

A Study of the Alignment of the NWEA RIT Scale with the North Carolina End of Grade Testing Program

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Recently, NWEA completed a project to connect the scale of End of Grade tests used for North Carolina mathematics and reading assessments with NWEA's RIT scale. Information from the NC 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 aggregate state test results with NWEA test results for all schools whose NWEA test count for a grade and subject was between 95% and 105% of the count tested on the state assessment. This provided assurance that only schools that had tested a very similar population on both tests were included.

The North Carolina state test is administered in spring. An equipercentile method was used to estimate the RIT score equivalent to each state performance level. For spring, we determined the percentage of the population within the selected study group that performed at each level on the state test and found the equivalent percentile ranges within the NWEA dataset to estimate the cut scores. For example, if 40% of the study group population in grade 3 mathematics performed below the proficient level on the state test, we would find the RIT score that would be equivalent to the 40th percentile for the study population (this would not be the same as the 40th 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.

The analyses for this report used data collected during the Spring 2008 testing season. The total sample used data from about 10,000 students from 10 schools.

More complete 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 North Carolina performance level for same-season (spring) and prior-season (fall) RIT scores. These tables can be used to identify students who may need additional help to perform well on these tests.

Tables 5 through 8 show the estimated probability of a student receiving a proficient score on the state assessment, based on that student's RIT score. These tables 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. These tables can also be useful for identifying target RIT-score objectives likely to correspond to successful or "proficient" performance on the state test.

Table 1 – Minimum Estimated Same-Season (Spring) RIT Cut Scores Corresponding to NC Performance Levels – Mathematics

Grade	Level 1		Level 2		Level 3		Level 4	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile	
2	<171	171	4	186	34	201	80	
3	<179	179	4	198	33	212	78	
4	<189	189	6	206	33	224	81	
5	<201	201	11	217	42	235	85	
6	<191	191	2	219	35	239	83	
7	<208	208	12	227	43	245	84	
8	<211	211	12	228	36	251	86	

*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.

Note: *italicized text denotes extrapolated cut score*

Table 2 – Minimum Estimated Same-Season (Spring) RIT Cut Scores Corresponding to NC Performance Levels – Reading

Grade	Level 1		Level 2		Level 3		Level 4	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile	
2	<181	181	25	187	40	201	79	
3	<190	190	24	197	40	210	78	
4	<192	192	15	203	37	216	76	
5	<201	201	20	211	44	226	87	
6	<203	203	18	213	39	228	83	
7	<206	206	18	219	48	229	77	
8	<206	206	13	219	38	237	88	

*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.

Note: *italicized text denotes extrapolated cut score*

Table 3 – Minimum Estimated Prior-Season (Fall) RIT Cut Scores Corresponding to NC Performance Levels – Mathematics

Grade	Level 1		Level 2		Level 3		Level 4	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile	
2	<164	164	4	175	35	188	79	
3	<172	172	4	188	35	202	80	
4	<183	183	6	199	35	214	81	
5	<196	196	12	210	44	227	86	
6	<185	185	2	214	36	233	84	
7	<205	205	12	223	44	240	84	
8	<209	209	12	225	37	247	85	

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.

Note: *italicized text denotes extrapolated cut score*

Table 4 – Minimum Estimated Prior-Season (Fall) RIT Cut Scores Corresponding to NC Performance Levels – Reading

Grade	Level 1		Level 2		Level 3		Level 4	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile	
2	<170	170	25	176	40	191	79	
3	<182	182	24	189	41	203	79	
4	<186	186	15	197	37	211	78	
5	<197	197	21	207	46	222	88	
6	<200	200	18	210	40	225	84	
7	<204	204	18	217	50	226	76	
8	<204	204	12	217	34	235	84	

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.

Note: *italicized text denotes extrapolated cut score*

Table 5 –Estimated Probability of scoring at Level 3 or Higher on the NC Mathematics Test in Same Season (Spring), by Student Grade and RIT Score Range on MAP Mathematics

Estimated Probability of Passing State Test Based on Observed MAP Score							
RIT Range	2	3	4	5	6	7	8
140	1%	0%	0%	0%	0%	0%	0%
145	2%	1%	0%	0%	0%	0%	0%
150	3%	1%	0%	0%	0%	0%	0%
155	5%	2%	1%	0%	0%	0%	0%
160	8%	3%	1%	0%	0%	0%	0%
165	13%	4%	2%	1%	1%	0%	0%
170	20%	7%	3%	1%	1%	0%	0%
175	29%	11%	5%	2%	1%	1%	1%
180	40%	17%	8%	3%	2%	1%	1%
185	52%	25%	13%	5%	4%	2%	2%
190	64%	36%	20%	8%	6%	3%	3%
195	75%	48%	29%	12%	10%	5%	4%
200	83%	60%	40%	18%	16%	8%	7%
205	89%	71%	52%	27%	23%	12%	11%
210	93%	80%	64%	38%	33%	18%	17%
215	96%	87%	75%	50%	45%	27%	25%
220	97%	92%	83%	62%	57%	38%	36%
225	98%	95%	89%	73%	69%	50%	48%
230	99%	97%	93%	82%	78%	62%	60%
235	99%	98%	96%	88%	86%	73%	71%
240	100%	99%	97%	92%	91%	82%	80%
245	100%	99%	98%	95%	94%	88%	87%
250	100%	100%	99%	97%	96%	92%	92%
255	100%	100%	99%	98%	98%	95%	95%
260	100%	100%	100%	99%	99%	97%	97%
265	100%	100%	100%	99%	99%	98%	98%
270	100%	100%	100%	100%	99%	99%	99%
275	100%	100%	100%	100%	100%	99%	99%
280	100%	100%	100%	100%	100%	100%	100%
285	100%	100%	100%	100%	100%	100%	100%
290	100%	100%	100%	100%	100%	100%	100%
295	100%	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%	100%

Note: This table provides the estimated probability of passing the state test based on a MAP test score taken during that same (spring) season. Example: if a third grade student scored 170 on a MAP test taken during the spring season, her/his estimated probability of passing the state test is 7%.

Table 6 –Probability of scoring as Proficient or Higher on the NC Reading Test in Same Season (Spring), by Student Grade and RIT Score Range on MAP Reading

Estimated Probability of Passing State Test Based on Observed MAP Score							
RIT Range	2	3	4	5	6	7	8
140	1%	0%	0%	0%	0%	0%	0%
145	2%	1%	0%	0%	0%	0%	0%
150	3%	1%	1%	0%	0%	0%	0%
155	5%	2%	1%	0%	0%	0%	0%
160	8%	3%	2%	1%	1%	0%	0%
165	12%	5%	3%	1%	1%	1%	1%
170	18%	8%	4%	2%	2%	1%	1%
175	27%	12%	7%	3%	3%	1%	1%
180	38%	18%	11%	5%	4%	2%	2%
185	50%	27%	17%	8%	7%	4%	4%
190	62%	38%	25%	13%	11%	6%	6%
195	73%	50%	36%	20%	17%	10%	10%
200	82%	62%	48%	29%	25%	16%	16%
205	88%	73%	60%	40%	36%	23%	23%
210	92%	82%	71%	52%	48%	33%	33%
215	95%	88%	80%	64%	60%	45%	45%
220	97%	92%	87%	75%	71%	57%	57%
225	98%	95%	92%	83%	80%	69%	69%
230	99%	97%	95%	89%	87%	78%	78%
235	99%	98%	97%	93%	92%	86%	86%
240	100%	99%	98%	96%	95%	91%	91%
245	100%	99%	99%	97%	97%	94%	94%
250	100%	100%	99%	98%	98%	96%	96%
255	100%	100%	100%	99%	99%	98%	98%
260	100%	100%	100%	99%	99%	99%	99%
265	100%	100%	100%	100%	100%	99%	99%
270	100%	100%	100%	100%	100%	99%	99%
275	100%	100%	100%	100%	100%	100%	100%
280	100%	100%	100%	100%	100%	100%	100%
285	100%	100%	100%	100%	100%	100%	100%
290	100%	100%	100%	100%	100%	100%	100%
295	100%	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%	100%

Note: This table provides the estimated probability of passing the state test based on a MAP test score taken during that same (spring) season. Example: if a third grade student scored 190 on a MAP test taken during the spring season, her/his estimated probability of passing the state test is 38%.

Table 7 – Estimated Probability of scoring as Proficient or Higher on the NC Mathematics Test Based on Prior Season (Fall) MAP Score, by Student Grade and RIT Score Range on MAP Mathematics

Estimated Probability of Passing State Test Based on Observed MAP Score							
RIT Range	2	3	4	5	6	7	8
140	4%	1%	0%	0%	0%	0%	0%
145	6%	2%	1%	0%	0%	0%	0%
150	9%	3%	1%	0%	0%	0%	0%
155	14%	4%	1%	1%	0%	0%	0%
160	22%	7%	2%	1%	1%	0%	0%
165	31%	11%	4%	1%	1%	0%	0%
170	43%	17%	6%	2%	1%	1%	1%
175	55%	25%	10%	4%	2%	1%	1%
180	67%	36%	16%	6%	4%	2%	1%
185	77%	48%	23%	9%	6%	3%	2%
190	84%	60%	33%	14%	10%	4%	4%
195	90%	71%	45%	22%	16%	7%	6%
200	94%	80%	57%	31%	23%	11%	9%
205	96%	87%	69%	43%	33%	17%	14%
210	98%	92%	78%	55%	45%	25%	22%
215	99%	95%	86%	67%	57%	36%	31%
220	99%	97%	91%	77%	69%	48%	43%
225	99%	98%	94%	84%	78%	60%	55%
230	100%	99%	96%	90%	86%	71%	67%
235	100%	99%	98%	94%	91%	80%	77%
240	100%	100%	99%	96%	94%	87%	84%
245	100%	100%	99%	98%	96%	92%	90%
250	100%	100%	99%	99%	98%	95%	94%
255	100%	100%	100%	99%	99%	97%	96%
260	100%	100%	100%	99%	99%	98%	98%
265	100%	100%	100%	100%	99%	99%	99%
270	100%	100%	100%	100%	100%	99%	99%
275	100%	100%	100%	100%	100%	100%	99%
280	100%	100%	100%	100%	100%	100%	100%
285	100%	100%	100%	100%	100%	100%	100%
290	100%	100%	100%	100%	100%	100%	100%
295	100%	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%	100%

Note: This table provides the estimated probability of passing the state test in spring, based on a MAP test score taken during the previous (fall) season. Example: if a third grade student scored 170 on a MAP test taken during the fall season, her/his estimated probability of passing the state test in spring is 17%.

Table 8 – Estimated Probability of scoring as Proficient or Higher on the NC Reading Test Based on Prior Season (Fall) MAP Score, by Student Grade and RIT Score Range on MAP Reading

Estimated Probability of Passing State Test Based on Observed MAP Score							
RIT Range	2	3	4	5	6	7	8
140	3%	1%	0%	0%	0%	0%	0%
145	5%	1%	1%	0%	0%	0%	0%
150	8%	2%	1%	0%	0%	0%	0%
155	13%	4%	2%	1%	1%	0%	0%
160	20%	6%	3%	1%	1%	0%	0%
165	29%	10%	5%	2%	1%	1%	1%
170	40%	16%	8%	3%	2%	1%	1%
175	52%	23%	12%	5%	4%	2%	2%
180	64%	33%	18%	8%	6%	3%	3%
185	75%	45%	27%	12%	9%	5%	5%
190	83%	57%	38%	18%	14%	8%	8%
195	89%	69%	50%	27%	22%	12%	12%
200	93%	78%	62%	38%	31%	18%	18%
205	96%	86%	73%	50%	43%	27%	27%
210	97%	91%	82%	62%	55%	38%	38%
215	98%	94%	88%	73%	67%	50%	50%
220	99%	96%	92%	82%	77%	62%	62%
225	99%	98%	95%	88%	84%	73%	73%
230	100%	99%	97%	92%	90%	82%	82%
235	100%	99%	98%	95%	94%	88%	88%
240	100%	99%	99%	97%	96%	92%	92%
245	100%	100%	99%	98%	98%	95%	95%
250	100%	100%	100%	99%	99%	97%	97%
255	100%	100%	100%	99%	99%	98%	98%
260	100%	100%	100%	100%	99%	99%	99%
265	100%	100%	100%	100%	100%	99%	99%
270	100%	100%	100%	100%	100%	100%	100%
275	100%	100%	100%	100%	100%	100%	100%
280	100%	100%	100%	100%	100%	100%	100%
285	100%	100%	100%	100%	100%	100%	100%
290	100%	100%	100%	100%	100%	100%	100%
295	100%	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%	100%

Note: This table provides the estimated probability of passing the state test in spring, based on a MAP test score taken during the previous (fall) season. Example: if a third grade student scored a 190 on a MAP test taken during the fall season, her/his estimated probability of passing the state test in spring is 57%.