

# Georgia Student Growth Model

## Frequently Asked Questions



***Dr. John D. Barge, State School Superintendent***  
*"Making Education Work for All Georgians"*

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## Section 1: Student Growth

### *What is the Georgia Student Growth Model (Student Growth Percentiles)?*

The Georgia Student Growth Model – Student Growth Percentiles (SGPs) – is a growth model that describes a student’s growth relative to his or her academic peers – other students statewide with similar prior achievement.

### *What is the difference between growth and value-added?*

A growth model describes change in student achievement across time. A growth model becomes value-added when the growth is attributed to an entity (a teacher, a school, etc.). In many models, the value-added is the difference between predicted and actual student performance. The Georgia Student Growth Model does not predict performance; it describes observed student growth.

### *Is a vertical or developmental scale required to model growth?*

A vertical or developmental scale is a continuous scale spanning multiple grades in the same content area. SGPs do not require a vertical assessment scale in order to describe student growth. Georgia’s growth model is not specifying how many scale score points a student improved from year to year. Rather, this growth model describes growth in terms of how a student performed this year relative to other students who have a similar academic history.

### *How can you calculate a growth measure without a pretest score?*

The growth model uses two years of prior test data as pretest scores (one year is used when two years are not available). For example, growth percentiles for 5th-grade students on the 5th-grade CRCT are generated using 3rd and 4th grade CRCT results as priors.

### *Does the model have floor or ceiling effects?*

Floor and ceiling effects refer to the inability to adequately define or distinguish really low and really high student growth. Analyses reveal that Georgia does not have such effects with the GSGM. All students, regardless of their achievement level, have the opportunity to demonstrate all levels of growth.

### *How does the model handle missing data?*

Some growth/value-added models will impute missing data, meaning they generate a plausible estimate of what a missing test score would be based on the test scores of similar students. The Georgia Student Growth Model does not impute or estimate missing data. If a student does not have at least one immediately consecutive prior (prior from the previous year), a growth percentile will not be produced.

## Section 2: Academic Peers

### *What are academic peers?*

Academic peers are students enrolled in the same grade and content area or EOCT course statewide with similar prior academic achievement (academic history). In other words, they are students that had the same scores on prior state assessments. There are potentially thousands of academic peer groups – as many as there are prior score combinations. Students can be in different academic peer groups across subject areas and peer groups can change from year to year based on the most recent prior scores.

### *Can I get a list of the students in a particular academic peer group?*

A list of peers is not what is used to calculate a student's growth percentile. The model uses quantile regression to describe the curvi-linear relationship between prior scores and current scores. That analysis results in a look-up table that relates prior achievement to current achievement. Using this look-up table, any combination of prior scores can be plugged in to obtain an achievement distribution that is dependent on those prior scores. Using that distribution and the current score, a student's growth percentile can be identified.

### *Do academic peers have the exact same prior scores?*

Yes. The entire state's data is used to establish the functional relationship between prior and current scores. That functional relationship (i.e., the regression equation) is used to look at the conditional distribution for any combination of prior and current scores. Therefore academic peers will be students with the exact same prior scale scores.

### *How many students are required to develop an academic peer group?*

While the concept of academic peers is critical to describing and understanding student growth, an actual list of students is not what is used to calculate a student's growth percentile. Instead, the model establishes the functional relationship between prior and current scores. That functional relationship is used to look at the conditional distribution for any combination of prior and current scores. Some of these combinations will have several students and some might never occur (e.g., the lowest obtainable scale score in year 1, the highest obtainable scale score in year 2, and the lowest obtainable scale score in year 3). However, the relationship between prior and current scores and the resulting growth percentiles can still be determined.

### *How do continuously high-performing students demonstrate growth?*

Growth percentiles represent how a student performed this year relative to academically-similar students. While there are a few students statewide who continuously score at the top of the assessment scale range, there is enough variability in scale scores to produce growth percentiles. Additionally, even students who score at the top of the assessment scale range year after year must "grow" in order to do so. Therefore, even high-performing students have the ability to demonstrate all levels of growth. It is important to remember that demonstrating low growth

does not mean a student is low achieving. Even very high-achieving students will demonstrate low growth if they scored lower on the current assessment when compared with other high-achieving students. Therefore it is always important to consider both status achievement and growth.

*Does the model adjust for student demographic characteristics?*

No. The Georgia Student Growth Model does not make adjustments for any student demographic characteristics such as race, gender, or student poverty. The inclusion of demographic characteristics into the model would create different growth norm groups for each of the demographic subgroups, setting different growth expectations for those groups. In the same way that the state does not set different attainment (i.e., proficiency) expectations for students based upon their demographic characteristics, the state does not set different growth expectations for students. As such, not including student demographic characteristics in the Georgia Student Growth Model allows Georgia to investigate growth gaps between different demographic subgroups at the state, district, and school level to add an important dimension to the achievement gap discussion.

### **Section 3: Priors**

*What is prior academic achievement (priors)?*

Priors are the historical assessment scores being used to model growth. The GSGM uses two years of prior test data (one year is used when two years are not available). For example, growth percentiles for an eighth-grade student who just took the 8th-grade CRCT would have his or her 7th- and 6th-grade CRCT scores as priors.

*How many years of prior data will be used?*

Two years of prior data will be used when available but only one year is required. Growth percentiles for 4th-grade students will use only one prior (3rd-grade CRCT). Additionally, students that only have one prior (such as those that moved to Georgia from out of state) will use the one prior. At least one immediately consecutive prior (prior from the previous year) is required to produce a growth percentile (e.g., an 8th-grade student must have a 7th-grade score).

*If a student just moved into the state this year, will the student receive a growth percentile?*

No. At least one year of prior CRCT or EOCT data is required to generate a growth percentile.

*Is it fair to compare the growth rates of students in a class when some may have entered the classroom at different achievement levels?*

An SGP describes a student's growth relative to other students in the state with similar prior achievement. Therefore each student's growth percentile takes into account his or her prior

achievement or “starting point.” This makes the SGP a fair method of comparing the growth of different students.

### *What priors will be used for EOCTs?*

In addition to prior achievement, growth percentile calculations for EOCTs also depend on test sequence and timing (i.e., year and administration period taken). SGPs will be produced for all sequences for which there are a sufficient number of students to model growth reliably. This includes students who repeat EOCT courses or take them on a block schedule. For uncommon sequences with few students (e.g., students who were in the 8<sup>th</sup> grade in 2011 and took US History as 9<sup>th</sup>-graders in 2012), those students will not receive growth percentiles.

### *If a student fails and is taking a course for the second time, is the EOCT data figured in for the second year even though they have data for the course from the year before?*

In addition to prior achievement, growth percentile calculations for EOCTs also depend on test sequence and timing (i.e., year and administration period taken). SGPs will be produced for all sequences for which there are a sufficient number of students to model growth reliably, including students whose course sequences includes repeat courses (e.g., 8<sup>th</sup> grade – Math I – Math I – Math II). When there are not enough students participating in a repeat sequence, those students will receive a growth percentile for the first attempt of a course. They will not receive a growth percentile for subsequent attempts but will receive a growth percentile for the next course in the sequence, using the final attempt at the repeated course as the prior.

### *How do accelerated courses fit the model?*

Growth percentiles are generated for each EOCT. Multiple courses, including advanced courses, take the same EOCT. SGPs represent growth relative to academic peers, so advanced students with a high-scoring achievement history will be compared to other students with a high-scoring achievement history.

## **Section 4: Assessment Inclusion**

### *Which assessments will be included in the growth model?*

Student growth percentiles are produced for the CRCT (grades 4-8 reading, English/language arts, math, science, and social studies) and EOCTs (Physical Science, Biology, 9th-Grade Literature/Composition, 11th-Grade Literature/Composition, US History, Economics/Business/Free Enterprise, Mathematics I, Mathematics II, GPS Algebra, GPS Geometry, Coordinate Algebra, and Analytic Geometry). As Georgia transitions to Georgia Milestones, SGPs will be produced for end of grade assessments in grades 4-8 in English/language arts, mathematics, science, and social studies and end of course assessments.

### *Will the CRCT-M or GAA be included in the growth model?*

No, there is not a sufficient number of students participating in the CRCT-M to model growth reliably. Participation in this assessment is limited (by design and purpose) and, coupled with the fact that students move on and off this assessment as well as the fact that students can be placed on the CRCT-M in one content area, but not another, makes modeling growth difficult.

Additionally, the U.S. Department of Education has stipulated that modified assessments will no longer be permitted beginning in 2014-2015. Similarly, it is difficult to model growth with the GAA because this assessment is highly individualized and not scaled. The standards assessed vary according to the needs of the student. While students will not receive growth percentiles for the CRCT-M or GAA, they will receive growth percentiles for any subjects for which they participate in the CRCT.

### *What happens when the state implements new assessments?*

The new assessments will be included in the growth model, as long as the necessary prior scores are available. While SGPs can be reported for the first year of implementation, they will be cohort-referenced until there are a sufficient number of years of data to create new baselines. Additionally, targets and projections will not be provided until there are a sufficient number of years of data.

### *How do proficiency cut scores affect SGPs?*

Growth (SGPs) is independent of the proficiency cuts. SGPs describe a student's growth relative to academically-similar students, not relative to the proficiency cuts. Therefore, students can demonstrate low or high growth whether or not they met the state's expectations on the assessment.

### *Will Student Learning Objectives (SLOs) be included in the growth model?*

No, only state-administered standardized assessments (CRCT and EOCT) will be included in the growth model.

### *What grades will receive a growth percentile?*

Because at least one prior test score is necessary to model growth, grades 4-8 and courses with EOCTs will receive growth percentiles.

### *Why is the 3rd grade considered a non-tested subject when there is a 3rd grade CRCT?*

At least one year of prior data is required to generate a growth percentile. Even though 3rd-grade students participate in the CRCT, they will not have previous CRCT data to use in order to generate a growth percentile.

*How will growth be calculated for 8th-grade students who participate in both the CRCT and an EOCT?*

Growth percentiles for 8th-grade students participating in EOCTs will be calculated (using 6<sup>th</sup> and 7<sup>th</sup> grade CRCT scores as priors) when a sufficient number of students participate in those sequences to model growth reliably. These students will receive a growth percentile for both their CRCTs and EOCTs and both will be reported in the GSGM visualization tool. Additional business rules may be applied for these students in College and Career Readiness Performance Index (CCRPI) or Teacher and Leader Keys Effectiveness Systems (TKES and LKES) calculations.

*How does the model account for retests?*

Prior to 2013, retest scores were included in the model, with the higher of the main and retest score being utilized. Beginning in 2013, retest scores are no longer included in the model. This means that SGPs should be interpreted as representing students' first (main) attempt on a state-mandated assessment for a grade and content area or for an EOCT course.

## **Section 5: Reporting**

*What is the reporting scale?*

A growth percentile can range from 1 to 99. Lower percentiles indicate lower academic growth and higher percentiles indicate higher academic growth.

*What are the SGP summary measures?*

While SGPs are produced for individual students, there are multiple ways of combining SGPs to summarize the growth of a group of students (such as for a classroom, school, or system). One method of combining SGPs for a group of students is to utilize a median. A median is the numerical value separating the higher half of the data from the lower half. In other words, it is the middle value in an ordered list. A second method of combining SGPs for a group of students is to utilize a mean. A mean is the sum of the values divided by the number of values. It is often referred to as an average. A third method of combining SGPs for a group of students is to utilize the percent of students demonstrating typical or high growth.

*What are student growth levels?*

Information about the interaction between student growth and status-based achievement were used to set the following student growth levels:

- Low: 1-34
- Typical: 35-65
- High: 66-99

### *How should student growth levels be interpreted?*

Analyses show that a student who begins Grade 3 scoring just at “Meets” and demonstrates consistent 35<sup>th</sup> percentile growth across grades likely will end Grade 8 also scoring just at “Meets.” A student who begins Grade 3 scoring just at “Meets” and demonstrates consistent 65<sup>th</sup> percentile growth across grades likely will end Grade 8 having made significant progress towards scoring “Exceeds.” Thus, 35 and 65 were used as the cut points for the three student growth levels, which could be interpreted as:

- A student who demonstrates low growth generally will struggle to maintain his or her current level of achievement.
- A student who demonstrates typical growth generally will maintain or improve academically.
- A student who demonstrates high growth generally will make greater improvements academically.

### *Will students receive individual reports?*

Yes, beginning in 2013, students will receive individual student reports that describe their demonstrated and projected growth. When the growth model is fully operational, schools can expect to receive individual student reports in the fall.

## **Section 6: Cohort- and Baseline-Referenced Growth**

### *What are cohort-referenced SGPs?*

Cohort-referenced student growth percentiles describe a student’s growth relative to academically-similar students in the state in a given year. With these SGPs, student and school growth is relative to the state. Cohort-referenced SGPs can continue to be reported during an assessment transition.

### *What are baseline-referenced SGPs?*

SGPs can also be anchored to a baseline, enabling the comparison of statewide growth from year to year. With baseline-referenced SGPs, a student’s growth is relative to academically-similar students from the baseline years. All students can demonstrate lower or higher growth than students in the baseline. These SGPs cannot be reported during an assessment transition. New baselines can be set once there are several years of Georgia Milestones implementation.

## **Section 7: Growth to Proficiency**

*How do we know if a student's growth is enough to put that student on track to reach or exceed proficiency?*

In addition to describing observed growth, the GSGM will also provide information on possible future growth in the form of growth projections and growth targets. SGPs analyze historical student assessment data to model how students performed on earlier assessments, how they performed on later assessments, and what level of growth they demonstrated in between. This information is used to create growth projections and growth targets for each student. The growth targets tells us, based on where students are now, how much they need to grow to Meet or Exceed expectations on the next assessment. The growth projections tell us, for all levels of growth, where a student may score on next year's assessment. Growth projections and targets will not be provided during the first year(s) of Georgia Milestones implementation. Several years of implementation will be required to provide projections and targets.

## **Section 8: Use of the GSGM**

*How will the GSGM be used?*

The GSGM's primary purpose is to improve teaching and learning by providing parents, educators, and the public with a new dimension of student performance. The GSGM enables educators to analyze how much students grew from one year to the next, even if they did not cross the threshold from "Does Not Meet" to "Meets" or from "Meets" to "Exceeds." Additionally, the GSGM will provide growth targets, enabling educators to understand how much a student needs to grow to reach or exceed proficiency and adjust their instructional techniques as necessary. The GSGM will also be utilized in the TKES and LKES educator effectiveness systems and the CCRPI accountability system.

## **Section 9: Accessing Results**

*How can educators view their students' growth data?*

Educator access to GSGM data is displayed via the growth model visualization tool which is accessible through the Statewide Longitudinal Data System (SLDS). Educators can access the SLDS through their district's Student Information System (SIS).

*Why are some students missing growth data?*

Students must have the required prior(s) and have participated in a common course sequence in order to receive a growth percentile. Additionally, the growth model utilizes assessment data that has been matched to Student Record (SR). Districts can review and sign-off on the assessment data that is used in the growth model annually through the district matching application process (refer to the Accountability Division for more information on this process).

*How are students linked to teachers and course sections in the visualization tool?*

Student growth data is linked to teachers and course sections through the Course History component of Student Record (SR). Therefore, the visualization tool is utilizing course information that districts provided to GaDOE and signed-off on by the system superintendent.

*How can parents access their students' growth data?*

Parent will receive student growth reports from their schools in the fall/winter following the school year.

*How can the public access student growth data?*

Public access to school and district summary information is available on the GSGM website ([gsgm.gadoe.org](http://gsgm.gadoe.org)).