

A Principal's Guide to Interpreting State-Provided Growth Scores for Grades 4–8 in 2015–16

Understanding the 2015–16 State-Provided Growth Scores for Use in Annual Professional Performance Reviews

The Role of Growth Scores in Annual Performance Reviews

As part of the Annual Professional Performance Review (APPR) process pursuant to Education Law §§3012-c and 3012-d, New York State teachers of mathematics and English language arts (ELA) in Grades 4–8 and their principals, as well as Grades 9–12 principals, will receive State-provided growth scores based on 2015–16 State tests **for advisory purposes only** pursuant to Sections 30-2.14 and 30-3.17 of the Rules of the Board of Regents. These growth scores describe how much students are growing academically in mathematics and ELA (as measured by the New York State tests) compared to similar students statewide.

During the 2015–16 through 2018–19 school years, teachers and principals who receive a State-provided growth score (i.e., Grades 4–8 ELA and mathematics teachers and principals of schools that include Grades 4–8 or all of Grades 9–12) will receive two sets of scores and ratings: Original scores and ratings and transition scores and ratings. The State-provided growth score shall be excluded from the scores and ratings used to calculate the transition score and rating. Only the transition score and rating will be used for purposes of employment decisions, including tenure determinations and for purposes of proceedings under Education Law § 3020-a and 3020-b, teacher and principal improvement plans, and the individual's employment record.

State-provided growth scores are just **one** of the **multiple** measures that make up the annual performance reviews. For APPRs completed pursuant to Education Law §3012-c, State-provided growth scores count for 20 percent of an informational evaluation score for the 2015–16 school year. For APPRs completed pursuant to Education Law §3012-d, the informational composite rating is determined using a matrix that combines one or more measures of student growth as well as teacher observations.

Development of Growth Measures

The Regents Task Force on Teacher and Principal Effectiveness—comprising representatives from key stakeholder groups, including **educators, educator unions, and educator professional organizations**—provided input into the development of APPR regulations and the design of the current State-provided growth scores. In addition, a technical advisory committee of leading experts in the nation reviewed the technical accuracy and utility of the statistical methodology used to calculate scores.¹ Revisions to the State-provided growth model will be considered during the 2016–17 school year.

Staff assignment data that are submitted by districts are used to link principals to specific grade levels within a school. In schools where two (or more) principals are assigned to different grade levels, those principals will have growth scores that include only the grade levels of their assignments.

WHERE AND WHEN WILL DATA BE AVAILABLE?

State-provided growth scores for 2015–16 were distributed to districts in August 2016.

WHERE CAN I GET MORE INFORMATION?

Visit <http://www.engageny.org> for detailed information on State-provided growth scores.

Visit <https://www.engageny.org/resource/appr-3012-c> for additional information on APPR plans under Education Law §3012-c, <https://www.engageny.org/resource/appr-3012-d> for additional information on APPR plans under Education Law §3012-d, and a detailed guidance document located here: <http://www.engageny.org/resource/guidance-on-new-york-s-annual-professional-performance-review-law-and-regulations/>

Principals should contact their district/BOC ES leaders for additional information about APPR or the calculation of State-provided growth scores.

¹ For a list of task force members and technical advisory committee members, visit <http://www.engageny.org/resource/resources-about-state-growth-measures>

Background

Why Growth?

Students enter classrooms and schools at differing levels of proficiency or academic achievement. By measuring academic growth rather than proficiency only, we can identify strengths and gaps in student progress and help principals better support students with varying academic needs. In addition, these growth measures are one part of a multiple-measures annual evaluation system that gives all educators a chance to do well, regardless of their students' starting achievement levels.

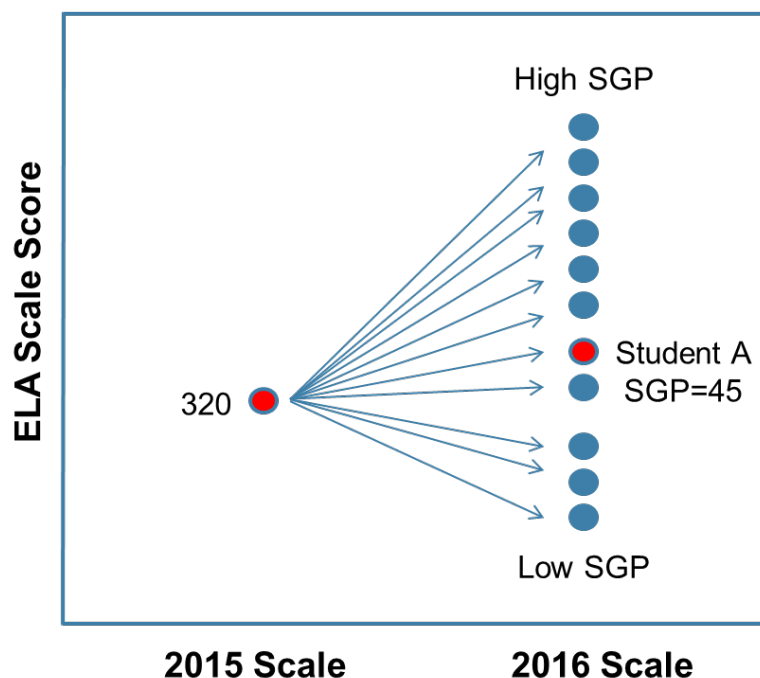
Student Growth Percentile (SGP):

A measure of a student's academic growth compared to similar students

How Is Student Growth Measured?

The simplest way to measure growth would be to subtract a student's test score in a prior year from his or her test score in the current year. However, New York State's tests are not designed to allow for this kind of calculation, nor would this approach account for a student's starting point—it would just determine the amount of growth. We therefore take a different approach to measuring growth for the State-provided growth measures. The approach New York State uses compares the current year scores of *similar* students—that is, of students who had the same prior test scores and other characteristics—in order to measure growth while accounting for students' starting levels of achievement.² This method is illustrated in Figure 1, which shows Student A with an ELA score of 320 in 2015.³ Compared to other students who also had a score of 320 in 2015, Student A's 2016 ELA test score was in the middle range. We can describe Student A's growth in relative terms as a "student growth percentile" (SGP). In this example, because Student A's SGP is 45, it means that this student performed as well as or better than 45 percent of other similar students (those with the same starting point and characteristics). **SGPs range from 1–99** and they always tell you where a student stands in a distribution of similar students (specifically, what share of students he or she performed the same as or better than). In New York State's evaluation system, SGPs are calculated separately by subject and grade.

Figure 1. Measuring Student Growth Compared to Similar Students



² This "comparison" is done through a regression modeling approach (see the Technical Report for more details).

³ Note that the sample scaled scores are for illustrative purposes only.

Factors Used to Define “Similar Students” in the Growth Model for 2015–16

For educator evaluation, we further refine the definition of *similar students* to include additional factors known to impact student performance, to better isolate the impact of a student's teacher on his or her performance. In the State growth model, the term “similar students” means not only students with the same academic history, but also ones with the same English language learner (ELL), economic disadvantage, and disability statuses. Figure 2 displays specific factors for each of these categories. We account for whether or not a student is an ELL, for example; we also account for the percentage of ELL students in a student's ELA or mathematics course. This type of factor is intended to address *peer effects*, acknowledging that it may be a different experience for a student to be in course with many ELL students (and a different job for an educator with many ELL students) than it is to be in a course with fewer ELL students.

Figure 2. Characteristics of Similar Students

Grades 4–8 Principals	Similar Student Characteristics Used in 2015–16*
Academic History	<ul style="list-style-type: none"> Up to three years of student State exam scores, same subject Prior-year test score, different subject Retained in grade Average prior achievement and range around average prior score in student's course (same subject) New to school in a nonarticulation year (e.g., entered middle school as an eighth grader)
English Language Learners	<ul style="list-style-type: none"> New York State English as a Second Language Achievement Test (NYSESLAT) scores Percentage of ELLs in student's course ELL status (yes or no)
Economic Disadvantage	<ul style="list-style-type: none"> Percentage of economically disadvantaged students in student's course Student economic disadvantage status (yes or no)
Students with Disabilities	<ul style="list-style-type: none"> Student with disabilities spending less than 40 percent of time in general education setting Percentage of student with disabilities in student's course Student with disabilities status (yes or no)

*In future, additional characteristics may be added or other changes may be made to the growth model as approved by the Board of Regents.

How Is Student Growth Used for Grades 4–8 Principal Evaluation?

A school's or principal's State-provided growth rating (the “HEDI” rating) and growth points (0–20) are based on the mean growth percentile (MGP), the aggregate measure of student growth in the principal's school. An MGP is calculated by finding the average of all the SGPs for students attributed to a school or principal, across grades and subjects.

Mean Growth Percentile (MGP):

The average of all SGPs linked to a school or principal

Figure 3 illustrates how an MGP is calculated for a school or principal by averaging SGPs of students. Students who do not meet the continuous enrollment requirement (i.e., those who were not enrolled on BEDS day and on the first day of the State assessment administration) are not included in a school's or principal's MGP.⁴

Figure 3. Example of Students Who Count in a School's or Principal's MGP

Principal Jensen's School			
	SGP	BEDS-Assessment Day Enrollment	Grade
Student Q	45	Yes	4
Student R	40	Yes	5
Student S	70	Yes	6
Student T	60	No	7
Student U	41	Yes	8

To determine the school's MGP, we find the average of the SGPs for all students who were enrolled on BEDS and assessment day. In this case, the calculations would be as follows:

Step 1: $45 + 40 + 70 + 41 = 196$

Step 2: $196 / 4 = 49$

The school's MGP is 49.⁵

To determine Principal Jensen's MGP, we find the average of the SGPs for all students who were enrolled on BEDS and assessment day and who were in the grade levels to which Principal Jensen was assigned, using data submitted by the district, Board of Cooperative Education (BOCES), or charter school. In this example, Principal Jensen is the principal of the entire school. If, however, two principals were assigned to this school (for example, one to oversee Grades K–5 and one to oversee Grades 6–8), we would average the SGPs only for students in the grade levels to which the principal was assigned.

For purposes of educator evaluation, we calculate each MGP based on the average of all SGPs in our refined definition of similar students (including academic history, English language proficiency, economic disadvantage, and disability status). We refer to this MGP as the *adjusted* MGP. **Adjusted MGPs are used to determine growth ratings (HEDIs) and scores.** Unadjusted MGPs that take into account only students' prior achievement also are reported, for informational purposes only.

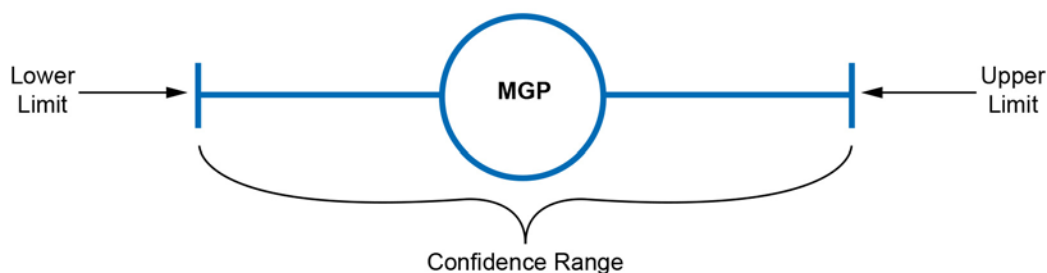
MGPs are provided by subject, grade, teacher, and principal, and then an overall MGP that combines SGPs for all students across grades and subjects in a school is provided. Grades 4–8 school and principal MGPs are based only on students who had test scores from the current and immediate prior school year and who met the State's continuous enrollment requirement. **Also, an MGP is reported only if it is based on at least 16 SGPs.**

⁴ Note that student linkage rules are different and therefore MGPs are computed differently for teachers than they are for principals. Specifically, SGPs for students who were enrolled in a teacher's course for a longer period of time and who attended more regularly count more heavily in a teacher's MGP than those who were enrolled and attended for less time. Students with less than 60 percent course enrollment are not included in a teacher's MGP. For more details and an example, see the brochure *A Teacher's Guide to Interpreting State-Provided Growth Scores for Grades 4–8*.

⁵ For purposes of illustration, this example includes fewer than 16 SGPs. MGPs are reported **only when at least 16 SGPs are available**.

MGP's also are reported with an upper limit and a lower limit that represents a 95-percent confidence range (see Figure 4).

Figure 4. MGP and Confidence Range



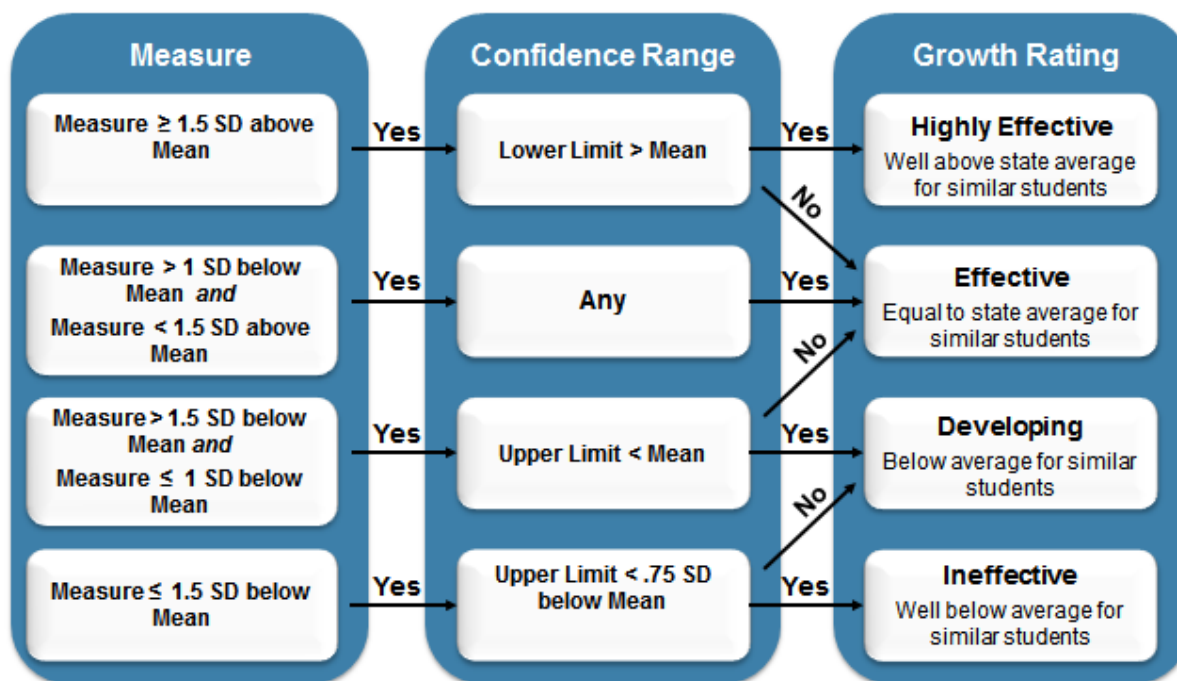
All statistical calculations contain some uncertainty. Although the reported MGP is the best estimate for any teacher or principal, we also can quantify a range wherein we can expect that the *true* answer lies. The upper- and lower-limit MGPs define a set of scores wherein an educator's true MGP lies 95 percent of the time. Reporting upper- and lower-limit MGPs is similar to the way we are used to seeing results from other statistical calculations such as political polls reported, in which a candidate can be ahead in the polls by six points plus or minus three points. The width of the confidence range (that is, the distance between the upper and lower limits) is affected by such factors as the number of students included in generating the score, the spread of student scores, and characteristics of the tests students take.

We report the upper- and lower-limit MGPs because we want to be transparent about the data. We also use upper- and lower-limit MGPs to assign educator ratings in a way that fairly takes uncertainty in MGPs into account. We use the overall adjusted MGP (that is, the MGP that combines information across all applicable grade levels and subjects) and upper- and lower-limit MGPs to determine growth ratings, as shown in Figure 5. The rules for assigning growth ratings are the same for schools, principals, and teachers of Grades 4–8 students.

A growth score of 0–20 points is then assigned within each growth rating category using the scoring bands for implementation of Education Law §3012-c or §3012-d as appropriate for the district. Higher MGPs within a growth rating category receive more points.⁶ Schools or principals serving a combination of Grades 4–8 and Grades 9–12 will have additional growth results factored into their final growth subcomponent rating. The next section provides details on how State-provided growth scores and ratings are determined for those schools and principals.

⁶ Based on the arguments presented in the New York City arbitration proceeding held on May 30 and 31, 2013, and pursuant to his authority in Education Law §3012-c(2)(a), the Commissioner imposed different scoring ranges for use in New York City for the 2013–14, 2014–15, 2015–16, and 2016–17 school years than in the rest of the state. See the following link for a description of these scoring ranges: <http://usny.nysed.gov/rtrr/teachers-leaders/plans/docs/new-york-city/new-york-city-appr-plan-060113.pdf>.

Figure 5. Determining School and Principal Growth Ratings



Notes: SD = Standard Deviation
Values are rounded to the nearest .5.

Growth Ratings for Schools or Principals Serving Grades 4–8 and 9–12

To determine a final State-provided growth rating for schools or principals who serve Grades 4–8 and Grades 9–12, growth ratings and scores are determined for Grades 4–8 and Grades 9–12 separately and then combined.⁷ The Grades 4–8 measure growth rating is determined using the process shown in Figure 5. Because multiple Grades 9–12 measures exist, growth scores for each Grades 9–12 measure are averaged together and then weighted by the number of students in each measure to determine an overall Grades 9–12 growth rating and score. An overall growth subcomponent rating that includes results for both Grades 4–8 and Grades 9–12 students is then computed in the same manner by averaging Grades 4–8 and Grades 9–12 growth scores by the number of students in each measure and finding the final rating. Figure 6 shows an example of this process.

⁷ Details on measures and results for schools and principals of Grades 9–12 can be found in *A Principal's Guide to Interpreting State-Provided Growth Scores for Grades 9–12*, available on the Growth Resources page on the EngageNY website: <http://www.engageny.org/resource/resources-about-state-growth-measures/>

Figure 6. Determining Growth Ratings for Schools and Principals With Grades 4–8 and 9–12 Growth Measures⁸

Sample School	Growth Rating	Growth Score	Number of Students or Student Scores in Measure	Percentage of Students (Measure Weight)	Score x Measure Weight	Weighted Score (Rounded)
4–8 Growth Subcomponent Rating/Growth Score	Effective	13	435	18%	13 x 0.18	2.3
9–12 Growth Subcomponent Rating/Growth Score	Effective	11	1,970	82%	11 x 0.82	9.0
Overall Growth Subcomponent Rating/Growth Score (4–8 and 9–12)	Effective		2,405	100%		11

Sum the weighted scores for 4–8 (in this case, 2.3) and 9–12 (in this case, 9.0) to get the overall growth subcomponent score (in this case, 11).

Use the final growth subcomponent score (in this case, 11) to find the final growth subcomponent rating (in this case, Effective)

Information Available in District Files

State-provided growth scores are made available to districts prior to September 1 of each school year or as soon as practicable thereafter. Results are provided in separate files for teachers, principals, and schools. These files contain the following information:

Number of Student Scores: The number of SGPs included in an MGP.

Percent of Students Above the State Median: Percentage of students above the State median SGP in the relevant subject and grade, using adjusted student SGPs.

Unadjusted MGP (Principal or School): The mean of the SGPs for students linked to a principal (or school), based on similar prior achievement scores only, without taking into consideration ELL, students with disabilities, or economic disadvantage student characteristics.

Unadjusted MGP (Teacher): The weighted mean of the SGPs for students who are attributed to a teacher, based on similar prior achievement scores only, without taking into consideration ELL, students with disabilities, or economic disadvantage student characteristics. The weighted mean is calculated based on the amount of time students were enrolled in and attended a course with a teacher.

⁸ This example applies to educators outside New York City and those in districts implementing Education Law §3012-c. Based on the arguments presented in the arbitration proceeding held on May 30 and 31, 2013, and pursuant to his authority in Education Law §3012-c(2)(a), the Commissioner imposed different scoring ranges for use in New York City for the 2013–14, 2014–15, 2015–16, and 2016–17 school years than in the rest of the state. See the following link for a description of these scoring ranges: <http://usny.nysed.gov/rttt/teachers-leaders/plans/docs/new-york-city/new-york-city-appr-plan-060113.pdf>. For educators in New York City or those in districts implementing Education Law §3012-d, a similar calculation as shown in this example is done using different growth scoring bands.

Adjusted MGP (Principal or School): Adjusted MGP is the mean of the SGPs for students linked to a principal (or school), based on academic history as well as ELL, students with disabilities, and economically disadvantaged student characteristics. This MGP is used to determine a principal's (or school's) State-provided growth score and growth rating.

Adjusted MGP (Teacher): Adjusted MGP is the weighted mean of the SGPs for students attributed to a teacher based on academic history as well as ELL, students with disabilities, and economically disadvantaged student characteristics. This MGP is used to determine a teacher's State-provided growth score and growth rating.

Upper Limit and Lower Limit: Highest and lowest possible MGP for a 95-percent confidence range.

Growth Rating: Growth rating describes the educator's HEDI performance on the State-provided growth subcomponent.

Growth Score: Using scoring bands for implementation of Education Law §3012-c or §3012-d as appropriate for the district, a growth score of 0 to 20 points is assigned to each educator based on his or her overall MGP within each growth-rating category.

MGP's disaggregated by grade and subject are also provided. Districts are also provided with student roster files. These files show which students were included in an educator's MGP's along with information about each student. These rosters display information about students who were linked to educators but were not included in the calculation of the educator's MGP. Students who do not meet the minimum enrollment requirements will have a detailed exclusion reason, and those who do meet the minimum enrollment requirements to be included in educators' MGP's will have an exclusion reason of "NA." For students who were included in an educator's growth score (exclusion reason of "NA"), the following information will be provided:

- Year, which indicates the end of the school year to which the information applies
- District, school, and educator (teacher or principal) name and ID
- Student name and ID
- Assessment subject and grade ("Item Description")
- Student background characteristics
 - Disability: Students identified as having disabilities, based on district, BOCES, or charter school provided information
 - ELL: Students who have been identified as speaking English language learners in accordance with Part 154 of the Commissioner's regulations, based on district, BOCES, or charter school provided information⁹
 - Economic disadvantage: Students whose families participate in economic assistance programs such as free or reduced-priced lunch programs, Social Security Insurance, food stamps, foster care, refugee assistance, earned income tax credit, the Home Energy Assistance Program, Safety Net Assistance, the Bureau of Indian Affairs, or Temporary Assistance for Needy Families, based on district-, BOCES, or charter school-provided information
 - Students with disabilities spending less than 40 percent of time in general education settings
 - NYSESLAT form and score
 - New to school
 - Retained in grade
- 2016 State test score and prior year(s) State test score(s)
- SGP (unadjusted and adjusted)

⁹ See Part 154 of the Commissioner's Regulations here: <http://www.p12.nysed.gov/biling/docs/CRPart154.pdf>.

SGP (unadjusted and adjusted) Questions for Consideration

Following are some questions to consider as you review your State-provided growth score information:

- How much did my students grow, on average, compared to similar students? Is this higher, lower, or about what I would have expected? Why?
- How does this information about student growth align with information about my leadership practice received through observations or other measures? Why might this be?
- How do my MGPs in these subjects compare? Why might they be similar or different?
- How do my MGPs compare across grade levels? Why might they be similar or different?

Information or Additional Questions

If you have questions about your data, what the scores are used for, or why you received the score that you did, please contact your school's superintendent or district data personnel for assistance. If unable to obtain answers to questions, contact educatoreval@nysed.gov.

Disclaimer

If any discrepancies exist between the language in these materials and the Statute, Regulations, or APPR Guidance, the Statute, Regulations, or APPR Guidance prevail.