California High School ALIGNMENT
A Study of the Alignment of the NWEA RIT Scale with the California High School Exit Exam (CAHSEE)*

*As of June 2017 Measures of Academic Progress® (MAP®) is known as MAP® Growth™.

March 2010

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KINGSBURY CENTER AT NWEA

MARCH 2010

Recently, NWEA completed a project to connect the scale of the California High School Exit Exam (CAHSEE) mathematics and reading assessments with NWEA's RIT scale. Information from the state assessments was used in a study to establish performance-level scores on the RIT scale that would indicate a good chance of success on these tests.

To perform the analysis, we linked together state test and NWEA test results for a sample of 937 California students who completed the exams during the 2007-08 and 2008-09 school years. An equipercentile method was used to estimate the RIT score equivalent to each state performance level by determining the percentage of the population within the selected study group that performed at each level on the state test and finding the equivalent percentile ranges within the NWEA dataset to estimate the cut scores. For example, if 40% of the study group population in mathematics performed below the proficient level on the state test (based on AYP standards), we would find the RIT score that would be equivalent to the 40^{th} percentile for the study population (this would not be the same as the 40^{th} percentile in the NWEA norms). This RIT score would be the estimated point on the NWEA RIT scale that would be equivalent to the minimum score for proficiency on the state test. Documentation about this method can be found on our website.

Tables 1 through 4 show the best estimate of the minimum RIT equivalent to each state performance level for same-season and prior-season RIT scores. These tables can be used to identify students who may need additional help to perform well on these tests.

Table 5 shows the estimated probability of a student receiving a proficient score on the state assessment, based on that student's RIT score. This table can be used to assist in identifying students who are not likely to pass these assessments, thereby increasing the probability that intervention strategies will be planned and implemented. This table can also be useful for identifying target RIT-score objectives likely to correspond to successful or "proficient" performance on the state test.

Table 6 shows the correlation coefficients between MAP and the state test for reading and mathematics. These statistics show the degree to which MAP and the state test are linearly related, with values at or near 1.0 suggesting a perfect linear relationship, and values near 0.0 indicating no linear relationship. Table 7 shows the percentages of students within each subject whose status on the state test (i.e., whether or not the student "met standards") was accurately predicted by their MAP performance and using the estimated cut scores within the current study. This table can be used to understand the predictive validity of MAP with respect to the CAHSEE.

TABLE 1 – MINIMUM ESTIMATED SAME-SEASON (SPRING) RIT CUT SCORES CORRESPONDING TO STATE PERFORMANCE LEVELS – MATHEMATICS

MATH-Current Season			
Cut Scores and Percentiles for each State Performance Level			
Grade	AYP Not Pass	AYP Pass	
	Cut Score	Cut Score	Percentile
High Sch	<235	235	41

*Note: the cut scores shown in this table are the **minimum** estimated scores. Meeting the minimum MAP cut score corresponds to a 50% probability of achieving that performance level. Use the probabilities in Tables 5-8 to determine the appropriate 'target' scores for a desired level of certainty. Italics represent extrapolated data.

TABLE 2 – MINIMUM ESTIMATED SAME-SEASON (SPRING) RIT CUT SCORES CORRESPONDING TO STATE PERFORMANCE LEVELS – READING

READING-Current Season			
Cut Scores and Percentiles for each State Performance Level			
Grade	AYP Not Pass	AYP Pass	
	Cut Score	Cut Score	Percentile
High Sch	<223	223	38

*Note: the cut scores shown in this table are the **minimum** estimated scores. Meeting the minimum MAP cut score corresponds to a 50% probability of achieving that performance level. Use the probabilities in Tables 5-8 to determine the appropriate 'target' scores for a desired level of certainty. Italics represent extrapolated data.

TABLE 3 – MINIMUM ESTIMATED PRIOR-SEASON (FALL) RIT CUT SCORES CORRESPONDING TO STATE PERFORMANCE LEVELS – MATHEMATICS

MATH-Prior Season			
Cut Scores and Percentiles for each State Performance Level			
Grade	AYP Not Pass	AYP Pass	
	Cut Score	Cut Score	Percentile
High Sch	<233	233	41

*Note: the cut scores shown in this table are the **minimum** estimated scores. Meeting the minimum MAP cut score corresponds to a 50% probability of achieving that performance level. Use the probabilities in Tables 5-8 to determine the appropriate 'target' scores for a desired level of certainty. Italics represent extrapolated data.

TABLE 4 – MINIMUM ESTIMATED PRIOR-SEASON (FALL) RIT CUT SCORES CORRESPONDING TO STATE PERFORMANCE LEVELS – READING

READING-Prior Season			
Cut Scores and Percentiles for each State Performance Level			
Grade	AYP Not Pass	AYP Pass	
	Cut Score	Cut Score	Percentile
High Sch	<221	221	37

*Note: the cut scores shown in this table are the **minimum** estimated scores. Meeting the minimum MAP cut score corresponds to a 50% probability of achieving that performance level. Use the probabilities in Tables 5-8 to determine the appropriate 'target' scores for a desired level of certainty. Italics represent extrapolated data.

TABLE 5 –ESTIMATED PROBABILITY OF SCORING AS PROFICIENT OR HIGHER ON THE STATE READING AND MATHEMATICS TESTS IN SAME SEASON (SPRING) AND PRIOR SEASON (FALL), BY RIT SCORE RANGE ON MAP ASSESSMENTS

Estimated Probability of Passing State Test					
Based on Observed MAP Score					
RIT Range	Math Current Season	Reading Current Season		Math Prior Season	Reading Prior Season
120	0%	0%		0%	0%
125	0%	0%		0%	0%
130	0%	0%		0%	0%
135	0%	0%		0%	0%
140	0%	0%		0%	0%
145	0%	0%		0%	0%
150	0%	0%		0%	0%
155	0%	0%		0%	0%
160	0%	0%		0%	0%
165	0%	0%		0%	0%
170	0%	0%		0%	1%
175	0%	1%		0%	1%
180	0%	1%		0%	2%
185	1%	2%		1%	3%
190	1%	4%		1%	4%
195	2%	6%		2%	7%
200	3%	9%		4%	11%
205	5%	14%		6%	17%
210	8%	21%		9%	25%
215	12%	31%		14%	35%
220	18%	43%		21%	48%
225	27%	55%		31%	60%
230	38%	67%		43%	71%
235	50%	77%		55%	80%
240	62%	85%		67%	87%
245	73%	90%		77%	92%
250	82%	94%		85%	95%
255	88%	96%		90%	97%
260	92%	98%		94%	98%
265	95%	99%		96%	99%
270	97%	99%		98%	99%
275	98%	99%		99%	100%
280	99%	100%		99%	100%
285	99%	100%		99%	100%
290	100%	100%		100%	100%
295	100%	100%		100%	100%
300	100%	100%		100%	100%

*Note: This table reflects probabilities for both tests in both seasons. The second and third columns in this table provide the estimated probability of passing the state test based on a MAP test score taken during that same (spring) season. Example: if a student scored 235 on a MAP test taken during the spring season, her/his estimated probability of passing the state math test is 50% and her/his estimated probability of passing the state reading test is 77%. The fifth and sixth columns in this table provide the estimated probability of passing the state test based on a MAP test score taken during the prior (fall) season. Example: if a student scored 235 on a MAP test taken during the fall season, her/his estimated probability of passing the state math test is 55% and her/his estimated probability of passing the state reading test is 80%.

TABLE 6 – CORRELATION COEFFICIENTS BETWEEN MAP AND STATE TEST FOR EACH GRADE AND TEST SUBJECT

Grade	Math Correlation Pearson's *r*	Reading Correlation Pearson's *r*
HS	0.613	0.799

* Note: Correlations range from 0 (indicating no correlation between the state test score and the NWEA test score) to 1 (indicating complete correlation between the state test score and the NWEA test score).

TABLE 7 – PERCENTAGE OF STUDENTS WHOSE PASS STATUS WAS ACCURATELY PREDICTED BY THEIR MAP PERFORMANCE USING REPORTED CUT SCORES

Grade	Sample Size	MAP Accurately Predicted State Performance	MAP Underestimated State Performance	MAP Overestimated State Performance
Mathematics				
HS	291	84.15%	7.75%	8.10%
Reading				
HS	852	83.57%	7.28%	9.15%

*Note: The third column of this table shows the percentage of students whose Pass/NotPass status was predicted accurately when their state test score was linked to their MAP score based on this linking study. The fourth column shows the percentage of students whose MAP score predicted they would not pass the state benchmark but they did pass. The last column shows the percentage of students whose MAP score predicted they would pass the state benchmark but they did not pass.

Due to rounding, percentages may not add to 100%.

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