1590**–1625	1626–1850

MAP Growth Mathematics								
Grade	***Needs Support***		***Approaching Proficient***		***Proficient***		***Advanced***	
	RIT	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**
Fall								
2	100–167	1–37	168–180	38–69	**181**–204	70–97	205–350	98–99
3	100–180	1–41	181–190	42–66	**191**–210	67–95	211–350	96–99
4	100–195	1–46	196–206	47–72	**207**–220	73–92	221–350	93–99
5	100–203	1–44	204–212	45–65	**213**–230	66–93	231–350	94–99
6	100–207	1–43	208–217	44–68	**218**–232	69–91	233–350	92–99
7	100–215	1–46	216–224	47–66	**225**–243	67–93	244–350	94–99
8	100–221	1–49	222–231	50–70	**232**–249	71–93	250–350	94–99
9	100–227	1–56	228–239	57–79	**240**–255	80–95	256–350	96–99
Winter								
2	100–175	1–36	176–189	37–70	**190**–212	71–97	213–350	98–99
3	100–188	1–40	189–199	41–66	**200**–219	67–94	220–350	95–99
4	100–202	1–46	203–214	47–72	**215**–228	73–92	229–350	93–99
5	100–209	1–45	210–218	46–65	**219**–237	66–92	238–350	93–99
6	100–213	1–44	214–223	45–67	**224**–239	68–91	240–350	92–99
7	100–219	1–47	220–228	48–66	**229**–248	67–93	249–350	94–99
8	100–225	1–49	226–235	50–69	**236**–254	70–92	255–350	93–99
9	100–230	1–57	231–240	58–76	**241**–256	77–93	257–350	94–99
Spring								
2	100–182	1–38	183–194	39–67	**195**–215	68–95	216–350	96–99
3	100–195	1–42	196–205	43–65	**206**–224	66–93	225–350	94–99
4	100–208	1–47	209–219	48–70	**220**–233	71–90	234–350	91–99
5	100–213	1–45	214–222	46–64	**223**–241	65–91	242–350	92–99
6	100–217	1–44	218–227	45–65	**228**–243	66–89	244–350	90–99
7	100–222	1–47	223–231	48–65	**232**–250	66–91	251–350	92–99
8	100–228	1–49	229–238	50–68	**239**–256	69–91	257–350	92–99
9	100–231	1–55	232–241	56–72	**242**–257	73–91	258–350	92–99

Table 3.4. MAP Growth Cut Scores—ELA/Reading

AK STAR Summative ELA/Reading				
Grade	***Needs Support***	***Approaching Proficient***	***Proficient***	***Advanced***
3	1400–1561	1562–1581	**1582**–1598	1599–1720
4	1410–1567	1568–1588	**1589**–1611	1612–1750
5	1420–1575	1576–1595	**1596**–1625	1626–1780
6	1430–1575	1576–1604	**1605**–1635	1636–1800
7	1440–1583	1584–1609	**1610**–1644	1645–1820
8	1450–1586	1587–1614	**1615**–1651	1652–1840
9	1450–1589	1590–1618	**1619**–1667	1668–1850

MAP Growth ELA/Reading								
Grade	***Needs Support***		***Approaching Proficient***		***Proficient***		***Advanced***	
	RIT	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**	**RIT**	**Percentile**
Fall								
2	100–159	1–27	160–179	28–71	**180**–194	72–92	195–350	93–99
3	100–176	1–33	177–192	34–67	**193**–205	68–87	206–350	88–99
4	100–188	1–34	189–201	35–62	**202**–214	63–85	215–350	86–99
5	100–196	1–34	197–208	35–61	**209**–222	62–86	223–350	87–99
6	100–200	1–31	201–215	32–65	**216**–226	66–85	227–350	86–99
7	100–207	1–39	208–219	40–67	**220**–231	68–87	232–350	88–99
8	100–211	1–40	212–222	41–66	**223**–233	67–85	234–350	86–99
9	100–214	1–46	215–223	47–66	**224**–235	67–85	236–350	86–99
Winter								
2	100–166	1–28	167–185	29–70	**186**–200	71–91	201–350	92–99
3	100–181	1–32	182–197	33–66	**198**–209	67–86	210–350	87–99
4	100–192	1–35	193–204	36–61	**205**–217	62–84	218–350	85–99
5	100–199	1–35	200–211	36–62	**212**–223	63–84	224–350	85–99
6	100–202	1–31	203–216	32–64	**217**–227	65–84	228–350	85–99
7	100–208	1–38	209–220	39–66	**221**–232	67–86	233–350	87–99
8	100–213	1–42	214–223	43–65	**224**–234	66–85	235–350	86–99
9	100–215	1–47	216–224	48–67	**225**–236	68–86	237–350	87–99
Spring								
2	100–172	1–30	173–189	31–67	**190**–202	68–88	203–350	89–99
3	100–186	1–34	187–200	35–64	**201**–211	65–83	212–350	84–99
4	100–195	1–36	196–206	37–60	**207**–218	61–82	219–350	83–99
5	100–202	1–37	203–212	38–60	**213**–224	61–82	225–350	83–99
6	100–204	1–33	205–217	34–63	**218**–228	64–84	229–350	85–99
7	100–210	1–40	211–221	41–65	**222**–233	66–86	234–350	87–99
8	100–214	1–42	215–224	43–65	**225**–235	66–85	236–350	86–99
9	100–216	1–49	217–225	50–68	**226**–237	69–86	238–350	87–99

3.4. Classification Accuracy

Table 3.5 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 AK STAR spring summative tests, providing insight into the predictive validity of MAP Growth. The overall classification accuracy rates range from 0.94 to 0.96 for mathematics and 0.92 to 0.94 for ELA/reading. These values suggest that the RIT cut scores are good at classifying students as proficient (*Proficient* or higher) or not proficient (lower than *Proficient*) on the AK STAR summative assessment.

Although the results show that MAP Growth scores can be used to predict student proficiency on the AK STAR summative tests with relatively high accuracy, there is a notable limitation to how these results should be used and interpreted. The MAP Growth and AK STAR summative 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 3.5. Classification Accuracy Results

Grade	N	Cut Score		Class. Accuracy	Rate		Sensitivity	Specificity	Precision	AUC
		MAP Growth	AK STAR		FP	FN				
Mathematics										
3	8,400	204	1524	0.95	0.04	0.06	0.94	0.96	0.92	0.99
4	8,307	215	1538	0.95	0.02	0.10	0.90	0.98	0.95	0.99
5	8,385	220	1544	0.94	0.03	0.10	0.90	0.97	0.94	0.99
6	8,157	225	1563	0.95	0.03	0.10	0.90	0.97	0.94	0.99
7	7,966	230	1570	0.96	0.03	0.07	0.93	0.97	0.93	0.99
8	7,909	235	1580	0.95	0.03	0.08	0.92	0.97	0.93	0.99
9	7,100	239	1590	0.96	0.03	0.07	0.93	0.97	0.91	0.99
ELA/Reading										
3	8,361	201	1582	0.93	0.06	0.09	0.91	0.94	0.85	0.98
4	8,275	207	1589	0.92	0.08	0.09	0.91	0.92	0.85	0.98
5	8,363	213	1596	0.93	0.07	0.06	0.94	0.93	0.88	0.98
6	8,131	218	1605	0.94	0.05	0.08	0.92	0.95	0.92	0.99
7	7,977	222	1610	0.93	0.04	0.12	0.88	0.96	0.90	0.98
8	7,931	225	1615	0.93	0.05	0.10	0.90	0.95	0.88	0.98
9	7,091	226	1619	0.94	0.05	0.10	0.90	0.95	0.90	0.98

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

3.5. Proficiency Projections

Table 3.6 and Table 3.7 present the estimated probability of achieving proficiency (*Proficient* or higher) performance on the AK STAR summative test based on RIT scores from fall, winter, or spring. Due to measurement error in all test scores, the *Proficient* MAP Growth cuts do not guarantee that a student will reach proficiency on the AK STAR summative test. Instead, they indicate a 50% chance that a student will reach a particular achievement level. Therefore, these projections further elucidate the *Proficient* cut scores by providing the likelihood of reaching proficiency on the AK STAR spring summative assessment at a given percentile throughout the year. For example, a grade 3 student at percentile 70 who obtained a MAP Growth mathematics score of 192 in the fall has an 55% chance of reaching *Proficient* or higher on the AK STAR test in spring. Additionally, an educator can also use the table to estimate that a grade 3 student who obtained a MAP Growth mathematics score of 201 in the winter has a 55% probability of reaching *Proficient* or higher on the AK STAR mathematics spring summative assessment.

Table 3.6. Proficiency Projections 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	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
2	5	195	147	No	<0.01	155	No	<0.01	161	No	<0.01
	10	195	153	No	<0.01	161	No	<0.01	167	No	<0.01
	15	195	157	No	<0.01	165	No	<0.01	171	No	<0.01
	20	195	160	No	0.01	168	No	0.01	174	No	<0.01
	25	195	162	No	0.02	171	No	0.01	177	No	<0.01
	30	195	165	No	0.03	173	No	0.02	179	No	<0.01
	35	195	167	No	0.06	175	No	0.04	181	No	<0.01
	40	195	169	No	0.09	177	No	0.07	183	No	<0.01
	45	195	171	No	0.14	179	No	0.09	185	No	<0.01
	50	195	173	No	0.2	181	No	0.14	187	No	0.01
	55	195	175	No	0.23	183	No	0.21	189	No	0.04
	60	195	177	No	0.31	185	No	0.3	192	No	0.2
	65	195	179	No	0.4	187	No	0.4	194	No	0.39
	70	195	181	Yes	0.5	189	No	0.45	196	Yes	0.61
	75	195	183	Yes	0.6	192	Yes	0.6	198	Yes	0.8
	80	195	186	Yes	0.69	194	Yes	0.7	201	Yes	0.96
	85	195	189	Yes	0.8	197	Yes	0.82	204	Yes	0.99
	90	195	193	Yes	0.89	201	Yes	0.91	208	Yes	>0.99
	95	195	198	Yes	0.97	207	Yes	0.98	214	Yes	>0.99
3	5	206	158	No	<0.01	166	No	<0.01	171	No	<0.01
	10	206	164	No	<0.01	172	No	<0.01	177	No	<0.01
	15	206	168	No	<0.01	176	No	<0.01	181	No	<0.01
	20	206	171	No	0.01	179	No	<0.01	185	No	<0.01
	25	206	174	No	0.01	182	No	0.01	188	No	<0.01
	30	206	176	No	0.03	184	No	0.02	190	No	<0.01
	35	206	178	No	0.05	186	No	0.04	193	No	<0.01
	40	206	180	No	0.08	189	No	0.08	195	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	45	206	182	No	0.13	191	No	0.13	197	No	0.01
	50	206	184	No	0.19	193	No	0.17	199	No	0.02
	55	206	186	No	0.26	195	No	0.24	201	No	0.08
	60	206	188	No	0.35	197	No	0.34	203	No	0.2
	65	206	190	No	0.45	199	No	0.45	206	Yes	0.5
	70	206	192	Yes	0.55	201	Yes	0.55	208	Yes	0.72
	75	206	195	Yes	0.7	204	Yes	0.71	211	Yes	0.92
	80	206	197	Yes	0.78	206	Yes	0.8	213	Yes	0.98
	85	206	200	Yes	0.87	210	Yes	0.89	217	Yes	>0.99
	90	206	204	Yes	0.95	214	Yes	0.96	221	Yes	>0.99
	95	206	210	Yes	0.99	220	Yes	>0.99	227	Yes	>0.99
4	5	220	171	No	<0.01	176	No	<0.01	180	No	<0.01
	10	220	177	No	<0.01	183	No	<0.01	187	No	<0.01
	15	220	181	No	<0.01	187	No	<0.01	191	No	<0.01
	20	220	184	No	<0.01	190	No	<0.01	195	No	<0.01
	25	220	186	No	<0.01	193	No	<0.01	198	No	<0.01
	30	220	189	No	0.01	196	No	0.01	201	No	<0.01
	35	220	191	No	0.02	198	No	0.01	203	No	<0.01
	40	220	193	No	0.04	200	No	0.02	206	No	<0.01
	45	220	195	No	0.07	202	No	0.04	208	No	<0.01
	50	220	197	No	0.11	204	No	0.08	210	No	<0.01
	55	220	199	No	0.16	207	No	0.16	212	No	0.01
	60	220	201	No	0.23	209	No	0.2	215	No	0.08
	65	220	203	No	0.31	211	No	0.28	217	No	0.2
	70	220	205	No	0.4	213	No	0.39	220	Yes	0.5
	75	220	208	Yes	0.55	216	Yes	0.56	222	Yes	0.72
	80	220	210	Yes	0.65	219	Yes	0.72	225	Yes	0.92
	85	220	214	Yes	0.81	222	Yes	0.84	229	Yes	0.99

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	90	220	217	Yes	0.89	226	Yes	0.94	233	Yes	>0.99
	95	220	223	Yes	0.98	232	Yes	0.99	240	Yes	>0.99
5	5	223	180	No	<0.01	183	No	<0.01	186	No	<0.01
	10	223	185	No	<0.01	189	No	<0.01	192	No	<0.01
	15	223	189	No	<0.01	194	No	<0.01	197	No	<0.01
	20	223	193	No	<0.01	197	No	<0.01	200	No	<0.01
	25	223	195	No	0.01	200	No	<0.01	204	No	<0.01
	30	223	198	No	0.03	203	No	0.01	206	No	<0.01
	35	223	200	No	0.05	205	No	0.02	209	No	<0.01
	40	223	202	No	0.08	207	No	0.04	211	No	<0.01
	45	223	204	No	0.12	210	No	0.1	214	No	0.01
	50	223	206	No	0.19	212	No	0.16	216	No	0.02
	55	223	208	No	0.26	214	No	0.24	218	No	0.08
	60	223	210	No	0.35	216	No	0.33	221	No	0.28
	65	223	212	No	0.45	219	Yes	0.5	223	Yes	0.5
	70	223	215	Yes	0.6	221	Yes	0.61	226	Yes	0.8
	75	223	217	Yes	0.7	224	Yes	0.76	228	Yes	0.92
	80	223	220	Yes	0.81	226	Yes	0.84	232	Yes	0.99
	85	223	223	Yes	0.9	230	Yes	0.94	235	Yes	>0.99
	90	223	227	Yes	0.96	234	Yes	0.98	240	Yes	>0.99
	95	223	233	Yes	>0.99	240	Yes	>0.99	246	Yes	>0.99
6	5	228	184	No	<0.01	187	No	<0.01	190	No	<0.01
	10	228	190	No	<0.01	194	No	<0.01	197	No	<0.01
	15	228	194	No	<0.01	198	No	<0.01	201	No	<0.01
	20	228	197	No	<0.01	201	No	<0.01	205	No	<0.01
	25	228	199	No	0.01	204	No	<0.01	208	No	<0.01
	30	228	202	No	0.02	207	No	0.01	211	No	<0.01
	35	228	204	No	0.04	209	No	0.02	213	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	40	228	206	No	0.07	212	No	0.05	216	No	<0.01
	45	228	208	No	0.11	214	No	0.09	218	No	<0.01
	50	228	210	No	0.16	216	No	0.14	220	No	0.01
	55	228	212	No	0.23	218	No	0.21	223	No	0.08
	60	228	214	No	0.31	220	No	0.29	225	No	0.2
	65	228	216	No	0.4	223	No	0.45	227	No	0.39
	70	228	219	Yes	0.55	225	Yes	0.55	230	Yes	0.72
	75	228	221	Yes	0.69	228	Yes	0.71	233	Yes	0.92
	80	228	224	Yes	0.81	231	Yes	0.83	236	Yes	0.99
	85	228	227	Yes	0.89	234	Yes	0.91	239	Yes	>0.99
	90	228	231	Yes	0.96	238	Yes	0.97	244	Yes	>0.99
	95	228	237	Yes	0.99	245	Yes	>0.99	251	Yes	>0.99
7	5	232	189	No	<0.01	191	No	<0.01	192	No	<0.01
	10	232	195	No	<0.01	197	No	<0.01	199	No	<0.01
	15	232	199	No	<0.01	202	No	<0.01	204	No	<0.01
	20	232	203	No	<0.01	206	No	<0.01	208	No	<0.01
	25	232	206	No	0.01	209	No	<0.01	211	No	<0.01
	30	232	208	No	0.02	211	No	0.01	214	No	<0.01
	35	232	211	No	0.04	214	No	0.02	216	No	<0.01
	40	232	213	No	0.07	216	No	0.04	219	No	<0.01
	45	232	215	No	0.11	219	No	0.1	221	No	<0.01
	50	232	217	No	0.17	221	No	0.15	224	No	0.01
	55	232	219	No	0.23	223	No	0.22	226	No	0.04
	60	232	222	No	0.36	226	No	0.35	229	No	0.2
	65	232	224	No	0.45	228	No	0.45	231	No	0.39
	70	232	226	Yes	0.55	231	Yes	0.55	234	Yes	0.72
	75	232	229	Yes	0.69	233	Yes	0.65	237	Yes	0.92
	80	232	232	Yes	0.8	236	Yes	0.78	240	Yes	0.99

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	85	232	235	Yes	0.89	240	Yes	0.9	244	Yes	>0.99
	90	232	239	Yes	0.96	245	Yes	0.98	249	Yes	>0.99
	95	232	246	Yes	0.99	251	Yes	>0.99	256	Yes	>0.99
8	5	239	192	No	<0.01	194	No	<0.01	196	No	<0.01
	10	239	199	No	<0.01	201	No	<0.01	203	No	<0.01
	15	239	203	No	<0.01	206	No	<0.01	208	No	<0.01
	20	239	207	No	<0.01	210	No	<0.01	212	No	<0.01
	25	239	210	No	0.01	213	No	<0.01	215	No	<0.01
	30	239	212	No	0.01	216	No	0.01	218	No	<0.01
	35	239	215	No	0.03	219	No	0.02	221	No	<0.01
	40	239	217	No	0.04	221	No	0.03	224	No	<0.01
	45	239	220	No	0.08	224	No	0.07	226	No	<0.01
	50	239	222	No	0.13	226	No	0.1	229	No	<0.01
	55	239	224	No	0.18	228	No	0.16	231	No	0.01
	60	239	227	No	0.28	231	No	0.26	234	No	0.08
	65	239	229	No	0.37	233	No	0.35	237	No	0.28
	70	239	232	Yes	0.5	236	Yes	0.5	239	Yes	0.5
	75	239	234	Yes	0.59	239	Yes	0.6	242	Yes	0.8
	80	239	237	Yes	0.72	242	Yes	0.74	246	Yes	0.98
	85	239	241	Yes	0.85	246	Yes	0.87	250	Yes	>0.99
	90	239	246	Yes	0.95	251	Yes	0.96	255	Yes	>0.99
	95	239	252	Yes	0.99	258	Yes	>0.99	262	Yes	>0.99
9	5	242	196	No	<0.01	196	No	<0.01	194	No	<0.01
	10	242	202	No	0.01	203	No	<0.01	202	No	<0.01
	15	242	207	No	0.02	207	No	0.01	207	No	<0.01
	20	242	210	No	0.04	211	No	0.01	211	No	<0.01
	25	242	213	No	0.06	214	No	0.02	215	No	<0.01
	30	242	216	No	0.07	217	No	0.03	218	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	35	242	218	No	0.1	220	No	0.05	221	No	<0.01
	40	242	220	No	0.12	222	No	0.07	223	No	<0.01
	45	242	223	No	0.15	225	No	0.11	226	No	<0.01
	50	242	225	No	0.19	227	No	0.14	229	No	<0.01
	55	242	227	No	0.22	230	No	0.18	231	No	<0.01
	60	242	229	No	0.25	232	No	0.23	234	No	0.01
	65	242	232	No	0.31	235	No	0.31	237	No	0.08
	70	242	234	No	0.37	237	No	0.37	240	No	0.28
	75	242	237	No	0.42	240	No	0.47	243	Yes	0.61
	80	242	240	Yes	0.5	243	Yes	0.57	247	Yes	0.92
	85	242	243	Yes	0.58	247	Yes	0.69	251	Yes	0.99
	90	242	248	Yes	0.71	252	Yes	0.82	256	Yes	>0.99
	95	242	254	Yes	0.83	259	Yes	0.93	263	Yes	>0.99

Table 3.7. Proficiency Projections Based on RIT Scores—ELA/Reading

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
2	5	190	142	No	<0.01	149	No	<0.01	153	No	<0.01
	10	190	148	No	<0.01	155	No	<0.01	159	No	<0.01
	15	190	152	No	<0.01	159	No	<0.01	164	No	<0.01
	20	190	156	No	0.01	162	No	0.01	167	No	<0.01
	25	190	159	No	0.02	165	No	0.01	170	No	<0.01
	30	190	161	No	0.04	168	No	0.03	173	No	<0.01
	35	190	163	No	0.06	170	No	0.05	175	No	<0.01
	40	190	166	No	0.09	172	No	0.07	177	No	<0.01
	45	190	168	No	0.13	175	No	0.11	180	No	<0.01
	50	190	170	No	0.19	177	No	0.17	182	No	0.01
	55	190	172	No	0.22	179	No	0.24	184	No	0.04
	60	190	174	No	0.29	181	No	0.27	186	No	0.13
	65	190	177	No	0.41	183	No	0.36	188	No	0.28
	70	190	179	No	0.46	186	Yes	0.5	191	Yes	0.61
	75	190	182	Yes	0.59	188	Yes	0.59	193	Yes	0.8
	80	190	184	Yes	0.67	191	Yes	0.68	196	Yes	0.96
	85	190	188	Yes	0.78	194	Yes	0.8	200	Yes	>0.99
	90	190	192	Yes	0.89	199	Yes	0.91	204	Yes	>0.99
	95	190	198	Yes	0.96	205	Yes	0.98	210	Yes	>0.99
3	5	201	155	No	<0.01	160	No	<0.01	164	No	<0.01
	10	201	161	No	<0.01	167	No	<0.01	171	No	<0.01
	15	201	166	No	<0.01	171	No	<0.01	175	No	<0.01
	20	201	169	No	0.01	175	No	0.01	179	No	<0.01
	25	201	172	No	0.02	178	No	0.02	182	No	<0.01
	30	201	175	No	0.04	180	No	0.03	184	No	<0.01
	35	201	178	No	0.07	183	No	0.06	187	No	<0.01
	40	201	180	No	0.11	185	No	0.08	189	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	45	201	182	No	0.13	188	No	0.14	192	No	0.01
	50	201	185	No	0.22	190	No	0.2	194	No	0.02
	55	201	187	No	0.29	192	No	0.27	196	No	0.08
	60	201	189	No	0.37	194	No	0.32	198	No	0.2
	65	201	192	No	0.46	197	No	0.45	201	Yes	0.5
	70	201	194	Yes	0.54	199	Yes	0.55	203	Yes	0.72
	75	201	197	Yes	0.63	202	Yes	0.68	206	Yes	0.92
	80	201	200	Yes	0.75	205	Yes	0.76	209	Yes	0.99
	85	201	204	Yes	0.84	209	Yes	0.88	213	Yes	>0.99
	90	201	208	Yes	0.93	213	Yes	0.94	217	Yes	>0.99
	95	201	215	Yes	0.98	220	Yes	0.99	224	Yes	>0.99
4	5	207	166	No	<0.01	170	No	<0.01	173	No	<0.01
	10	207	173	No	<0.01	177	No	<0.01	179	No	<0.01
	15	207	177	No	0.01	181	No	<0.01	184	No	<0.01
	20	207	181	No	0.02	184	No	0.01	187	No	<0.01
	25	207	184	No	0.04	187	No	0.02	190	No	<0.01
	30	207	186	No	0.05	190	No	0.05	193	No	<0.01
	35	207	189	No	0.1	193	No	0.08	195	No	<0.01
	40	207	191	No	0.14	195	No	0.13	198	No	0.01
	45	207	194	No	0.2	197	No	0.19	200	No	0.02
	50	207	196	No	0.28	199	No	0.27	202	No	0.08
	55	207	198	No	0.36	202	No	0.35	204	No	0.2
	60	207	200	No	0.45	204	No	0.45	207	Yes	0.5
	65	207	203	Yes	0.55	206	Yes	0.55	209	Yes	0.72
	70	207	205	Yes	0.64	209	Yes	0.69	211	Yes	0.87
	75	207	208	Yes	0.76	211	Yes	0.73	214	Yes	0.98
	80	207	211	Yes	0.83	214	Yes	0.84	217	Yes	>0.99
	85	207	215	Yes	0.92	218	Yes	0.93	220	Yes	>0.99

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	90	207	219	Yes	0.96	222	Yes	0.98	225	Yes	>0.99
	95	207	226	Yes	0.99	229	Yes	>0.99	231	Yes	>0.99
5	5	213	175	No	<0.01	178	No	<0.01	180	No	<0.01
	10	213	181	No	<0.01	184	No	<0.01	186	No	<0.01
	15	213	186	No	0.01	189	No	0.01	191	No	<0.01
	20	213	189	No	0.02	192	No	0.01	194	No	<0.01
	25	213	192	No	0.03	195	No	0.03	197	No	<0.01
	30	213	195	No	0.07	197	No	0.05	199	No	<0.01
	35	213	197	No	0.11	200	No	0.1	202	No	<0.01
	40	213	199	No	0.14	202	No	0.15	204	No	0.01
	45	213	201	No	0.2	204	No	0.18	206	No	0.02
	50	213	204	No	0.31	206	No	0.26	208	No	0.08
	55	213	206	No	0.36	209	No	0.4	211	No	0.28
	60	213	208	No	0.45	211	No	0.45	213	Yes	0.5
	65	213	210	Yes	0.55	213	Yes	0.55	215	Yes	0.72
	70	213	213	Yes	0.64	215	Yes	0.65	217	Yes	0.87
	75	213	215	Yes	0.73	218	Yes	0.78	220	Yes	0.98
	80	213	218	Yes	0.84	221	Yes	0.88	223	Yes	>0.99
	85	213	222	Yes	0.91	224	Yes	0.94	226	Yes	>0.99
	90	213	226	Yes	0.97	228	Yes	0.98	230	Yes	>0.99
	95	213	232	Yes	0.99	235	Yes	>0.99	237	Yes	>0.99
6	5	218	181	No	<0.01	183	No	<0.01	185	No	<0.01
	10	218	187	No	<0.01	189	No	<0.01	191	No	<0.01
	15	218	191	No	0.01	193	No	<0.01	195	No	<0.01
	20	218	195	No	0.01	197	No	0.01	198	No	<0.01
	25	218	198	No	0.03	199	No	0.02	201	No	<0.01
	30	218	200	No	0.04	202	No	0.04	203	No	<0.01
	35	218	202	No	0.07	204	No	0.06	206	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	40	218	205	No	0.14	206	No	0.1	208	No	<0.01
	45	218	207	No	0.16	209	No	0.19	210	No	0.01
	50	218	209	No	0.23	211	No	0.22	212	No	0.04
	55	218	211	No	0.31	213	No	0.31	214	No	0.13
	60	218	213	No	0.4	215	No	0.4	216	No	0.28
	65	218	215	No	0.45	217	Yes	0.5	218	Yes	0.5
	70	218	218	Yes	0.6	219	Yes	0.6	221	Yes	0.8
	75	218	220	Yes	0.69	222	Yes	0.74	223	Yes	0.92
	80	218	223	Yes	0.8	225	Yes	0.84	226	Yes	0.99
	85	218	226	Yes	0.89	228	Yes	0.92	229	Yes	>0.99
	90	218	231	Yes	0.97	232	Yes	0.97	233	Yes	>0.99
	95	218	237	Yes	0.99	238	Yes	>0.99	239	Yes	>0.99
7	5	222	185	No	<0.01	186	No	<0.01	187	No	<0.01
	10	222	191	No	<0.01	192	No	<0.01	193	No	<0.01
	15	222	195	No	0.01	196	No	<0.01	197	No	<0.01
	20	222	198	No	0.01	200	No	0.01	201	No	<0.01
	25	222	201	No	0.02	202	No	0.01	203	No	<0.01
	30	222	204	No	0.05	205	No	0.03	206	No	<0.01
	35	222	206	No	0.06	207	No	0.06	208	No	<0.01
	40	222	208	No	0.1	210	No	0.11	211	No	<0.01
	45	222	210	No	0.15	212	No	0.14	213	No	0.01
	50	222	212	No	0.21	214	No	0.2	215	No	0.02
	55	222	214	No	0.24	216	No	0.27	217	No	0.08
	60	222	217	No	0.36	218	No	0.36	219	No	0.2
	65	222	219	No	0.45	220	No	0.45	221	No	0.39
	70	222	221	Yes	0.55	223	Yes	0.6	224	Yes	0.72
	75	222	224	Yes	0.68	225	Yes	0.69	226	Yes	0.87
	80	222	226	Yes	0.76	228	Yes	0.8	229	Yes	0.98

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	85	222	230	Yes	0.88	231	Yes	0.89	232	Yes	>0.99
	90	222	234	Yes	0.95	235	Yes	0.96	237	Yes	>0.99
	95	222	240	Yes	0.99	241	Yes	0.99	243	Yes	>0.99
8	5	225	188	No	<0.01	189	No	<0.01	190	No	<0.01
	10	225	194	No	<0.01	195	No	<0.01	196	No	<0.01
	15	225	198	No	0.01	199	No	<0.01	200	No	<0.01
	20	225	201	No	0.01	203	No	0.01	203	No	<0.01
	25	225	204	No	0.03	205	No	0.02	206	No	<0.01
	30	225	207	No	0.04	208	No	0.04	209	No	<0.01
	35	225	209	No	0.07	210	No	0.06	211	No	<0.01
	40	225	211	No	0.11	213	No	0.1	213	No	<0.01
	45	225	214	No	0.15	215	No	0.14	216	No	0.01
	50	225	216	No	0.21	217	No	0.2	218	No	0.02
	55	225	218	No	0.29	219	No	0.28	220	No	0.08
	60	225	220	No	0.37	221	No	0.36	222	No	0.2
	65	225	222	No	0.45	223	No	0.45	224	No	0.39
	70	225	225	Yes	0.59	226	Yes	0.59	227	Yes	0.72
	75	225	227	Yes	0.67	228	Yes	0.68	229	Yes	0.87
	80	225	230	Yes	0.79	231	Yes	0.8	232	Yes	0.98
	85	225	233	Yes	0.87	235	Yes	0.9	236	Yes	>0.99
	90	225	238	Yes	0.96	239	Yes	0.96	240	Yes	>0.99
	95	225	244	Yes	0.99	245	Yes	0.99	246	Yes	>0.99
9	5	226	186	No	<0.01	187	No	<0.01	187	No	<0.01
	10	226	193	No	<0.01	194	No	<0.01	194	No	<0.01
	15	226	197	No	0.01	198	No	<0.01	198	No	<0.01
	20	226	201	No	0.01	201	No	0.01	202	No	<0.01
	25	226	204	No	0.03	205	No	0.02	205	No	<0.01
	30	226	207	No	0.04	207	No	0.04	208	No	<0.01

Grade	Start Percentile	Spring Cut	Fall			Winter			Spring		
			Fall RIT	Projected Proficiency		Winter RIT	Projected Proficiency		Spring RIT	Projected Proficiency	
				Proficient	Prob.		*Proficient*	Prob.		*Proficient*	Prob.
	35	226	209	No	0.06	210	No	0.06	210	No	<0.01
	40	226	212	No	0.11	212	No	0.08	213	No	<0.01
	45	226	214	No	0.15	214	No	0.12	215	No	<0.01
	50	226	216	No	0.21	217	No	0.2	217	No	0.01
	55	226	218	No	0.27	219	No	0.26	219	No	0.02
	60	226	221	No	0.38	221	No	0.34	222	No	0.13
	65	226	223	No	0.46	224	No	0.46	224	No	0.28
	70	226	226	Yes	0.58	226	Yes	0.54	227	Yes	0.61
	75	226	228	Yes	0.66	229	Yes	0.66	230	Yes	0.87
	80	226	231	Yes	0.76	232	Yes	0.77	233	Yes	0.98
	85	226	235	Yes	0.87	236	Yes	0.88	236	Yes	>0.99
	90	226	239	Yes	0.94	240	Yes	0.94	241	Yes	>0.99
	95	226	246	Yes	0.99	247	Yes	0.99	247	Yes	>0.99

References

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

Lewis, K., & Kuhfeld, M. (2024). *MAP Growth with enhanced item-selection algorithm: Updates on score comparability*. NWEA Research Report. NWEA. https://www.nwea.org/uploads/Research-MAP-Growth-with-enhanced-item-selection-algorithm-updates-on-score-compatibility_NWEA_Research_Guide.pdf

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

Meyer, J. P., Hu, A. H., & Li, S. (2023). *Content Proximity Spring 2022 Pilot Study Research Brief.* NWEA Research Report. NWEA. https://www.nwea.org/uploads/Content-Proximity-Project-and-Pilot-Study-Spring-2022-Research-Report.pdf

NWEA. (2025). *MAP Growth achievement status and growth norms for students and schools*. [Tech Rep.]. NWEA.

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