

A Study of the Alignment of the NWEA RIT Scale with the Kansas Assessment System

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Northwest Evaluation Association

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In April 2007, NWEA completed a project to connect the scale of the tests used for Kansas mathematics and reading assessments with NWEA's RIT scale. Information from the Kansas 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. In 2009, additional data were collected and analyzed to create cut score estimates for high school grades.

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 Kansas state test is administered in spring. For the spring season, 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.

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

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

Tables 5 through 8 show the proportion of students achieving various RIT score ranges whom we estimate would achieve a proficient score on the state assessment. 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.

Table 1 - Recommended same- season (spring) RIT cut scores for Kansas performance levels - Reading

Grade	Academic Warning		Approaches Standards		Meets Standards		Exceeds Standards		Exemplary	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile	
2	<176	176	16	184	34	196	66	204	86	
3	<185	185	16	194	34	205	66	213	86	
4	<192	192	15	199	29	211	64	219	84	
5	<202	202	23	209	40	216	63	222	80	
6	<201	201	15	210	33	220	63	229	86	
7	<205	205	17	213	33	222	59	231	83	
8	<208	208	16	217	35	227	63	235	85	
9	<210	210	18	221	40	230	66	238	86	
10	<213	213	18	224	40	233	66	240	86	
11	<213	213	18	224	40	233	66	240	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: *bolded, italicized text denotes extrapolated cut score*

Table 2 - Recommended same- season (spring) RIT cut scores for Kansas performance levels - Mathematics

Grade	Academic Warning			Approaches Standards		Meets Standards		Exceeds Standards		Exemplary	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile
2	<178	178	14	184	29	195	62	201	80		
3	<189	189	14	196	29	206	62	212	80		
4	<199	199	18	205	32	218	69	227	87		
5	<207	207	22	213	34	226	66	236	87		
6	<210	210	19	217	32	229	61	239	84		
7	<215	215	21	227	44	237	68	247	87		
8	<217	217	18	229	39	241	67	252	88		
9	<230	230	37	237	54	245	71	253	86		
10	<233	233	37	241	54	248	71	257	86		
11	<235	235	37	243	54	251	71	259	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: ***bolded, italicized text denotes extrapolated cut score***

Table 3 - Recommended prior- season (fall) RIT cut scores for Kansas performance levels - Reading

Grade	Academic Warning		Approaches Standards		Meets Standards		Exceeds Standards		Exemplary	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile	
2	<165	165	15	174	35	186	68	196	88	
3	<177	177	15	186	35	198	68	207	88	
4	<186	186	16	193	29	206	66	214	86	
5	<197	197	22	204	39	212	64	218	81	
6	<197	197	14	206	31	217	64	225	85	
7	<202	202	16	210	32	219	58	228	82	
8	<205	205	15	214	33	224	62	232	83	
9	<209	209	18	219	40	228	66	236	86	
10	<212	212	18	222	40	231	66	238	86	
11	<213	213	18	224	40	233	66	240	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: *bolded, italicized text denotes extrapolated cut score*

Table 4 - Recommended prior- season (fall) RIT cut scores for Kansas performance levels - Mathematics

Grade	Academic Warning	Approaches Standards		Meets Standards		Exceeds Standards		Exemplary	
	Cut score	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile	Cut score	Percentile
2	<169	169	16	174	34	183	66	190	84
3	<180	180	16	187	34	197	66	203	84
4	<193	193	21	199	37	210	73	217	88
5	<202	202	24	207	37	218	68	228	88
6	<206	206	20	212	33	223	62	232	83
7	<212	212	22	223	46	232	68	240	84
8	<214	214	18	225	38	236	64	246	84
9	<227	227	37	235	54	242	71	250	86
10	<231	231	37	238	54	246	71	254	86
11	<232	232	37	241	54	249	71	257	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: ***bolded, italicized text denotes extrapolated cut score***

Table 5 - Proportion of students passing the Kansas state reading assessment based on same- season (spring) reading RIT range

RIT Range	Estimated Probability of Passing State Test Based on Observed MAP Score									
	2	3	4	5	6	7	8	9	10	11
140	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%
145	2%	1%	1%	0%	0%	0%	0%	0%	0%	0%
150	4%	1%	1%	0%	0%	0%	0%	0%	0%	0%
155	6%	2%	1%	1%	1%	0%	0%	0%	0%	0%
160	10%	4%	2%	1%	1%	1%	0%	0%	0%	0%
165	16%	6%	4%	1%	1%	1%	1%	0%	0%	0%
170	23%	10%	6%	2%	2%	2%	1%	1%	1%	1%
175	33%	16%	10%	4%	4%	3%	2%	1%	1%	1%
180	45%	23%	16%	6%	6%	4%	3%	2%	1%	1%
185	57%	33%	23%	10%	9%	7%	5%	3%	2%	2%
190	69%	45%	33%	16%	14%	11%	8%	5%	4%	4%
195	78%	57%	45%	23%	22%	17%	12%	8%	6%	6%
200	86%	69%	57%	33%	31%	25%	18%	13%	10%	10%
205	91%	78%	69%	45%	43%	36%	27%	20%	16%	16%
210	94%	86%	78%	57%	55%	48%	38%	29%	23%	23%
215	96%	91%	86%	69%	67%	60%	50%	40%	33%	33%
220	98%	94%	91%	78%	77%	71%	62%	52%	45%	45%
225	99%	96%	94%	86%	84%	80%	73%	64%	57%	57%
230	99%	98%	96%	91%	90%	87%	82%	75%	69%	69%
235	99%	99%	98%	94%	94%	92%	88%	83%	78%	78%
240	100%	99%	99%	96%	96%	95%	92%	89%	86%	86%
245	100%	99%	99%	98%	98%	97%	95%	93%	91%	91%
250	100%	100%	99%	99%	99%	98%	97%	96%	94%	94%
255	100%	100%	100%	99%	99%	99%	98%	97%	96%	96%
260	100%	100%	100%	99%	99%	99%	99%	98%	98%	98%
265	100%	100%	100%	100%	100%	100%	99%	99%	99%	99%
270	100%	100%	100%	100%	100%	100%	100%	99%	99%	99%
275	100%	100%	100%	100%	100%	100%	100%	100%	99%	99%
280	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
285	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
290	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
295	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 6 - Proportion of students passing the Kansas state mathematics assessment based on same- season (spring) mathematics RIT range

RIT Range	Estimated Probability of Passing State Test Based on Observed MAP Score									
	2	3	4	5	6	7	8	9	10	11
140	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
145	2%	1%	0%	0%	0%	0%	0%	0%	0%	0%
150	4%	1%	1%	0%	0%	0%	0%	0%	0%	0%
155	6%	2%	1%	0%	0%	0%	0%	0%	0%	0%
160	10%	3%	1%	1%	0%	0%	0%	0%	0%	0%
165	16%	5%	2%	1%	1%	0%	0%	0%	0%	0%
170	23%	8%	4%	2%	1%	0%	0%	0%	0%	0%
175	33%	13%	6%	3%	2%	1%	1%	0%	0%	0%
180	45%	20%	9%	4%	3%	1%	1%	0%	0%	0%
185	57%	29%	14%	7%	5%	2%	1%	1%	0%	0%
190	69%	40%	22%	11%	8%	3%	2%	1%	1%	1%
195	78%	52%	31%	17%	12%	5%	4%	2%	1%	1%
200	86%	64%	43%	25%	18%	8%	6%	3%	2%	2%
205	91%	75%	55%	36%	27%	12%	10%	5%	3%	3%
210	94%	83%	67%	48%	38%	18%	16%	8%	5%	4%
215	96%	89%	77%	60%	50%	27%	23%	12%	8%	7%
220	98%	93%	84%	71%	62%	38%	33%	18%	13%	11%
225	99%	96%	90%	80%	73%	50%	45%	27%	20%	17%
230	99%	97%	94%	87%	82%	62%	57%	38%	29%	25%
235	99%	98%	96%	92%	88%	73%	69%	50%	40%	36%
240	100%	99%	98%	95%	92%	82%	78%	62%	52%	48%
245	100%	99%	99%	97%	95%	88%	86%	73%	64%	60%
250	100%	100%	99%	98%	97%	92%	91%	82%	75%	71%
255	100%	100%	99%	99%	98%	95%	94%	88%	83%	80%
260	100%	100%	100%	99%	99%	97%	96%	92%	89%	87%
265	100%	100%	100%	100%	99%	98%	98%	95%	93%	92%
270	100%	100%	100%	100%	100%	99%	99%	97%	96%	95%
275	100%	100%	100%	100%	100%	99%	99%	98%	97%	97%
280	100%	100%	100%	100%	100%	100%	99%	99%	98%	98%
285	100%	100%	100%	100%	100%	100%	100%	99%	99%	99%
290	100%	100%	100%	100%	100%	100%	100%	100%	99%	99%
295	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 7 - Proportion of students passing the Kansas state reading assessment based on prior- season (fall) reading RIT range

RIT Range	Estimated Probability of Passing State Test Based on Observed MAP Score									
	2	3	4	5	6	7	8	9	10	11
140	4%	1%	1%	0%	0%	0%	0%	0%	0%	0%
145	6%	2%	1%	0%	0%	0%	0%	0%	0%	0%
150	10%	3%	2%	1%	0%	0%	0%	0%	0%	0%
155	16%	5%	3%	1%	1%	1%	0%	0%	0%	0%
160	23%	8%	4%	1%	1%	1%	1%	0%	0%	0%
165	33%	13%	7%	2%	2%	1%	1%	1%	0%	0%
170	45%	20%	11%	4%	3%	2%	1%	1%	1%	1%
175	57%	29%	17%	6%	5%	4%	2%	1%	1%	1%
180	69%	40%	25%	10%	8%	6%	4%	2%	2%	1%
185	78%	52%	36%	16%	13%	9%	6%	4%	3%	2%
190	86%	64%	48%	23%	20%	14%	10%	6%	5%	4%
195	91%	75%	60%	33%	29%	22%	16%	10%	8%	6%
200	94%	83%	71%	45%	40%	31%	23%	16%	12%	10%
205	96%	89%	80%	57%	52%	43%	33%	23%	18%	16%
210	98%	93%	87%	69%	64%	55%	45%	33%	27%	23%
215	99%	96%	92%	78%	75%	67%	57%	45%	38%	33%
220	99%	97%	95%	86%	83%	77%	69%	57%	50%	45%
225	99%	98%	97%	91%	89%	84%	78%	69%	62%	57%
230	100%	99%	98%	94%	93%	90%	86%	78%	73%	69%
235	100%	99%	99%	96%	96%	94%	91%	86%	82%	78%
240	100%	100%	99%	98%	97%	96%	94%	91%	88%	86%
245	100%	100%	100%	99%	98%	98%	96%	94%	92%	91%
250	100%	100%	100%	99%	99%	99%	98%	96%	95%	94%
255	100%	100%	100%	99%	99%	99%	99%	98%	97%	96%
260	100%	100%	100%	100%	100%	99%	99%	99%	98%	98%
265	100%	100%	100%	100%	100%	100%	99%	99%	99%	99%
270	100%	100%	100%	100%	100%	100%	100%	99%	99%	99%
275	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%
280	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
285	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
290	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
295	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 8 - Proportion of students passing the Kansas state mathematics assessment based on prior- season (fall) mathematics RIT range

RIT Range	Estimated Probability of Passing State Test Based on Observed MAP Score									
	2	3	4	5	6	7	8	9	10	11
140	4%	1%	0%	0%	0%	0%	0%	0%	0%	0%
145	6%	2%	1%	0%	0%	0%	0%	0%	0%	0%
150	10%	3%	1%	0%	0%	0%	0%	0%	0%	0%
155	16%	5%	1%	1%	0%	0%	0%	0%	0%	0%
160	23%	8%	2%	1%	1%	0%	0%	0%	0%	0%
165	33%	12%	4%	2%	1%	0%	0%	0%	0%	0%
170	45%	18%	6%	3%	2%	1%	1%	0%	0%	0%
175	57%	27%	10%	5%	3%	1%	1%	0%	0%	0%
180	69%	38%	16%	8%	5%	2%	1%	1%	0%	0%
185	78%	50%	23%	12%	8%	3%	2%	1%	1%	0%
190	86%	62%	33%	18%	12%	4%	4%	1%	1%	1%
195	91%	73%	45%	27%	18%	7%	6%	2%	2%	1%
200	94%	82%	57%	38%	27%	11%	9%	4%	3%	2%
205	96%	88%	69%	50%	38%	17%	14%	6%	4%	3%
210	98%	92%	78%	62%	50%	25%	22%	9%	7%	5%
215	99%	95%	86%	73%	62%	36%	31%	14%	11%	8%
220	99%	97%	91%	82%	73%	48%	43%	22%	17%	13%
225	99%	98%	94%	88%	82%	60%	55%	31%	25%	20%
230	100%	99%	96%	92%	88%	71%	67%	43%	36%	29%
235	100%	99%	98%	95%	92%	80%	77%	55%	48%	40%
240	100%	100%	99%	97%	95%	87%	84%	67%	60%	52%
245	100%	100%	99%	98%	97%	92%	90%	77%	71%	64%
250	100%	100%	99%	99%	98%	95%	94%	84%	80%	75%
255	100%	100%	100%	99%	99%	97%	96%	90%	87%	83%
260	100%	100%	100%	100%	99%	98%	98%	94%	92%	89%
265	100%	100%	100%	100%	100%	99%	99%	96%	95%	93%
270	100%	100%	100%	100%	100%	99%	99%	98%	97%	96%
275	100%	100%	100%	100%	100%	100%	99%	99%	98%	97%
280	100%	100%	100%	100%	100%	100%	100%	99%	99%	98%
285	100%	100%	100%	100%	100%	100%	100%	99%	99%	99%
290	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%
295	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
300	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%