# Predicting Performance on the Wisconsin Forward Exam Based on NWEA MAP Growth Scores

August 2025

NWEA Psychometrics and Analytics

## Linking Study Updates

| Date | Description |
|---|---|
| 2020-07 | Conducted a linking study for grades 3–8 in ELA and mathematics based on the 2020 norms and Spring 2019 data. |
| 2025-08 | Updated the linking study based on the 2025 norms. |

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

## Table of Contents



## List of Tables



## List of Figures

## Executive Summary

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

Table E.1 presents the Wisconsin Forward Exam *Proficient* performance level cut scores and the corresponding MAP Growth RIT cut scores that allow teachers to identify students who are on track for proficiency (*Proficient* or higher) on the state summative test and those who are not. For example, the *Proficient* cut score on the Wisconsin Forward Exam in grade 3 ELA is 570. A grade 3 student with a MAP Growth reading RIT score of 196 in the fall is likely to meet proficiency on the state summative test in the spring, whereas a grade 3 student with a MAP Growth reading RIT score lower than 196 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 Wisconsin Forward Exam by grade 3. These cut scores were derived based on the grade 3 cuts and the 2025 NWEA growth norms for the adjacent grade (i.e., grades 2 to 3).

**Table E.1. MAP Growth Cut Scores for Wisconsin Forward Exam Proficiency**

| Assessment | | *Proficient* Cut Scores by Grade | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| **ELA/Reading** | | | | | | | | |
| WI Forward Exam Spring | | – | 570 | 592 | 610 | 622 | 638 | 652 |
| MAP Growth | Fall | 183 | 196 | 205 | 214 | 219 | 222 | 227 |
| | Winter | 189 | 201 | 208 | 216 | 220 | 223 | 228 |
| | Spring | 193 | 204 | 210 | 217 | 221 | 224 | 229 |
| **Mathematics** | | | | | | | | |
| WI Forward Exam Spring | | – | 560 | 588 | 611 | 626 | 647 | 667 |
| MAP Growth | Fall | 181 | 191 | 207 | 215 | 220 | 231 | 239 |
| | Winter | 190 | 200 | 215 | 221 | 227 | 236 | 244 |
| | Spring | 195 | 206 | 220 | 225 | 231 | 238 | 246 |

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

## E.1. Assessment Overview

The Wisconsin Forward Exam in grades 3–8 ELA and mathematics are Wisconsin's state summative assessments aligned to the Wisconsin Academic Standards. Based on their test scores, students are placed into one of four performance levels: *Below Basic, Basic, Proficient* and *Advanced.* These tests are used to provide evidence of student achievement in ELA/reading and mathematics for various test score uses, such as meeting the requirements of the state's accountability program. 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 100–350.

## 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 Wisconsin Forward Exam performance level cut scores. MAP Growth spring cut scores for grade 2 were then derived from the spring cuts for grade 3 and the growth norms for the adjacent grade (i.e., grades 2 to 3). Similarly, the MAP Growth cut scores for the fall and winter administrations of all grades were derived from the spring administration cuts and the growth norms for either fall to spring or winter to spring, respectively. The spring cuts[1] for mathematics were adjusted for score alignment before deriving the cuts for grade 2 spring and for all grades' fall and winter administrations.

## E.3. Student Sample

Only students who took both MAP Growth and the Wisconsin Forward Exam in Spring 2019 were included in the study sample. Table E.2 presents the weighted numbers of Wisconsin students from 30 districts and 161 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.

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

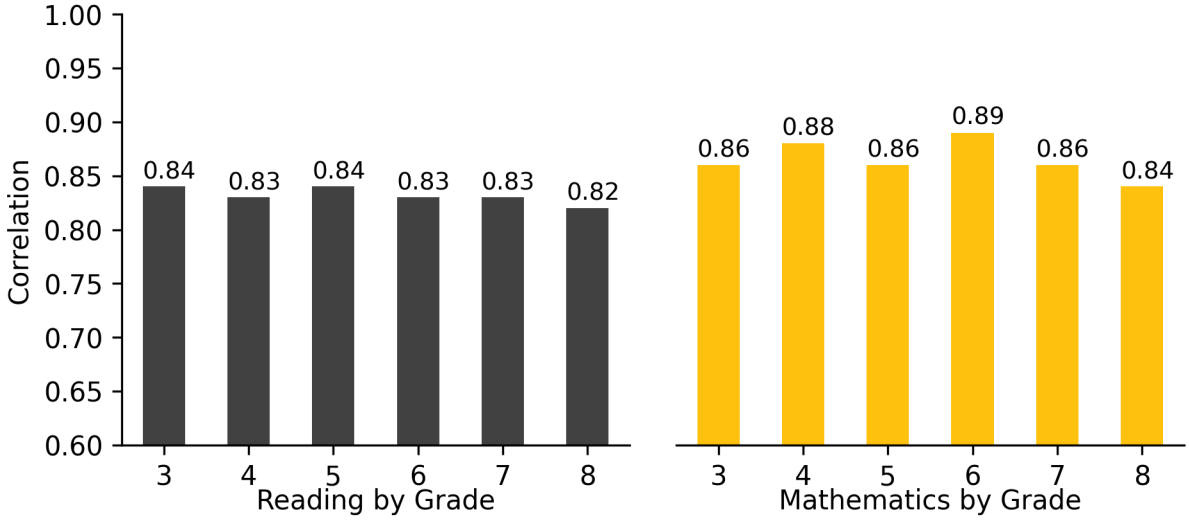
**Table E.2. Linking Study Sample**

| Grade | # Students | |
|---|---|---|
| | ELA/Reading | Mathematics |
| 3 | 5,992 | 6,012 |
| 4 | 6,316 | 6,413 |
| 5 | 6,486 | 6,555 |
| 6 | 6,779 | 6,820 |
| 7 | 6,695 | 6,683 |
| 8 | 6,084 | 5,997 |

## E.4. Test Score Relationships

Correlations between MAP Growth RIT scores and Wisconsin Forward Exam scores range from 0.82 to 0.89 across both 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 Wisconsin Forward Exam.

**Figure E.1. Correlations Between MAP Growth and Wisconsin Forward Exam**

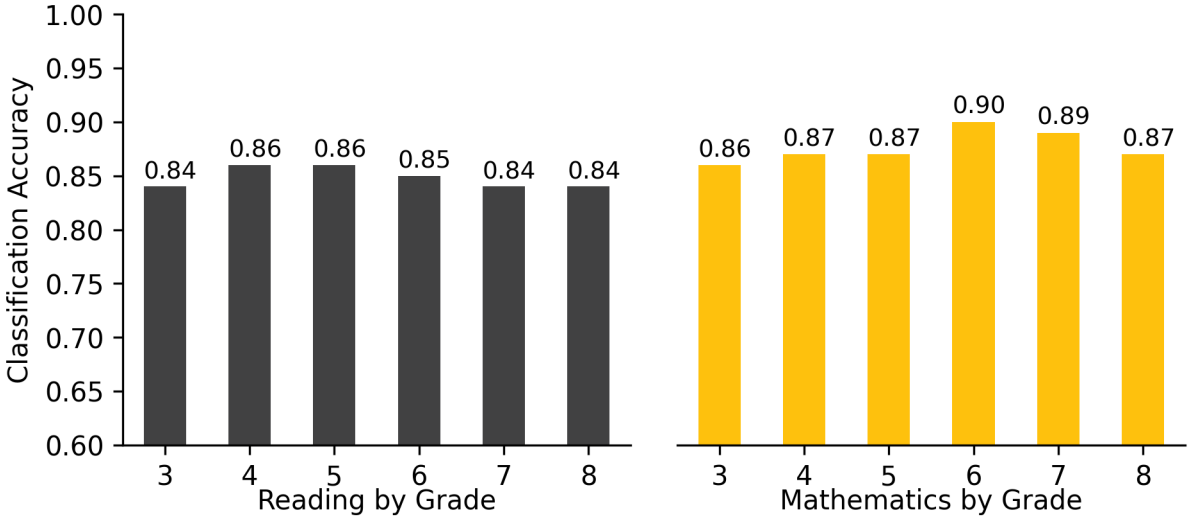



## E.5. Accuracy of MAP Growth Classifications

Figure E.2 presents the classification accuracy statistics that show the proportion of students correctly classified by their RIT scores as proficient (*Proficient* or higher) or not proficient (lower than *Proficient*) on the Wisconsin Forward Exam.[2] For example, the MAP Growth reading grade 3 *Proficient* cut score has a 0.84 accuracy rate, meaning it accurately classified student achievement on the state test for 84% of the sample. The results range from 0.84 to 0.90 across both content areas, indicating that RIT scores have a high accuracy rate of identifying student proficiency on the Wisconsin Forward Exam.

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

**Figure E.2. Accuracy of MAP Growth Classifications**



# 1. Introduction

## 1.1. Purpose of the Study

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

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

## 1.2. Assessment Overview

The Wisconsin Forward Exam grades 3–8 ELA and mathematics summative assessments are aligned to the Wisconsin 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 Basic, Basic, Proficient*, and *Advanced.* The *Proficient* cut score demarks the minimum level of performance considered to be proficient for accountability purposes.

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

# 2. Methods

## 2.1. Data Collection

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

## 2.2. Post-Stratification Weighting

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

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

## 2.3. MAP Growth Cut Scores

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

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

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

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

where:

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

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

### 2.4. Classification Accuracy

The degree to which MAP Growth predicts student proficiency status on the Wisconsin Forward Exam 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 (*Proficient* or higher) or not proficient (lower than *Proficient*). Table 2.1 describes the classification accuracy statistics provided in this report (Pommerich et al., 2004). The results are based on the Spring 2019 MAP Growth and Wisconsin Forward Exam data for the *Proficient* cut score.

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

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

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

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

### 2.5. 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 (*Proficient* or higher) on the state test, with their chances increasing the greater their score is from the cut. The proficiency projections indicate these probabilities for various RIT scores throughout the year.

In addition to calculating the MAP Growth fall and winter cut scores (and the projected grade 2 cut scores), the MAP Growth conditional growth norms data were also used to calculate the probability of reaching proficiency on the Wisconsin Forward Exam based on a student's RIT scores from fall, winter, and spring. The equation below was used to calculate the probability of a student achieving proficiency on the Wisconsin Forward Exam based on their fall or winter RIT score:

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

where:

- $\Phi$ is a standardized normal cumulative distribution,
- $RIT_{previous}$ is the student's RIT score in fall or winter,
- $g$ is the expected growth from the previous RIT (e.g., fall or winter) to the spring RIT,
- $RIT_{SpringCut}$ is the MAP Growth *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 on the Wisconsin Forward Exam based on their spring RIT score ($RIT_{Spring}$):

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

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

# 3. Results

## 3.1. Study Sample

Only students who took both the MAP Growth and Wisconsin Forward Exam assessments in Spring 2019 were included in the study sample. Data used in this study were collected from 30 districts and 161 schools in Wisconsin. Table 3.1 presents the demographic distributions of race, sex, and performance level in the original unweighted study sample. Table 3.2 presents the distributions of the student population who took the Wisconsin Forward Exam in Spring 2019 (WDPI, 2019). Since the unweighted data are different from the general Wisconsin student 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 Wisconsin student population distributions. The analyses in this study were therefore conducted based on the weighted sample.

**Table 3.1. Linking Study Sample Demographics (Unweighted)**

| Demographic Subgroup | | % Students by Grade | | | | | |
|---|---|---|---|---|---|---|---|
| | | 3 | 4 | 5 | 6 | 7 | 8 |
| **ELA/Reading** | | | | | | | |
| | Total N | 5,992 | 6,316 | 6,492 | 6,772 | 6,695 | 6,090 |
| Race | Asian | 3.7 | 3.4 | 3.7 | 3.3 | 3.7 | 4.0 |
| | Black | 8.9 | 8.5 | 8.5 | 8.5 | 7.8 | 7.9 |
| | Hispanic | 20.5 | 19.7 | 18.8 | 19.2 | 19.4 | 18.1 |
| | Other | 5.0 | 5.5 | 4.9 | 4.9 | 4.6 | 3.6 |
| | White | 62.0 | 62.8 | 64.1 | 64.2 | 64.6 | 66.4 |
| Sex | Female | 49.7 | 47.5 | 49.8 | 48.8 | 48.5 | 49.0 |
| | Male | 50.3 | 52.5 | 50.2 | 51.2 | 51.5 | 51.0 |
| Performance Level | *Below Basic* | 21.1 | 20.9 | 22.8 | 19.9 | 17.4 | 22.9 |
| | *Basic* | 39.5 | 33.8 | 33.3 | 35.0 | 34.1 | 36.6 |
| | *Proficient* | 33.5 | 35.5 | 36.5 | 33.8 | 36.3 | 29.4 |
| | *Advanced* | 6.0 | 9.8 | 7.5 | 11.4 | 12.2 | 11.1 |
| **Mathematics** | | | | | | | |
| | Total N | 6,006 | 6,413 | 6,555 | 6,820 | 6,676 | 5,997 |
| Race | Asian | 3.8 | 3.4 | 3.6 | 3.3 | 3.7 | 3.9 |
| | Black | 8.9 | 8.8 | 8.4 | 8.6 | 7.7 | 8.0 |
| | Hispanic | 20.8 | 19.8 | 19.1 | 19.2 | 19.6 | 18.4 |
| | Other | 5.0 | 5.4 | 4.9 | 4.9 | 4.6 | 3.6 |
| | White | 61.6 | 62.6 | 64.0 | 64.1 | 64.4 | 66.1 |
| Sex | Female | 49.8 | 47.4 | 49.8 | 48.8 | 48.3 | 48.7 |
| | Male | 50.2 | 52.6 | 50.2 | 51.2 | 51.7 | 51.3 |
| Performance Level | *Below Basic* | 16.6 | 16.5 | 21.5 | 21.2 | 27.1 | 24.0 |
| | *Basic* | 32.0 | 35.5 | 29.0 | 30.0 | 29.4 | 34.6 |
| | *Proficient* | 38.5 | 34.1 | 35.9 | 40.3 | 36.5 | 30.3 |
| | *Advanced* | 12.9 | 13.9 | 13.5 | 8.5 | 7.0 | 11.1 |

**Table 3.2. Spring 2019 Wisconsin Student Population Demographics**

| Demographic Subgroup | | % Students by Grade | | | | | |
|---|---|---|---|---|---|---|---|
| | | 3 | 4 | 5 | 6 | 7 | 8 |
| **ELA** | | | | | | | |
| | Total N | 61,091 | 63,528 | 64,654 | 65,386 | 63,878 | 63,056 |
| Race | Asian | 4.2 | 4.3 | 4.0 | 4.0 | 4.0 | 3.9 |
| | Black | 10.8 | 11.0 | 10.9 | 10.6 | 10.3 | 10.0 |
| | Hispanic | 13.6 | 13.7 | 13.7 | 13.5 | 13.6 | 12.8 |
| | Other | 5.7 | 5.6 | 5.5 | 5.4 | 5.1 | 4.8 |
| | White | 65.8 | 65.4 | 66.0 | 66.6 | 67.1 | 68.6 |
| Sex | Female | 49.1 | 48.8 | 49.1 | 48.8 | 48.7 | 48.9 |
| | Male | 50.9 | 51.2 | 50.9 | 51.2 | 51.3 | 51.1 |
| Performance Level | *Below Basic* | 23.3 | 23.9 | 26.1 | 23.6 | 21.9 | 25.9 |
| | *Basic* | 38.0 | 33.1 | 33.8 | 35.5 | 33.2 | 37.0 |
| | *Proficient* | 33.2 | 34.1 | 34.3 | 31.9 | 35.4 | 28.8 |
| | *Advanced* | 5.5 | 8.9 | 5.7 | 9.1 | 9.5 | 8.2 |
| **Mathematics** | | | | | | | |
| | Total N | 61,210 | 63,630 | 64,728 | 65,470 | 63,973 | 63,108 |
| Race | Asian | 4.2 | 4.4 | 4.0 | 4.0 | 4.0 | 3.9 |
| | Black | 10.7 | 11.0 | 10.9 | 10.6 | 10.3 | 10.0 |
| | Hispanic | 13.7 | 13.8 | 13.8 | 13.6 | 13.6 | 12.9 |
| | Other | 5.7 | 5.6 | 5.5 | 5.4 | 5.1 | 4.8 |
| | White | 65.7 | 65.3 | 65.9 | 66.5 | 67.0 | 68.5 |
| Sex | Female | 49.1 | 48.8 | 49.1 | 48.8 | 48.7 | 48.9 |
| | Male | 50.9 | 51.2 | 50.9 | 51.2 | 51.4 | 51.1 |
| Performance Level | *Below Basic* | 19.3 | 18.9 | 24.2 | 26.7 | 32.2 | 28.6 |
| | *Basic* | 31.3 | 36.1 | 29.2 | 30.8 | 29.0 | 35.6 |
| | *Proficient* | 37.2 | 32.8 | 35.1 | 35.8 | 34.1 | 27.8 |
| | *Advanced* | 12.3 | 12.2 | 11.5 | 6.7 | 4.8 | 8.0 |

**Table 3.3. Linking Study Sample Demographics (Weighted)**

| Demographic Subgroup | | % Students by Grade | | | | | |
|---|---|---|---|---|---|---|---|
| | | 3 | 4 | 5 | 6 | 7 | 8 |
| **ELA/Reading** | | | | | | | |
| | Total N | 5,992 | 6,316 | 6,486 | 6,779 | 6,695 | 6,084 |
| Race | Asian | 4.2 | 4.3 | 4.0 | 4.0 | 4.0 | 3.9 |
| | Black | 10.8 | 11.0 | 10.9 | 10.6 | 10.3 | 10.0 |
| | Hispanic | 13.6 | 13.7 | 13.7 | 13.5 | 13.6 | 12.8 |
| | Other | 5.7 | 5.6 | 5.5 | 5.4 | 5.1 | 4.8 |
| | White | 65.8 | 65.3 | 66.0 | 66.6 | 67.1 | 68.5 |
| Sex | Female | 49.1 | 48.8 | 49.1 | 48.8 | 48.7 | 48.9 |
| | Male | 50.9 | 51.2 | 50.9 | 51.2 | 51.3 | 51.1 |
| Performance Level | *Below Basic* | 23.3 | 23.9 | 26.1 | 23.6 | 21.9 | 25.9 |
| | *Basic* | 38.0 | 33.1 | 33.8 | 35.5 | 33.2 | 37.0 |
| | *Proficient* | 33.2 | 34.1 | 34.3 | 31.9 | 35.4 | 28.8 |
| | *Advanced* | 5.5 | 8.9 | 5.7 | 9.1 | 9.5 | 8.2 |
| **Mathematics** | | | | | | | |
| | Total N | 6,012 | 6,413 | 6,555 | 6,820 | 6,683 | 5,997 |
| Race | Asian | 4.2 | 4.3 | 4.0 | 4.0 | 4.0 | 3.9 |
| | Black | 10.7 | 11.0 | 10.9 | 10.6 | 10.3 | 10.0 |
| | Hispanic | 13.7 | 13.8 | 13.8 | 13.6 | 13.6 | 12.9 |
| | Other | 5.7 | 5.6 | 5.5 | 5.4 | 5.1 | 4.8 |
| | White | 65.7 | 65.3 | 65.9 | 66.5 | 67.0 | 68.5 |
| Sex | Female | 49.1 | 48.8 | 49.1 | 48.8 | 48.6 | 48.9 |
| | Male | 50.9 | 51.2 | 50.9 | 51.2 | 51.4 | 51.1 |
| Performance Level | *Below Basic* | 19.3 | 18.9 | 24.2 | 26.7 | 32.2 | 28.6 |
| | *Basic* | 31.3 | 36.1 | 29.2 | 30.8 | 29.0 | 35.6 |
| | *Proficient* | 37.2 | 32.8 | 35.1 | 35.8 | 34.1 | 27.8 |
| | *Advanced* | 12.3 | 12.2 | 11.5 | 6.7 | 4.8 | 8.0 |

### 3.2. Descriptive Statistics

Table 3.4 presents descriptive statistics of the MAP Growth and Wisconsin Forward Exam test scores from Spring 2019, including the correlation coefficients (*r*) between them. The correlation coefficients between the scores range from 0.82 to 0.84 for ELA/reading and 0.84 to 0.89 for mathematics. These values indicate a strong relationship among the scores, which is important validity evidence for the claim that MAP Growth scores are good predictors of performance on the Wisconsin Forward Exam.

**Table 3.4. Descriptive Statistics of Test Scores**

| Grade | N | *r* | Wisconsin Forward Exam | | | | MAP Growth | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Mean | SD | Min. | Max. | Mean | SD | Min. | Max. |
| **ELA/Reading** | | | | | | | | | | |
| 3 | 5,992 | 0.84 | 555.5 | 44.7 | 330 | 710 | 198.4 | 15.7 | 145 | 241 |
| 4 | 6,316 | 0.83 | 582.8 | 50.9 | 340 | 823 | 205.5 | 15.5 | 146 | 252 |
| 5 | 6,486 | 0.84 | 596.2 | 48.7 | 364 | 940 | 211.4 | 15.1 | 147 | 263 |
| 6 | 6,779 | 0.83 | 608.2 | 49.6 | 394 | 950 | 215.8 | 15.0 | 158 | 264 |
| 7 | 6,695 | 0.83 | 629.5 | 53.5 | 419 | 884 | 220.1 | 15.0 | 160 | 262 |
| 8 | 6,084 | 0.82 | 630.1 | 59.3 | 383 | 894 | 223.4 | 14.9 | 154 | 266 |
| **Mathematics** | | | | | | | | | | |
| 3 | 6,012 | 0.86 | 556.8 | 52.1 | 360 | 760 | 203.5 | 14.4 | 141 | 263 |
| 4 | 6,413 | 0.88 | 577.9 | 51.9 | 405 | 800 | 212.6 | 15.8 | 127 | 278 |
| 5 | 6,555 | 0.86 | 602.1 | 52.5 | 430 | 830 | 221.1 | 17.3 | 148 | 280 |
| 6 | 6,820 | 0.89 | 612.2 | 58.1 | 440 | 870 | 224.3 | 17.0 | 164 | 278 |
| 7 | 6,683 | 0.86 | 627.2 | 59.8 | 450 | 880 | 230.7 | 18.0 | 162 | 301 |
| 8 | 5,997 | 0.84 | 644.8 | 58.2 | 470 | 890 | 235.5 | 19.5 | 156 | 299 |

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

### 3.3. MAP Growth Cut Scores

Table 3.5 and Table 3.6 present the Wisconsin Forward Exam 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 Wisconsin Forward Exam 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 196 in the fall is likely to reach *Proficient* performance on the Wisconsin Forward Exam in ELA. A grade 3 student who obtained a MAP Growth reading RIT score of 201 in the winter is also likely to reach *Proficient* performance on the state 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.

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

| Wisconsin Forward Exam ELA | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Grade** | ***Below Basic*** | | ***Basic*** | | ***Proficient*** | | ***Advanced*** | |
| 3 | 330–521 | | 522–569 | | **570**–623 | | 624–900 | |
| 4 | 340–545 | | 546–591 | | **592**–649 | | 650–930 | |
| 5 | 350–563 | | 564–609 | | **610**–669 | | 670–940 | |
| 6 | 360–571 | | 572–621 | | **622**–670 | | 671–950 | |
| 7 | 370–584 | | 585–637 | | **638**–696 | | 697–960 | |
| 8 | 380–591 | | 592–651 | | **652**–707 | | 708–970 | |
| **MAP Growth Reading** | | | | | | | | |
| **Grade** | ***Below Basic*** | | ***Basic*** | | ***Proficient*** | | ***Advanced*** | |
| | **RIT** | **Percentile** | **RIT** | **Percentile** | **RIT** | **Percentile** | **RIT** | **Percentile** |
| **Fall** | | | | | | | | |
| 2 | 100–160 | 1–29 | 161–182 | 30–76 | **183**–206 | 77–97 | 207–350 | 98–99 |
| 3 | 100–177 | 1–35 | 178–195 | 36–72 | **196**–215 | 73–95 | 216–350 | 96–99 |
| 4 | 100–188 | 1–34 | 189–204 | 35–68 | **205**–220 | 69–91 | 221–350 | 92–99 |
| 5 | 100–196 | 1–34 | 197–213 | 35–71 | **214**–229 | 72–92 | 230–350 | 93–99 |
| 6 | 100–201 | 1–33 | 202–218 | 34–71 | **219**–230 | 72–89 | 231–350 | 90–99 |
| 7 | 100–205 | 1–34 | 206–221 | 35–71 | **222**–234 | 72–90 | 235–350 | 91–99 |
| 8 | 100–211 | 1–40 | 212–226 | 41–74 | **227**–238 | 75–90 | 239–350 | 91–99 |
| **Winter** | | | | | | | | |
| 2 | 100–167 | 1–30 | 168–188 | 31–75 | **189**–212 | 76–97 | 213–350 | 98–99 |
| 3 | 100–182 | 1–34 | 183–200 | 35–72 | **201**–219 | 73–94 | 220–350 | 95–99 |
| 4 | 100–192 | 1–35 | 193–207 | 36–67 | **208**–222 | 68–90 | 223–350 | 91–99 |
| 5 | 100–199 | 1–35 | 200–215 | 36–70 | **216**–230 | 71–91 | 231–350 | 92–99 |
| 6 | 100–203 | 1–33 | 204–219 | 34–70 | **220**–231 | 71–89 | 232–350 | 90–99 |
| 7 | 100–206 | 1–33 | 207–222 | 34–70 | **223**–235 | 71–90 | 236–350 | 91–99 |
| 8 | 100–213 | 1–42 | 214–227 | 43–73 | **228**–239 | 74–90 | 240–350 | 91–99 |
| **Spring** | | | | | | | | |
| 2 | 100–173 | 1–32 | 174–192 | 33–73 | **193**–213 | 74–96 | 214–350 | 97–99 |
| 3 | 100–187 | 1–36 | 188–203 | 37–70 | **204**–220 | 71–92 | 221–350 | 93–99 |
| 4 | 100–195 | 1–36 | 196–209 | 37–66 | **210**–223 | 67–88 | 224–350 | 89–99 |
| 5 | 100–202 | 1–37 | 203–216 | 38–68 | **217**–231 | 69–91 | 232–350 | 92–99 |
| 6 | 100–205 | 1–35 | 206–220 | 36–69 | **221**–232 | 70–89 | 233–350 | 90–99 |
| 7 | 100–208 | 1–36 | 209–223 | 37–70 | **224**–236 | 71–89 | 237–350 | 90–99 |
| 8 | 100–214 | 1–42 | 215–228 | 43–73 | **229**–240 | 74–90 | 241–350 | 91–99 |

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

**Table 3.6. MAP Growth Cut Scores—Mathematics**

| Wisconsin Forward Exam Mathematics | | | | |
|---|---|---|---|---|
| **Grade** | ***Below Basic*** | ***Basic*** | ***Proficient*** | ***Advanced*** |
| 3 | 360–516 | 517–559 | **560**–610 | 611–760 |
| 4 | 405–535 | 536–587 | **588**–632 | 633–800 |
| 5 | 430–573 | 574–610 | **611**–657 | 658–830 |
| 6 | 440–581 | 582–625 | **626**–687 | 688–870 |
| 7 | 450–605 | 606–646 | **647**–711 | 712–880 |
| 8 | 470–619 | 620–666 | **667**–717 | 718–890 |

| MAP Growth Mathematics | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Grade** | ***Below Basic*** | | ***Basic*** | | ***Proficient*** | | ***Advanced*** | |
| | **RIT** | **Percentile** | **RIT** | **Percentile** | **RIT** | **Percentile** | **RIT** | **Percentile** |
| **Fall** | | | | | | | | |
| 2 | 100–163 | 1–27 | 164–180 | 28–69 | **181**–201 | 70–96 | 202–350 | 97–99 |
| 3 | 100–177 | 1–34 | 178–190 | 35–66 | **191**–208 | 67–94 | 209–350 | 95–99 |
| 4 | 100–189 | 1–32 | 190–206 | 33–72 | **207**–222 | 73–94 | 223–350 | 95–99 |
| 5 | 100–200 | 1–36 | 201–214 | 37–70 | **215**–233 | 71–95 | 234–350 | 96–99 |
| 6 | 100–207 | 1–43 | 208–219 | 44–72 | **220**–240 | 73–96 | 241–350 | 97–99 |
| 7 | 100–217 | 1–51 | 218–230 | 52–78 | **231**–253 | 79–97 | 254–350 | 98–99 |
| 8 | 100–222 | 1–51 | 223–238 | 52–81 | **239**–257 | 82–97 | 258–350 | 98–99 |
| **Winter** | | | | | | | | |
| 2 | 100–172 | 1–29 | 173–189 | 30–70 | **190**–210 | 71–96 | 211–350 | 97–99 |
| 3 | 100–185 | 1–33 | 186–199 | 34–66 | **200**–217 | 67–93 | 218–350 | 94–99 |
| 4 | 100–196 | 1–32 | 197–214 | 33–72 | **215**–230 | 73–93 | 231–350 | 94–99 |
| 5 | 100–206 | 1–38 | 207–220 | 39–69 | **221**–240 | 70–94 | 241–350 | 95–99 |
| 6 | 100–213 | 1–44 | 214–226 | 45–73 | **227**–247 | 74–96 | 248–350 | 97–99 |
| 7 | 100–221 | 1–51 | 222–235 | 52–78 | **236**–258 | 79–97 | 259–350 | 98–99 |
| 8 | 100–226 | 1–51 | 227–243 | 52–82 | **244**–263 | 83–97 | 264–350 | 98–99 |
| **Spring** | | | | | | | | |
| 2 | 100–179 | 1–31 | 180–194 | 32–67 | **195**–213 | 68–94 | 214–350 | 95–99 |
| 3 | 100–192 | 1–35 | 193–205 | 36–65 | **206**–222 | 66–91 | 223–350 | 92–99 |
| 4 | 100–202 | 1–34 | 203–219 | 35–70 | **220**–235 | 71–91 | 236–350 | 92–99 |
| 5 | 100–210 | 1–38 | 211–224 | 39–68 | **225**–244 | 69–93 | 245–350 | 94–99 |
| 6 | 100–217 | 1–44 | 218–230 | 45–71 | **231**–251 | 72–95 | 252–350 | 96–99 |
| 7 | 100–224 | 1–51 | 225–237 | 52–76 | **238**–260 | 77–96 | 261–350 | 97–99 |
| 8 | 100–229 | 1–51 | 230–245 | 52–79 | **246**–264 | 80–95 | 265–350 | 96–99 |

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

### 3.4. Classification Accuracy

Table 3.7 presents the classification accuracy summary statistics, including the overall classification accuracy rates. These results indicate how well MAP Growth spring RIT scores predict proficiency on the Wisconsin Forward Exam, providing insight into the predictive validity of MAP Growth. The overall classification accuracy rates range from 0.84 to 0.86 for ELA/reading and 0.86 to 0.90 for mathematics. 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 Wisconsin Forward Exam.

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

**Table 3.7. Classification Accuracy Results**

| Grade | N | Cut Score | | Class. Accuracy | Rate | | Sensitivity | Specificity | Precision | AUC |
|---|---|---|---|---|---|---|---|---|---|---|
| | | MAP Growth | WI Forward Exam | | FP | FN | | | | |
| **ELA/Reading** | | | | | | | | | | |
| 3 | 5,992 | 204 | 570 | 0.84 | 0.15 | 0.16 | 0.84 | 0.85 | 0.78 | 0.92 |
| 4 | 6,316 | 210 | 592 | 0.86 | 0.14 | 0.14 | 0.86 | 0.86 | 0.83 | 0.94 |
| 5 | 6,486 | 217 | 610 | 0.86 | 0.12 | 0.17 | 0.83 | 0.88 | 0.82 | 0.94 |
| 6 | 6,779 | 221 | 622 | 0.85 | 0.13 | 0.19 | 0.81 | 0.87 | 0.81 | 0.93 |
| 7 | 6,695 | 224 | 638 | 0.84 | 0.14 | 0.19 | 0.81 | 0.86 | 0.83 | 0.92 |
| 8 | 6,084 | 229 | 652 | 0.84 | 0.14 | 0.20 | 0.80 | 0.86 | 0.77 | 0.92 |
| **Mathematics** | | | | | | | | | | |
| 3 | 6,012 | 204 | 560 | 0.86 | 0.18 | 0.10 | 0.90 | 0.82 | 0.83 | 0.94 |
| 4 | 6,413 | 215 | 588 | 0.87 | 0.14 | 0.11 | 0.89 | 0.86 | 0.84 | 0.95 |
| 5 | 6,555 | 222 | 611 | 0.87 | 0.16 | 0.09 | 0.91 | 0.84 | 0.83 | 0.95 |
| 6 | 6,820 | 228 | 626 | 0.90 | 0.11 | 0.10 | 0.90 | 0.89 | 0.86 | 0.96 |
| 7 | 6,683 | 236 | 647 | 0.89 | 0.12 | 0.11 | 0.89 | 0.88 | 0.83 | 0.96 |
| 8 | 5,997 | 242 | 667 | 0.87 | 0.13 | 0.13 | 0.87 | 0.87 | 0.79 | 0.95 |

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

### 3.5. Proficiency Projections

Table 3.8 and Table 3.9 present the estimated probability of achieving proficiency (*Proficient* or higher) performance on the Wisconsin Forward Exam based on RIT scores from fall, winter, or spring. For example, a grade 3 student who obtained a MAP Growth reading score of 204 in the fall has a 75% chance of reaching proficiency on the Wisconsin Forward Exam. “Prob.” indicates the probability of obtaining proficiency status on the state summative test in the spring.

**Table 3.8. Proficiency Projection 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 | 193 | 142 | No | <0.01 | 149 | No | <0.01 | 153 | No | <0.01 |
| | 10 | 193 | 148 | No | <0.01 | 155 | No | <0.01 | 159 | No | <0.01 |
| | 15 | 193 | 152 | No | <0.01 | 159 | No | <0.01 | 164 | No | <0.01 |
| | 20 | 193 | 156 | No | 0.01 | 162 | No | <0.01 | 167 | No | <0.01 |
| | 25 | 193 | 159 | No | 0.01 | 165 | No | <0.01 | 170 | No | <0.01 |
| | 30 | 193 | 161 | No | 0.02 | 168 | No | 0.01 | 173 | No | <0.01 |
| | 35 | 193 | 163 | No | 0.03 | 170 | No | 0.02 | 175 | No | <0.01 |
| | 40 | 193 | 166 | No | 0.05 | 172 | No | 0.04 | 177 | No | <0.01 |
| | 45 | 193 | 168 | No | 0.07 | 175 | No | 0.06 | 180 | No | <0.01 |
| | 50 | 193 | 170 | No | 0.11 | 177 | No | 0.09 | 182 | No | <0.01 |
| | 55 | 193 | 172 | No | 0.13 | 179 | No | 0.14 | 184 | No | 0.01 |
| | 60 | 193 | 174 | No | 0.19 | 181 | No | 0.17 | 186 | No | 0.02 |
| | 65 | 193 | 177 | No | 0.29 | 183 | No | 0.24 | 188 | No | 0.08 |
| | 70 | 193 | 179 | No | 0.33 | 186 | No | 0.36 | 191 | No | 0.28 |
| | 75 | 193 | 182 | No | 0.46 | 188 | No | 0.45 | 193 | Yes | 0.5 |
| | 80 | 193 | 184 | Yes | 0.54 | 191 | Yes | 0.55 | 196 | Yes | 0.8 |
| | 85 | 193 | 188 | Yes | 0.67 | 194 | Yes | 0.68 | 200 | Yes | 0.98 |
| | 90 | 193 | 192 | Yes | 0.81 | 199 | Yes | 0.83 | 204 | Yes | >0.99 |
| | 95 | 193 | 198 | Yes | 0.93 | 205 | Yes | 0.95 | 210 | Yes | >0.99 |
| 3 | 5 | 204 | 155 | No | <0.01 | 160 | No | <0.01 | 164 | No | <0.01 |
| | 10 | 204 | 161 | No | <0.01 | 167 | No | <0.01 | 171 | No | <0.01 |
| | 15 | 204 | 166 | No | <0.01 | 171 | No | <0.01 | 175 | No | <0.01 |
| | 20 | 204 | 169 | No | <0.01 | 175 | No | <0.01 | 179 | No | <0.01 |
| | 25 | 204 | 172 | No | 0.01 | 178 | No | 0.01 | 182 | No | <0.01 |
| | 30 | 204 | 175 | No | 0.02 | 180 | No | 0.01 | 184 | No | <0.01 |
| | 35 | 204 | 178 | No | 0.04 | 183 | No | 0.03 | 187 | No | <0.01 |
| | 40 | 204 | 180 | No | 0.06 | 185 | No | 0.04 | 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 | 204 | 182 | No | 0.07 | 188 | No | 0.08 | 192 | No | <0.01 |
| | 50 | 204 | 185 | No | 0.13 | 190 | No | 0.12 | 194 | No | <0.01 |
| | 55 | 204 | 187 | No | 0.18 | 192 | No | 0.17 | 196 | No | 0.01 |
| | 60 | 204 | 189 | No | 0.25 | 194 | No | 0.2 | 198 | No | 0.04 |
| | 65 | 204 | 192 | No | 0.33 | 197 | No | 0.32 | 201 | No | 0.2 |
| | 70 | 204 | 194 | No | 0.41 | 199 | No | 0.41 | 203 | No | 0.39 |
| | 75 | 204 | 197 | Yes | 0.5 | 202 | Yes | 0.55 | 206 | Yes | 0.72 |
| | 80 | 204 | 200 | Yes | 0.63 | 205 | Yes | 0.64 | 209 | Yes | 0.92 |
| | 85 | 204 | 204 | Yes | 0.75 | 209 | Yes | 0.8 | 213 | Yes | 0.99 |
| | 90 | 204 | 208 | Yes | 0.87 | 213 | Yes | 0.88 | 217 | Yes | >0.99 |
| | 95 | 204 | 215 | Yes | 0.96 | 220 | Yes | 0.98 | 224 | Yes | >0.99 |
| 4 | 5 | 210 | 166 | No | <0.01 | 170 | No | <0.01 | 173 | No | <0.01 |
| | 10 | 210 | 173 | No | <0.01 | 177 | No | <0.01 | 179 | No | <0.01 |
| | 15 | 210 | 177 | No | <0.01 | 181 | No | <0.01 | 184 | No | <0.01 |
| | 20 | 210 | 181 | No | 0.01 | 184 | No | <0.01 | 187 | No | <0.01 |
| | 25 | 210 | 184 | No | 0.02 | 187 | No | 0.01 | 190 | No | <0.01 |
| | 30 | 210 | 186 | No | 0.02 | 190 | No | 0.02 | 193 | No | <0.01 |
| | 35 | 210 | 189 | No | 0.05 | 193 | No | 0.04 | 195 | No | <0.01 |
| | 40 | 210 | 191 | No | 0.08 | 195 | No | 0.07 | 198 | No | <0.01 |
| | 45 | 210 | 194 | No | 0.12 | 197 | No | 0.1 | 200 | No | <0.01 |
| | 50 | 210 | 196 | No | 0.17 | 199 | No | 0.16 | 202 | No | 0.01 |
| | 55 | 210 | 198 | No | 0.24 | 202 | No | 0.23 | 204 | No | 0.04 |
| | 60 | 210 | 200 | No | 0.32 | 204 | No | 0.31 | 207 | No | 0.2 |
| | 65 | 210 | 203 | No | 0.41 | 206 | No | 0.4 | 209 | No | 0.39 |
| | 70 | 210 | 205 | Yes | 0.5 | 209 | Yes | 0.55 | 211 | Yes | 0.61 |
| | 75 | 210 | 208 | Yes | 0.64 | 211 | Yes | 0.6 | 214 | Yes | 0.87 |
| | 80 | 210 | 211 | Yes | 0.72 | 214 | Yes | 0.73 | 217 | Yes | 0.98 |
| | 85 | 210 | 215 | Yes | 0.86 | 218 | Yes | 0.87 | 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 | 210 | 219 | Yes | 0.92 | 222 | Yes | 0.95 | 225 | Yes | >0.99 |
| | 95 | 210 | 226 | Yes | 0.98 | 229 | Yes | 0.99 | 231 | Yes | >0.99 |
| 5 | 5 | 217 | 175 | No | <0.01 | 178 | No | <0.01 | 180 | No | <0.01 |
| | 10 | 217 | 181 | No | <0.01 | 184 | No | <0.01 | 186 | No | <0.01 |
| | 15 | 217 | 186 | No | <0.01 | 189 | No | <0.01 | 191 | No | <0.01 |
| | 20 | 217 | 189 | No | 0.01 | 192 | No | <0.01 | 194 | No | <0.01 |
| | 25 | 217 | 192 | No | 0.01 | 195 | No | 0.01 | 197 | No | <0.01 |
| | 30 | 217 | 195 | No | 0.03 | 197 | No | 0.01 | 199 | No | <0.01 |
| | 35 | 217 | 197 | No | 0.04 | 200 | No | 0.04 | 202 | No | <0.01 |
| | 40 | 217 | 199 | No | 0.06 | 202 | No | 0.06 | 204 | No | <0.01 |
| | 45 | 217 | 201 | No | 0.09 | 204 | No | 0.08 | 206 | No | <0.01 |
| | 50 | 217 | 204 | No | 0.16 | 206 | No | 0.12 | 208 | No | 0.01 |
| | 55 | 217 | 206 | No | 0.2 | 209 | No | 0.22 | 211 | No | 0.04 |
| | 60 | 217 | 208 | No | 0.27 | 211 | No | 0.26 | 213 | No | 0.13 |
| | 65 | 217 | 210 | No | 0.36 | 213 | No | 0.35 | 215 | No | 0.28 |
| | 70 | 217 | 213 | No | 0.45 | 215 | No | 0.45 | 217 | Yes | 0.5 |
| | 75 | 217 | 215 | Yes | 0.55 | 218 | Yes | 0.6 | 220 | Yes | 0.8 |
| | 80 | 217 | 218 | Yes | 0.69 | 221 | Yes | 0.74 | 223 | Yes | 0.96 |
| | 85 | 217 | 222 | Yes | 0.8 | 224 | Yes | 0.85 | 226 | Yes | 0.99 |
| | 90 | 217 | 226 | Yes | 0.91 | 228 | Yes | 0.94 | 230 | Yes | >0.99 |
| | 95 | 217 | 232 | Yes | 0.98 | 235 | Yes | 0.99 | 237 | Yes | >0.99 |
| 6 | 5 | 221 | 181 | No | <0.01 | 183 | No | <0.01 | 185 | No | <0.01 |
| | 10 | 221 | 187 | No | <0.01 | 189 | No | <0.01 | 191 | No | <0.01 |
| | 15 | 221 | 191 | No | <0.01 | 193 | No | <0.01 | 195 | No | <0.01 |
| | 20 | 221 | 195 | No | 0.01 | 197 | No | <0.01 | 198 | No | <0.01 |
| | 25 | 221 | 198 | No | 0.01 | 199 | No | 0.01 | 201 | No | <0.01 |
| | 30 | 221 | 200 | No | 0.02 | 202 | No | 0.02 | 203 | No | <0.01 |
| | 35 | 221 | 202 | No | 0.03 | 204 | No | 0.03 | 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 | 221 | 205 | No | 0.07 | 206 | No | 0.05 | 208 | No | <0.01 |
| | 45 | 221 | 207 | No | 0.09 | 209 | No | 0.1 | 210 | No | <0.01 |
| | 50 | 221 | 209 | No | 0.14 | 211 | No | 0.13 | 212 | No | 0.01 |
| | 55 | 221 | 211 | No | 0.2 | 213 | No | 0.19 | 214 | No | 0.02 |
| | 60 | 221 | 213 | No | 0.27 | 215 | No | 0.26 | 216 | No | 0.08 |
| | 65 | 221 | 215 | No | 0.31 | 217 | No | 0.35 | 218 | No | 0.2 |
| | 70 | 221 | 218 | No | 0.45 | 219 | No | 0.45 | 221 | Yes | 0.5 |
| | 75 | 221 | 220 | Yes | 0.55 | 222 | Yes | 0.6 | 223 | Yes | 0.72 |
| | 80 | 221 | 223 | Yes | 0.69 | 225 | Yes | 0.74 | 226 | Yes | 0.92 |
| | 85 | 221 | 226 | Yes | 0.8 | 228 | Yes | 0.84 | 229 | Yes | 0.99 |
| | 90 | 221 | 231 | Yes | 0.93 | 232 | Yes | 0.94 | 233 | Yes | >0.99 |
| | 95 | 221 | 237 | Yes | 0.99 | 238 | Yes | 0.99 | 239 | Yes | >0.99 |
| 7 | 5 | 224 | 185 | No | <0.01 | 186 | No | <0.01 | 187 | No | <0.01 |
| | 10 | 224 | 191 | No | <0.01 | 192 | No | <0.01 | 193 | No | <0.01 |
| | 15 | 224 | 195 | No | <0.01 | 196 | No | <0.01 | 197 | No | <0.01 |
| | 20 | 224 | 198 | No | 0.01 | 200 | No | 0.01 | 201 | No | <0.01 |
| | 25 | 224 | 201 | No | 0.01 | 202 | No | 0.01 | 203 | No | <0.01 |
| | 30 | 224 | 204 | No | 0.03 | 205 | No | 0.02 | 206 | No | <0.01 |
| | 35 | 224 | 206 | No | 0.04 | 207 | No | 0.03 | 208 | No | <0.01 |
| | 40 | 224 | 208 | No | 0.06 | 210 | No | 0.07 | 211 | No | <0.01 |
| | 45 | 224 | 210 | No | 0.1 | 212 | No | 0.09 | 213 | No | <0.01 |
| | 50 | 224 | 212 | No | 0.15 | 214 | No | 0.14 | 215 | No | 0.01 |
| | 55 | 224 | 214 | No | 0.18 | 216 | No | 0.2 | 217 | No | 0.02 |
| | 60 | 224 | 217 | No | 0.28 | 218 | No | 0.27 | 219 | No | 0.08 |
| | 65 | 224 | 219 | No | 0.36 | 220 | No | 0.36 | 221 | No | 0.2 |
| | 70 | 224 | 221 | No | 0.45 | 223 | Yes | 0.5 | 224 | Yes | 0.5 |
| | 75 | 224 | 224 | Yes | 0.59 | 225 | Yes | 0.6 | 226 | Yes | 0.72 |
| | 80 | 224 | 226 | Yes | 0.68 | 228 | Yes | 0.73 | 229 | Yes | 0.92 |

| 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 | 224 | 230 | Yes | 0.82 | 231 | Yes | 0.84 | 232 | Yes | 0.99 |
| | 90 | 224 | 234 | Yes | 0.92 | 235 | Yes | 0.93 | 237 | Yes | >0.99 |
| | 95 | 224 | 240 | Yes | 0.98 | 241 | Yes | 0.99 | 243 | Yes | >0.99 |
| 8 | 5 | 229 | 188 | No | <0.01 | 189 | No | <0.01 | 190 | No | <0.01 |
| | 10 | 229 | 194 | No | <0.01 | 195 | No | <0.01 | 196 | No | <0.01 |
| | 15 | 229 | 198 | No | <0.01 | 199 | No | <0.01 | 200 | No | <0.01 |
| | 20 | 229 | 201 | No | <0.01 | 203 | No | <0.01 | 203 | No | <0.01 |
| | 25 | 229 | 204 | No | 0.01 | 205 | No | <0.01 | 206 | No | <0.01 |
| | 30 | 229 | 207 | No | 0.02 | 208 | No | 0.01 | 209 | No | <0.01 |
| | 35 | 229 | 209 | No | 0.03 | 210 | No | 0.02 | 211 | No | <0.01 |
| | 40 | 229 | 211 | No | 0.04 | 213 | No | 0.04 | 213 | No | <0.01 |
| | 45 | 229 | 214 | No | 0.07 | 215 | No | 0.06 | 216 | No | <0.01 |
| | 50 | 229 | 216 | No | 0.11 | 217 | No | 0.1 | 218 | No | <0.01 |
| | 55 | 229 | 218 | No | 0.15 | 219 | No | 0.14 | 220 | No | 0.01 |
| | 60 | 229 | 220 | No | 0.21 | 221 | No | 0.2 | 222 | No | 0.02 |
| | 65 | 229 | 222 | No | 0.29 | 223 | No | 0.28 | 224 | No | 0.08 |
| | 70 | 229 | 225 | No | 0.41 | 226 | No | 0.41 | 227 | No | 0.28 |
| | 75 | 229 | 227 | Yes | 0.5 | 228 | Yes | 0.5 | 229 | Yes | 0.5 |
| | 80 | 229 | 230 | Yes | 0.63 | 231 | Yes | 0.64 | 232 | Yes | 0.8 |
| | 85 | 229 | 233 | Yes | 0.75 | 235 | Yes | 0.8 | 236 | Yes | 0.98 |
| | 90 | 229 | 238 | Yes | 0.89 | 239 | Yes | 0.9 | 240 | Yes | >0.99 |
| | 95 | 229 | 244 | Yes | 0.97 | 245 | Yes | 0.98 | 246 | Yes | >0.99 |

**Table 3.9. Proficiency Projection Based on RIT Scores—Mathematics**

| Grade | Start Percentile | Spring Cut | Fall | | | Winter | | | Spring | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fall RIT | Projected Proficiency | | Winter RIT | Projected Proficiency | | Spring RIT | Projected Proficiency | |
| | | | | *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 | 225 | 180 | No | <0.01 | 183 | No | <0.01 | 186 | No | <0.01 |
| | 10 | 225 | 185 | No | <0.01 | 189 | No | <0.01 | 192 | No | <0.01 |
| | 15 | 225 | 189 | No | <0.01 | 194 | No | <0.01 | 197 | No | <0.01 |
| | 20 | 225 | 193 | No | <0.01 | 197 | No | <0.01 | 200 | No | <0.01 |
| | 25 | 225 | 195 | No | <0.01 | 200 | No | <0.01 | 204 | No | <0.01 |
| | 30 | 225 | 198 | No | 0.01 | 203 | No | 0.01 | 206 | No | <0.01 |
| | 35 | 225 | 200 | No | 0.03 | 205 | No | 0.01 | 209 | No | <0.01 |
| | 40 | 225 | 202 | No | 0.05 | 207 | No | 0.02 | 211 | No | <0.01 |
| | 45 | 225 | 204 | No | 0.08 | 210 | No | 0.06 | 214 | No | <0.01 |
| | 50 | 225 | 206 | No | 0.12 | 212 | No | 0.1 | 216 | No | 0.01 |
| | 55 | 225 | 208 | No | 0.19 | 214 | No | 0.16 | 218 | No | 0.02 |
| | 60 | 225 | 210 | No | 0.26 | 216 | No | 0.24 | 221 | No | 0.13 |
| | 65 | 225 | 212 | No | 0.35 | 219 | No | 0.39 | 223 | No | 0.28 |
| | 70 | 225 | 215 | Yes | 0.5 | 221 | Yes | 0.5 | 226 | Yes | 0.61 |
| | 75 | 225 | 217 | Yes | 0.6 | 224 | Yes | 0.67 | 228 | Yes | 0.8 |
| | 80 | 225 | 220 | Yes | 0.74 | 226 | Yes | 0.76 | 232 | Yes | 0.98 |
| | 85 | 225 | 223 | Yes | 0.85 | 230 | Yes | 0.9 | 235 | Yes | >0.99 |
| | 90 | 225 | 227 | Yes | 0.94 | 234 | Yes | 0.97 | 240 | Yes | >0.99 |
| | 95 | 225 | 233 | Yes | 0.99 | 240 | Yes | >0.99 | 246 | Yes | >0.99 |
| 6 | 5 | 231 | 184 | No | <0.01 | 187 | No | <0.01 | 190 | No | <0.01 |
| | 10 | 231 | 190 | No | <0.01 | 194 | No | <0.01 | 197 | No | <0.01 |
| | 15 | 231 | 194 | No | <0.01 | 198 | No | <0.01 | 201 | No | <0.01 |
| | 20 | 231 | 197 | No | <0.01 | 201 | No | <0.01 | 205 | No | <0.01 |
| | 25 | 231 | 199 | No | <0.01 | 204 | No | <0.01 | 208 | No | <0.01 |
| | 30 | 231 | 202 | No | 0.01 | 207 | No | <0.01 | 211 | No | <0.01 |
| | 35 | 231 | 204 | No | 0.02 | 209 | No | 0.01 | 213 | No | <0.01 |

| Grade | Start Percentile | Spring Cut | Fall | | | Winter | | | Spring | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Fall RIT | Projected Proficiency | | Winter RIT | Projected Proficiency | | Spring RIT | Projected Proficiency | |
| | | | | *Proficient* | Prob. | | *Proficient* | Prob. | | *Proficient* | Prob. |
| | 40 | 231 | 206 | No | 0.03 | 212 | No | 0.02 | 216 | No | <0.01 |
| | 45 | 231 | 208 | No | 0.05 | 214 | No | 0.04 | 218 | No | <0.01 |
| | 50 | 231 | 210 | No | 0.09 | 216 | No | 0.07 | 220 | No | <0.01 |
| | 55 | 231 | 212 | No | 0.13 | 218 | No | 0.11 | 223 | No | 0.01 |
| | 60 | 231 | 214 | No | 0.19 | 220 | No | 0.17 | 225 | No | 0.04 |
| | 65 | 231 | 216 | No | 0.27 | 223 | No | 0.29 | 227 | No | 0.13 |
| | 70 | 231 | 219 | No | 0.4 | 225 | No | 0.39 | 230 | No | 0.39 |
| | 75 | 231 | 221 | Yes | 0.55 | 228 | Yes | 0.55 | 233 | Yes | 0.72 |
| | 80 | 231 | 224 | Yes | 0.69 | 231 | Yes | 0.71 | 236 | Yes | 0.92 |
| | 85 | 231 | 227 | Yes | 0.81 | 234 | Yes | 0.83 | 239 | Yes | 0.99 |
| | 90 | 231 | 231 | Yes | 0.91 | 238 | Yes | 0.93 | 244 | Yes | >0.99 |
| | 95 | 231 | 237 | Yes | 0.98 | 245 | Yes | 0.99 | 251 | Yes | >0.99 |
| 7 | 5 | 238 | 189 | No | <0.01 | 191 | No | <0.01 | 192 | No | <0.01 |
| | 10 | 238 | 195 | No | <0.01 | 197 | No | <0.01 | 199 | No | <0.01 |
| | 15 | 238 | 199 | No | <0.01 | 202 | No | <0.01 | 204 | No | <0.01 |
| | 20 | 238 | 203 | No | <0.01 | 206 | No | <0.01 | 208 | No | <0.01 |
| | 25 | 238 | 206 | No | <0.01 | 209 | No | <0.01 | 211 | No | <0.01 |
| | 30 | 238 | 208 | No | <0.01 | 211 | No | <0.01 | 214 | No | <0.01 |
| | 35 | 238 | 211 | No | 0.01 | 214 | No | <0.01 | 216 | No | <0.01 |
| | 40 | 238 | 213 | No | 0.01 | 216 | No | 0.01 | 219 | No | <0.01 |
| | 45 | 238 | 215 | No | 0.03 | 219 | No | 0.02 | 221 | No | <0.01 |
| | 50 | 238 | 217 | No | 0.04 | 221 | No | 0.03 | 224 | No | <0.01 |
| | 55 | 238 | 219 | No | 0.07 | 223 | No | 0.06 | 226 | No | <0.01 |
| | 60 | 238 | 222 | No | 0.14 | 226 | No | 0.12 | 229 | No | 0.01 |
| | 65 | 238 | 224 | No | 0.2 | 228 | No | 0.18 | 231 | No | 0.02 |
| | 70 | 238 | 226 | No | 0.27 | 231 | No | 0.26 | 234 | No | 0.13 |
| | 75 | 238 | 229 | No | 0.4 | 233 | No | 0.35 | 237 | No | 0.39 |
| | 80 | 238 | 232 | Yes | 0.55 | 236 | Yes | 0.5 | 240 | Yes | 0.72 |

| 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 | 238 | 235 | Yes | 0.69 | 240 | Yes | 0.7 | 244 | Yes | 0.96 |
| | 90 | 238 | 239 | Yes | 0.83 | 245 | Yes | 0.88 | 249 | Yes | >0.99 |
| | 95 | 238 | 246 | Yes | 0.97 | 251 | Yes | 0.98 | 256 | Yes | >0.99 |
| 8 | 5 | 246 | 192 | No | <0.01 | 194 | No | <0.01 | 196 | No | <0.01 |
| | 10 | 246 | 199 | No | <0.01 | 201 | No | <0.01 | 203 | No | <0.01 |
| | 15 | 246 | 203 | No | <0.01 | 206 | No | <0.01 | 208 | No | <0.01 |
| | 20 | 246 | 207 | No | <0.01 | 210 | No | <0.01 | 212 | No | <0.01 |
| | 25 | 246 | 210 | No | <0.01 | 213 | No | <0.01 | 215 | No | <0.01 |
| | 30 | 246 | 212 | No | <0.01 | 216 | No | <0.01 | 218 | No | <0.01 |
| | 35 | 246 | 215 | No | <0.01 | 219 | No | <0.01 | 221 | No | <0.01 |
| | 40 | 246 | 217 | No | 0.01 | 221 | No | <0.01 | 224 | No | <0.01 |
| | 45 | 246 | 220 | No | 0.01 | 224 | No | 0.01 | 226 | No | <0.01 |
| | 50 | 246 | 222 | No | 0.03 | 226 | No | 0.02 | 229 | No | <0.01 |
| | 55 | 246 | 224 | No | 0.04 | 228 | No | 0.03 | 231 | No | <0.01 |
| | 60 | 246 | 227 | No | 0.08 | 231 | No | 0.07 | 234 | No | <0.01 |
| | 65 | 246 | 229 | No | 0.13 | 233 | No | 0.1 | 237 | No | 0.01 |
| | 70 | 246 | 232 | No | 0.21 | 236 | No | 0.19 | 239 | No | 0.02 |
| | 75 | 246 | 234 | No | 0.28 | 239 | No | 0.26 | 242 | No | 0.13 |
| | 80 | 246 | 237 | No | 0.41 | 242 | No | 0.4 | 246 | Yes | 0.5 |
| | 85 | 246 | 241 | Yes | 0.59 | 246 | Yes | 0.6 | 250 | Yes | 0.87 |
| | 90 | 246 | 246 | Yes | 0.79 | 251 | Yes | 0.81 | 255 | Yes | 0.99 |
| | 95 | 246 | 252 | Yes | 0.93 | 258 | Yes | 0.96 | 262 | 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

Wisconsin Department of Public Instruction (WDPI). 2019). *Wisconsin Forward Exam technical report 2019*. Retrieved from https://dpi.wi.gov/assessment/forward/resources#documentation.