



Guide to Interpreting Student Growth Data Aggregated by Teachers

PREPARED FOR THE NEW YORK STATE EDUCATION DEPARTMENT BY EDUCATION ANALYTICS, INC.
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The Role of Growth Scores in Annual Performance Reviews

New York State teachers of English language arts (ELA) and mathematics in grades 4–8, including teachers of grade 8 students who take the Algebra I Regents examination, and their principals will receive growth data based on State tests. The growth data are provided **for continuous improvement purposes** and describe how much students are growing academically in ELA and mathematics (as measured by the New York State tests) compared to students with similar test histories.

Why Growth?

All students enter their teachers’ classrooms at differing levels of academic proficiency or achievement. One way to measure proficiency is student performance on standardized assessments. By measuring the amount of progress, or “academic growth” a student makes during a given school year on these assessments, we can begin to understand the influence of that particular school year experience on student learning. By measuring academic **growth** in addition to **proficiency**, we can identify strengths and gaps in student progress and help teachers to better support students who have a wide range of academic needs.

Where and when will data be available?

Accountability growth data are generated for public schools, districts, and charter schools and are made available via the [SIRS 112 Report](#). Teacher growth data are made available for download each fall on the secure [Information and Reporting Services Portal](#).

Where can I get more information?

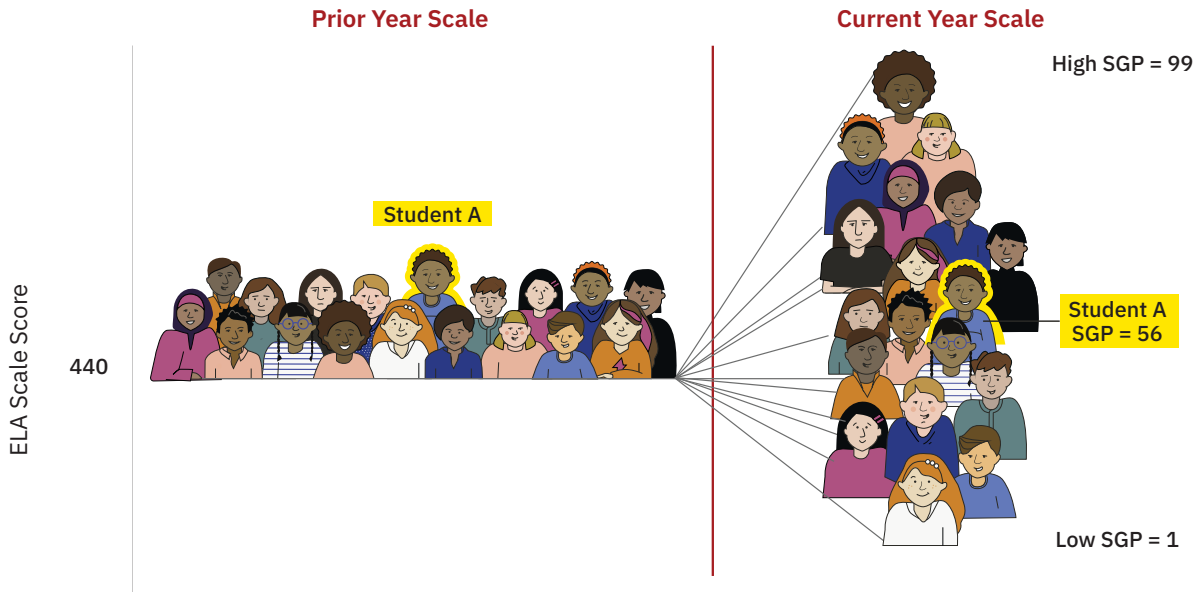
Additional information is available on the [nysed.gov School and District Accountability Resources and Data](#) page.

How Does New York State Measure Student Growth?

The simplest way to measure growth would be to subtract a student’s test score in a prior year from their test score in the current year (e.g., test score in spring minus test score from the prior spring). However, New York State’s tests are not designed to allow for this kind of calculation because the test scores are not comparable across grade levels. Nor would this approach account for a student’s starting point and other background characteristics. Instead, New York State’s approach is to compare the current year scores of similar students—that is, of students who had the same prior test histories—in order to measure growth while accounting for students’ starting levels of achievement.

This method, illustrated in **Figure 1**, shows Student A (highlighted in yellow) with an ELA score of 440 in the previous year. Compared to other students who also had scores of 440 in the previous year, Student A’s ELA test score in the current year was in the middle range when compared to those same students. We can describe Student A’s growth relative to students with similar test histories as a **“student growth percentile”** or **SGP**. In this example, because Student A’s SGP is 56 (Student A scored 10th out of 18 similar students; 10 divided by 18 equals 56% or an SGP of 56), it means that this student achieved an ELA test score as high or better than 56 percent of other students with similar test histories. SGPs range from 1–99 and 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). New York State’s growth model calculates SGPs separately by subject and grade.

FIGURE 1. MEASURING STUDENT GROWTH COMPARED TO SIMILAR STUDENTS





What Assessments Are Used to Determine Grades 4–8 ELA and Math Growth Scores?

Students must have an immediate prior year score in the same subject in order to receive an SGP. If available, students may also have up to three additional prior achievement scores, or pretests included as predictors in the model.

— TABLE 1. ASSESSMENTS AVAILABLE FOR GROWTH SCORES

		Current Year Assessment				
		Grade 4	Grade 5	Grade 6	Grade 7	Grade 8/ Algebra I
Prior Years Assessment, Same Subject	Grade 3	REQUIRED	USE IF AVAILABLE	USE IF AVAILABLE		
	Grade 4		REQUIRED	USE IF AVAILABLE	USE IF AVAILABLE	
	Grade 5			REQUIRED	USE IF AVAILABLE	USE IF AVAILABLE
	Grade 6				REQUIRED	USE IF AVAILABLE
	Grade 7					REQUIRED

How is Student Growth Attributed to Teachers?

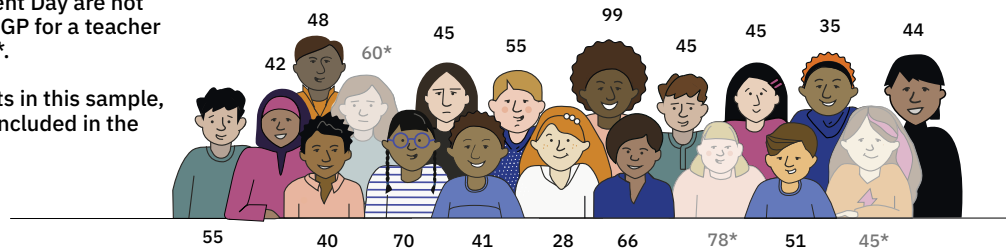
Student's growth results linked to each teacher are based on their “mean growth percentile” or MGP, the measure of their students’ growth. An MGP is calculated by finding the average of all the SGPs for students attributed to a teacher, across grades and subjects.

Figure 2 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 last day of the State assessment administration) are not included in the MGP for a teacher.¹ Finally, an MGP is reported only if it is based on at least 16 SGPs.

FIGURE 2. EXAMPLE OF STUDENTS WHO COUNT IN THE MGP FOR A TEACHER: SAMPLE DATA

Students who are not enrolled on BEDS - Assessment Day are not included in the MGP for a teacher shown here with*.

Of the 19 students in this sample, 16 students are included in the MGP Calculation.



To determine the MGP for a teacher, we find the average of the SGPs for all students linked to the teacher who were enrolled on BEDS day and the last day of State Assessments.

Step 1:

Sum the Scores for Students Included in the MGP Calculation

$$55+42+48+40+70+45+41+55+28+66+99+45+45+35+51+44 = 809$$

Step 2:

Divide Step 1 Result by the Total Number of Students Included in the MGP Calculation

$$809/16 \text{ students} = 50.6$$

$$50.6 = \text{MGP of the school}$$

The students linked to the teacher in Figure 2 has an MGP of 50.6, meaning that, on average, students who were enrolled in this school on BEDS Day performed as well as or better than about 50.6 percent of students with similar test histories.

To determine the MGP for a teacher, we find the average of the SGPs for all students who were enrolled on BEDS Day and the last day of the assessment period and who were in the grade levels to which that teacher was assigned, using data submitted by the district, BOCES, or charter school.

MGP's for a teacher are provided by subject as well as combined across all grades and subjects. MGP's for a teacher 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.

¹ For purposes of illustration, this example includes fewer than 16 SGPs. MGPs are reported only when at least 16 SGPs are available.



Information Available in District Files

Growth scores are made available to districts each fall. These files contain the following information:

- **Number of Student Scores:** The number of SGPs included in a teacher's MGP.
- **MGP:** The mean of the SGPs for students who are attributed to a teacher.

Districts are also provided with student roster files and MGPs disaggregated by subject. These files show which students were included in a teacher's MGP along with information about each student. These rosters display information about students who were linked to teachers but were not included in the calculation of the MGP for the teacher. Students who do not meet the minimum enrollment requirements will have a detailed exclusion reason (this will be "NA" if the student was included).

For students who were included in the MGP for a teacher (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 teacher name and ID
- Student name and ID
- Assessment subject and grade ("Item Description")
- Current and prior year(s) State test score(s)
- SGP

Questions for Consideration

The following are questions for teachers to consider in reviewing 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?
- Look for patterns of high or low achievement and growth. Are these patterns correlated with interventions and accommodations provided to students?
- How does this information about student growth align with information about my instructional practice received through observations or other measures? Why might this be?
- **For MGPs attributed to teachers in both ELA and mathematics:** How do my MGPs in these subjects compare? Why might they be similar or different?

Information or Additional Questions

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