

Use of NWEA for AEC Accountability Measures

Created by Dr. Jody Ernst, July 2012

Formatting NWEA Data

1. Export NWEA reports for the academic years (fall, winter, and spring, or fall and spring as appropriate to your school's assessment cycles).
2. (optional) Separate data into three files, one for each subject; mathematics, reading, and language use.
3. Merge files together, using the students ID number as the matching variable, so that all three (or both) testing occasions form one row of data for each student.
4. Compute the difference, in weeks, between each testing occasion (i.e., fall to winter, winter to spring, and/or fall to spring), turning each computation into its own variable.
5. *Only results based on assessments that were at least eight weeks apart may be used.* Delete (or filter) out any results that are based on assessment occasions that are less than eight weeks apart.
6. *Only RIT scores obtained via the "Survey with Goals" assessments may be used for the calculation of the metrics for the AEC framework.* Delete (or filter) all RIT scores obtained via the "Survey" assessments. (NOTE: "Survey with Goals" refers to the full assessment; "Survey" refers to the short assessment, often used for placement or skill level assessment.)

Computing Grade Level Equivalent RIT

1. Using the **Fall RIT Ranges** and **Fall RIT Grade Equivalents** supplied in tables 1-3, compute the grade level equivalent for each student's RIT score (using only RIT obtained via the "Survey with Goals" assessments, see above).

For example, if a ninth grade student obtains a mathematics RIT of 207 in the fall (Table 1), his **Fall RIT Grade Equivalent** is 5th grade. **Note:** *For ease of use, it is recommended that the grade level equivalents be coded as 0=K, 1=1st grade, 2=2nd grade, etc. This will make it easy to compute changes in grade levels (see section 'Use of Grade Level Equivalents as a Status Measure for the AEC Framework, Metric 2' below) between testing occasions.*

2. Using the same tables (1-3) and method compute the grade equivalent RIT for winter and spring outcomes as well. Be sure to label each grade equivalent score appropriately (e.g., FallGE, WinterGE, and SpringGE)

Table 1. NWEA Fall Grade Equivalents in Mathematics	
Fall RIT Range	Fall RIT Grade Equivalent
<i>up to 148</i>	<i>K</i>
<i>149-164</i>	<i>1st</i>
<i>165-179</i>	<i>2nd</i>
<i>180-192</i>	<i>3rd</i>
<i>193-203</i>	<i>4th</i>
<i>204-212</i>	<i>5th</i>
<i>213-219</i>	<i>6th</i>
<i>220-225</i>	<i>7th</i>
<i>226-230</i>	<i>8th</i>
<i>231-233</i>	<i>9th</i>
<i>234-237</i>	<i>10th</i>
<i>238-239</i>	<i>11th</i>
<i>240 and above</i>	<i>Above 11th</i>

Table 3. NWEA Fall Grade Equivalents in Language Use	
Fall RIT Range	Fall RIT Grade Equivalent
up to 180	2nd
181-193	3rd
194-202	4th
203-208	5th
209-213	6th
214-217	7th
218-220	8th
221	9th
222-223	10th
224-225	11th
226 and above	Above 11th

Table 2. NWEA Fall Grade Equivalents in Reading	
Fall RIT Range	Fall RIT Grade Equivalent
up to 146	K
147-160	1st
161-179	2nd
180-192	3rd
193-201	4th
202-208	5th
209-213	6th
214-217	7th
218-220	8th
221-222	9th
223-226	10th
227	11th
228 and above	Above 11th

Use of Grade Level Equivalents as a Status Measure for the AEC Framework

There are two choices for metrics using NWEA as a measure of student achievement in the AEC framework; 1) percent of students to score at grade level at the end of the year, and 2) percent of students to increase by at least one grade level between fall and spring (or winter, whichever is later for each student).

Metric 1—Percent of students to score at grade level

1. Using the grade level equivalents calculated in the prior section, compute the percentage of students to score at grade level using the following equation:

$$\frac{\text{number of students scoring at their assigned grade level on the spring assessment} + \text{number of students scoring at their assigned grade level on the winter assessment (for students that do not have a spring assessment on record only)}}{\text{number of students tested during the spring administration} + \text{number of students that tested in the winter that do not also have a spring assessment on record}}$$

Inclusion rules: students that have been enrolled in the school for at least eight weeks (40 consecutive school days).

Assigned grade level means the grade that the student entered (or was assigned by the school) in the fall of the current academic year.

2. Rating based on percentage. This calculation is done for each of the three subject areas, mathematics, reading, and language use and the school receives the following number of points based on the percent yielded:

4 points for 90 percent or higher

3 points for 60 percent to 89.99 percent

2 points for 40 percent to 59.99 percent

1 point for 39.99 percent and below

Metric 2—Percent of students to increase their grade level equivalent by at least one grade level between pre- and post assessments.

This measure uses the change score between grade level equivalents and should include the change score that represents the longest period of time between the pre- and post-test. For example, if a student was assessed during all three testing windows; fall, winter, and spring, you would use the

change score associated with fall to spring. However, if a student left the school before the spring administration you would use the change score associated with the fall to winter results.

1. Within your data file you will **compute changes scores** for all of the following:

Change between fall and winter = Winter Grade Equivalent – Fall Grade Equivalent

Change between Winter and Spring: = Spring Grade Equivalent - Winter Grade Equivalent

Change between Fall and Spring = Spring Grade Equivalent - Fall Grade Equivalent

As noted in the section on computing grade level equivalents from students RIT scores, if the grade level equivalent is coded as a numeric value (e.g., 0=K, 1=1st grade, 2= 2nd grade, etc) then the resulting value of the change scores will also be numeric and will indicate positive and negative change scores that represent increases in skill level as appropriate. Change scores of zero '0' reflect no change, positive numbers represent skill increases by number of grade levels, and negative numbers represent loss of skill, regression to the mean, and/or student lack of motivation. Regression to the mean is more likely to be the case in students that scored on the extreme high end of the RIT score distribution.

2. **Determine the appropriate change score to use for each student.** Again, in cases where students have multiple change scores during the academic year, only the change score that is associated with the longest period between assessments should be used.

3. **Calculate the percentage of students to have increased in grade level equivalents** by at least one year using the following equation:

Number of students with change scores of 1 or higher (using only one change score per student, which reflects the change associated with the longest time between pre- and post-assessments)

Number of students with pre- and post-test records between fall and spring + the number of students with pre- and post-test records between fall and winter only + the number of student with pre- and post-test results between winter and spring only

Inclusion rules: all students that have been enrolled in the school for at least eight weeks (40 consecutive school days) that have at least two 'survey with goals' results on record.

4. **Rating based on percentage:** This calculation is done for each of the three subject areas, mathematics, reading, and language use and the school receives the following number of points based on the percent yielded (for each subject):

4 points for 90 percent or higher

3 points for 60 percent to 89.99 percent

2 points for 40 percent to 59.99 percent

1 point for 39.99 percent and below

Use of NWEA RIT Growth as a Growth Measure for the AEC Framework

1. You can either compute the RIT growth for each student or request reports from NWEA on student growth. If you opt for this second option, the files will need to be merged, matching on student ID, and cleaned of all results that are not based on survey with goals assessments (as described in the first section of this document). If using the file structure as developed above; RIT growth between fall and winter, winter and spring, and fall and spring will need to be calculated. This can be done using the following equations:

Fall to Winter Growth: = Winter RIT – Fall RIT

Winter to Spring Growth = Spring RIT – Winter RIT

Fall to Spring Growth = Spring RIT – Fall RIT

2. Using tables 4-6 below **calculate (or define) each student’s target growth** for each of the three growth periods: fall to winter, winter to spring, and fall to spring; and each of the subject areas.

Table 4. NWEA Growth Targets for AEC Students in Mathematics				
Fall RIT Range	Fall RIT Grade Equivalent	Fall to Winter Growth Target	Winter to Spring Growth Target	Fall to Spring Growth Target
up to 148	K	5 RIT	5 RIT	10 RIT
149-164	1 st	7 RIT	7 RIT	14 RIT
165-179	2 nd	7 RIT	5 RIT	12 RIT
180-192	3 rd	7 RIT	4 RIT	11 RIT
193-203	4 th	5 RIT	3 RIT	8 RIT
204-212	5 th	4 RIT	4 RIT	8 RIT
213-219	6 th	3 RIT	3 RIT	6 RIT
220-225	7 th	3 RIT	2 RIT	5 RIT
226-230	8 th	2 RIT	2 RIT	4 RIT
231-233	9 th	2 RIT	2 RIT	4 RIT
234-237	10 th	1 RIT	1 RIT	2 RIT
238-239	11 th	1 RIT	1 RIT	2 RIT
240 and above	Above 11 th	0.5 RIT	0.5 RIT	1 RIT

Table 5. NWEA Growth Targets for AEC Students in Reading				
Fall RIT Range	Fall RIT Grade Equivalent	Fall to Winter Growth Target	Winter to Spring Growth Target	Fall to Spring Growth Target
up to 146	K	5 RIT	4 RIT	9 RIT
147-160	1 st	7 RIT	6 RIT	13 RIT
161-179	2 nd	7 RIT	4 RIT	11 RIT
180-192	3 rd	5 RIT	3 RIT	8 RIT
193-201	4 th	4 RIT	2 RIT	6 RIT
202-208	5 th	3 RIT	1 RIT	4 RIT
209-213	6 th	2 RIT	1 RIT	3 RIT
214-217	7 th	2 RIT	1 RIT	3 RIT
218-220	8 th	2 RIT	1 RIT	3 RIT
221-222	9 th	1 RIT	1 RIT	2 RIT
223-226	10 th	1 RIT	1 RIT	2 RIT
227	11 th	1 RIT	1 RIT	2 RIT
228 and above	Above 11 th	0.5 RIT	0.5 RIT	1 RIT

Table 6. NWEA Growth Targets for AEC Students in Language Use				
Fall RIT Range	Fall RIT Grade Equivalent	Fall to Winter Growth Target	Winter to Spring Growth Target	Fall to Spring Growth Target
up to 180	2 nd	8 RIT	4 RIT	12 RIT
181-193	3 rd	6 RIT	3 RIT	9 RIT
194-202	4 th	4 RIT	2 RIT	6 RIT
203-208	5 th	3 RIT	2 RIT	5 RIT
209-213	6 th	2 RIT	2 RIT	4 RIT
214-217	7 th	1 RIT	1 RIT	2 RIT
218-220	8 th	1 RIT	1 RIT	2 RIT
221	9 th	1 RIT	1 RIT	2 RIT
222-223	10 th	1 RIT	1 RIT	2 RIT
224-225	11 th	1 RIT	1 RIT	2 RIT
226 and above	Above 11 th	0.5 RIT	0.5 RIT	1 RIT

3. Determine whether each student met their growth target by comparing the actual growth obtained to their target growth using the following equations:

Met Fall to Winter Growth: Fall to Winter Growth = or > Fall to Winter Target

Met Winter to Spring Growth: Winter to Spring Growth = or > Winter to Spring Target

Met Fall to Spring Growth: Fall to Spring Growth = or > Fall to Spring Target

4. Determine the appropriate “met growth” variable to use. As with the change scores, in cases where students have multiple growth scores during the academic year, only the change score that is associated with the longest period between assessments should be used.

5. Compute the percentage of student to have met their target growth:

Number of students that met their target growth (using only one growth result per student, which reflects the growth associated with the longest time between pre- and post-assessments)

Number of students with pre- and post-test records between fall and spring + the number of students with pre- and post-test records between fall and winter only + the number of student with pre- and post-test results between winter and spring only

Inclusion rules: all students that have been enrolled in the school for at least eight weeks (40 consecutive school days) that have at least two ‘survey with goals’ results on record.

6. Rating based on percentage: This calculation is done for each of the three subject areas, mathematics, reading, and language use and the school receives the following number of points based on the percent yielded (for each subject):

4 points for 90 percent or higher

3 points for 60 percent to 89.99 percent

2 points for 40 percent to 59.99 percent

1 point for 39.99 percent and below