

# **Functional Requirements for the Minnesota Growth Calculation 2016**

August 8, 2016

## Minnesota Growth Calculation

In 2008, Minnesota established a School Improvement Reporting System and designed methods to measure individual student growth for students taking the math and reading accountability assessments. The purpose of this document is to describe the Minnesota Growth calculation and how it is applied to schools and districts.

The Minnesota Growth calculation computes the percent of proficient and not proficient students demonstrating low, medium and high rates of growth on the MCA-III for math and reading. The MTAS and MCA-Modified assessments are not included in the Minnesota Growth calculation.

Results of current year individual student assessments are compared to the results on the student's previous assessments. A Low, Medium, or High Growth Level is then assigned to each of the student's current year records. The growth levels are based on Growth Targets derived from a set of statewide assessment data from the 2005/06 school year through present. The methodology to derive these targets and the actual targets used in 2016 are described in the companion Excel workbook called Determining Growth Target Ranges for 2016.

In addition to the growth level, the Minnesota Growth calculation also considers if the student is proficient in the subject in the prior year.

These two values (growth level and prior year proficiency) are then summarized for schools and districts to determine the six Growth Component Percentages for each group included in the measurement.

The methodology to assign growth levels and compute the growth percentages are described in the following sections.

The results are made available on the web under the MDE Data Center.

For Growth Data in the MN Report Card  
Choose ['Student Progress'](#) in the MN Report Card

For public downloadable files and documents:  
Choose ['Assessment and Growth Files'](#) under Accountability and Assessments

For secure reports:  
Choose  
['Growth Detail Download'](#) or  
['Growth Summary Report and Download'](#) under Assessment Secure Reports

References made in this document:

[2016 NCLB – AYP Calculations - Functional Requirements](#)

Select Adequate Yearly Progress, then list files, then select one of the help files.

[Determining Growth Target Ranges for 2016 \(Excel Workbook\)](#)

Select Assessments and Growth, then select GROWTH from the dropdown menu, then list files and select Determining Growth Target Ranges for 2016.

## Glossary

<b>Term</b>	<b>Definition</b>
AYP Record	The student enrollment record linked with the appropriate assessment record created during Adequate Yearly Progress (AYP) processing.
Growth Level	A designator (Low, Medium or High) assigned to AYP Records based on the previous scale score compared to the current scale score.
Growth Target	For each subject, the expected scale score for a prior year grade and prior year scale score.
Growth Record	An AYP record which satisfies all the requirements to be included in the growth calculation.
Growth Component Percentage	One of six computed percentages based on Growth Records summarized by Proficient - low, medium or high growth and Not Proficient - low, medium or high growth.
MCA-III	Minnesota Comprehensive Assessment – Series III. Beginning in 2011, a census test given annually to grades 3-8 for Math replacing the MCA-II. In 2013, this was expanded to Reading for grades 3-8 and 10. In 2014, this was expanded to grade 11 Math.
MDE	Minnesota Department of Education
NCLB	No Child Left Behind. A federal act ensuring accountability (among other things) for schools designated as Title I and Title III.
TestWES	The Assessment Web Edit System where districts have the ability to update and verify assessment data as well as view the MARSS demographics assigned to each record

## 1. Student Record Selection from AYP

The Minnesota Growth calculation only uses student records included in the Minnesota Adequate Yearly Progress (AYP) Proficiency calculation. During AYP processing, current year assessment records are combined with MARSS enrollment records to create an **AYP Record** used in the AYP Proficiency calculation.

The AYP Proficiency calculation limits AYP Records to include only those students that participated in the assessment and received a valid score. Other criteria are also used to exclude AYP Records from the proficiency calculation. For example, assessments from students who were new to the country are excluded. Assessments from students who were not enrolled for the full academic year are also excluded from certain summaries. The full description of the AYP Proficiency calculation is illustrated in the *2016 NCLB – AYP Calculations - Functional Requirements*.

During AYP processing, the proficiency inclusion rules are implemented and the AYP Records are marked with three separate flags. These flags indicate whether the record should be used in the proficiency denominator for the school, the proficiency denominator for the district, or the proficiency denominator for the State. The proficiency denominator flag must equal 'Y' to be included in the summarization for the respective aggregation (school, district or State).

## 2. Linking Current AYP Records to Prior Year Assessments

During the TestWES processing, the State Student ID system is used to validate and link current year and previous year assessment records. The prior scores for the current year assessments are stored for later processing in a Prior Score reference table. To link prior assessments to current assessment, the validated MARSS Number (SSID) and subject must match between assessments.

The Prior Score reference table holds the following information which is used in the Minnesota Growth calculation:

- Prior Test Name
- Prior Grade
- Prior Score Code
- Prior Achievement Level
- Prior Scale Score

Prior score information is then linked to the AYP Record for each student. For the current year grade 10 AYP Records, prior score information is obtained from the assessments from two years ago. For current year Grade 11 AYP Records, prior score information is obtained from the assessments from three years ago. For current year Grade 4 through 8 AYP Records, prior score information is obtained from the prior year. Current year Grade 3 AYP Records are not used in the Minnesota Growth Calculation.

### 3. Limiting AYP Records used in Growth Calculation

The Minnesota Growth calculation only uses AYP Records included in the AYP Proficiency calculation and further limits these records to ensure:

- there is an appropriate assessment in a previous year
- there is a normal grade progression from the previous assessment
- the previous assessment has a valid score

Once the prior score information is assigned to each of the AYP Records, additional checks are performed to determine if the record could be used in the Minnesota Growth calculation. The records are only eligible to be included when:

- The current year AYP Record test name is MCA-III.
- The Prior Test Name is MCA-III.
- For grades 4-8, the grade minus one equals the Prior Grade.
- For grade 10 and 11, the Prior Grade is 08.
- The current year AYP Record Score Code is 'VS' (Valid Score).
- The Prior Score Code is 'VS' (Valid Score).
- The current year AYP Record has the 'UseInSchoolSummary' flag = 'Y' (this eliminates potential duplicates when a single student is reported more than once in a school).

Eligible AYP Records are referred to as **Growth Records**.

### 4. Assigning Proficiency to Growth Records

Records that are eligible to be included in the Minnesota Growth calculation have Proficiency designators assigned.

- PROFICIENT: Prior year Achievement Level equal to M or E
- NOT PROFICIENT: Prior year Achievement Level equal to D or P

## 5. Use of Growth Targets

Prior scores for each subject have two **Growth Targets** (High and Medium). The Growth Targets are the expected scale score needed in the following year to reach the appropriate growth level.

In the table shown below, six targets for Math are shown for students currently in 4<sup>th</sup> grade. For example, a student who had a prior score of 330 in 3<sup>rd</sup> grade the year before has two targets established for the current year. If the student scored at least 435 for Math, a High Growth Level is assigned. If the student scored less than 435 but at least 424 for Math, a Medium Growth Level is assigned. If the student scored less than 424, a Low Growth Level is assigned.

Subject	Grade	Minimum Prior Score	Maximum Prior Score	High Growth Target Score	Medium Growth Target Score
Math	03	301	324	430	420
Math	03	325	327	431	421
Math	03	328	329	433	423
<b>Math</b>	<b>03</b>	<b>330</b>	<b>331</b>	<b>435</b>	<b>424</b>
Math	03	332	333	435	425
Math	03	334	334	437	427

The complete set of targets is listed in the companion Excel workbook called *Determining Growth Target Ranges for 2016*.

## 6. Assigning Growth Levels to Growth Records

Growth Levels are assigned in the following manner.

- HIGH GROWTH: Current score meets or exceeds the High Growth target set for the prior grade and prior score.
- MEDIUM GROWTH: Current score falls below the target for High Growth, but meets or exceeds the Medium Growth target.
- LOW GROWTH: Current score falls below the target for the Medium Growth.

## 7. Summarizing Growth Records

Growth Records are summarized for each grade in a school, the school as a whole, each grade in a district, the district as a whole, each grade in the State, and the state as a whole. The number of Growth Records is totaled and is called the growth denominator. Additional summaries are made using the Growth Records to calculate growth numerators for the six **Growth Component Percentages**. These are:

1. Proficient with Low Growth
2. Proficient with Medium Growth
3. Proficient with High Growth
4. Not Proficient with Low Growth
5. Not Proficient with Medium Growth
6. Not Proficient with High Growth

Schools and districts that have fewer than 20 Growth Records as a whole are not included in the Minnesota Growth calculation. This can occur when a school only serves a small number of students or only serves students not eligible for a growth measurement (such as K-3 school).

## 8. Summarizing Growth Records

For schools and districts with 20 or more Growth Records, the Growth Component Percentages are computed to one decimal point from the six growth numerators created above divided by the growth denominator. The following two tables illustrate a typical set of Growth Component Percentages for two subjects:

### Math:

Level	Low Growth	Medium Growth	High Growth
Proficient	19.0%	27.9%	19.3%
Not Proficient	8.1%	13.9%	11.9%

### Reading:

Level	Low Growth	Medium Growth	High Growth
Proficient	19.3%	29.7%	21.9%
Not Proficient	7.0%	12.0%	10.1%

## 9. Disaggregated Student Groups

All of these summaries listed above contain the same disaggregated student groups as computed in the AYP calculation. Growth Component Percentages are also computed for each of these student groups:

- A. All Students
- B. American Indian / Alaskan Native Students
- C. Asian / Pacific Islander Students
- D. Hispanic Students
- E. Black Students, not of Hispanic Origin
- F. White Students, not of Hispanic Origin
- G. English Learner Students
- H. Students Receiving Special Education Services
- I. Students Eligible for Free or Reduced Price Meals

The full description of how demographics are assigned to AYP Records is included in the 2016 *NCLB – AYP Calculations - Functional Requirements*.