

Predicting Performance on the Oklahoma School Testing Program (OSTP) Test based on MAP[®] Growth[™] Scores

July 2019

NWEA Psychometric Solutions

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Executive Summary

To predict student achievement on the Oklahoma School Testing Program (OSTP) tests based on MAP® Growth™ scores, NWEA® conducted a linking study to derive cut scores on the MAP Growth assessments that correspond to the OSTP 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.

Table E.1 presents the Proficient performance level cut scores for the OSTP tests and the corresponding MAP Growth Rasch Unit (RIT) cut scores that allow teachers to identify students who are on track for proficiency on the state summative test and those who are not. For example, the Proficient cut score on the OSTP Grade 3 English Language Arts (ELA) test is 300. A Grade 3 student with a MAP Growth Reading RIT score of 197 in the fall is likely to meet proficiency on the OSTP ELA test in the spring, whereas a Grade 3 student with a Reading RIT score lower than 197 in the fall is in jeopardy of not meeting proficiency.

Table E.1. MAP Growth Cut Score Predictions for Proficiency on OSTP

Assessment		Proficient Cut Scores by Grade					
		3	4	5	6	7	8
ELA/Reading							
	OSTP	300	300	300	300	300	300
MAP Growth	Fall	197	205	210	217	224	226
	Winter	203	210	214	220	226	227
	Spring	206	212	216	221	227	228
Mathematics							
	OSTP	300	300	300	300	300	300
MAP Growth	Fall	193	203	215	223	229	241
	Winter	201	210	221	228	233	243
	Spring	206	215	225	231	235	245

E.1. Assessment Overviews

MAP Growth tests are adaptive interim assessments aligned to the Oklahoma Academic Standards and administered in the fall, winter, and spring. RIT scores are reported on the RIT vertical scale with a range of 100–350. The OSTP tests are Oklahoma’s state summative tests aligned to the Oklahoma Academic Standards and administered to students in Grades 3–8 in ELA and Mathematics. Based on their state test scores, students are placed into one of four performance levels: Below Basic, Basic, Proficient, and Advanced. The Proficient cut score demarks the minimum level of achievement considered to be proficient.

E.2. Linking Methods

Based on scores from the Spring 2017 and 2018 test administrations, the equipercentile linking method was used to identify the spring MAP Growth scores that correspond to the spring OSTP performance level cut scores by grade and content area. MAP Growth fall and winter cut scores that predict proficiency on the spring OSTP test were then projected using the 2015 NWEA growth norms that provide expected score gains across test administrations (i.e., fall/winter RIT score = spring RIT score – expected growth).

E.3. Student Sample

Table E.2 presents the weighted number of Oklahoma students from six districts and 72 schools with both MAP Growth and OSTP test scores in Spring 2017/2018 who were included in the linking study sample. Student scores were weighted to ensure that the sample was representative of the state population on gender, race, and performance level.

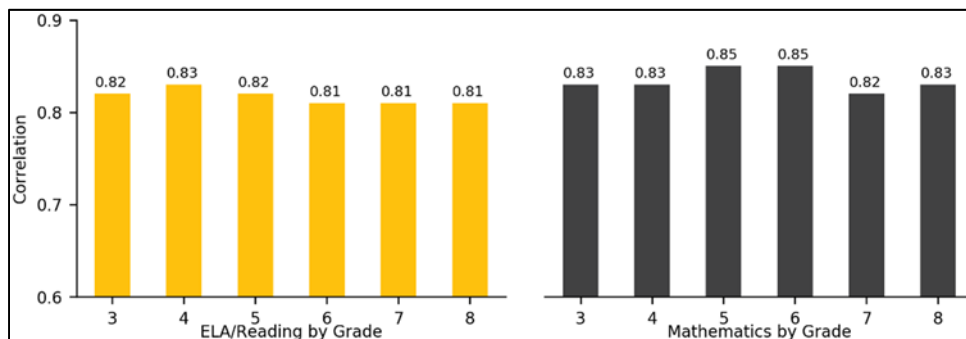
Table E.2. Number of Students in the Linking Study Sample

Content Area	Number of Students by Grade					
	3	4	5	6	7	8
ELA/Reading	4,064	3,757	3,577	3,290	2,694	3,009
Mathematics	4,056	3,793	3,544	3,310	2,664	3,065

E.4. Test Score Relationships

Correlations between MAP Growth scores and OSTP scores range from 0.81 to 0.85, as shown in Figure E.1. These values indicate a strong relationship among the scores, which provides evidence that the two tests measure similar constructs.

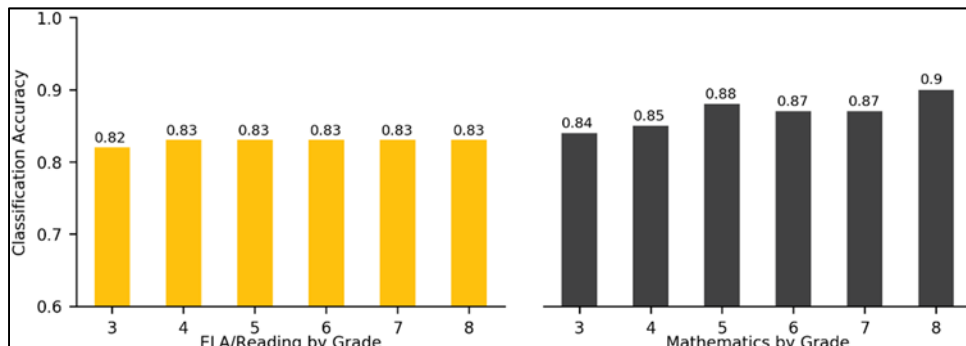
Figure E.1. Correlations between MAP Growth and Oklahoma’s OSTP Tests



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 MAP Growth scores as Proficient or above (i.e., Proficient or Advanced) or not Proficient (i.e., Below Basic or Basic) on the OSTP tests. For example, the MAP Growth Reading Grade 3 Proficient cut score has a 0.82 accuracy rate, meaning it accurately classified student achievement on the state test for 82% of the sample. The results range from 0.82 to 0.90, indicating that MAP Growth scores have a high accuracy rate of identifying student proficiency on the OSTP tests.

Figure E.2. Accuracy of MAP Growth Classifications



1. Introduction

1.1. Purpose of the Study

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

This document presents results from a linking study conducted by NWEA in April 2019 to statistically connect the scores of the Oklahoma School Testing Program (OSTP) English Language Arts (ELA) and Mathematics Grades 3–8 tests scores from MAP Growth tests taken during the Spring 2017 and 2018 terms. Specifically, this report presents the following:

- MAP Growth Reading and Mathematics Rasch Unit (RIT) cut scores that correspond to the cut scores on the OSTP ELA and Mathematics tests using the equipercntile linking procedure for the MAP Growth spring results and the 2015 norms (Thum & Houser, 2015) for the MAP Growth fall and winter results.
- Classification accuracy statistics based on the MAP Growth cut score predictions to determine the degree to which MAP Growth tests accurately predict student proficiency status on the OSTP tests.
- The probability of meeting or exceeding grade-level proficiency (i.e., achieving Proficient or above performance) on the OSTP assessment based on the observed MAP Growth scores taken during the fall, winter, and spring using the 2015 norms.

1.2. Assessment Overview

1.2.1. Oklahoma School Testing Program (OSTP)

The OSTP summative assessments are aligned to the Oklahoma Academic Standards and are administered to students in Grades 3–8 in ELA and Mathematics. Each grade and content area has three cut scores that distinguish between the following performance levels. A cut score is the minimum score a student must get on a test to be placed in a certain performance level. The Proficient cut score that distinguishes between Basic and Proficient performance demarks the minimum level of performance considered to be proficient for accountability purposes.

- Below Basic
- Basic
- Proficient
- Advanced

1.2.2. MAP Growth

MAP Growth Reading and Mathematics are computer adaptive interim assessments aligned to the Oklahoma Academic Standards for ELA and Mathematics. MAP Growth scores are reported on the RIT vertical scale with a range of 100–350. Each content area has its own scale. To aid interpretation of MAP Growth scores, NWEA periodically conducts norming studies of student and school performance on MAP Growth. The most recent MAP Growth norming study by Thum & Hauser (2015) employed multi-level growth models on nearly 500,000 longitudinal test scores from over 100,000 students that were weighted to create large, nationally representative norms.

2. Methods

2.1. Data Collection

This linking study is based on data from both the Spring 2017 and Spring 2018 administrations of the MAP Growth and OSTP assessments. NWEA recruited Oklahoma school districts to participate in the study by sharing their student and score data for the target term. Districts also gave NWEA permission to access students' associated MAP Growth scores from NWEA's in-house database. Once Oklahoma state score information was received by participating districts, each student's state testing record was matched to their MAP Growth score by using the student's first and last names, date of birth, student ID, and other available identifying information. Only students who took both the MAP Growth and OSTP assessments in Spring 2017/2018 were included in the study sample.

2.2. Post-Stratification Weighting

Post-stratification weights were applied to the calculations to ensure that the sample represented the state population in terms of ethnicity, gender, and performance level. These variables were selected because they were correlated with a student's academic achievement within this study, and these data are often provided for the state population. When weighted, the sample matches the target population as closely as possible on the key demographics and test score characteristics.

Specifically, a raking procedure was used to calculate the post-stratification weights and improve the representativeness of the sample. Raking uses iterative procedures to obtain weights that match sample marginal distributions to known population margins. The following steps were taken during this process:

- Calculate marginal distributions of ethnicity, gender, and performance level for the sample and population.
- Calculate post-stratification weights with the rake function from the survey package in R.
- Trim the weight if it is not in the range of 0.3 to 3.0.
- Apply the weights to the sample before conducting the linking study analyses.

2.3. Equipercentile Linking Procedure

The equipercentile procedure (Kolen & Brennan, 2004) was used to link the spring OSTP scores and the spring MAP Growth RIT scores, and the 2015 MAP Growth norms (Thum & Hauser, 2015) were used to predict performance on the spring OSTP test based on MAP Growth RIT scores in the fall and winter. The MAP Growth spring cut scores could be calculated using the equipercentile linking method because that data is directly connected to the OSTP 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). Consider the linked scores between two tests. Let x represent a score on Test X (e.g., OSTP). Its equipercentile equivalent score on Test Y (e.g., MAP Growth), $e_y(x)$, can be obtained through a cumulative-distribution-based linking function defined in Equation 1:

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

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

2.4. Classification Accuracy

The degree to which MAP Growth tests predict student proficiency status on the OSTP tests can be described using classification accuracy statistics that show the proportion of students correctly classified by their MAP Growth scores as Proficient or above (i.e., Proficient or Advanced) or not Proficient (i.e., Below Basic or Basic) on the OSTP tests. Table 2.1 describes the classification accuracy statistics provided in this report. The results are based on the Spring 2017/2018 MAP Growth and OSTP data for proficiency (i.e., students who reached proficiency and those who did not based on the cut score between Basic and Proficient).

Table 2.1. Descriptions of Classification Accuracy Summary Statistics

Classification Accuracy Statistic	Description*	Interpretation
Overall Classification Accuracy Rate	$(TP + TN) / (\text{total sample size})$	The proportion of students in the study sample whose proficiency classification on the state test was correctly predicted by MAP Growth cut scores (Pommerich, Hanson, Harris, & Scoring, 2004).
Sensitivity	$TP / (TP + FN)$	The proportion of proficient students who were correctly identified on the MAP Growth test as such.
Specificity	$TN / (TN + FP)$	The proportion of below-proficient students who were correctly identified on the MAP Growth test as such.
False Negative Rate	$FN / (FN + TP)$	The proportion of proficient students who were incorrectly predicted by MAP Growth test to be below proficiency.
False Positive Rate	$FP / (FP + TN)$	The proportion of below-proficient students who were incorrectly predicted by MAP Growth test to be proficient.
Area Under the Curve (AUC)	Area under the 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.

*TN = true negatives. FP = false positives. FN = false negatives. TP = true positives. ROC = receiver operating characteristics.

2.5. Proficiency Projection

MAP Growth conditional growth norms provide students' expected score gains across testing seasons (Thum & Hauser, 2015). This information was used to estimate the previous fall and winter MAP Growth scores that would meet the MAP Growth spring cut. Equation 2 was used to determine the fall or winter MAP Growth score needed to reach the spring cut score, considering the expected growth associated with the previous RIT score:

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

where:

- $RIT_{PredSpring}$ is the predicted MAP Growth spring score.
- $RIT_{previous}$ is the unknown fall or winter RIT score.
- g is the expected growth from fall or winter to spring corresponding to $RIT_{previous}$.

The MAP Growth conditional growth norms data were also used to calculate the probability of reaching proficiency on the OSTP test based on a student's MAP Growth scores from fall, winter, and spring. Equation 3 was used to calculate the probability of a student achieving proficiency on the OSTP test based on their fall or winter MAP Growth score:

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

where:

- Φ is a standardized normal cumulative distribution.
- $RIT_{previous}$ is the student's RIT score in fall or winter.
- g is the expected growth from fall or winter to spring corresponding to that previous RIT.
- $RIT_{SpringCut}$ is the MAP Growth Proficient cut score for spring.
- SD is the conditional standard deviation of growth from fall or winter to spring.

Equation 4 was used to estimate the probability of a student achieving proficiency on the OSTP test based on their spring score (RIT_{Spring}):

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

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

3. Results

3.1. Study Sample

Only students who took both the OSTP and MAP Growth assessments in Spring 2017/2018 were included in the study sample. Table 3.1 presents the unweighted ethnicity, gender, and performance level distributions for the 72 schools across six districts in Oklahoma that participated in this linking study. Table 3.2 presents student demographic information of the Oklahoma OSTP student population, which includes all students who took the Spring 2018 OSTP tests (Measured Progress, 2018).

Since the unweighted data were quite different from the OSTP population, post-stratification weights were applied to the linking study sample to improve its representativeness. Table 3.3 presents the sample percentages after weighting, which are almost identical to the OSTP student population distributions. The differences are no more than 1%. The analyses in this study (i.e., descriptive statistics, MAP Growth cut score predictions, classification accuracy statistics, and proficiency projections) were therefore conducted based on the weighted sample.

Table 3.1. Linking Study Sample Demographics (Unweighted)

Demographic Subgroup		Percentage of Students in Each Subgroup by Grade					
		3	4	5	6	7	8
ELA/Reading							
	Total N	4,064	3,795	3,577	3,290	2,667	3,009
Ethnicity*	White	32.3	33.2	33.7	34.3	38.2	37.7
	Black	19.4	18.6	17.6	20.2	17.8	18.1
	Hispanic	30.2	30.2	31.1	29.4	24.5	26.0
	Asian/PI	1.2	1.2	1.3	1.6	1.3	1.7
	AI/AN	9.4	8.2	8.7	8.0	11.5	10.5
	NH/PI	0.4	0.6	0.4	0.4	0.5	0.4
	Multiethnic	7.2	7.9	7.2	6.1	6.2	5.6
Gender	Female	50.0	50.1	49.8	49.3	48.5	50.6
	Male	50.0	49.9	50.2	50.7	51.5	49.4
Performance Level	Below Basic	52.5	47.4	35.0	32.1	41.7	38.0
	Basic	26.6	30.3	38.0	41.0	34.9	38.6
	Proficient	17.2	17.7	18.4	21.1	17.5	16.7
	Advanced	3.7	4.6	8.6	5.7	5.9	6.8
Mathematics							
	Total N	4,056	3,793	3,544	3,310	2,664	3,065
Ethnicity*	White	32.4	33.2	33.9	34.2	38.4	37.3
	Black	19.2	18.7	17.4	20.0	18.0	18.4
	Hispanic	30.3	30.1	31.0	29.5	24.4	26.3
	Asian/PI	1.2	1.2	1.4	1.6	1.2	1.7
	AI/AN	9.4	8.2	8.8	8.1	11.4	10.2
	NH/PI	0.4	0.6	0.5	0.4	0.5	0.4
	Multiethnic	7.2	7.9	7.1	6.1	6.1	5.5
Gender	Female	50.0	50.0	49.8	49.3	48.6	50.0
	Male	50.0	50.0	50.2	50.7	51.4	50.0

Demographic Subgroup		Percentage of Students in Each Subgroup by Grade					
		3	4	5	6	7	8
Performance Level	Below Basic	44.7	45.3	40.5	45.0	48.7	70.2
	Basic	31.6	34.8	40.9	36.3	27.2	18.2
	Proficient	16.8	14.0	12.8	16.2	19.0	6.1
	Advanced	6.9	6.0	5.8	2.6	5.1	5.4

*Asian/PI = Asian/Pacific Islander. AI/AN = American Indian/Alaska Native. NH/PI = Native Hawaiian/Other Pacific Islander.

Table 3.2. Spring 2018 Oklahoma Population Demographics

Demographic Subgroup		Percentage of Students in Each Subgroup by Grade					
		3	4	5	6	7	8
ELA/Reading							
	Total N	52,343	51,227	51,090	49,233	46,689	48,056
Ethnicity*	White	46.8	47.6	47.8	48.0	50.0	49.0
	Black	8.9	8.4	8.5	8.7	8.2	8.6
	Hispanic	18.8	18.5	18.4	18.0	16.8	17.3
	Asian/PI	1.9	1.9	2.0	2.0	1.9	2.2
	AI/AN	13.0	12.7	13.1	13.8	14.2	14.4
	NH/PI	0.4	0.4	0.3	0.4	0.3	0.3
	Multiethnic	10.3	10.5	9.9	9.1	8.5	8.2
Gender	Female	48.7	49.2	49.1	49.5	48.9	48.7
	Male	51.3	50.8	50.9	50.5	51.1	51.3
Performance Level	Below Basic	34.0	30.0	22.0	22.0	32.0	24.0
	Basic	33.0	34.0	41.0	40.0	41.0	43.0
	Proficient	27.0	28.0	23.0	29.0	20.0	24.0
	Advanced	6.0	7.0	14.0	9.0	8.0	9.0
Mathematics							
	Total N	52,319	51,156	51,078	48,677	46,121	47,483
Ethnicity*	White	46.8	47.7	47.7	48.1	50.1	49.1
	Black	8.9	8.4	8.5	8.8	8.2	8.6
	Hispanic	18.8	18.5	18.4	17.9	16.7	17.2
	Asian/PI	1.9	1.9	2.0	2.0	1.9	2.2
	AI/AN	13.0	12.7	13.1	13.8	14.1	14.3
	NH/PI	0.4	0.4	0.3	0.4	0.3	0.3
	Multiethnic	10.3	10.5	9.9	9.2	8.5	8.3
Gender	Female	48.7	49.2	49.1	49.5	49.0	48.8
	Male	51.3	50.8	50.9	50.5	51.0	51.2
Performance Level	Below Basic	24.0	27.0	25.0	29.0	34.0	52.0
	Basic	35.0	37.0	45.0	43.0	32.0	28.0
	Proficient	26.0	25.0	20.0	23.0	26.0	10.0
	Advanced	15.0	11.0	10.0	5.0	8.0	10.0

*Asian/PI = Asian/Pacific Islander. AI/AN = American Indian/Alaska Native. NH/PI = Native Hawaiian/Other Pacific Islander.

Table 3.3. Linking Study Sample Demographics (Weighted)

Demographic Subgroup		Percentage of Students in Each Subgroup by Grade					
		3	4	5	6	7	8
ELA/Reading							
	Total N	4,064	3,757	3,577	3,290	2,694	3,009
Ethnicity*	White	46.8	47.6	47.8	48.0	50.1	49.0
	Black	8.9	8.4	8.5	8.7	8.2	8.6
	Hispanic	18.8	18.5	18.4	18.0	16.8	17.3
	Asian/PI	1.9	1.9	2.0	2.0	1.9	2.2
	AI/AN	13.0	12.7	13.1	13.8	14.2	14.4
	NH/PI	0.4	0.4	0.3	0.4	0.3	0.3
	Multiethnic	10.3	10.5	9.9	9.1	8.5	8.2
Gender	Female	48.7	49.2	49.1	49.5	48.9	48.7
	Male	51.3	50.8	50.9	50.5	51.1	51.3
Performance Level	Below Basic	34.0	30.3	22.0	22.0	31.7	24.0
	Basic	33.0	34.3	41.0	40.0	40.6	43.0
	Proficient	27.0	28.3	23.0	29.0	19.8	24.0
	Advanced	6.0	7.1	14.0	9.0	7.9	9.0
Mathematics							
	Total N	4,056	3,793	3,544	3,310	2,664	3,065
Ethnicity*	White	46.8	47.7	47.7	48.0	50.2	49.1
	Black	8.9	8.4	8.5	8.8	8.2	8.6
	Hispanic	18.8	18.5	18.4	17.9	16.7	17.2
	Asian/PI	1.9	1.9	2.0	2.0	1.9	2.2
	AI/AN	13.0	12.7	13.1	13.8	14.1	14.3
	NH/PI	0.4	0.4	0.3	0.4	0.3	0.3
	Multiethnic	10.3	10.5	9.9	9.2	8.5	8.3
Gender	Female	48.7	49.2	49.1	49.5	49.0	48.8
	Male	51.3	50.8	50.9	50.5	51.0	51.2
Performance Level	Below Basic	24.0	27.0	25.0	29.0	34.0	52.0
	Basic	35.0	37.0	45.0	43.0	32.0	28.0
	Proficient	26.0	25.0	20.0	23.0	26.0	10.0
	Advanced	15.0	11.0	10.0	5.0	8.0	10.0

*Asian/PI = Asian/Pacific Islander. AI/AN = American Indian/Alaska Native. NH/PI = Native Hawaiian/Other Pacific Islander.

3.2. Descriptive Statistics

Table 3.4 presents descriptive statistics of the MAP Growth and OSTP test scores for Spring 2017/2018, including the correlation coefficient (r) between the two scales. As shown in the table, the correlation coefficients between the MAP Growth and OSTP test scores range from 0.81 to 0.83 for ELA/Reading and 0.82 to 0.85 for Mathematics. These values indicate a strong relationship among the scores, which provides evidence that the two tests measure similar constructs.

Table 3.4. Descriptive Statistics of MAP Growth and OSTP Test Scores

Grade	N	r	OSTP*				MAP Growth*			
			Mean	SD	Min.	Max.	Mean	SD	Min.	Max.
ELA/Reading										
3	4,064	0.82	284.7	31.2	202	394	197.2	17.1	142	240
4	3,757	0.83	287.0	30.6	200	389	205.1	16.4	145	255
5	3,577	0.82	290.2	30.6	200	399	211.0	15.4	144	254
6	3,290	0.81	289.5	30.5	201	399	214.6	15.9	149	259
7	2,694	0.81	283.4	31.0	201	399	217.9	17.0	151	262
8	3,009	0.81	285.0	30.8	201	399	220.9	16.5	144	261
Mathematics										
3	4,056	0.83	291.4	30.2	201	399	201.1	14.2	139	258
4	3,793	0.83	288.0	30.1	200	399	209.3	14.2	143	258
5	3,544	0.85	283.3	30.8	203	399	217.1	16.2	146	267
6	3,310	0.85	281.4	30.7	201	373	221.1	16.3	148	262
7	2,664	0.82	286.0	31.7	207	399	227.0	18.3	146	285
8	3,065	0.83	271.9	34.4	202	399	230.3	19.6	146	286

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

3.3. MAP Growth Cut Score Predictions

Table 3.5 and Table 3.6 present the OSTP scale score ranges for each performance level 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 OSTP spring assessment when MAP Growth is taken in the fall, winter, or spring. For example, a Grade 3 student who obtained a MAP Growth Reading RIT score of 197 in the fall is likely to reach Ready proficiency on the OSTP test in the spring. A Grade 3 student who obtained a MAP Growth Reading RIT score of 206 in the spring is also likely to reach Proficient proficiency on the OSTP spring test. The spring cut score is higher than the fall cut score because growth is expected between fall and spring as students receive more instruction during the school year.

Table 3.5. MAP Growth Cut Score Predictions—ELA/Reading

OSTP ELA								
Grade	Below Basic		Basic		Proficient*		Advanced	
3	200–276		277–299		300–328		329–399	
4	200–274		275–299		300–330		331–399	
5	200–270		271–299		300–322		323–399	
6	200–268		269–299		300–329		330–399	
7	200–272		273–299		300–322		323–399	
8	200–268		269–299		300–321		322–399	
MAP Growth Reading								
Grade	Below Basic		Basic		Proficient		Advanced	
	RIT	Percentile	RIT	Percentile	RIT*	Percentile	RIT	Percentile
Fall								
3	100–182	1–35	183–196	36–69	197–213	70–94	214–350	95–99
4	100–190	1–31	191–204	32–65	205–222	66–93	223–350	94–99
5	100–194	1–23	195–209	24–59	210–223	60–88	224–350	89–99
6	100–199	1–22	200–216	23–64	217–230	65–90	231–350	91–99
7	100–210	1–39	211–223	40–72	224–234	73–90	235–350	91–99
8	100–211	1–35	212–225	36–70	226–236	71–88	237–350	89–99
Winter								
3	100–190	1–36	191–202	37–67	203–217	68–92	218–350	93–99
4	100–196	1–31	197–209	32–65	210–225	66–92	226–350	93–99
5	100–199	1–24	200–213	25–59	214–226	60–87	227–350	88–99
6	100–203	1–23	204–219	24–64	220–231	65–88	232–350	89–99
7	100–213	1–40	214–225	41–71	226–235	72–89	236–350	90–99
8	100–214	1–38	215–226	39–68	227–237	69–88	238–350	89–99
Spring								
3	100–193	1–36	194–205	37–67	206–219	68–91	220–350	92–99
4	100–199	1–33	200–211	34–64	212–226	65–91	227–350	92–99
5	100–202	1–26	203–215	27–59	216–227	60–85	228–350	86–99
6	100–205	1–24	206–220	25–62	221–232	63–87	233–350	88–99
7	100–214	1–40	215–226	41–70	227–236	71–88	237–350	89–99
8	100–215	1–38	216–227	39–68	228–238	69–87	239–350	88–99

*Bolded numbers indicate the cut scores considered to be at least proficient for accountability purposes.

Table 3.6. MAP Growth Cut Score Predictions—Mathematics

OSTP Mathematics								
Grade	Below Basic		Basic		Proficient*		Advanced	
3	200–273		274–299		300–320		321–399	
4	200–272		273–299		300–321		322–399	
5	200–265		266–299		300–320		321–399	
6	200–266		267–299		300–329		330–399	
7	200–278		279–299		300–328		329–399	
8	200–276		277–299		300–315		316–399	
MAP Growth Mathematics								
Grade	Below Basic		Basic		Proficient		Advanced	
	RIT	Percentile	RIT	Percentile	RIT*	Percentile	RIT	Percentile
Fall								
3	100–179	1–20	180–192	21–56	193–201	57–80	202–350	81–99
4	100–190	1–20	191–202	21–51	203–213	52–79	214–350	80–99
5	100–198	1–18	199–214	19–58	215–225	59–83	226–350	84–99
6	100–205	1–21	206–222	22–62	223–238	63–91	239–350	92–99
7	100–217	1–37	218–228	38–63	229–243	64–89	244–350	90–99
8	100–228	1–54	229–240	55–78	241–249	79–90	250–350	91–99
Winter								
3	100–188	1–23	189–200	24–56	201–208	57–78	209–350	79–99
4	100–197	1–21	198–209	22–52	210–219	53–77	220–350	78–99
5	100–204	1–20	205–220	21–58	221–231	59–82	232–350	83–99
6	100–210	1–23	211–227	24–63	228–242	64–89	243–350	90–99
7	100–221	1–39	222–232	40–64	233–247	65–89	248–350	90–99
8	100–231	1–55	232–242	56–76	243–251	77–88	252–350	89–99
Spring								
3	100–193	1–23	194–205	24–56	206–213	57–76	214–350	77–99
4	100–202	1–23	203–214	24–52	215–224	53–76	225–350	77–99
5	100–208	1–21	209–224	22–57	225–235	58–80	236–350	81–99
6	100–213	1–23	214–230	24–62	231–245	63–88	246–350	89–99
7	100–223	1–38	224–234	39–63	235–249	64–88	250–350	89–99
8	100–233	1–55	234–244	56–76	245–253	77–88	254–350	89–99

*Bolded 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 rate. These results indicate how well MAP Growth spring scores predict proficiency on the OSTP tests, providing insight into the predictive validity of MAP Growth tests. The overall classification accuracy rate ranges from 0.82 to 0.83 for ELA/Reading and 0.84 to 0.90 for Mathematics. These values suggest that the MAP Growth cut scores for each content area and grade are good at classifying students as Proficient on the OSTP spring assessment.

Although the results show that MAP Growth scores can be used to accurately classify students as Proficient on the OSTP tests, there is a notable limitation to how these results should be

used and interpreted. OSTP tests and MAP Growth 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 for Proficiency on the State Test

Grade	N	Cut Score		Class. Accuracy*	Rate		Sensitivity	Specificity	AUC*
		MAP Growth	OSTP		FP*	FN*			
ELA/Reading									
3	4,064	206	300	0.82	0.15	0.24	0.76	0.85	0.89
4	3,757	212	300	0.83	0.16	0.19	0.81	0.84	0.91
5	3,577	216	300	0.83	0.18	0.16	0.84	0.82	0.91
6	3,290	221	300	0.83	0.14	0.22	0.78	0.86	0.91
7	2,694	227	300	0.83	0.15	0.25	0.75	0.85	0.90
8	3,009	228	300	0.83	0.16	0.18	0.82	0.84	0.91
Mathematics									
3	4,056	206	300	0.84	0.16	0.16	0.84	0.84	0.92
4	3,793	215	300	0.85	0.14	0.17	0.83	0.86	0.92
5	3,544	225	300	0.88	0.11	0.14	0.86	0.89	0.95
6	3,310	231	300	0.87	0.10	0.22	0.78	0.90	0.93
7	2,664	235	300	0.87	0.11	0.17	0.83	0.89	0.95
8	3,065	245	300	0.90	0.09	0.16	0.84	0.91	0.96

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

3.5. Proficiency Projection

Table 3.8, Table 3.9, and Table 3.10 present the estimated probability of achieving the Proficient performance level on the OSTP spring assessment based on students' observed MAP Growth score when MAP Growth is taken in the fall, winter, or spring. For example, a Grade 3 student who obtained a MAP Growth Reading score of 205 in the fall has a 0.84 or 84% chance of reaching proficiency (i.e., achieving Proficient performance or higher) on the OSTP spring test.

**Table 3.8. OSTP Proficiency Projection based on MAP Growth Fall and Winter RIT Scores—
ELA/Reading**

Grade	Start Percentile	ELA/Reading (Fall)				ELA/Reading (Winter)			
		Fall RIT	Projected Proficiency			Winter RIT	Projected Proficiency		
			Spring Cut	Proficient	Prob.*		Spring Cut	Proficient	Prob.*
3	5	162	206	No	<0.01	171	206	No	<0.01
	10	168	206	No	<0.01	176	206	No	<0.01
	15	172	206	No	<0.01	180	206	No	<0.01
	20	175	206	No	<0.01	183	206	No	<0.01
	25	178	206	No	0.01	185	206	No	<0.01
	30	180	206	No	0.03	188	206	No	<0.01
	35	182	206	No	0.03	190	206	No	0.01
	40	184	206	No	0.06	192	206	No	0.02
	45	186	206	No	0.10	194	206	No	0.04
	50	188	206	No	0.13	196	206	No	0.09
	55	190	206	No	0.20	198	206	No	0.17
	60	192	206	No	0.29	199	206	No	0.22
	65	194	206	No	0.34	201	206	No	0.35
	70	197	206	Yes	0.50	204	206	Yes	0.50
	75	199	206	Yes	0.61	206	206	Yes	0.65
	80	202	206	Yes	0.71	208	206	Yes	0.78
	85	205	206	Yes	0.84	211	206	Yes	0.91
90	209	206	Yes	0.92	215	206	Yes	0.98	
95	214	206	Yes	0.97	221	206	Yes	>0.99	
4	5	173	212	No	<0.01	179	212	No	<0.01
	10	178	212	No	<0.01	184	212	No	<0.01
	15	182	212	No	<0.01	188	212	No	<0.01
	20	185	212	No	0.01	191	212	No	<0.01
	25	188	212	No	0.01	194	212	No	<0.01
	30	190	212	No	0.03	196	212	No	0.01
	35	192	212	No	0.05	198	212	No	0.02
	40	194	212	No	0.07	200	212	No	0.04
	45	196	212	No	0.12	202	212	No	0.06
	50	198	212	No	0.19	204	212	No	0.12
	55	200	212	No	0.28	205	212	No	0.16
	60	202	212	No	0.33	207	212	No	0.28
	65	204	212	No	0.44	209	212	No	0.42
	70	206	212	Yes	0.56	211	212	Yes	0.58
	75	209	212	Yes	0.67	214	212	Yes	0.78
	80	211	212	Yes	0.77	216	212	Yes	0.88
	85	214	212	Yes	0.88	219	212	Yes	0.94
90	218	212	Yes	0.95	223	212	Yes	0.99	
95	224	212	Yes	0.99	228	212	Yes	>0.99	

Grade	Start Percentile	ELA/Reading (Fall)				ELA/Reading (Winter)			
		Fall RIT	Projected Proficiency			Winter RIT	Projected Proficiency		
			Spring Cut	Proficient	Prob.*		Spring Cut	Proficient	Prob.*
5	5	181	216	No	<0.01	186	216	No	<0.01
	10	186	216	No	<0.01	191	216	No	<0.01
	15	190	216	No	<0.01	195	216	No	<0.01
	20	193	216	No	0.01	197	216	No	<0.01
	25	195	216	No	0.03	200	216	No	0.01
	30	198	216	No	0.05	202	216	No	0.01
	35	200	216	No	0.09	204	216	No	0.03
	40	202	216	No	0.15	206	216	No	0.06
	45	204	216	No	0.19	208	216	No	0.12
	50	206	216	No	0.28	210	216	No	0.22
	55	208	216	No	0.38	212	216	No	0.35
	60	210	216	Yes	0.50	214	216	Yes	0.50
	65	212	216	Yes	0.56	215	216	Yes	0.58
	70	214	216	Yes	0.67	218	216	Yes	0.72
	75	216	216	Yes	0.77	220	216	Yes	0.83
	80	218	216	Yes	0.81	222	216	Yes	0.91
	85	221	216	Yes	0.91	225	216	Yes	0.97
90	225	216	Yes	0.96	229	216	Yes	>0.99	
95	231	216	Yes	>0.99	234	216	Yes	>0.99	
6	5	186	221	No	<0.01	190	221	No	<0.01
	10	192	221	No	<0.01	196	221	No	<0.01
	15	196	221	No	<0.01	199	221	No	<0.01
	20	198	221	No	0.01	202	221	No	<0.01
	25	201	221	No	0.02	204	221	No	<0.01
	30	203	221	No	0.04	207	221	No	0.01
	35	205	221	No	0.07	209	221	No	0.03
	40	207	221	No	0.10	211	221	No	0.06
	45	209	221	No	0.16	212	221	No	0.09
	50	211	221	No	0.23	214	221	No	0.17
	55	213	221	No	0.28	216	221	No	0.22
	60	215	221	No	0.39	218	221	No	0.35
	65	217	221	Yes	0.05	220	221	Yes	0.50
	70	219	221	Yes	0.61	222	221	Yes	0.65
	75	221	221	Yes	0.67	224	221	Yes	0.78
	80	224	221	Yes	0.81	226	221	Yes	0.88
	85	226	221	Yes	0.88	229	221	Yes	0.96
90	230	221	Yes	0.94	233	221	Yes	0.99	
95	236	221	Yes	0.99	238	221	Yes	>0.99	

Grade	Start Percentile	ELA/Reading (Fall)				ELA/Reading (Winter)			
		Fall RIT	Projected Proficiency			Winter RIT	Projected Proficiency		
			Spring Cut	Proficient	Prob.*		Spring Cut	Proficient	Prob.*
7	5	189	227	No	<0.01	192	227	No	<0.01
	10	195	227	No	<0.01	198	227	No	<0.01
	15	199	227	No	<0.01	201	227	No	<0.01
	20	202	227	No	<0.01	204	227	No	<0.01
	25	204	227	No	<0.01	207	227	No	<0.01
	30	206	227	No	0.01	209	227	No	<0.01
	35	209	227	No	0.02	211	227	No	<0.01
	40	211	227	No	0.04	213	227	No	0.01
	45	213	227	No	0.07	215	227	No	0.02
	50	214	227	No	0.10	217	227	No	0.04
	55	216	227	No	0.15	219	227	No	0.09
	60	218	227	No	0.19	221	227	No	0.17
	65	220	227	No	0.28	223	227	No	0.28
	70	222	227	No	0.39	225	227	No	0.42
	75	225	227	Yes	0.50	227	227	Yes	0.58
	80	227	227	Yes	0.61	230	227	Yes	0.78
	85	230	227	Yes	0.77	232	227	Yes	0.88
90	234	227	Yes	0.90	236	227	Yes	0.97	
95	240	227	Yes	0.99	242	227	Yes	>0.99	
8	5	191	228	No	<0.01	194	228	No	<0.01
	10	197	228	No	<0.01	199	228	No	<0.01
	15	201	228	No	<0.01	203	228	No	<0.01
	20	204	228	No	0.01	206	228	No	<0.01
	25	207	228	No	0.02	209	228	No	<0.01
	30	209	228	No	0.03	211	228	No	<0.01
	35	211	228	No	0.05	213	228	No	0.01
	40	213	228	No	0.06	215	228	No	0.01
	45	215	228	No	0.10	217	228	No	0.03
	50	217	228	No	0.16	219	228	No	0.07
	55	219	228	No	0.22	221	228	No	0.14
	60	221	228	No	0.26	223	228	No	0.23
	65	223	228	No	0.35	225	228	No	0.36
	70	225	228	No	0.45	227	228	Yes	0.50
	75	228	228	Yes	0.60	229	228	Yes	0.64
	80	230	228	Yes	0.69	232	228	Yes	0.82
	85	234	228	Yes	0.84	235	228	Yes	0.93
90	237	228	Yes	0.92	239	228	Yes	0.99	
95	243	228	Yes	0.98	244	228	Yes	>0.99	

*Prob. = Probability of obtaining proficient status on the OSTP test in the spring.

**Table 3.9. OSTP Proficiency Projection based on MAP Growth Fall and Winter RIT Scores—
Mathematics**

Grade	Start Percentile	Mathematics (Fall)				Mathematics (Winter)			
		Fall RIT	Projected Proficiency			Winter RIT	Projected Proficiency		
			Spring Cut	Proficient	Prob.*		Spring Cut	Proficient	Prob.*
3	5	169	206	No	<0.01	176	206	No	<0.01
	10	174	206	No	<0.01	181	206	No	<0.01
	15	177	206	No	0.01	184	206	No	<0.01
	20	179	206	No	0.02	187	206	No	<0.01
	25	182	206	No	0.06	189	206	No	0.01
	30	184	206	No	0.08	191	206	No	0.02
	35	185	206	No	0.11	193	206	No	0.05
	40	187	206	No	0.17	195	206	No	0.10
	45	189	206	No	0.27	197	206	No	0.20
	50	190	206	No	0.32	198	206	No	0.26
	55	192	206	No	0.44	200	206	No	0.42
	60	194	206	Yes	0.56	202	206	Yes	0.58
	65	195	206	Yes	0.62	203	206	Yes	0.66
	70	197	206	Yes	0.73	205	206	Yes	0.80
	75	199	206	Yes	0.78	207	206	Yes	0.90
	80	201	206	Yes	0.86	209	206	Yes	0.95
	85	204	206	Yes	0.94	212	206	Yes	0.99
90	207	206	Yes	0.98	215	206	Yes	>0.99	
95	212	206	Yes	>0.99	220	206	Yes	>0.99	
4	5	179	215	No	<0.01	185	215	No	<0.01
	10	184	215	No	<0.01	190	215	No	<0.01
	15	188	215	No	0.01	194	215	No	<0.01
	20	190	215	No	0.02	197	215	No	<0.01
	25	193	215	No	0.06	199	215	No	0.01
	30	195	215	No	0.11	201	215	No	0.03
	35	197	215	No	0.17	203	215	No	0.07
	40	198	215	No	0.22	205	215	No	0.14
	45	200	215	No	0.32	207	215	No	0.26
	50	202	215	No	0.44	209	215	No	0.42
	55	204	215	Yes	0.56	211	215	Yes	0.58
	60	205	215	Yes	0.56	212	215	Yes	0.66
	65	207	215	Yes	0.68	214	215	Yes	0.80
	70	209	215	Yes	0.78	216	215	Yes	0.90
	75	211	215	Yes	0.86	218	215	Yes	0.96
	80	214	215	Yes	0.94	221	215	Yes	0.99
	85	216	215	Yes	0.97	223	215	Yes	>0.99
90	220	215	Yes	0.99	227	215	Yes	>0.99	
95	225	215	Yes	>0.99	232	215	Yes	>0.99	

Grade	Start Percentile	Mathematics (Fall)				Mathematics (Winter)			
		Fall RIT	Projected Proficiency			Winter RIT	Projected Proficiency		
			Spring Cut	Proficient	Prob.*		Spring Cut	Proficient	Prob.*
5	5	187	225	No	<0.01	192	225	No	<0.01
	10	193	225	No	<0.01	198	225	No	<0.01
	15	196	225	No	<0.01	201	225	No	<0.01
	20	199	225	No	0.01	204	225	No	<0.01
	25	202	225	No	0.03	207	225	No	<0.01
	30	204	225	No	0.05	209	225	No	0.01
	35	206	225	No	0.09	211	225	No	0.02
	40	208	225	No	0.15	213	225	No	0.05
	45	210	225	No	0.23	215	225	No	0.11
	50	211	225	No	0.28	217	225	No	0.20
	55	213	225	No	0.38	219	225	No	0.34
	60	215	225	Yes	0.50	221	225	Yes	0.50
	65	217	225	Yes	0.62	223	225	Yes	0.66
	70	219	225	Yes	0.72	225	225	Yes	0.80
	75	221	225	Yes	0.81	228	225	Yes	0.93
	80	224	225	Yes	0.91	230	225	Yes	0.97
	85	227	225	Yes	0.96	233	225	Yes	0.99
90	230	225	Yes	0.99	237	225	Yes	>0.99	
95	236	225	Yes	>0.99	242	225	Yes	>0.99	
6	5	192	231	No	<0.01	196	231	No	<0.01
	10	198	231	No	<0.01	202	231	No	<0.01
	15	202	231	No	<0.01	205	231	No	<0.01
	20	205	231	No	<0.01	209	231	No	<0.01
	25	207	231	No	0.01	211	231	No	<0.01
	30	209	231	No	0.02	214	231	No	<0.01
	35	212	231	No	0.05	216	231	No	0.01
	40	214	231	No	0.09	218	231	No	0.02
	45	216	231	No	0.15	220	231	No	0.05
	50	218	231	No	0.23	222	231	No	0.11
	55	220	231	No	0.33	224	231	No	0.20
	60	222	231	No	0.44	226	231	No	0.34
	65	224	231	Yes	0.56	228	231	Yes	0.50
	70	226	231	Yes	0.67	230	231	Yes	0.66
	75	228	231	Yes	0.77	233	231	Yes	0.85
	80	231	231	Yes	0.85	236	231	Yes	0.95
	85	234	231	Yes	0.93	239	231	Yes	0.99
90	238	231	Yes	0.98	243	231	Yes	>0.99	
95	243	231	Yes	>0.99	248	231	Yes	>0.99	

Grade	Start Percentile	Mathematics (Fall)				Mathematics (Winter)			
		Fall RIT	Projected Proficiency			Winter RIT	Projected Proficiency		
			Spring Cut	Proficient	Prob.*		Spring Cut	Proficient	Prob.*
7	5	195	235	No	<0.01	198	235	No	<0.01
	10	201	235	No	<0.01	204	235	No	<0.01
	15	205	235	No	<0.01	208	235	No	<0.01
	20	209	235	No	<0.01	212	235	No	<0.01
	25	211	235	No	<0.01	215	235	No	<0.01
	30	214	235	No	0.01	217	235	No	<0.01
	35	216	235	No	0.02	220	235	No	<0.01
	40	218	235	No	0.05	222	235	No	0.01
	45	221	235	No	0.11	224	235	No	0.03
	50	223	235	No	0.18	226	235	No	0.07
	55	225	235	No	0.27	228	235	No	0.15
	60	227	235	No	0.38	230	235	No	0.26
	65	229	235	Yes	0.50	233	235	Yes	0.50
	70	231	235	Yes	0.62	235	235	Yes	0.66
	75	234	235	Yes	0.78	238	235	Yes	0.85
	80	237	235	Yes	0.89	240	235	Yes	0.93
	85	240	235	Yes	0.95	244	235	Yes	0.99
90	244	235	Yes	0.99	248	235	Yes	>0.99	
95	250	235	Yes	>0.99	254	235	Yes	>0.99	
8	5	197	245	No	<0.01	199	245	No	<0.01
	10	203	245	No	<0.01	206	245	No	<0.01
	15	208	245	No	<0.01	210	245	No	<0.01
	20	211	245	No	<0.01	214	245	No	<0.01
	25	214	245	No	<0.01	217	245	No	<0.01
	30	217	245	No	<0.01	220	245	No	<0.01
	35	219	245	No	<0.01	222	245	No	<0.01
	40	222	245	No	0.01	225	245	No	<0.01
	45	224	245	No	0.02	227	245	No	<0.01
	50	226	245	No	0.03	229	245	No	<0.01
	55	229	245	No	0.08	231	245	No	0.01
	60	231	245	No	0.12	234	245	No	0.04
	65	233	245	No	0.15	236	245	No	0.08
	70	236	245	No	0.26	239	245	No	0.21
	75	238	245	No	0.35	241	245	No	0.35
	80	241	245	Yes	0.50	245	245	Yes	0.65
	85	245	245	Yes	0.70	248	245	Yes	0.84
90	249	245	Yes	0.85	253	245	Yes	0.98	
95	256	245	Yes	0.98	259	245	Yes	>0.99	

*Prob. = Probability of obtaining proficient status on the OSTP test in the spring.

Table 3.10. OSTP Proficiency Projection based on MAP Growth Spring RIT Scores

Grade	Start Percentile	ELA/Reading				Mathematics			
		Spring RIT	Projected Proficiency			Spring RIT	Projected Proficiency		
			Cut Score	Proficient	Prob.*		Cut Score	Proficient	Prob.*
3	5	174	206	No	<0.01	181	206	No	<0.01
	10	179	206	No	<0.01	186	206	No	<0.01
	15	183	206	No	<0.01	189	206	No	<0.01
	20	186	206	No	<0.01	192	206	No	<0.01
	25	188	206	No	<0.01	194	206	No	<0.01
	30	191	206	No	<0.01	196	206	No	<0.01
	35	193	206	No	<0.01	198	206	No	<0.01
	40	195	206	No	<0.01	200	206	No	0.02
	45	197	206	No	<0.01	202	206	No	0.08
	50	199	206	No	0.01	203	206	No	0.15
	55	201	206	No	0.06	205	206	No	0.37
	60	202	206	No	0.11	207	206	Yes	0.63
	65	204	206	No	0.27	209	206	Yes	0.85
	70	207	206	Yes	0.62	211	206	Yes	0.96
	75	209	206	Yes	0.83	213	206	Yes	0.99
	80	211	206	Yes	0.94	215	206	Yes	>0.99
85	214	206	Yes	0.99	218	206	Yes	>0.99	
90	218	206	Yes	>0.99	221	206	Yes	>0.99	
95	223	206	Yes	>0.99	226	206	Yes	>0.99	
4	5	181	212	No	<0.01	189	215	No	<0.01
	10	187	212	No	<0.01	194	215	No	<0.01
	15	190	212	No	<0.01	198	215	No	<0.01
	20	193	212	No	<0.01	201	215	No	<0.01
	25	196	212	No	<0.01	203	215	No	<0.01
	30	198	212	No	<0.01	206	215	No	<0.01
	35	200	212	No	<0.01	208	215	No	0.01
	40	202	212	No	<0.01	210	215	No	0.04
	45	204	212	No	0.01	212	215	No	0.15
	50	206	212	No	0.03	213	215	No	0.25
	55	208	212	No	0.11	215	215	Yes	0.50
	60	210	212	No	0.27	217	215	Yes	0.75
	65	212	212	Yes	0.50	219	215	Yes	0.92
	70	214	212	Yes	0.73	221	215	Yes	0.98
	75	216	212	Yes	0.89	224	215	Yes	>0.99
	80	218	212	Yes	0.97	226	215	Yes	>0.99
85	221	212	Yes	>0.99	229	215	Yes	>0.99	
90	225	212	Yes	>0.99	233	215	Yes	>0.99	
95	230	212	Yes	>0.99	238	215	Yes	>0.99	

Grade	Start Percentile	ELA/Reading				Mathematics			
		Spring RIT	Projected Proficiency			Spring RIT	Projected Proficiency		
			Cut Score	Proficient	Prob.*		Cut Score	Proficient	Prob.*
5	5	188	216	No	<0.01	195	225	No	<0.01
	10	193	216	No	<0.01	201	225	No	<0.01
	15	197	216	No	<0.01	205	225	No	<0.01
	20	199	216	No	<0.01	208	225	No	<0.01
	25	202	216	No	<0.01	210	225	No	<0.01
	30	204	216	No	<0.01	213	225	No	<0.01
	35	206	216	No	<0.01	215	225	No	<0.01
	40	208	216	No	0.01	217	225	No	<0.01
	45	210	216	No	0.03	219	225	No	0.02
	50	212	216	No	0.11	221	225	No	0.08
	55	214	216	No	0.27	223	225	No	0.25
	60	216	216	Yes	0.50	225	225	Yes	0.50
	65	217	216	Yes	0.62	228	225	Yes	0.85
	70	220	216	Yes	0.89	230	225	Yes	0.96
	75	222	216	Yes	0.97	232	225	Yes	0.99
	80	224	216	Yes	0.99	235	225	Yes	>0.99
	85	227	216	Yes	>0.99	238	225	Yes	>0.99
90	231	216	Yes	>0.99	242	225	Yes	>0.99	
95	236	216	Yes	>0.99	248	225	Yes	>0.99	
6	5	192	221	No	<0.01	198	231	No	<0.01
	10	197	221	No	<0.01	204	231	No	<0.01
	15	201	221	No	<0.01	208	231	No	<0.01
	20	203	221	No	<0.01	211	231	No	<0.01
	25	206	221	No	<0.01	214	231	No	<0.01
	30	208	221	No	<0.01	217	231	No	<0.01
	35	210	221	No	<0.01	219	231	No	<0.01
	40	212	221	No	<0.01	221	231	No	<0.01
	45	214	221	No	0.01	223	231	No	<0.01
	50	216	221	No	0.06	225	231	No	0.02
	55	218	221	No	0.17	227	231	No	0.08
	60	219	221	No	0.27	230	231	No	0.37
	65	221	221	Yes	0.50	232	231	Yes	0.63
	70	223	221	Yes	0.73	234	231	Yes	0.85
	75	226	221	Yes	0.94	237	231	Yes	0.98
	80	228	221	Yes	0.99	239	231	Yes	>0.99
	85	231	221	Yes	>0.99	243	231	Yes	>0.99
90	235	221	Yes	>0.99	247	231	Yes	>0.99	
95	240	221	Yes	>0.99	253	231	Yes	>0.99	

Grade	Start Percentile	ELA/Reading				Mathematics			
		Spring RIT	Projected Proficiency			Spring RIT	Projected Proficiency		
			Cut Score	Proficient	Prob.*		Cut Score	Proficient	Prob.*
7	5	193	227	No	<0.01	199	235	No	<0.01
	10	199	227	No	<0.01	206	235	No	<0.01
	15	202	227	No	<0.01	210	235	No	<0.01
	20	205	227	No	<0.01	214	235	No	<0.01
	25	208	227	No	<0.01	217	235	No	<0.01
	30	210	227	No	<0.01	219	235	No	<0.01
	35	212	227	No	<0.01	222	235	No	<0.01
	40	214	227	No	<0.01	224	235	No	<0.01
	45	216	227	No	<0.01	226	235	No	<0.01
	50	218	227	No	<0.01	229	235	No	0.02
	55	220	227	No	0.01	231	235	No	0.08
	60	222	227	No	0.06	233	235	No	0.25
	65	224	227	No	0.17	235	235	Yes	0.50
	70	226	227	No	0.38	238	235	Yes	0.85
	75	228	227	Yes	0.62	241	235	Yes	0.98
	80	231	227	Yes	0.89	244	235	Yes	>0.99
	85	234	227	Yes	0.99	247	235	Yes	>0.99
90	238	227	Yes	>0.99	251	235	Yes	>0.99	
95	243	227	Yes	>0.99	258	235	Yes	>0.99	
8	5	194	228	No	<0.01	199	245	No	<0.01
	10	200	228	No	<0.01	206	245	No	<0.01
	15	204	228	No	<0.01	211	245	No	<0.01
	20	207	228	No	<0.01	215	245	No	<0.01
	25	209	228	No	<0.01	218	245	No	<0.01
	30	212	228	No	<0.01	221	245	No	<0.01
	35	214	228	No	<0.01	224	245	No	<0.01
	40	216	228	No	<0.01	226	245	No	<0.01
	45	218	228	No	<0.01	229	245	No	<0.01
	50	220	228	No	0.01	231	245	No	<0.01
	55	222	228	No	0.03	233	245	No	<0.01
	60	224	228	No	0.11	236	245	No	<0.01
	65	226	228	No	0.27	238	245	No	0.01
	70	228	228	Yes	0.50	241	245	No	0.08
	75	231	228	Yes	0.83	244	245	No	0.37
	80	233	228	Yes	0.94	247	245	Yes	0.75
	85	236	228	Yes	0.99	251	245	Yes	0.98
90	240	228	Yes	>0.99	255	245	Yes	>0.99	
95	246	228	Yes	>0.99	262	245	Yes	>0.99	

*Prob. = Probability of obtaining proficient status on the OSTP test in the spring.

4. References

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