STATE GROWTH MEASURES TOOLKITS

FOR ADMINISTRATORS

Guide to Interpreting State-Provided Principal Growth Scores for Grades 9-12 in 2022-23

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 and principals of buildings that include all of grades 9-12 will receive State-provided growth scores based on 2022-23 State tests. The growth scores are **for advisory purposes only** pursuant to Chapter 59 of the Laws of 2019, which amended the Student Performance Category requirements of Education Law §3012-d. These growth scores describe how much students are growing academically in ELA and mathematics (as measured by the New York State tests) compared to similar students statewide. Development of the growth measures for principals of grades 9-12 was informed by the growth model for principals of grades 4-8. Where possible, the New York State Education Department used the same definitions of similar students and the same rules about student attribution as those that were used for the grades 4-8 principal measures.[1]

Where and when will data be available?

State-provided growth scores for 2022-23 are expected to be distributed to districts in November 2023.

Where can I get more information?

Additional information is available on the nysed.gov State-Provided Growth Measures Toolkits page.

Detailed guidance documents on New York's law and regulations and, additional information on APPR plans is available under Education Law §3012-d.

Principals should contact their district/Board of Cooperative Educational Services (BOCES) leaders for additional information about APPR or the calculation of State-provided growth scores.

[1] See the Principal's Guide to Interpreting State-Provided Growth Scores for Grades 4-8, which is available on the NYSED Growth Measures Toolkits page.

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.[2]

Measures for grades 9-12 include the mean growth percentile (MGP) measure based on ELA and Algebra I Regents Exams and the Comparative Growth in Regents Exams Passed measure. For the Comparative Growth in Regents Exams Passed measure, students who dropped out were counted in the school from which they dropped out until they would have reached their fourth year since entering grade 9 or until they enrolled at another school, starting with those who dropped out in the 2019-20 school year. Students who dropped out prior to the 2019-20 school year were not counted.

Staff assignment data submitted by districts, BOCES, and charter schools 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. However, scores are produced only for schools that serve all of grades 9-12 and for principals of schools with all of grades 9-12.

Why Growth?

All students enter their schools 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.[3] 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.

The goal of growth measures for principals of grades 9-12 is to measure student growth toward graduation as well as college and career readiness using available Regents Exam data. To achieve this goal, two different growth measures are reported. These two measures are intended to acknowledge progress in passing Regents Exams required for graduation, as well as to account for high-level performance on Regents Exams and passing Regents Exams beyond the minimum of five exams required for students using the "traditional pathway." Using these two measures allows us to capture two different, but equally important, aspects of student progress toward graduation and college and career readiness. They also allow us to include most students in at least one measure used to compute a score for high school principals. Each measure is described in detail in the sections that follow.

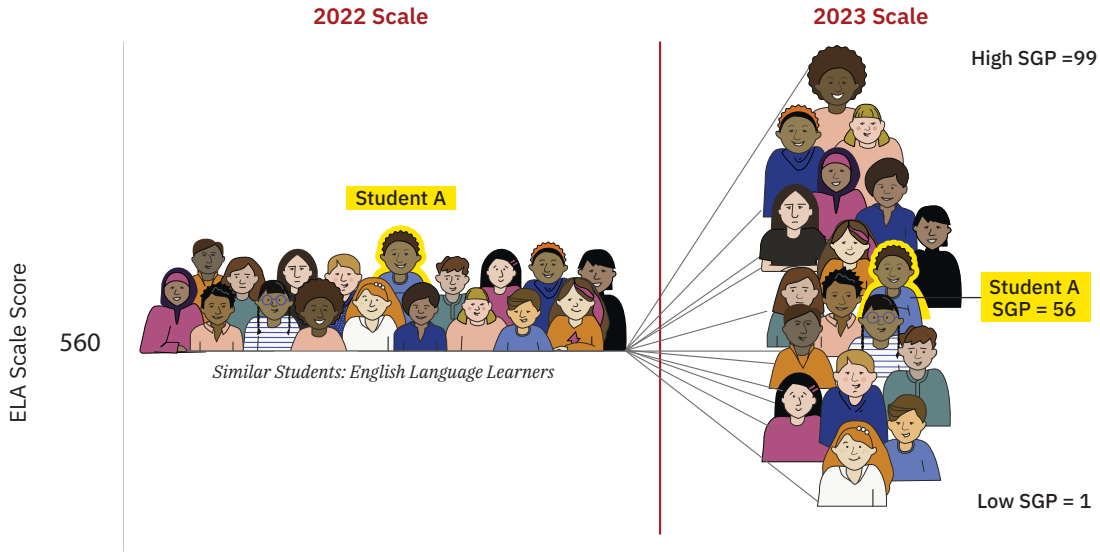
[2] For a list of task force members and technical advisory committee members, visit the NYSED Growth Measures Toolkits page.
[3] Education Law §3012-d(2)(c) defines "student growth" as: "the change in student achievement for an individual student between two or more points in time."

How Does New York State Measure Student Growth?

One growth measure for grades 9-12 principals is based on ELA and Algebra I Regents Exams.

The approach New York State uses compares the current-year Regents Exam 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.[4] This method of measuring growth is illustrated in **Figure 1**, which is the same as that used for grades 4-8 teachers and principals. In Figure 1, Student A (highlighted in yellow) had an eighth grade ELA score of 560 in 2022. Compared with other students who also had a score of 560 in 2022, Student A's 2023 ELA Regents Exam test score was somewhere in the middle. We can describe Student A's growth in relative terms 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 55.5% or an SGP of 56), it means that this student performed as well as or better than 56 percent of students (with the same starting point and characteristics) who took the ELA Regents exam. 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). New York State's growth model calculates SGPs separately for ELA and Algebra I Regents exams.

FIGURE 1. MEASURING STUDENT GROWTH COMPARED TO SIMILAR STUDENTS



[4] This "comparison" is done through a regression modeling approach. For more details, please see the Growth Model for Educator Evaluation 2021-22 Technical Report, which is available on the NYSED Growth Measures Toolkits page. The 2022-23 Technical Report will be available on the NYSED website in the fall of 2023.

Once we have computed SGPs for students, we average them to compute a school- or principal-level "mean growth percentile" or MGP. Students who do not meet the continuous enrollment requirement (i.e., those who were not enrolled on BEDS day and during the June Regents test administration) are not included in a school's or principal's MGP. The minimum sample size required to report an MGP is 16, and only schools with all of grades 9-12 and principals of schools with all of grades 9-12 receive MGPs. An ELA, Algebra I, and combined MGP is reported for schools and principals if they have the minimum of 16 for each MGP.[5] To combine ELA and Algebra I MGPs into an overall MGP, we take the average of all SGPs attributed to the school or principal. **Table 1** illustrates how an MGP is calculated for a school or principal (note that for purposes of illustration only, Table 1 displays a score based on fewer than 16 students).

The school described in Table 1 has an MGP of 57, meaning that, on average, students who were enrolled in this school on BEDS Day performed as well or better than about 57 percent of similar students. In this example, there is just one principal for the entire school (grades 9-12), and therefore the principal's MGP is also 57. If, however, two principals were assigned to this school (for example, one to oversee grade 9 and one to oversee grades 10-12), neither principal would receive a principal-level MGP because neither was responsible for all of grades 9-12, although a school-level MGP would be reported.

TABLE 1. EXAMPLE OF STUDENTS WHO COUNT IN A SCHOOL'S OR PRINCIPAL'S MGP: SAMPLE DATA

Student	Algebra I SGP	ELA SGP	BEDS - Assessment Day Enrollment	Include Student in MGP Calculation	Grade
Student Q	-	75	Yes	Yes	11
Student R	40	50	Yes	Yes	9
Student S	70	80	Yes	Yes	10
Student T	60	55	No	No	12
Student U	40	43	Yes	Yes	11
Cumulative	150	248			

Step 1: *Sum "Algebra I SGP" and "ELA SGP" for all students to be included in the calculation across exams.*

150 + 248 = 398

Step 2: *Divide Step 1 result by the total number of SGPs.*

398 / 7 = 57

[5] A principal receives an **MGP in each subject area** if they have a minimum of 16 SGPs attributed to them for each subject. A principal receives a **combined MGP** as long as they have a total of 16 SGPs across the two subjects (e.g., eight SGPs each in ELA and Algebra I would be adequate to calculate a combined MGP).

Because Regents Exams are offered multiple times each year and students take Regents Exams at different points in their schooling, we include students and test scores using the following rules:

- Students who take the ELA or Algebra I Regents Exams prior to high school are NOT included in the MGP of a principal of grades 9-12.
- Students must have a valid prior score from grades 6, 7, or 8 ELA or mathematics (the score must be from ELA to be used in the ELA MGP model and from mathematics to be used for the Algebra I MGP model).
- Regents Exam scores are counted from the following administrations: August of the prior year (except for ninth graders), January, and June.
- If a student takes a Regents Exam more than once during the year, we use the highest test score.
- Student scores are used until the student passes the Regents Exam (after students pass, we do not want the measure alone to encourage additional test taking, which may not be necessary).
- Students are included for up to eight years after entering ninth grade.

Comparative Growth in Regents Exams Passed

Another growth measure for principals of grades 9-12 is the Comparative Growth in Regents Exams Passed (GRE) metric. Because a major graduation requirement is for students to pass five Regents Exams (more for advanced Regents diplomas), this measure compares how much progress a school's students are making from one year to the next toward passing up to eight Regents Exams (the five required Regents Exams plus up to three more). A principal's score on this measure reflects whether their students exceeded the average change in number of Regents Exams passed each year by similar students statewide. Approximately 70 percent of students in a high school are included in the GRE measure.

As with the MGP measure, students who do not meet the continuous enrollment requirement (i.e., students who were not enrolled both on BEDS day and during the June Regents test administration) are not included in the GRE measure for schools or principals of grades 9-12. The minimum sample size required to report a GRE measure score for a school or principal is 16 students, and only schools with all of grades 9-12 and principals of schools with all of grades 9-12 will receive GRE measure scores.

Table 2 provides an example of how the GRE measure works (note that for purposes of illustration only, Table 2 displays a score based on fewer than 16 students).

TABLE 2. SIMPLIFIED ILLUSTRATIVE EXAMPLE OF COMPUTING GRE SCORE

Student	Number of Regents Passed this Year for this Student	Number of Regents Passed this Year by Similar Students	Difference
Student A	1	1	0
Student B	2	2	0
Student C	1	2	-1
Student D	3	2	1
Student E	3	2	1
	Total Difference (Sum of Differences)		1
	Average Difference (Total Difference / Number of Students)		1/5=0.2

Note: 0 means student or school achieved the average (or "effective") result compared to similar students statewide.

Principal's score on this metric is 0.2. On average, students at this school are passing 0.2 Regents Exams more than similar students statewide. A zero represents average or effective results.

Because Regents Exams are offered multiple times each year and students take Regents Exams at different points in their schooling, we include students and test scores **for the comparative GRE growth measure** using the following rules:

- Regents Exam scores from the following administrations are counted: August of prior year, January, and June.
- If a student takes a Regents Exam more than once during the year, we use the highest test score.
- Students must have a valid prior score from grade 6, 7, or 8 ELA or mathematics.
- Student scores count up until they pass.
- Five required Regents Exams for students using the "traditional pathway" (one each in ELA, Math, Science, and Social Studies, plus one additional exam in Math, Science, or Social Studies) and no more than eight total exams are counted. The scores for students who exceed eight Regents Exams passed are NOT included in a school's or principal's results. Scores are limited to Regents exams, exemptions, and approved alternatives.
- Due to the COVID-19 pandemic, New York State did not administer the 2019-20 Grades 6-8 ELA and Math assessments, Regents Examinations, or approved Regents Alternatives. Additionally, the following administrations of the Regents and approved Regents Alternatives were canceled: August 2020; January, June, and August 2021; and January 2022.[6] In order to allow students to meet graduation requirements, the Board of Regents adopted regulations that granted students exemptions from taking and passing Regents examinations if they passed the course culminating in a Regents examination. These exemptions—including exemptions granted to approved Regents alternatives—continue to be incorporated into the growth model for 2023.
- Modified passing score rules for students with disabilities are used, where students may pass the four required Regents exams with a score of 55-64. Students may also use a score of 65 or higher on one Regents Exam to compensate for a score of 45-54 on a Regents exam other than ELA and math, unless a score of 65 or higher is to compensate for a score of 45-54 on a second math Regents Exam.
- All students who meet the minimum enrollment requirement (i.e., students who are enrolled on BEDS and during the June Regents Exam administration) are included in determining a school's score, whether or not they take a Regents Exam during the year.
- Students are included for up to eight years after first entering ninth grade.
- Students who dropped out are counted in the school from which they dropped out until they would have reached their fourth year since entering grade 9 or until they enrolled at another school, starting with those who dropped out in the 2019-20 school year. Students who dropped out prior to the 2019-20 school year are not counted.

Defining "Similar Students" in Grades 9-12 Growth Measures

For educator growth scores, we further refine the definition of similar students to include additional factors known to impact student performance in order to better isolate the impact of a student's teacher on their performance. That is, when computing student-level growth, we always assess a student's progress relative to students with a similar academic history and other defined characteristics. We do this because we want to capture the effects of instruction on student performance separate from the effects of factors that principals or teachers cannot control. We know that a student's starting level of academic achievement is one important factor in how well the student will achieve in the future; other factors, such as a student's English language proficiency, disability, or economically disadvantaged status, also could play a role in the student's performance. We include these characteristics in our definition of similar students. We do this to ensure that principals whose schools serve students with different characteristics are not advantaged or disadvantaged by the composition of the schools.

Table 4 provides details about how each of these characteristics is defined in the grade 9-12 principal growth measures for 2022-23. Both student- and school-level characteristics are included. We account for whether a student is an English language learner (ELL), for example, and we also account for the percentage of ELL students in a school. This type of school-level factor is intended to address peer effects, acknowledging that it may be a different experience for a student to be in school with many ELL students (and a different job for a principal to lead a school with many ELL students) than it is to be in a school with fewer ELL students. The factors shown in Table 4 are the same as those used for growth measures for teachers and principals in grades

[6] The USDE denied the Department's request for a waiver from administering 2021 assessments. As a result, following Regents examinations were administered in June 2021: Algebra I, Earth Science (written test only), ELA, and Living Environment.

4-8, with a few additions for the high school context (e.g., we also account for the total number of Regents Exams a student has passed at the time we measure growth).

TABLE 4. FACTORS USED TO DEFINE "SIMILAR STUDENTS"*

Categories	Factors
Academic History	• Up to 3 grades of student state exam scores, same subject • Optional 8th grade state exam score for the opposite subject • Optional 6th and 7th grade exam scores for the opposite subject • Average 8th grade exam scores for the student's school • New to school in a grade other than 9th • Cohort year
English Language Learners	• Student's ELL Status • Percentage of ELLs in student's ***school*** • New York State English as a Second Language Achievement Test (NYSESLAT) scores
Economic Disadvantage	• Student's economic disadvantage status • Percentage of economically disadvantaged students in student's ***school***
Students with Disabilities	• Student's disability status • Student's status for spending less than 40% of time in general education setting • Percentage of students with disabilities in student's ***school***

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

We refer to measures computed using the characteristics listed in Table 4 as adjusted measures. **Adjusted measures are used to determine growth ratings (HEDI) and scores**. Unadjusted measures, taking into account only students' prior test scores, also are reported for informational purposes only.

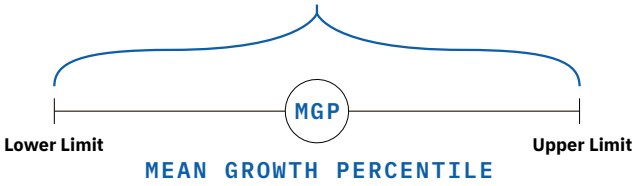
Confidence Range

All growth measures are reported with an upper limit and a lower limit that represents a 95-percent confidence range (see **Figure 2**).

All statistical calculations contain some uncertainty. Although the reported MGP or GRE score is the best estimate for any school or principal, we also can quantify a range wherein we can expect that the true answer lies. Reporting upper- and lower-limit MGPs is similar to the way other statistical calculations, such as political polls, are reported (e.g., a candidate can be ahead in the polls by 6 points, plus or minus 3 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.

FIGURE 2. MGP AND CONFIDENCE INTERVAL

The 95% confidence interval for a teacher's MGP



Wider confidence intervals are asociated with smaller classes or broader variability within classes.

We report the upper- and lower-limit MGPs because we want to be transparent about the data. We also use upper and lower limits to assign school and principal growth ratings in a way that fairly takes uncertainty in MGP and GRE measures into account.

To determine the growth rating for a school or principal of grades 9-12, we first find a growth rating and score for each of the two types of metrics: The combined MGP measure and the GRE measure. **Figures 3 and 4** show the rules used to determine these growth ratings. A growth score of 0-20 points is then assigned within each rating category (HEDI) using the scoring bands prescribed in Subpart 30-3 and the Rules of the Board of Regents (i.e., the regulations that govern evaluations pursuant to Education Law §3012-d). Higher MGPs and GRE scores receive more points.

Then we average the growth scores together, weighting them by the number of students included in each measure. **Figure 5** provides an example. The resulting score determines the State-provided growth subcomponent HEDI rating and growth score for a school or principal of grades 9-12.

FIGURE 3. HOW MGP IS CLASSIFIED INTO 3012-D GROWTH RATING FOR PRINCIPALS WITH GRADES 9-12

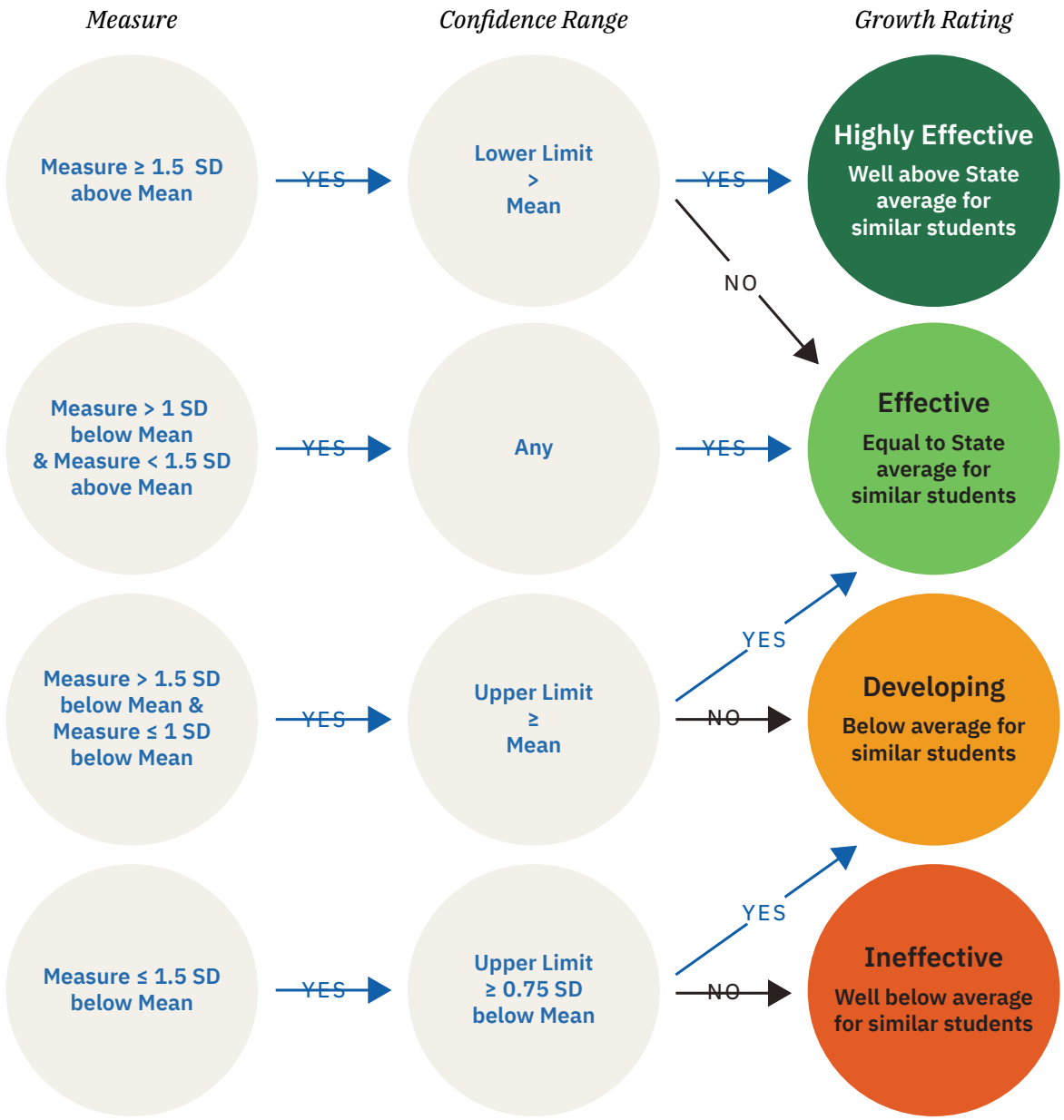
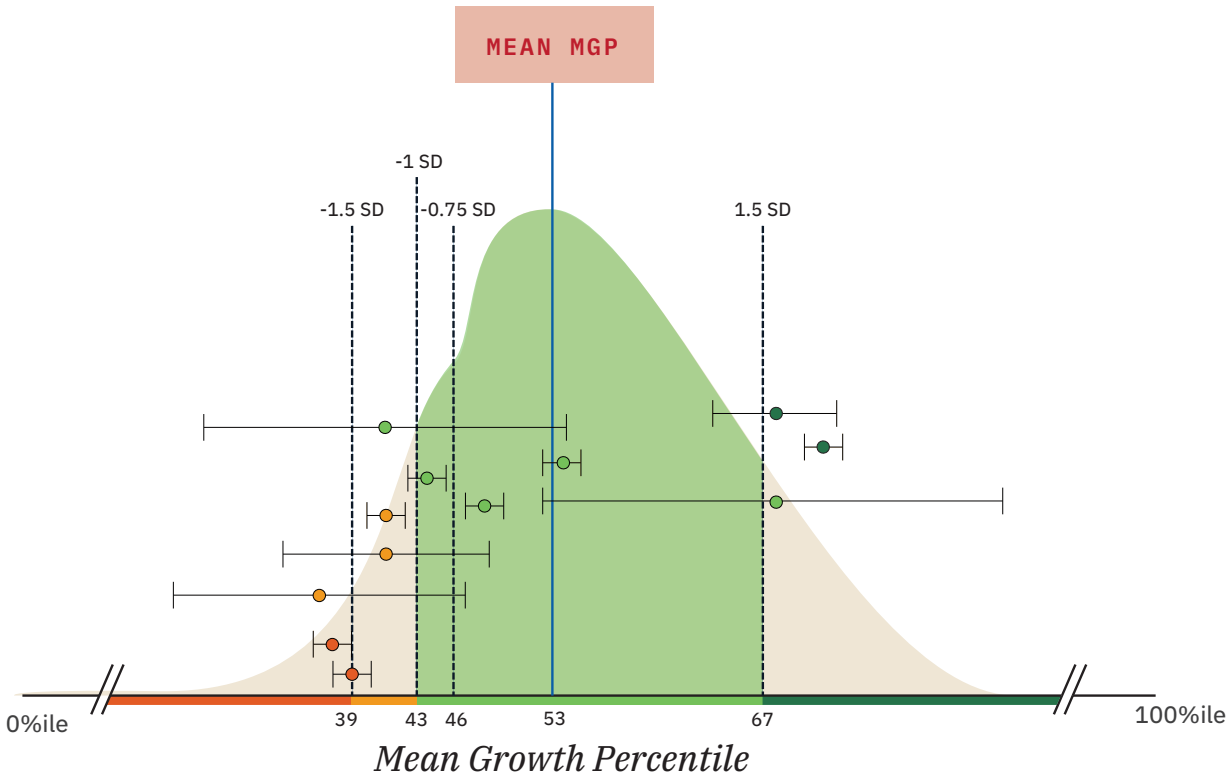


FIGURE 4. MGP CLASSIFICATION DIAGRAM



= *The confidence interval for a principal's MGP* *SD = Standard Deviation*

Ineffective	*Developing*	*Effective*	*Highly Effective*
0-12 Points	13-14 Points	15-17 Points	18-20 Points
Well below state average for similar students	Below state average for similar students	Equal to state average for similar students	Well above state average for similar students

FIGURE 5. DETERMINING GROWTH RATINGS FOR PRINCIPALS WITH GRADES 4-8 & 9-12 GROWTH MEASURES

If schools or principals have only one measure (for example, if they do not meet the minimum sample size requirement of 16 for one measure), then the final State-provided growth score and growth HEDI rating are derived from whichever measure is available.

Principals and schools serving grades 4-8 and grades 9-12 will have additional growth results factored into their final State-provided growth subcomponent rating. The next section provides details about how this process works for those schools and principals.

Sample School	Growth Rating	Growth Score	Number of 9-12 Students or Student Scores in Measure	Percentage of 9-12 Students (Measure Weight)	Score X Measure Weight	Weighted Score (Rounded)
Comparative Growth in Regents Exams Passed	Effective	17	1,635	83%	17x0.83	14.1
MGP	Developing	13	335	17%	13x0.17	2.2
9-12 Growth Subcomponent Rating/Growth Score	**Effective**		**1,970**	**100%**	7	**16**

Step 1: *Multiply growth score by measure weight to get weighted score (e.g., 17 x 0.83 = 14.1).*

Step 2: *Sum the weighted scores for the Comparative Growth Measure and MGP measure to get the overall subcomponent score (14.1 + 2.2 = 16).*

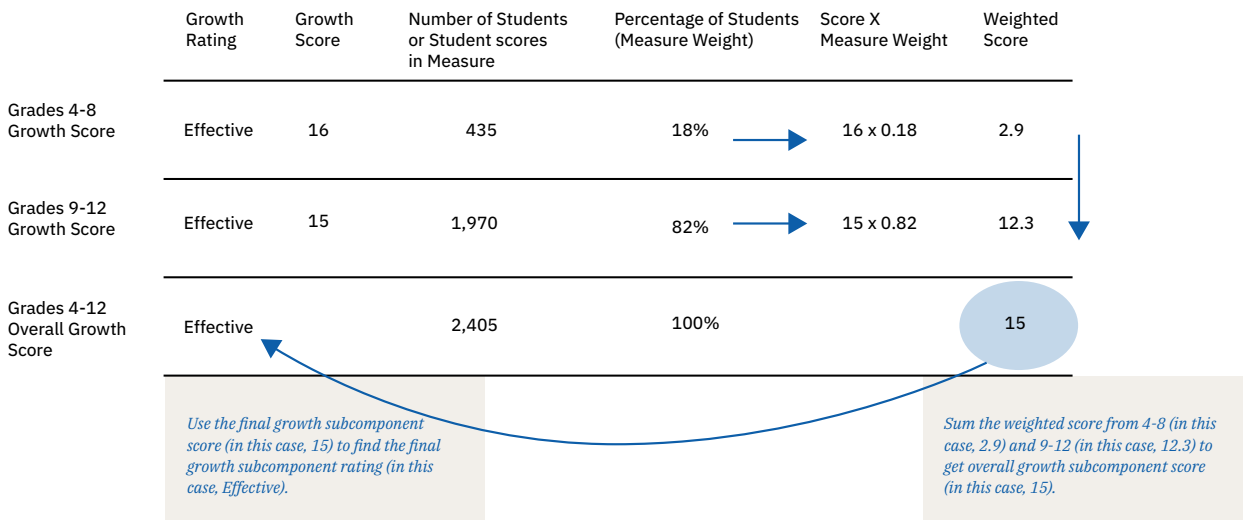
Step 3: *Use the final growth subcomponent score to find the final growth subcomponent rating (16 = Effective).*

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

To determine a final State-provided growth subcomponent rating for schools and principals serving 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 6**. Because multiple grade 9-12 measures exist, growth scores for each grade 9-12 measure are averaged together, and then weighted by the number of students in each measure, to determine an overall grade 9-12 growth rating and score (as shown in Figure 5). 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 as that shown in Figure 5, by averaging the 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 4-8 can be found in the Principal's Guide to Interpreting State-Provided Growth Scores for Grades 4-8, which is available on the NYSED Growth Measures Toolkits page.

FIGURE 6. DETERMINING GROWTH RATINGS FOR SCHOOLS WITH GRADES 4-8 & 9-12 GROWTH MEASURES



Information Available in District Files

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

- **Number of Student Scores (for MGP measure) or Student (for GRE measure):** These numbers refer to the SGPs included in an MGP or to the number of students included in the GRE measure.
- **Unadjusted Measure:** This measure is based on student growth and accounts for prior achievement scores only, without taking into consideration ELL, student with disabilities, or economically disadvantaged student characteristics.
- **Adjusted Measure:** This measure is based on student growth and is adjusted for academic history as well as ELL, student with disabilities, and economically disadvantaged characteristics at the student and school levels.
- **Upper Limit and Lower Limit:** Highest and lowest possible measure score for a 95-percent confidence range.
- **Growth Rating:** Growth rating describes the performance category (HEDI) for each individual measure (MGP or GRE) and overall for grades 9-12.
- **Growth Score:** Using scoring bands for implementation of Education Law §3012-d, a growth score of 0-20 points is computed for a principal for each individual measure (MGP or GRE) and overall for grades 9-12. The overall growth score is used in educator evaluation on the State-provided growth subcomponent.

Districts are also provided with student roster files and MGPs disaggregated by grade and subject. These files show which students were included in an educator's MGP and GRE 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 an educator's MGP and GRE. Students who do not meet the minimum enrollment requirements will have a detailed exclusion reason (this will be missing if the student was included).

For students who were included in an educator's growth score (exclusion reason of "missing"), 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 (see box below)
- 2023 State test score and prior year(s) State test score(s)
- SGP (unadjusted and adjusted)
- Cohort (years since entering ninth grade) (GRE only): Students who entered ninth grade one, two, three, four, or five or more years ago

Student Background Characteristics include:

- **Disability:** Students identified as having disabilities, based on district, BOCES, or charter school-provided information
- **ELL:** Students who have been identified as English language learners in accordance with Part 154 of the Commissioner's Regulations, based on district, BOCES, or charter school-provided information[8]
- **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

Questions for Consideration

The following questions are intended to help principals evaluate growth scores, interpret scores relative to aggregate data provided, and to provide a framework in which to consider scores in light of institutional practices at each school.

- 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 do my scores compare with the district and State?
- 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 does my MGP in ELA compare with Algebra I (if applicable)? 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 superintendent or district data personnel for assistance. If unable to obtain answers to questions, contact evaldata@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.

[8] See Part 154 of the Commissioner's Regulations.