

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

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Recently, NWEA completed a project to connect the scale of the tests used for Montana mathematics and reading assessments with NWEA's RIT scale. Information from the Montana 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 Montana 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 Montana 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 Montana performance levels - Reading

| Grade | Novice | | Nearing Proficient | | Proficient | | Advanced | |
|-------|-----------|-----------|--------------------|-----------|------------|-----------|------------|--|
| | Cut score | Cut score | Percentile | Cut score | Percentile | Cut score | Percentile | |
| 3 | <178 | 178 | 10 | 190 | 26 | 205 | 67 | |
| 4 | <186 | 186 | 10 | 197 | 25 | 214 | 74 | |
| 5 | <191 | 191 | 9 | 204 | 27 | 219 | 73 | |
| 6 | <198 | 198 | 12 | 209 | 30 | 225 | 76 | |
| 7 | <202 | 202 | 13 | 213 | 32 | 230 | 80 | |
| 8 | <208 | 208 | 16 | 218 | 36 | 233 | 80 | |

Percentile column shows the associated NWEA norm group percentile score.

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

| Grade | Novice | | Nearing Proficient | | Proficient | | Advanced | |
|-------|-----------|-----------|--------------------|-----------|------------|-----------|------------|--|
| | Cut score | Cut score | Percentile | Cut score | Percentile | Cut score | Percentile | |
| 3 | <191 | 191 | 18 | 200 | 43 | 212 | 82 | |
| 4 | <200 | 200 | 21 | 208 | 43 | 220 | 77 | |
| 5 | <206 | 206 | 20 | 215 | 40 | 228 | 75 | |
| 6 | <212 | 212 | 24 | 222 | 45 | 236 | 78 | |
| 7 | <212 | 212 | 18 | 226 | 43 | 242 | 78 | |
| 8 | <224 | 224 | 29 | 239 | 60 | 252 | 85 | |

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

| Grade | Novice | | Nearing Proficient | | Proficient | | Advanced | |
|-------|-----------|-----------|--------------------|-----------|------------|-----------|------------|--|
| | Cut score | Cut score | Percentile | Cut score | Percentile | Cut score | Percentile | |
| 3 | <170 | 170 | 10 | 182 | 27 | 198 | 68 | |
| 4 | <179 | 179 | 10 | 191 | 25 | 209 | 75 | |
| 5 | <186 | 186 | 9 | 199 | 27 | 215 | 74 | |
| 6 | <194 | 194 | 12 | 206 | 32 | 221 | 76 | |
| 7 | <199 | 199 | 13 | 210 | 32 | 227 | 81 | |
| 8 | <205 | 205 | 16 | 215 | 36 | 230 | 80 | |

Percentile column shows the associated NWEA norm group percentile score.

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

| Grade | Novice | | Nearing Proficient | | Proficient | | Advanced | |
|-------|-----------|-----------|--------------------|-----------|------------|-----------|------------|--|
| | Cut score | Cut score | Percentile | Cut score | Percentile | Cut score | Percentile | |
| 3 | <182 | 182 | 20 | 191 | 44 | 203 | 83 | |
| 4 | <194 | 194 | 22 | 202 | 46 | 211 | 77 | |
| 5 | <201 | 201 | 21 | 208 | 40 | 220 | 75 | |
| 6 | <208 | 208 | 25 | 217 | 47 | 229 | 79 | |
| 7 | <209 | 209 | 18 | 222 | 44 | 236 | 79 | |
| 8 | <221 | 221 | 30 | 234 | 60 | 246 | 86 | |

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

| RIT Range | Percent in this range who pass | | | | | |
|-----------|--------------------------------|-----|-----|-----|-----|-----|
| | 3 | 4 | 5 | 6 | 7 | 8 |
| 160 | 6% | 3% | 1% | 1% | 1% | 0% |
| 165 | 9% | 5% | 2% | 1% | 1% | 1% |
| 170 | 14% | 8% | 4% | 2% | 2% | 1% |
| 175 | 22% | 12% | 6% | 4% | 3% | 2% |
| 180 | 31% | 18% | 10% | 6% | 4% | 3% |
| 185 | 43% | 27% | 16% | 10% | 7% | 4% |
| 190 | 55% | 38% | 23% | 16% | 11% | 7% |
| 195 | 67% | 50% | 33% | 23% | 17% | 11% |
| 200 | 77% | 62% | 45% | 33% | 25% | 17% |
| 205 | 84% | 73% | 57% | 45% | 36% | 25% |
| 210 | 90% | 82% | 69% | 57% | 48% | 36% |
| 215 | 94% | 88% | 78% | 69% | 60% | 48% |
| 220 | 96% | 92% | 86% | 78% | 71% | 60% |
| 225 | 98% | 95% | 91% | 86% | 80% | 71% |
| 230 | 99% | 97% | 94% | 91% | 87% | 80% |
| 235 | 99% | 98% | 96% | 94% | 92% | 87% |
| 240 | 99% | 99% | 98% | 96% | 95% | 92% |
| 245 | 100% | 99% | 99% | 98% | 97% | 95% |

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

| RIT Range | Percent in this range who pass | | | | | |
|-----------|--------------------------------|------|------|-----|-----|-----|
| | 3 | 4 | 5 | 6 | 7 | 8 |
| 170 | 6% | 3% | 1% | 1% | 0% | 0% |
| 175 | 9% | 4% | 2% | 1% | 1% | 0% |
| 180 | 14% | 7% | 4% | 2% | 1% | 0% |
| 185 | 22% | 11% | 6% | 3% | 2% | 1% |
| 190 | 31% | 17% | 9% | 5% | 3% | 1% |
| 195 | 43% | 25% | 14% | 8% | 5% | 1% |
| 200 | 55% | 36% | 22% | 12% | 8% | 2% |
| 205 | 67% | 48% | 31% | 18% | 13% | 4% |
| 210 | 77% | 60% | 43% | 27% | 20% | 6% |
| 215 | 84% | 71% | 55% | 38% | 29% | 10% |
| 220 | 90% | 80% | 67% | 50% | 40% | 16% |
| 225 | 94% | 87% | 77% | 62% | 52% | 23% |
| 230 | 96% | 92% | 84% | 73% | 64% | 33% |
| 235 | 98% | 95% | 90% | 82% | 75% | 45% |
| 240 | 99% | 97% | 94% | 88% | 83% | 57% |
| 245 | 99% | 98% | 96% | 92% | 89% | 69% |
| 250 | 99% | 99% | 98% | 95% | 93% | 78% |
| 255 | 100% | 99% | 99% | 97% | 96% | 86% |
| 260 | 100% | 100% | 99% | 98% | 97% | 91% |
| 265 | 100% | 100% | 99% | 99% | 98% | 94% |
| 270 | 100% | 100% | 100% | 99% | 99% | 96% |

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

| RIT Range | Percent in this range who pass | | | | | |
|-----------|--------------------------------|------|-----|-----|-----|-----|
| | 3 | 4 | 5 | 6 | 7 | 8 |
| 150 | 5% | 2% | 1% | 0% | 0% | 0% |
| 155 | 8% | 3% | 1% | 1% | 1% | 0% |
| 160 | 12% | 5% | 2% | 1% | 1% | 1% |
| 165 | 18% | 8% | 4% | 2% | 1% | 1% |
| 170 | 27% | 13% | 6% | 3% | 2% | 1% |
| 175 | 38% | 20% | 10% | 5% | 4% | 2% |
| 180 | 50% | 29% | 16% | 8% | 6% | 4% |
| 185 | 62% | 40% | 23% | 13% | 9% | 6% |
| 190 | 73% | 52% | 33% | 20% | 14% | 9% |
| 195 | 82% | 64% | 45% | 29% | 22% | 14% |
| 200 | 88% | 75% | 57% | 40% | 31% | 22% |
| 205 | 92% | 83% | 69% | 52% | 43% | 31% |
| 210 | 95% | 89% | 78% | 64% | 55% | 43% |
| 215 | 97% | 93% | 86% | 75% | 67% | 55% |
| 220 | 98% | 96% | 91% | 83% | 77% | 67% |
| 225 | 99% | 97% | 94% | 89% | 84% | 77% |
| 230 | 99% | 98% | 96% | 93% | 90% | 84% |
| 235 | 100% | 99% | 98% | 96% | 94% | 90% |
| 240 | 100% | 99% | 99% | 97% | 96% | 94% |
| 245 | 100% | 100% | 99% | 98% | 98% | 96% |

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

| RIT Range | Percent in this range who pass | | | | | |
|-----------|--------------------------------|------|------|-----|-----|-----|
| | 3 | 4 | 5 | 6 | 7 | 8 |
| 160 | 5% | 2% | 1% | 0% | 0% | 0% |
| 165 | 8% | 3% | 2% | 1% | 0% | 0% |
| 170 | 13% | 5% | 3% | 1% | 1% | 0% |
| 175 | 20% | 8% | 4% | 2% | 1% | 0% |
| 180 | 29% | 12% | 7% | 3% | 2% | 1% |
| 185 | 40% | 18% | 11% | 5% | 3% | 1% |
| 190 | 52% | 27% | 17% | 8% | 5% | 1% |
| 195 | 64% | 38% | 25% | 12% | 8% | 2% |
| 200 | 75% | 50% | 36% | 18% | 12% | 4% |
| 205 | 83% | 62% | 48% | 27% | 18% | 6% |
| 210 | 89% | 73% | 60% | 38% | 27% | 10% |
| 215 | 93% | 82% | 71% | 50% | 38% | 16% |
| 220 | 96% | 88% | 80% | 62% | 50% | 23% |
| 225 | 97% | 92% | 87% | 73% | 62% | 33% |
| 230 | 98% | 95% | 92% | 82% | 73% | 45% |
| 235 | 99% | 97% | 95% | 88% | 82% | 57% |
| 240 | 99% | 98% | 97% | 92% | 88% | 69% |
| 245 | 100% | 99% | 98% | 95% | 92% | 78% |
| 250 | 100% | 99% | 99% | 97% | 95% | 86% |
| 255 | 100% | 100% | 99% | 98% | 97% | 91% |
| 260 | 100% | 100% | 100% | 99% | 98% | 94% |
| 265 | 100% | 100% | 100% | 99% | 99% | 96% |