



Information, Frequently Asked Questions, and Glossary of Terms for the Rhode Island Growth Model Visualization Tool

If you have a question that is not answered here, please send your question to Jessica.Brown@ride.ri.gov
Resources for the Rhode Island Growth Model are available at <http://www.ride.ri.gov/Assessment/RIGM.aspx>

1. What is the Rhode Island Growth Model Visualization Tool?

Rhode Island has invested a great deal of time and effort into providing informative and interactive internet-based data visualization for parents, educators, and other stakeholders in the public education system. This web-based tool shows LEA and school results from the Rhode Island Growth Model to facilitate use by educators and members of the public at large.

It provides a summary-level view of schools' and LEAs' growth and achievement results. Users simply need a relatively up-to-date version of a web browser, equipped with a plug-in to display Adobe "Flash" content, and an active internet connection. At this website users can explore and compare schools and LEAs on growth and achievement levels. LEA and school users with a need for access to student-level data will use a version of Rhode Island Growth Model Visualization Tool (to be released fall 2012). This version will allow users to explore teacher and student growth data in their LEA or school. Access to this version will be protected by a password so that confidential data are only accessible to appropriate educators .

2. What is the Rhode Island Growth Model?

The Rhode Island Growth Model is a statistical model based on student state test scores (NECAP Reading and NECAP Mathematics). Student's scores are used to create student growth percentiles (SGP), which are then aggregated to calculate median SGPs for teachers, schools, LEAs and other groups. The Growth Model requires at least two years of NECAP data in order to measure growth across years. Therefore, growth scores are only able to be calculated in grades 3-7. The model uses *teaching* year data and associates the growth with the year the content is taught, not the year which testing occurred.

3. How are Student Growth Percentiles calculated?

The RIGM uses a statistical model to create student growth percentiles (SGP). In creating SGPs students are compared to their academic peers who scored similarly on the NECAP in the past (the model goes as far back as possible to calculate a "cohort" for each student). Academic history is the *only* factor by which students are grouped. Low-performing students are compared to other low-performing students; high-performing students are compared to other high-performing students, etc. Student demographic characteristics, for example,





are not used to create a student cohort.¹ Then the most recent NECAP score distribution for each academic peer group is used to determine the percentile at which an individual student scored within his or her cohort. That percentile number is their student growth percentile (SGP). Student growth percentiles range from 1 to 99. RIDE has not yet determined what the cut points will be to categorize the percentile distribution for students.

4. What questions can the Rhode Island Growth Model help us answer?

The RIGM enables LEAs and schools to more easily identify promising or potentially struggling programs and practices and thus look deeper into what may or may not be working. It can also help answer such questions as:

- How much academic progress on the NECAP assessment did a student or group of students make in a year?
- How does an individual student's growth compare to that of students with similar prior NECAP test scores?
- Students in which schools or LEAs demonstrate better than (or less than) typical² growth as compared to students in schools or LEAs with similar overall NECAP achievement?
- Which schools or LEAs produced the highest sustained rates of growth on the NECAP assessment?

5. What should I consider when drawing conclusions from the growth model results?

Although the growth data is useful for many reasons, there is a danger in over-interpreting or misinterpreting the results of the growth model. When interpreting the results, keep in mind that currently only one year's worth of growth data is being displayed in the visualization tool; for this reason we are unable to make inferences about the long term growth trends of a school or LEA. If a school or LEA has a high median SGP in one year it does not necessarily that they will have a high median SGP the next year; likewise, if a school (or LEA) has a low median SGP in one year it does not necessarily indicate that they will have a low median SGP the next year and such conclusions should not be drawn from these data.

6. For which grades and subjects does Rhode Island report growth?

Rhode Island reports growth for reading and mathematics for grades 3 through 7. Because the RIGM requires a minimum of 2 consecutive years of teaching-year³ NECAP test data, only grades 3-7 are included in growth calculations. As such, the RIGM cannot report growth for grades 8 or 11 or for science (because science is tested only in grades 4, 8, and 11).

¹ When median SGPs (i.e., observed growth scores) are displayed for student groups, such as by demographic characteristics, the median is found for all of those students in that group/school/LEA. For example, if a median SGP for Hispanic students within a particular school is reported as 60, this indicates that of those Hispanic students in that particular school, one-half of the Hispanic students had SGPs above 60 and one-half had SGPs below 60. The SGPs are still calculated without taking student characteristics into consideration in the model other than academic history, but are being displayed by demographic (or other) group.

² "Typical" in this context indicates neither high nor low, but moderate growth that places a school's or LEA's performance in the middle of a distribution.

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%



Percentage at/above proficient





7. What year does the visualization tool display data for?

Currently the tool displays data for the 2010-11 school year. This means that students took the test in fall 2011, but the results displayed reflect content that was taught and learned during the 2010-11 school year. (See next talking point for more information on grade levels)

8. The NECAP tests prior grade level content in the fall of the current year. What does the visualization tool display- teaching year or testing year data?

The prior school year is known as the teaching year because that was the year in which the student was instructed on the GLEs/GSEs tested in the fall of the following year (or testing year). The model displays *teaching* year data; therefore a bubble for grade 6 represents how well students performed on grade 6 GLEs/GSEs when they took the test in the fall as 7th graders.

9. What does the Percent At or Above Proficiency mean in the visualization tool? What year does it reflect?

The Y-axis in the tool represents the percentage of students in the selected school (or subgroup or LEA) that were classified as Proficient or Above Proficient on the NECAP. Currently the tool displays this percentage based upon the most recent fall test (in this case the October 2011 test) and is displayed and aggregated by the teaching year grouping.

10. What students are being included in the bubbles?

The growth visualization tool includes growth data for students who completed either (or both) the NECAP Reading or Mathematics assessment in the fall of 2011. Students who completed the alternate assessment are not included in the visualization tool. Students who are placed by the LEA in an out-placement school for a period of time, but who took NECAP, are included in the data being displayed for their original LEA.

11. What is the “average” student growth at our school or LEA?

Growth scores are not reported as averages, but instead use the median. The median growth percentile for the school or LEA summarizes the growth percentiles for all students in the school or LEA providing an indication of typical growth for a school or LEA.

12. How does student growth in our school compare with other schools? How does student growth in our LEA compare with other LEAs?

The median growth percentile can be used for comparison purposes. These comparisons are made possible by using the Visualization tool by searching for an LEA and adding other LEAs.

³ The NECAP reading and mathematics tests are administered in grades 3-8 and 11 and measure student achievement based on prior school year (aka teaching year or year in which the student was taught) Grade Level Expectations (GLEs) and Grade Span Expectations (GSEs). Because the RIGM requires two or more consecutive years of teaching-year data, grades 8 and 11 NECAP results cannot yield growth data because students are not tested in grades 9 or 12.

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%





13. How does student growth differ between groups of students?

The median growth percentile for a group can be used for comparison purposes. You can currently compare students in different LEAs and schools in the visualization tool.

14. How are the different schools in our LEA doing? Are there any patterns?

The median growth percentile can be used for comparison purposes. Look at the schools' median growth percentiles in the tool to make these comparisons.

15. Is there an established minimum group size for creating a median growth percentile for a school, disaggregated group, classroom, etc?

The RIGM public data website only displays medians for a minimum number of 10 students. This is done for two reasons. First, to protect the privacy of individual students it is important not to release data that are not adequately anonymous to the public, and with small numbers of students in a given group at schools, it becomes possible to deduce the identity of each student along with his/her data.

Another reason is that groups with fewer than 10 members are not accurately characterized by the median as a few unusually high or low percentiles may skew the true center of the data. Data for groups with fewer than 10 members can, however, be better understood by looking at the complete set of numbers, rather than by attempting to capture them in a single summary statistic. Educators will be able to do this when the private version of the tool is available in the fall of 2012.

16. Are all students with student growth percentiles included in the bubble for an LEA/school/other group?

No. In order to receive a student growth percentile in a NECAP content area, a student needs to have valid scores in that content area from two consecutive years, following a normal grade progression. Every student who meets these criteria will have a student growth percentile calculated. The observed growth for a school or any subgroup of a school includes only those students who were enrolled in that school by Oct. 1 of a given academic year. Similarly the observed growth for a district or any subgroup of a district includes only those students who were enrolled in a school in that district by Oct. 1 of a given academic year, or if they were continuously enrolled in that district for two consecutive years regardless of their Oct. 1 status. NOTE: Bubbles are only displayed for groups with 10 or more students with growth scores.

17. Why are some bubbles bigger than others?

The size of a bubble reflects the size of a school's or district's *total student enrollment* (not just the number of test takers or students in tested grades). Note that total enrollment can be quite different from the total number of kids who took NECAP, or the number of kids with growth percentiles, or the number of kids included in school or district growth calculations. This is because at least two years of NECAP scores are required to calculate growth percentiles.

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%





18. Some bubbles look really small - how many kids are in those bubbles?

Public data are always protected by only showing bubbles that represent 10 or more individual growth scores. For that reason, you will never see a bubble that represents fewer than 10 individuals. This practice protects the privacy of those individuals so that it would be impossible to deduce the identity of individual students through a process of elimination.

19. If I check two different boxes in the Explore menu, does it find schools that match both of those criteria?

No, in this case the application displays schools that match either of those criteria. In order to determine whether a school matches both criteria you must toggle the check boxes one at a time while keeping track of your targets.

20. How can I remove schools from the display list?

You can only filter out a whole school level such as Middle Schools. You cannot remove one or more particular schools in this version of the application.

21. Why does the link to a school's website take me to the district's website?

If a school does not supply RIDE with a link to an up-to-date website, RIDE substitutes the district's website instead. This generally enables users to easily navigate to a school's website, provided one exists.

22. I cannot hover over a school's bubble because there are too many other bubbles around it. What can I do?

If you click on the name of the school in the alphabetical list on the right, it will be easier to see exactly where the bubble is. You can further reduce the clutter by removing school levels (e.g., Middle Schools) from the display that are irrelevant to your search. If you double click on the name of the school in the alphabetical list on the right, that school will be broken out by grades. If you are interested in a different breakout (such as ethnicity or student group) you can select one from the pull-down menu in the upper left-hand corner of the window.

Glossary of Terms

1. Academic Peer

Academic peers are defined as students in a particular grade with a similar NECAP score history. The NECAP score history examined includes all past scores available for a given student. So, for a student who has had low NECAP scores (consistently at the *Substantially Below Proficient* level) for the last few years, his or her growth is compared to students who have scored similarly. This method of using academic

percentage at/above proficient
100%
90%
80%
70%
60%
50%
40%

100%
90%
80%





peer groups also means that the Rhode Island Growth Model is fair in its estimation of growth percentiles for *all* students, because the model is blind to differences such as race, ethnicity, gender, and other demographic characteristics. To illustrate, since the growth of students in traditionally at-risk groups—such as those from families with low income—is estimated using only prior test scores, they are neither penalized nor advantaged for making strong academic progress simply for being a member of an at-risk group.

2. English Language Learner (ELL) / Limited English Proficient (LEP)

The phrases "English-language learner" and "limited-English proficient" and their respective acronyms, "ELL" and "LEP," are similar in meaning. A child is ELL or LEP when they speak another language at home AND their limited English abilities slow down their learning in school.

3. Free/Reduced-Price Lunch

The National School Lunch Program is a federally assisted meal program that provides nutritionally balanced, low-cost or free lunches to children each day. School districts that choose to take part in the lunch program get cash subsidies and donated commodities from the USDA for each meal they serve. Any child at a participating school may purchase a meal through the program. In order to qualify for this program, you must be a resident of the State of Rhode Island and a parent or primary caregiver responsible for a child(ren) who attends school (high school or under). *Free Lunch* eligibility: children from families with incomes at or below 130% of the poverty level. *Reduced-Price Lunch* eligibility: children from families with incomes between 130% and 185% of the poverty level.

4. Growth

For an individual student, growth is a measure of progress in academic achievement. For some states, this measure might simply be a change (a gain or a loss) in test scores from one year to the next. For Rhode Island, growth is not expressed in test score point gains or losses, but in percentiles of gain. An individual's gain or loss in test score points is used as the basis for a growth calculation, using a statistical model called *quantile regression*. The calculations use all available test scores to estimate a student growth percentile for each student. The student growth percentile score tells us how a student's test score change from one year to the next compares with that of other similar students (members of his or her academic peer group). In this way, Rhode Island's measure of growth is a *normative* rather than an *absolute* one.

5. Growth Model

For K-12 education, the phrase "growth model" describes a method of measuring individual student progress on statewide assessments by tracking the scores of the same students from one year to the next. Traditional student assessment reports tell you about a student's achievement, whereas growth reports tell you how much change or "growth" there has been in achievement from year to year.

100%
90%
80%
70%
60%
proficient ?





6. Individual Education Plan (IEP)

An IEP is designed to meet the unique educational needs of one child, who may have a disability, as defined by federal regulations. In all cases the IEP must be tailored to the individual student's needs as identified by the IEP evaluation process, and must especially help teachers and related service providers (such as paraprofessional educators) understand the student's disability and how the disability affects the learning process.

7. LEA

A *Local Education Agency* or LEA, is a commonly used synonym for a public school district or an entity which operates local public primary and secondary schools. In Rhode Island, charter schools are also LEAs.

8. Median

The median in this context is found by taking all the individual SGPs of the students in the group being analyzed, ordering them from lowest to highest, and then identifying the middle score, which is the median. The median may not be as familiar to people as the *mean* or *average*, but it is nonetheless similar in interpretation. Medians have been shown to be more appropriate to use than averages when summarizing a collection of percentile scores.

9. Median Growth Percentile (also called **Observed Growth** in Visualization Tool)

The median growth percentile summarizes student growth rates by district, school, grade level, or other group of interest. The visualization tool uses the phrase "Observed Growth" to refer to the median student growth percentile.

10. Minimum Group/Cell Size

The RIGM public data website only displays medians for a minimum number of 10 students. This is done for two reasons. First, to protect the privacy of individual students it is important not to release data that are not adequately anonymous to the public, and with small numbers of students in a given group at schools, it becomes possible to deduce the identity of each student along with his/her data.

Another reason is that groups with fewer than 10 members are not accurately characterized by the median as a few unusually high or low percentiles may skew the true center of the data. Data for groups with fewer than 10 members can, however, be better understood by looking at the complete set of numbers, rather than by attempting to capture them in a single summary statistic. Educators will be able to do this when the private version of the tool is available in the fall of 2012.



11. NECAP

The New England Common Assessment Program or “NECAP” as it’s commonly referred to comprises several content areas administered to students in grades 3 through 8 and 11. While science and writing are both NECAP tests administered to RI students, only the NECAP mathematics and reading tests are used in growth calculations. Further, only grades 3-7 are included in calculations. Because the RIGM requires two or more consecutive years of teaching-year data, grades 8 and 11 NECAP results cannot yield growth data because students are not tested in grades 9 or 12.

12. Proficiency

NECAP proficiency is an indicator of a student’s ability to demonstrate minor gaps in the prerequisite knowledge and skills needed to participate and perform successfully in instructional activities aligned with the GLE at the current grade level. It is likely that any gaps in prerequisite knowledge and skills demonstrated by these students can be addressed during the course of typical classroom instruction.

13. Race/Ethnicity

Race and ethnicity, as defined by the Federal Office of Management and Budget (OMB) and the United States Census Bureau, are self-identification data items in which individuals choose the race or races with which they most closely identify, and indicate whether or not they are of Hispanic or Latino origin (ethnicity). States are required to report aggregated data to the U.S. Department of Education according to the following seven categories: American Indian or Alaska Native; Asian; Black or African American; Native Hawaiian or Other Pacific Islander; White; Two or more races; Hispanic of any race.

14. Rhode Island Growth Model (RIGM)

The Rhode Island Growth Model (RIGM) is a statistical model used to calculate each student’s progress on the NECAP Reading and Mathematics tests. It is also a tool for displaying student, school, and district results to educators and to the public. Student’s scores are used to create student growth percentiles (SGP), which are then aggregated to calculate median SGPs for teachers and schools. The RIGM requires at least two consecutive years of NECAP data in order to measure growth across years. Therefore, growth scores are only able to be calculated for grades 3-7.

15. Student Growth Percentile (SGP)

A **student growth percentile** (SGP) defines how much relative growth a student made. The Rhode Island Growth Model (RIGM) serves as a way for educators to understand how much growth a student makes from one year to the next relative to a student’s academic peers. More specifically, the RIGM compares each student’s current achievement to students in the same grade throughout Rhode Island who had similar NECAP scores in past years. The model then produces a student growth percentile much like children’s height and weight percentiles that

100%

90%

80%

70%





pediatricians share with parents. For example, a child who is in the 76th percentile in weight is as heavy as or heavier than 76% of other children of the same age. Similarly, SGP scores have a relatively straightforward interpretation. In terms of the RIGM, a SGP of 60 indicates the student grew as well or better than 60% of his/her academic peers.

16. State-Operated Schools

State-operated schools are those that are managed by RIDE, which include William J. Davies, Jr. Career-Technical High School, Metropolitan Career-Technical School, Rhode Island School for the Deaf, and the Department of Children, Youth , and Families (DCYF).

17. Teaching Year

The NECAP reading and mathematics tests are administered in grades 3-8 and 11 and measure student achievement based on prior school year Grade Level Expectations (GLEs) and Grade Span Expectations (GSEs). The prior school year is known as the teaching year because that was the year in which the student was instructed on the GLEs/GSEs tested the following year (or testing year). Because the RIGM requires two or more consecutive years of teaching-year data, grades 8 and 11 NECAP results cannot yield growth data because there is no NECAP that measures grade 8 GLEs or grade 11 GSEs.

18. Title I

Title I, Part A (Title I) of the Elementary and Secondary Education Act (ESEA) provides financial assistance to local educational agencies (LEAs) and schools with high numbers or high percentages of children from low-income families to help ensure that all children meet challenging state academic standards. Federal funds are currently allocated through four statutory formulas that are based primarily on census poverty estimates and the cost of education in each state. Schools in which children from low-income families make up at least 40 percent of enrollment are eligible to use Title I funds for schoolwide programs that serve all children in the school. LEAs also must use Title I funds to provide academic enrichment services to eligible children enrolled in private schools.

19. Urbanicity

Urbanicity is the degree to which a geographical unit is urban. When referring to the level of urbanicity for each district, RIDE maintains a standard policy of categorizing school districts into the following:

- Urban Districts:** Central Falls, Pawtucket, Providence, Woonsocket
- Urban Ring Districts:** Cranston, East Providence, Johnston, North Providence, Newport, Warwick, West Warwick
- Suburban Districts:** All other districts including Charter and State Operated Schools.

For Further Information on the RIDE website, visit <http://www.ride.ri.gov/Assessment/RIGM.aspx>

100%

90%

80%

70%

