A Study of the Alignment of the NWEA RIT Scale with the North Dakota State Assessment (NDSA)

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Recently, NWEA completed a project to connect the scale of the North Dakota State Assessment (NDSA) used for North Dakota's mathematics and reading assessments with NWEA's RIT scale. Information from the North Dakota assessments were 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 individual students' state test results with their corresponding NWEA test results for about 9,500 students in 70 North Dakota schools who took both tests during the fall 2007 testing season. For the fall season, an equipercentile method was used to estimate the RIT score equivalent to each state performance level. 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 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.

More complete documentation about this method can be found on our website.

Tables 1 through 6 show the best estimate of the minimum RIT equivalent to each NDSA performance level for same-season (Fall) and prior-season (Spring) RIT scores. These tables can be used to identify students who may need additional help to perform well on these tests.

Tables 7 through 12 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 (Fall) RIT Cut Scores Corresponding to North Dakota Performance Levels – Mathematics

Grade	Novice	Partially Proficient		Proficient		Ad	Advanced	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut Score	Percentile	
3	<169	169	3	180	15	202	80	
4	<183	183	7	195	24	212	80	
5	<191	191	7	201	21	220	75	
6	<195	195	7	208	25	227	74	
7	<198	198	6	215	28	233	72	
8	<205	205	9	225	39	240	75	

*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 7-12 to determine the appropriate "target" scores for a desired level of certainty.

Table 2 – Minimum Estimated Same-Season (Fall) RIT Cut Scores Corresponding to North Dakota Performance Levels – Reading

Grade	Novice	Partially Proficient		Proficient		Advanced	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut Score	Percentile
3	<156	156	1	181	25	204	83
4	<179	179	10	193	29	210	78
5	<188	188	11	204	40	222	90
6	<193	193	11	207	34	225	85
7	<184	184	3	206	23	227	81
8	<194	194	6	212	28	232	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 7-12 to determine the appropriate "target" scores for a desired level of certainty.

Table 3 – Minimum Estimated Same-Season (Fall) RIT Cut Scores Corresponding to North Dakota Performance Levels – Language Usage

Grade	Novice	ovice Partially Proficient		Pro	ficient	Advanced		
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut Score	Percentile	
3	<162	162	2	183	22	205	81	
4	<183	183	9	195	27	211	76	
5	<193	193	12	205	36	221	86	
6	<196	196	10	208	32	224	84	
7	<195	195	6	209	26	225	77	
8	<203	203	10	213	28	229	82	

*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 7-12 to determine the appropriate "target" scores for a desired level of certainty.

Table 4 – Minimum Estimated Prior-Season (Spring of Prior Year) RIT Cut Scores Corresponding to North Dakota Performance Levels – Mathematics

Grade	Novice	Partially Proficient		Pro	ficient	Advanced	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut Score	Percentile
3	<167	167	3	178	15	200	80
4	<182	182	7	194	25	212	82
5	<190	190	7	200	21	220	77
6	<196	196	7	209	26	228	75
7	<197	197	6	215	29	233	72
8	<204	204	9	225	41	241	76

*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 7-12 to determine the appropriate "target" scores for a desired level of certainty.

Table 5 – Minimum Estimated Prior-Season (Previous Spring) RIT Cut Scores Corresponding to North Dakota Performance Levels – Reading

Grade	Novice	Partially Proficient		Proficient		Advanced	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut Score	Percentile
3	<154	154	1	179	25	202	84
4	<178	178	10	192	30	209	79
5	<187	187	11	203	40	221	90
6	<194	194	11	207	35	224	86
7	<182	182	3	206	23	227	81
8	<193	193	6	212	30	233	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 7-12 to determine the appropriate "target" scores for a desired level of certainty.

Note: Refer to the grade in which the student is enrolled at the time he/she takes the NDSA (Fall)

Table 6 – Minimum Estimated Prior-Season (Spring of Prior Year) RIT Cut Scores Corresponding to North Dakota Performance Levels – Language Usage

Grade	Novice	Partially Proficient		Pro	ficient	Advanced		
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut Score	Percentile	
3	<162	162	2	181	22	204	83	
4	<181	181	9	194	27	210	76	
5	<192	192	12	204	37	220	86	
6	<197	197	10	208	32	224	84	
7	<195	195	6	210	28	225	78	
8	<202	202	10	212	28	229	83	

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 7-12 to determine the appropriate "target" scores for a desired level of certainty.

Note: Refer to the grade in which the student is enrolled at the time he/she takes the NDSA (Fall)

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

	Estimate	d Probability o	f Passing State	Test for Studer	nt with Given RI	T Score
RIT Range	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
130	1%	0%	0%	0%	0%	0%
135	1%	0%	0%	0%	0%	0%
140	2%	1%	0%	0%	0%	0%
145	4%	1%	0%	0%	0%	0%
150	6%	1%	1%	0%	0%	0%
155	9%	2%	1%	1%	0%	0%
160	14%	4%	2%	1%	1%	0%
165	22%	6%	3%	2%	1%	0%
170	31%	9%	5%	3%	1%	1%
175	43%	14%	8%	4%	2%	1%
180	55%	22%	13%	7%	4%	1%
185	67%	31%	20%	11%	6%	2%
190	77%	43%	29%	17%	9%	4%
195	84%	55%	40%	25%	14%	6%
200	90%	67%	52%	36%	22%	9%
205	94%	77%	64%	48%	31%	14%
210	96%	84%	75%	60%	43%	22%
215	98%	90%	83%	71%	55%	31%
220	99%	94%	89%	80%	67%	43%
225	99%	96%	93%	87%	77%	55%
230	99%	98%	96%	92%	84%	67%
235	100%	99%	97%	95%	90%	77%
240	100%	99%	98%	97%	94%	84%
245	100%	99%	99%	98%	96%	90%
250	100%	100%	99%	99%	98%	94%
255	100%	100%	100%	99%	99%	96%
260	100%	100%	100%	100%	99%	98%
265	100%	100%	100%	100%	99%	99%
270	100%	100%	100%	100%	100%	99%
275	100%	100%	100%	100%	100%	99%
280	100%	100%	100%	100%	100%	100%
285	100%	100%	100%	100%	100%	100%
290	100%	100%	100%	100%	100%	100%
295	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%

Note: This table provides the estimated probability of passing the NDSA in fall, based on a MAP test score taken during the same (fall) season. Example: if a current third grade student had scored 165 on a MAP test taken during that same (fall) season, the estimated probability of scoring proficient or better on the grade 3 NDSA is 22%.

Table 8 —Probability of scoring as Proficient or Higher on the North Dakota Reading Test in Same Season (Fall), by Student Grade and RIT Score Range on MAP Reading

Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	0 1 0
	^ 0/		0.000	Grade /	Grade 8
	0%	0%	0%	0%	0%
1%	0%	0%	0%	0%	0%
2%	1%	0%	0%	0%	0%
3%	1%	0%	0%	0%	0%
5%	2%	1%	0%	0%	0%
8%	3%	1%	1%	1%	0%
13%	4%	1%	1%	1%	1%
20%	7%	2%	2%	2%	1%
29%	11%	4%	3%	3%	2%
40%	17%	6%	5%	5%	3%
52%	25%	10%	8%	8%	5%
64%	36%	16%	12%	13%	8%
75%	48%	23%	18%	20%	12%
83%	60%	33%	27%	29%	18%
89%	71%	45%	38%	40%	27%
93%	80%	57%	50%	52%	38%
96%	87%	69%	62%	64%	50%
97%	92%	78%	73%	75%	62%
98%	95%	86%	82%	83%	73%
99%	97%	91%	88%	89%	82%
99%	98%	94%	92%	93%	88%
100%	99%	96%	95%	96%	92%
100%	99%	98%	97%	97%	95%
100%	100%	99%	98%	98%	97%
100%	100%	99%	99%	99%	98%
100%	100%	99%	99%	99%	99%
100%	100%	100%	100%	100%	99%
100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%
	2% 3% 5% 8% 13% 20% 29% 40% 52% 64% 75% 83% 89% 93% 96% 97% 98% 99% 100% 100% 100% 100% 100% 100% 100%	2% 1% 3% 1% 5% 2% 8% 3% 13% 4% 20% 7% 29% 11% 40% 17% 52% 25% 64% 36% 75% 48% 83% 60% 89% 71% 93% 80% 96% 87% 97% 92% 98% 95% 99% 97% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100%	2% 1% 0% 3% 1% 0% 5% 2% 1% 8% 3% 1% 13% 4% 1% 20% 7% 2% 29% 11% 4% 40% 17% 6% 52% 25% 10% 64% 36% 16% 75% 48% 23% 83% 60% 33% 89% 71% 45% 93% 80% 57% 96% 87% 69% 97% 92% 78% 98% 95% 86% 99% 97% 91% 100% 100% 99% 100% 100% 99% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100%	2% 1% 0% 0% 3% 1% 0% 0% 5% 2% 1% 0% 8% 3% 1% 1% 13% 4% 1% 1% 20% 7% 2% 2% 29% 11% 4% 3% 40% 17% 6% 5% 52% 25% 10% 8% 64% 36% 16% 12% 75% 48% 23% 18% 83% 60% 33% 27% 89% 71% 45% 38% 93% 80% 57% 50% 96% 87% 69% 62% 97% 92% 78% 73% 98% 95% 86% 82% 99% 97% 91% 88% 99% 97% 91% 88% 99% 98% 94% 92%	2% 1% 0% 0% 0% 3% 1% 0% 0% 0% 5% 2% 1% 0% 0% 5% 2% 1% 0% 0% 8% 3% 1% 1% 1% 13% 4% 1% 1% 1% 20% 2% 2% 2% 29% 11% 4% 3% 3% 40% 17% 6% 5% 5% 52% 25% 10% 8% 8% 64% 36% 16% 12% 13% 75% 48% 23% 18% 20% 83% 60% 33% 27% 29% 89% 71% 45% 38% 40% 93% 80% 57% 50% 52% 96% 87% 69% 62% 64% 97% 92% 78% 73% 75%

Note: This table provides the estimated probability of passing the NDSA in fall, based on a MAP test score taken during the same (fall) season. Example: if a current third grade student had scored 165 on a MAP test taken during that same (fall) season, the estimated probability of scoring proficient or better on the grade 3 NDSA is 20%.

Table 9 – Estimated Probability of scoring as Proficient or Higher on the North Dakota English Language Arts Test in Same Season (Fall), by Student Grade and RIT Score Range on MAP Language Usage

	Estimate	d Probability o	f Passing State	Test for Studer	nt with Given RI	T Score
RIT Range	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
130	1%	0%	0%	0%	0%	0%
135	1%	0%	0%	0%	0%	0%
140	2%	1%	0%	0%	0%	0%
145	3%	1%	0%	0%	0%	0%
150	4%	1%	1%	0%	0%	0%
155	7%	2%	1%	1%	1%	0%
160	11%	4%	1%	1%	1%	1%
165	17%	6%	2%	2%	1%	1%
1 <i>7</i> 0	25%	9%	4%	3%	2%	2%
1 <i>7</i> 5	36%	14%	6%	4%	4%	3%
180	48%	22%	9%	7%	6%	4%
185	60%	31%	14%	11%	10%	7%
190	71%	43%	22%	17%	16%	11%
195	80%	55%	31%	25%	23%	17%
200	87%	67%	43%	36%	33%	25%
205	92%	77%	55%	48%	45%	36%
210	95%	84%	67%	60%	57%	48%
215	97%	90%	77%	71%	69%	60%
220	98%	94%	84%	80%	78%	<i>7</i> 1%
225	99%	96%	90%	87%	86%	80%
230	99%	98%	94%	92%	91%	87%
235	100%	99%	96%	95%	94%	92%
240	100%	99%	98%	97%	96%	95%
245	100%	99%	99%	98%	98%	97%
250	100%	100%	99%	99%	99%	98%
255	100%	100%	99%	99%	99%	99%
260	100%	100%	100%	100%	99%	99%
265	100%	100%	100%	100%	100%	100%
270	100%	100%	100%	100%	100%	100%
275	100%	100%	100%	100%	100%	100%
280	100%	100%	100%	100%	100%	100%
285	100%	100%	100%	100%	100%	100%
290	100%	100%	100%	100%	100%	100%
295	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%

Note: This table provides the estimated probability of passing the NDSA in fall, based on a MAP test score taken during the same (fall) season. Example: if a current third grade student had scored 165 on a MAP test taken during that same (fall) season, the estimated probability of scoring proficient or better on the grade 3 NDSA is 17%.

Table 10 – Estimated Probability of scoring as Proficient or Higher on the North Dakota Mathematics Test Based on Prior Season (Spring) MAP Score, by Student Grade and RIT Score Range on MAP Mathematics

	Estimate	d Probability o	of Passing State	Test for Studer	nt with Given RI	T Score
RIT Range	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
130	1%	0%	0%	0%	0%	0%
135	2%	0%	0%	0%	0%	0%
140	3%	1%	0%	0%	0%	0%
145	4%	1%	1%	0%	0%	0%
150	7%	1%	1%	0%	0%	0%
155	11%	2%	1%	1%	0%	0%
160	17%	4%	2%	1%	1%	0%
165	25%	6%	4%	1%	1%	0%
170	36%	10%	6%	2%	1%	1%
175	48%	16%	9%	4%	2%	1%
180	60%	23%	14%	6%	4%	1%
185	71%	33%	22%	10%	6%	2%
190	80%	45%	31%	16%	9%	4%
195	87%	57%	43%	23%	14%	6%
200	92%	69%	55%	33%	22%	9%
205	95%	78%	67%	45%	31%	14%
210	97%	86%	77%	57%	43%	22%
215	98%	91%	84%	69%	55%	31%
220	99%	94%	90%	78%	67%	43%
225	99%	96%	94%	86%	77%	55%
230	100%	98%	96%	91%	84%	67%
235	100%	99%	98%	94%	90%	77%
240	100%	99%	99%	96%	94%	84%
245	100%	99%	99%	98%	96%	90%
250	100%	100%	99%	99%	98%	94%
255	100%	100%	100%	99%	99%	96%
260	100%	100%	100%	99%	99%	98%
265	100%	100%	100%	100%	99%	99%
270	100%	100%	100%	100%	100%	99%
275	100%	100%	100%	100%	100%	99%
280	100%	100%	100%	100%	100%	100%
285	100%	100%	100%	100%	100%	100%
290	100%	100%	100%	100%	100%	100%
295	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%

Note: This table provides the estimated probability of passing the NDSA in fall, based on a MAP test score taken during the previous (spring) season. Example: if a current third grade student had scored 165 on a MAP test taken during her/his previous (spring) season, the estimated probability of scoring proficient or better on the grade 3 NDSA is 25%.

Table 11 – Estimated Probability of scoring as Proficient or Higher on the North Dakota Reading Test Based on Prior Season (Spring) MAP Score, by Student Grade and RIT Score Range on MAP Reading

Estimated Probability of Passing State Test for Student with Given RIT Score										
RIT Range	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8				
130	1%	0%	0%	0%	0%	0%				
135	1%	0%	0%	0%	0%	0%				
140	2%	1%	0%	0%	0%	0%				
145	4%	1%	0%	0%	0%	0%				
150	6%	2%	1%	0%	0%	0%				
155	10%	3%	1%	1%	1%	0%				
160	16%	5%	2%	1%	1%	1%				
165	23%	8%	3%	2%	2%	1%				
170	33%	12%	4%	3%	3%	2%				
1 <i>7</i> 5	45%	18%	7%	5%	5%	3%				
180	57%	27%	11%	8%	8%	5%				
185	69%	38%	17%	12%	13%	8%				
190	78%	50%	25%	18%	20%	12%				
195	86%	62%	36%	27%	29%	18%				
200	91%	73%	48%	38%	40%	27%				
205	94%	82%	60%	50%	52%	38%				
210	96%	88%	71%	62%	64%	50%				
215	98%	92%	80%	73%	75%	62%				
220	99%	95%	87%	82%	83%	73%				
225	99%	97%	92%	88%	89%	82%				
230	99%	98%	95%	92%	93%	88%				
235	100%	99%	97%	95%	96%	92%				
240	100%	99%	98%	97%	97%	95%				
245	100%	100%	99%	98%	98%	97%				
250	100%	100%	99%	99%	99%	98%				
255	100%	100%	100%	99%	99%	99%				
260	100%	100%	100%	100%	100%	99%				
265	100%	100%	100%	100%	100%	100%				
270	100%	100%	100%	100%	100%	100%				
275	100%	100%	100%	100%	100%	100%				
280	100%	100%	100%	100%	100%	100%				
285	100%	100%	100%	100%	100%	100%				
290	100%	100%	100%	100%	100%	100%				
295	100%	100%	100%	100%	100%	100%				
300	100%	100%	100%	100%	100%	100%				

Note: This table provides the estimated probability of passing the NDSA in fall, based on a MAP test score taken during the previous (spring) season. Example: if a current third grade student had scored 165 on a MAP test taken during her/his previous (spring) season, the estimated probability of scoring proficient or better on the grade 3 NDSA is 23%.

Table 12 – Estimated Probability of scoring as Proficient or Higher on the North Dakota English Language Arts Test Based on Prior Season (Spring) MAP Score, by Student Grade and RIT Score Range on MAP Language Usage

	Estimate	d Probability o	f Passing State	Test for Studer	nt with Given RI	T Score
RIT Range	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
130	1%	0%	0%	0%	0%	0%
135	1%	0%	0%	0%	0%	0%
140	2%	1%	0%	0%	0%	0%
145	3%	1%	0%	0%	0%	0%
150	5%	1%	1%	0%	0%	0%
155	8%	2%	1%	1%	1%	0%
160	13%	4%	1%	1%	1%	1%
165	20%	6%	2%	2%	1%	1%
1 <i>7</i> 0	29%	10%	4%	3%	2%	2%
175	40%	16%	6%	4%	4%	3%
180	52%	23%	10%	7%	6%	5%
185	64%	33%	16%	11%	9%	8%
190	75%	45%	23%	17%	14%	12%
195	83%	57%	33%	25%	22%	18%
200	89%	69%	45%	36%	31%	27%
205	93%	78%	57%	48%	43%	38%
210	96%	86%	69%	60%	55%	50%
215	97%	91%	78%	71%	67%	62%
220	98%	94%	86%	80%	77%	73%
225	99%	96%	91%	87%	84%	82%
230	99%	98%	94%	92%	90%	88%
235	100%	99%	96%	95%	94%	92%
240	100%	99%	98%	97%	96%	95%
245	100%	99%	99%	98%	98%	97%
250	100%	100%	99%	99%	99%	98%
255	100%	100%	99%	99%	99%	99%
260	100%	100%	100%	100%	99%	99%
265	100%	100%	100%	100%	100%	100%
270	100%	100%	100%	100%	100%	100%
275	100%	100%	100%	100%	100%	100%
280	100%	100%	100%	100%	100%	100%
285	100%	100%	100%	100%	100%	100%
290	100%	100%	100%	100%	100%	100%
295	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%

Note: This table provides the estimated probability of passing the NDSA in fall, based on a MAP test score taken during the previous (spring) season. Example: if a current third grade student had scored 165 on a MAP test taken during her/his previous (spring) season, the estimated probability of scoring proficient or better on the grade 3 NDSA is 20%.