

The Rhode Island Growth Model

An Introductory Guide for Educators

September 2016



RIDE Rhode Island
Department
of Education



By the end of this presentation you will be able to answer the following questions:

- What is the Rhode Island Growth Model (RIGM)?
- How is growth calculated?
- Why is a growth model useful?



What is the RIGM?

- A statistical model that measures each student's academic growth based on PARCC results
- However, this growth is not expressed in gains or losses on test scores
- Growth is expressed in **Student Growth Percentiles**

A student growth percentile describes a student's current achievement *relative* to his/her academic peers who scored similarly on previous administrations of the PARCC assessments.



Student Growth Percentiles (SGP)

➤ Percentiles ≠ Percentage

100 students take a test with 10 questions

If Alisha correctly answers 8 out of 10 questions, then her percentage of correct answers is 80.

If the other 99 students all receive percentages lower than 80, then Alisha has outperformed 99% of all students. In other words, she is in the 99th percentile.

- Therefore, end result is a normative comparison, rather than an absolute one
- Percentiles range from 1 to 99 – a higher percentile is better but a low percentile still signifies growth



How is growth calculated?

- A statistical model called Quantile Regression is used to calculate student growth percentiles
- In order to calculate a SGP, each student's growth is compared to the growth of his/her academic peers (students who scored similarly on previous assessments)
- Academic history is the only factor by which students are grouped
- At least 2 consecutive PARCC scores are needed to calculate a SGP



How is growth calculated?

Student Growth Percentiles (SGP)

A student growth percentile describes a student's current achievement relative to his/her academic peers who scored similarly on previous administrations of the PARCC assessments.

1. In 3rd grade, Alisha obtains a scale score of 724 on PARCC English Language Arts/Literacy Assessment.
2. The following year, she takes the 4th grade PARCC English Language Arts/Literacy Assessment.
3. But before her 4th grade SGP is calculated, Alisha is grouped with academic peers who also attained a scale score of 724 in 3rd grade.
4. Based on her performance on the 4th grade Language Arts/Literacy Assessment relative to that of her academic peer group, Alisha's SGP is then calculated.

A Visual representation: How is growth calculated?

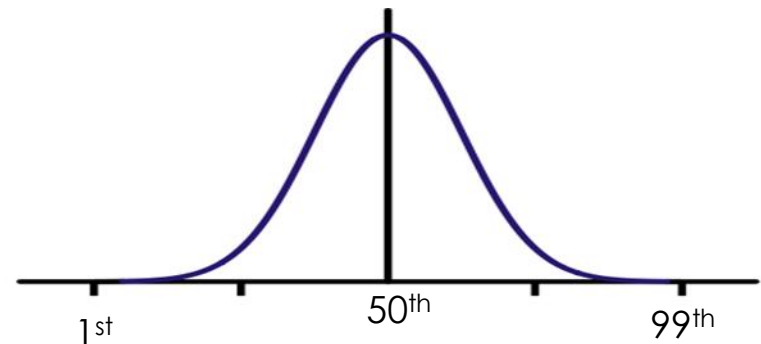


Grade 3: PARCC English Language
Arts/Literacy Assessment

Alisha: 724

Academic Peers: 724

Grade 4: PARCC English Language
Arts/Literacy Assessment



Alisha
750



Why is the RIGM useful?

The Rhode Island Growth Model enables us to get a fuller picture of student achievement by looking at growth in addition to whether a student is on track for the next grade level or course.

Currently, PARCC results can tell us whether Alisha has met grade-level expectations. But with the growth model, we can also determine how much academic growth Alisha has made while making valid inferences and comparisons in performance.

The RIGM allows us to ask:

- ✓ Are districts, schools, and students making progress?
- ✓ What level of progress is being made?
- ✓ Are there gaps in growth between subgroups?



Why is the RIGM model useful?

- The growth model has “stretch,” meaning students at the very bottom of the scale have an equal chance to obtain a high SGP as students at the very top of that scale
- It can encourage students/schools/districts with low PARCC scores to demonstrate high growth
- Focusing on growth can discourage complacency among high-performing students/schools/districts



The RIGM & Median SGPs

The Growth Model Visualization Tool uses Median SGPs to summarize data for districts, schools, and other student groups.

What are Median SGPs?

- A median is a measure of central tendency
- A median SGP is the number at which half of the students in the group have a higher growth percentile and half have a lower percentile



How are Median SGPs calculated?

Student's Name	SGP
Ross	5
Catherine	14
Ray	25
John	40
Lauren	51
Brian	56
Amanda	60
James	62
Marcus	70
Toni	82
Jasmine	85
Morgan	90
Sam	96

- Imagine that the students listed on the left are all the students in a school. Note that they are sorted from lowest to highest SGP.
- The point at which half of the students have a higher SGP and half have a lower SGP is the median for that school.
- The median SGP can be calculated for a district, a class, or another student group.

*Median SGP for the school



Let's review the questions...

- What is the Rhode Island Growth Model?
 - A statistical model that measures each student's academic growth based on PARCC results.
- How is growth calculated?
 - Using student growth percentiles, which describe students' current achievement relative to their respective academic peers who scored similarly on previous PARCC assessments.
- Why is a growth model useful?
 - It enables us to look at growth in addition to grade-level expectations; it places the same high expectations for progress on all students regardless of where they are academically; it encourages low-performing students/schools to demonstrate high growth while discouraging complacency among those who are high-performing.



Visit the RIDE website:

<http://www.ride.ri.gov/RIGM>

Email us:

RIGM@ride.ri.gov



RIGM Online Tool



Information on:
Districts & LEAs
Schools
Math & ELA
SY 2010-11
Grades 4-11
Subgroups

Link to RIGM Online Tool:
www.ride.ri.gov/RIGM-GMV