

**A Principal's Guide to Interpreting  
State-Provided Growth Scores  
for Grades 4–8 in 2012–13 and 2013–14**

## Understanding the Growth Subcomponent of 2012-2013 Annual Professional Performance Reviews: New York State-Provided Growth Scores

### The Role of Growth Scores in Annual Performance Reviews

As part of the Annual Professional Performance Review (APPR) process, New York State teachers of Math and English Language Arts (ELA) in grades 4 through 8 and their principals and principals of grades 9–12 will receive State-provided growth scores based on 2012–13 State tests. These growth scores describe how much students in their classrooms and schools are growing academically in mathematics and ELA (as measured by the New York State tests) compared to similar students statewide. State-provided growth scores are just **one** of the **multiple** measures that make up the annual performance reviews and will count for 20 percent of an evaluation score for the 2012–13 and 2013–14 school years (see box at right).

New York State law requires that APPRs play a significant role in employment decisions as well as in the provision of targeted professional development.

### Changes in Growth Measures from 2011–12

The Regents Task Force on Teacher and Principal Effectiveness, comprising representatives from key stakeholder groups, including **educators, educator unions, and educator professional organizations**, has given input into the development of APPR regulations and the design of the State-provided growth scores over the course of the last several years. 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. Between 2011–12 and 2012–13, NYSED made a number of refinements to the growth model in order to enhance its ability to account for additional factors that are associated with student performance but not related to teacher and school practices and to reflect complex student–teacher–school associations. Additionally, the New York State assessments that were administered in 2013 measure the Common Core State Standards and have different scale scores than those administered in 2012. The relative performance of similar students can still be calculated from year to year with the new assessments since all students in the growth measures took both the old and the new assessments. In addition to new 2012–13 growth scores, principals of New York State public schools with grades 4–8 mathematics or ELA in 2011–12 will be able to access 2011–12 mean growth percentiles (MGPs), growth ratings, and growth scores for their schools in the online growth reporting system (GRS). Refer to the following link for information on the 2011–12 grades 4-8 principal model and how to interpret growth scores.

### Multiple Measures for Performance Reviews

Growth is one of three components of the State's comprehensive approach to measuring educator effectiveness.

#### Student Growth or Other Comparable Growth Measures

(20%)

- Student growth on State assessments (State-provided)
- Student learning objectives

#### Locally Selected Measures of Student Achievement

(20%)

- Student growth or achievement
- Options selected through collective bargaining

#### Other Measures

(60%)

- Rubrics
- Sources of evidence: observations, visits, surveys, etc.
- Options selected through collective bargaining

Based on these multiple measures, **educators receive an overall performance rating from one of four rating categories:** Highly Effective, Effective, Developing, and Ineffective (HEDI), and will receive a single composite effectiveness score of up to 100 points for use in the educator's evaluation. The State-provided growth subcomponent reports include a growth rating and a growth score of up to 20 points for school years 2012–13 and 2013–14.

### WHERE AND WHEN WILL DATA BE AVAILABLE?

State-provided growth scores for 2012–2013 were distributed to districts in August 2013 and are available to authorized users via the secure online GRS in September 2013.

(<http://www.engageny.org/resource/secure-online-growth-reporting-system>)

### WHERE CAN I GET MORE INFORMATION?

Visit <http://www.engageny.org> for additional information on the State's teacher and leader effectiveness reform agenda and detailed information on State-provided growth scores.

Visit <http://www.engageny.org/resource/appr-planning> for additional information on APPR and a detailed guidance document located here: <http://www.engageny.org/resource/guidance-on-new-york-state-annual-professional-performance-review-law-and-regulations/>

Principals should contact their superintendent or their network team trainers for additional information about APPR or the calculation of State-provided growth scores.

## Backgrounds

### Why Growth?

Students enter classrooms and schools at differing levels of proficiency or academic achievement. By measuring academic growth rather than only proficiency, we can identify strengths and gaps in student progress and help principals to better support students of 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 no matter the starting achievement levels of their students.

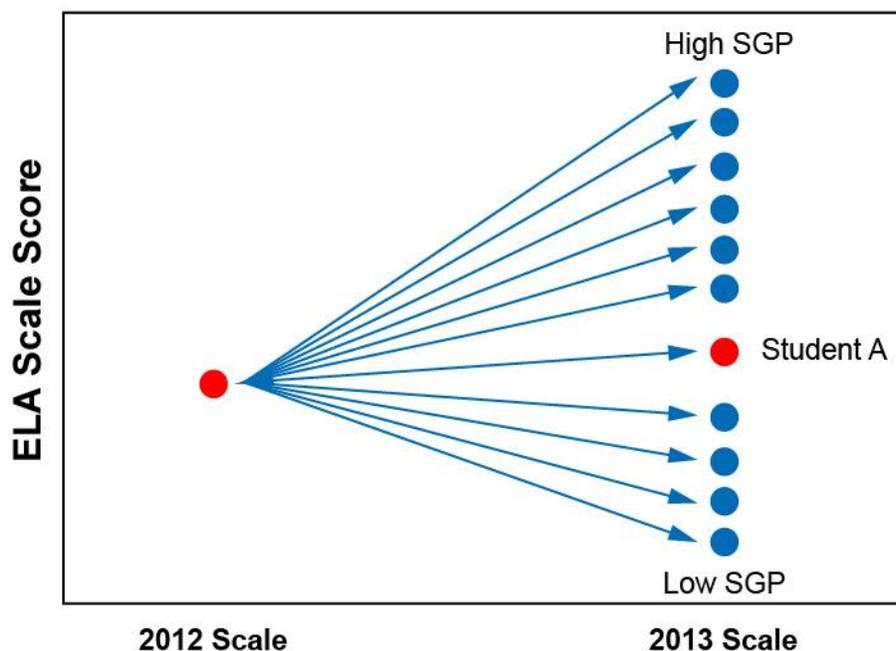
### How Is Student Growth Measured?

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. Therefore, we 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, students who had the same prior test scores and other characteristics (see Figure 2)—in order to measure growth while accounting for students' starting levels of achievement. The 2013 New York State assessments measure the Common Core State Standards and have different scale scores than in 2012. Growth scores can still be calculated, even with different scales across years. Since all students took the *old* test in the prior year and also took the *new* test this year, the relative performance of similar students can still be calculated statistically. This method is illustrated in Figure 1 below, where Student A had an ELA score of 450 in 2012.<sup>1</sup> Compared to other students who also had a score of 450 in 2012, Student A's 2013 ELA test score on the new scale in 2013 hovers in the middle range. We can describe Student A's growth in relative terms as a "student growth percentile" (SGP). In this example, since Student A's SGP is 45, it means that she 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 to 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.

#### STUDENT GROWTH PERCENTILE (SGP):

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

Figure 1. Measuring Student Growth Compared to Similar Students



<sup>1</sup> Note that the sample scaled scores are illustrative only.

### Factors Used to Define “Similar Students” in the Growth Model for 2012–13 and 2013–14

For educator evaluation, we further refine the definition of similar students to mean not just students with the same academic history, but also ones with the same English language learner (ELL), economic disadvantage (poverty), and disability (SWD) statuses. Specific factors for each of these categories are detailed in Figure 2. For instance, we account for whether or not a student is an ELL; we also account for the percent of ELL students in that student’s class or course. This type of factor is intended to get at “peer effects,” acknowledging that it may be a different thing for a student to be in class or course with many ELL students (and a different job for an educator with many ELL students) than it is to be in a class or course with fewer ELL students.

Figure 2. Characteristics of Similar Students

Grades 4-8 Principals	Similar Student Characteristics Used in 2012–13*
Academic History	<ul style="list-style-type: none"> <li>• Up to three years of student state exam scores, same subject</li> <li>• Prior-year test score, different subject</li> <li>• Retained in grade</li> <li>• Average prior achievement and range around average prior score in student’s class/course (same subject)</li> </ul>
English Language Learner (ELL)	<ul style="list-style-type: none"> <li>• New York State English as a Second Language Achievement Test (NYSESLAT) scores</li> <li>• Percentage of ELLs in student’s class/course</li> <li>• ELL status (yes/no)</li> </ul>
Economic Disadvantage (Poverty)	<ul style="list-style-type: none"> <li>• Percentage of economically disadvantaged students in student’s class/course</li> <li>• Student economic disadvantage status (yes/no)</li> </ul>
Disability Status (SWD)	<ul style="list-style-type: none"> <li>• SWD spends less than 40 percent of time in general education setting</li> <li>• Percentage of SWDs in student’s class/course</li> <li>• SWD status (yes/no)</li> </ul>

\*Additional characteristics may be added in the future as available and approved by the Board of Regents.

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

A principal’s State-provided growth subcomponent rating (Highly Effective, Effective, Developing, or Ineffective—i.e., the “HEDI” rating) and growth subcomponent points (0–20) are based on the 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 linked to a school, across grades and subjects.

#### MEAN GROWTH PERCENTILE (MGP):

The average of all SGPs linked to a school

Figure 3 illustrates how an MGP is calculated for a principal. 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 principal’s MGP.<sup>2</sup> SGPs for all students who do meet the continuous enrollment requirement are then averaged to find the principal’s MGP.

<sup>2</sup> 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% 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.”

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

Principal Jensen's School		
	SGP	Enrolled on BEDS Day and Assessment Day
Student Q	45	Yes
Student R	40	Yes
Student S	70	Yes
Student T	60	No
Student U	41	Yes

To measure Principal Jensen's performance, we find the average of the SGPs for all students who were enrolled on BEDS and assessment day. In this case:

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

Step 2:  $196 / 4 = 49$

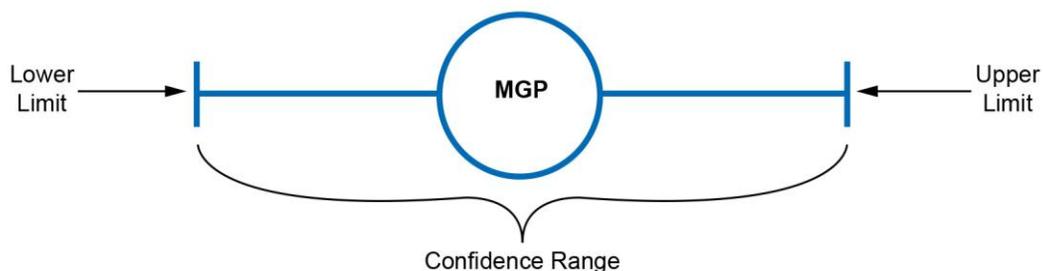
Principal Jensen's MGP is 49<sup>3</sup>.

For the purposes of principal evaluation, we calculate each principal's 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 (HEDI) ratings and scores.** Unadjusted MGPs that take into account only students' academic history are also reported, for informational purposes only.

MGPs are provided by subject, grade, and teacher, and then by an overall MGP that combines SGPs for all students across grades and subjects in a school. Grades 4–8 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 only reported if it is based on at least 16 SGPs.**

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

Figure 4. MGP and Confidence Range



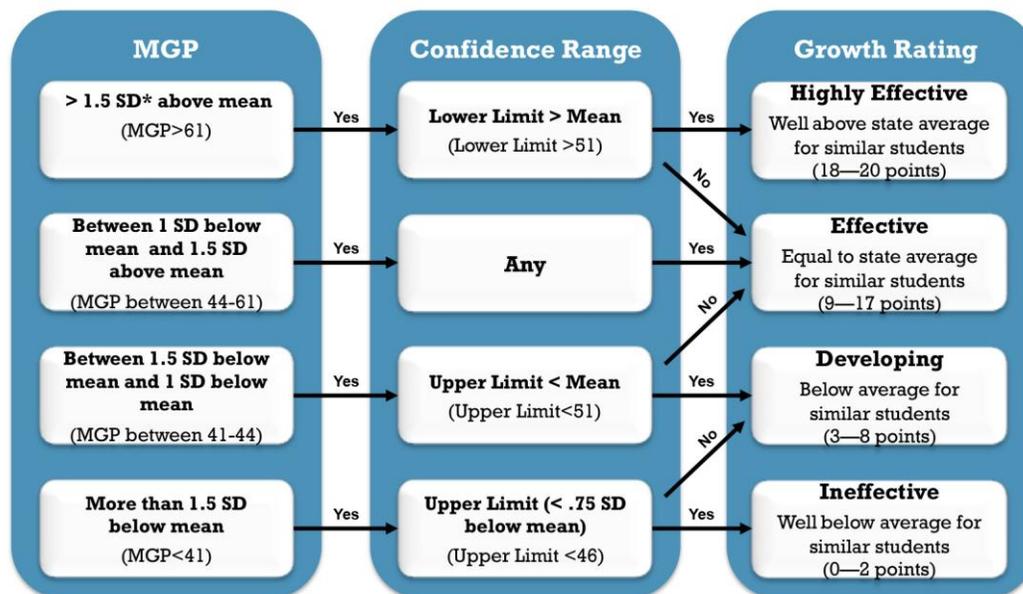
<sup>3</sup> For purposes of illustration, this example includes fewer than 16 SGPs. MGPs are reported only when at least 16 SGPs are available.

All statistical calculations contain some uncertainty. While the reported MGP is the best estimate for any principal, we can also quantify a range wherein we can expect that the “true” answer lies. The upper and lower limit MGPs define a set of scores wherein we are 95 percent confident an educator’s “true” MGP lies. This is similar to the way we are used to seeing results from other statistical calculations. Take, for example, political polls, where a candidate can be ahead in the polls by six points plus or minus three points. If we polled respondents multiple times, we might not get exactly a six-point lead (as the poll changed who was called on any particular day), but we know we are highly likely to get a number within a range of plus or minus three points around six. It would not make sense to give the same State test again and again under exactly the same conditions to the same students, so we use the confidence range to account for differences that could have occurred in student scores.

We report the upper and lower limit MGPs because we want to be transparent about the data, and we use this information to assign educator ratings based on student growth. The width of the confidence range (that is, the distance between the upper and lower limit MGPs) is affected by the number of students included in generating the score, by the spread of student scores in the teacher’s classroom or in the school, and by characteristics of the test itself, among other factors.

We use a principal’s 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 his or her growth rating, as shown in Figure 5. The rules for assigning growth ratings are the same for principals and teachers of grades 4–8 students. Principals in schools serving a combination of grades 4–8 and 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 principals.

Figure 5. Determining Principal Growth Ratings



\*Standard deviation

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

For principals in schools that serve grades 9–12 in addition to any combination of grades 4–8, additional growth results (beyond the MGP for grades 4–8) will be calculated to include grades 9–12 student growth in the principal's rating and score. Details on measures and results for 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/>).

To determine a final State-provided growth subcomponent rating for principals who serve grades 4–8 and 9–12, growth ratings and scores are determined for grades 4–8 and grades 9–12 separately and then combined. The grades 4–8 measure growth rating is determined using the process shown in Figure 5. Since there are multiple 9–12 measures, growth scores for each grade 9–12 measure are averaged together, weighted by the number of students in each measure, to find an overall 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.

Figure 6. Determining Growth Ratings for Principals with 4–8 and 9–12 Growth Measures

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%	$13 \times 0.18$	2.3
9–12 Growth Subcomponent Rating/Growth Score	Effective	11	1,970	82%	$11 \times 0.82$	9.0
<b>Overall Growth Subcomponent Rating/Growth Score (4–8 and 9–12)</b>	<b>Effective</b>		<b>2,405</b>	<b>100%</b>		<b>11</b>

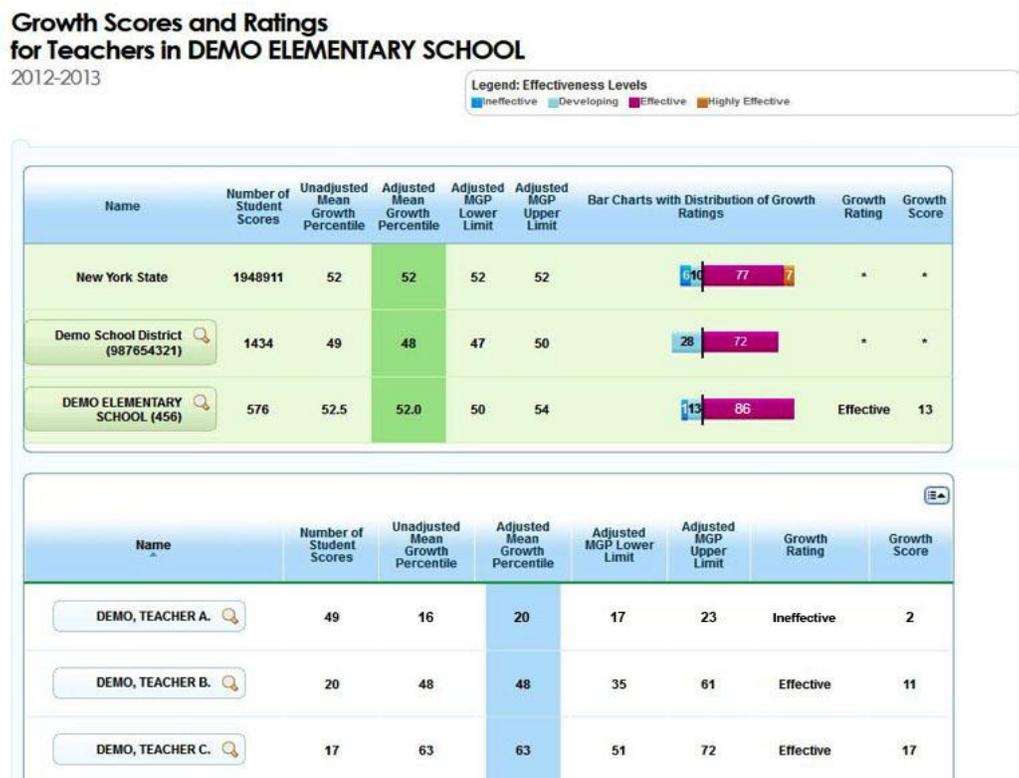
Sum the weighted scores for 4–8 (in this case, 2.3) and 9–12 (in this case, 9.0) to get the overall growth sub-component score (in this case, 11).

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

## Sample Grades 4–8 Principal Report

Figure 7 shows a sample grades 4–8 principal report from the online GRS. The GRS can be accessed through the Teacher/Leader Effectiveness tab on the EngageNY website (<http://www.engageny.org/resource/secure-online-growth-reporting-system>). This report provides information about a principal's MGP, growth rating, and growth score for each measure, as well as growth results for teachers in the school and comparative information for the district and state. The number of SGPs included in each MGP is also reported. Principals of schools that also serve grades 9–12 will be able to access those results via the GRS as well. Definitions of key data elements in the grades 4–8 principal report follow.

Figure 7. Sample Grades 4–8 Principal Report



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

**Unadjusted MGP (Principal):** The mean of the SGPs for students in the school is based on similar prior achievement scores only, without taking into consideration ELL, SWD, or economic disadvantage student characteristics.

**Unadjusted MGP (Teacher):** The weighted mean of the SGPs for students who are linked to a teacher is based on similar prior achievement scores only, without taking into consideration ELL, SWD, 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.

**Adjusted MGP (Principal):** Adjusted MGP is the mean of the SGPs for students linked to a teacher, based on similar prior achievement scores and *includes* consideration of ELL, SWD, and economic disadvantage student characteristics. This MGP is used to determine a principal's State-provided growth score and growth rating.

**Adjusted MGP (Teacher):** Adjusted MGP is the weighted mean of the SGPs for students linked to a teacher based on similar prior achievement scores and *includes* consideration of ELL, SWD, and economic disadvantage student characteristics. This MGP is used to determine a teacher's State-provided growth score and growth rating.

**Lower Limit and Upper 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 determined by the Commissioner, a growth score of 0–20 points is assigned to each educator based on his or her overall MGP within each growth rating category.

From the sample report shown in Figure 7, a principal can also navigate through the online GRS to obtain MGPs based on the subgroups listed below. Additionally, principals can view MGPs disaggregated by grade and subject. The *Growth Reporting System User's Guide* (available within the online GRS and on the EngageNY website at <http://www.engageny.org/resource/secure-online-growth-reporting-system>) provides detailed information on how to navigate within the GRS.

**Students with Disabilities:** Students identified as having disabilities based on district-provided information.

**English Language Learners:** Students identified as speaking English as a Second Language or who are receiving services through a bilingual program or a two-way bilingual education program, based on district-provided information.

**Economically Disadvantaged:** Students whose families participate in economic assistance programs such as the 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-provided information.

**Low-Achieving:** Students who achieved at performance level 1 in either Math or ELA on the prior year assessment.

**High-Achieving:** Students who achieved at performance level 4 in either Math or ELA on the prior year assessment.

## Roster Files

Teacher and principal scores will be directly available to each educator through the State's vendor's online secure GRS (accessible here: <http://www.engageny.org/resource/secure-online-growth-reporting-system>). The GRS will also contain student-level rosters that principals can download, which will show them which students were included in their MGPs, along with information about each student (see Figure 8). These rosters will also display information about students who are attributed to the school but who were not included in the calculation of the school's MGPs. For example, if a student was in a school but did not meet the continuous enrollment requirement, the student will be listed on the roster, and in the column labeled "Included in School MGP," the student will be listed as "N," and the reason for exclusion will also be listed. For example, review the row of information for Joshua Bryant and Elizabeth Parker in Figure 8. For any schools serving students in grades 4–8 and grades 9–12, separate roster files will be available for grades 4–8 and grades 9–12.

For students who were *included* in your school's growth score (indicated with a "Y" in the "Included in School MGP" column), you can see the following information:

- Date, 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)
- Student background characteristics
  - Disability
  - ELL
  - Economic disadvantage
  - Students with disability spending less than 40 percent of time in general education settings (LRE)
  - NYSESLAT Listening/Speaking (LS) and Reading/Writing (RW) scores

- 2013 State test score and prior year(s) State test scores
- SGP

For students who may have been enrolled in your school but who were not included in the growth score calculation (indicated with an “N” in the “Included in School MGP” column on the roster), the roster identifies the reason that a student was not included (see Figure 8). The following are likely reasons noted in the roster:

- Student was not present on BEDS or assessment day or did not receive a valid score on assessment day
- No valid prior test score

Figure 8. Excerpt of Roster Output<sup>4</sup>

School ID	Teacher last name	Teacher first name	Student last name	Student first name	Item description	Unadjusted SGP	Included in school MGP	Reason for exclusion from school MGP
123456789012	Green	Leonard	Wang	Jacob	Grade 4 ELA	45	Y	NA
123456789012	Hernandez	Megan	Wang	Jacob	Grade 4 ELA	45	Y	NA
123456789012	Jones	Janice	Bryant	Joshua	Grade 4 Math	NA	N	No valid prior test score
123456789012	Jones	Janice	Gonzalez	Sophia	Grade 5 ELA	74	Y	NA
123456789012	Jones	Janice	Gonzalez	Sophia	Grade 5 Math	84	Y	NA
123456789012	Jones	Janice	Jackson	Deshawn	Grade 5 ELA	65	Y	NA
123456789012	Jones	Janice	Jackson	Deshawn	Grade 5 Math	67	Y	NA
123456789012	Jones	Janice	Li	Mei	Grade 4 ELA	92	Y	NA
123456789012	Jones	Janice	Li	Mei	Grade 4 Math	64	Y	NA
123456789012	Jones	Janice	Nguyen	Phoung	Grade 4 ELA	64	Y	NA
123456789012	Jones	Janice	Nguyen	Phoung	Grade 4 Math	24	Y	NA
123456789012	Jones	Janice	Parker	Elizabeth	Grade 4 ELA	NA	N	Not present on BEDS or Assessment day or did not receive a valid score from Assessment Day
123456789012	Jones	Janice	Taylor	Christopher	Grade 4 ELA	NA	N	Not present on BEDS or Assessment day or did not receive a valid score from Assessment Day
123456789012	Jones	Janice	Wang	Jacob	Grade 4 ELA	45	Y	NA
123456789012	Jones	Janice	Wang	Jacob	Grade 4 Math	34	Y	NA
123456789012	Jones	Janice	Williams	Tamika	Grade 4 ELA	90	Y	NA
123456789012	Jones	Janice	Williams	Tamika	Grade 4 Math	48	Y	NA
123456789012	Klein	Tamara	Wang	Jacob	Grade 4 ELA	45	Y	NA
123456789012	Unassigned teacher		Doe	John	Grade 4 ELA	13	Y	NA

<sup>4</sup> Not all roster fields are displayed in sample excerpt; see list above for full set of data reported on rosters.

### **Questions for Consideration**

Following are some questions to consider as you review your state-provided growth score report:

- 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?
- How do my MGPs for each reported subgroup (ELL, SWD, economically disadvantaged, and low- and high-achieving students) compare to each other and to my overall MGPs? Do I see any patterns?
- How much did the students of my teachers grow, on average, compared to similar students and how does this differ across teachers? Are there differences across grades or subjects? How do my teachers' MGPs differ across each reported subgroup (ELL, SWD, economically disadvantaged, and low- and high-achieving students)? Do I see any patterns? (Refer to the “A Teacher’s Guide to Interpreting Your New York State-Provided Growth Score” for more information.)

### **For More 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. The New York State GRS help desk is available to assist you with questions related to the online GRS login and navigation.

#### **NYS Help Desk Contact Information**

Phone: (866) 821-6426

Email: [NYGrowth@air.org](mailto:NYGrowth@air.org)

Hours: 8:30 a.m. to 4:30 p.m., Eastern standard time, Monday–Friday (except holidays)

### **Disclaimer**

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