

Performance Levels

Following the adaptive placement or benchmark tests, students are classified into one of (5) performance levels. Performance levels describe students' performance when instructed on grade-level appropriate skills and concepts. Combined with the Quantile® measure, the performance levels can be used to group students and to determine appropriate instruction.

		PERFORMANCE LEVEL				
		Far Below Basic	Below Basic	Basic	Proficient	Advanced
GRADE LEVEL/COURSE	3	EM to 130Q	135Q to 235Q	240Q to 385Q	390Q to 770Q	775Q & Above
	4	EM to 275Q	280Q to 385Q	390Q to 525Q	530Q to 910Q	915Q & Above
	5	EM to 340Q	345Q to 555Q	560Q to 685Q	690Q to 1005Q	1010Q & Above
	6	EM to 430Q	435Q to 675Q	680Q to 805Q	810Q to 1075Q	1080Q & Above
	7	EM to 515Q	520Q to 795Q	800Q to 865Q	870Q to 1150Q	1155Q & Above
	8	EM to 605Q	610Q to 835Q	840Q to 945Q	950Q to 1220Q	1225Q & Above
	Algebra Readiness†					
	Algebra I†					
	HS Math I†	EM to 680Q	685Q to 895Q	900Q to 1015Q	1020Q to 1295Q	1300Q & Above
	Geometry†					
	HS Math II†	EM to 730Q	735Q to 1065Q	1070Q to 1155Q	1160Q to 1350Q	1355Q & Above

† Algebra Readiness = grade level 8, Algebra I and HS Math I = grade level 9, Geometry and HS Math II = grade level 10.

Advanced: Students exhibit advanced performance when tested on grade-level skills and concepts.

Teachers should consider adjusting the pathways of these students to a higher grade level.

Proficient: Students exhibit appropriate performance when tested on grade-level skills and concepts.

These students should experience success on a grade-level pathway with few remediation lessons included.

Basic: Students exhibit some appropriate performance when tested on grade-level skills and concepts.

These students should experience success on a grade-level pathway with some remediation lessons included.

Below Basic: These students generally do not exhibit minimally appropriate performance when tested on grade-level skills and concepts. *These students should be able to work back up to grade-level material with precursor and/or remediation lessons included.*

Far Below Basic: These students generally do not exhibit any appropriate performance when tested on grade-level skills and concepts. *These students may not be able to work back up to grade-level material with the included precursor and remediation lessons. Teachers should monitor students' progress to determine if an alternative pathway is necessary.*

Norm-referenced Interpretations

Norm-referenced interpretations – **NCE (Normal Curve Equivalent)** and **Percentile Rank** – appearing adjacent to student Quantile® measures express how a student performed on the test compared to other students of the same age or grade.

Norm-referenced interpretations **do not** provide any indication about what a student can or cannot understand. While norm-referenced interpretations may provide minimal value at the student level, they can be useful – and are often required – at school and district levels for program evaluation and to ensure funding. The NCE, in particular, was developed specifically for use in the evaluation of Title I programs and is most commonly used to aggregate “gain scores” from different programs.

The primary difference between NCE and Percentile Rank is their ability to be used to compare student populations. Percentile Rank is limited in its use for comparing results across tests and student populations, while the NCE provides a valid and reliable framework to compare student scores individually, in aggregate and on average across tests or student populations.

- **Percentile Rank:** The percentile rank of a Quantile measure indicates the percentage of scores less than or equal to that score. Percentile ranks range from 1 to 99. For example, if a student scores at the 65th percentile, it means that the student performed as well as, or better, than 65% of his or her peers (the norm group). This also means that 35% of his or her peers scored higher than the student. Percentile rank **does not** refer to the percentage of items answered correctly. A limitation of percentile rank is that all the points along the percentile distribution **do not** represent equal intervals. As a result, **percentile rank provides limited ability to compare achievement for groups of students.**
- **NCE:** The NCE is similar to a percentile rank, but **provides extensive ability to compare achievement for groups of students.** Like the percentile rank, the NCE scale ranges from 1 to 99. Like the percentile rank, an NCE indicates the percentage of scores less than or equal to that score. Unlike the percentile rank, the NCE is based on an equal interval scale, making it extremely useful in comparing student achievement. NCEs provide the ability to compare the results of **different** tests for a student or group of students. NCEs also provide the ability to compare results for different students or groups of students on the **same** test.

For example, if the same student received an NCE score of 45 on a math test and an NCE score of 65 on a reading test, it means that the student scored 20 points higher on the reading test as compared to the math test. Similarly, in Think Through Math, if the same student received an NCE score of 50 on the adaptive placement test and an NCE score of 70 on the first benchmark test, it means the student experienced a gain of 20 points between the adaptive placement test and the first benchmark test.

SAMPLE CLASSROOM SCENARIOS

As educators, we know that students' have unique needs. A student's Quantile measure and Performance Level coupled with his/her Think Through Math Instructional Grade Level and pathway performance provide multiple data points to allow Think Through Math to provide students with a more individualized experience. Teachers working with a classroom are likely to encounter the following scenarios.

Scenario 1: Different Quantile Measures and Performance Levels, but the same Instructional Grade Level

Mr. Sanchez administers the Placement test to each of his fifth-grade students. When he reviews the report, he notices that Tom is classified as Below Basic with a Quantile measure of 500Q and Tina is classified as Proficient with a Quantile measure of 850Q . He wonders why they are both set to Instructional Grade Level 5.

Whenever possible, students receive on-grade level instruction. Tom's Quantile measure is on the low side of the range for Instructional Grade Level 5, but not below the minimum Quantile measure for Grade 5 instruction. Tina's Quantile measure is above the range for Instructional Grade Level 5 and is in the Proficient range for Grade 5 at the end of the school year, but the Placement test results will not place the student in a grade higher than the student's nominal grade. So both Tom and Tina have an Instructional Grade Level of 5.

Scenario 2: Different Performance Levels, but similar Quantile Measures and the same Instructional Grade Level

Ms. Greene administers the Placement test to her Grade 5 class. Leo's Quantile measure is 550Q and Latisha's Quantile measure is 590Q. She is surprised that Leo and Latisha are in different Performance levels because they both have an Instructional Grade Level of 5 and similar Quantile measures. Latisha is classified as Basic and Leo is classified as Below Basic.

The meaning of Performance Levels has been improved this year to mean how well the student is expected to perform on grade-level content. The Quantile measures for the Performance Levels are based on several factors, including the Quantile measures of instructional materials across the country, norms that have been established for students across the country, and the meaning of these bands already established in different states.

In Ms. Greene's case, Leo and Latisha are in different Performance Levels because the maximum Quantile measure for the Grade 5 Below Basic range is 555Q and the minimum Quantile measure for the Grade 5 Basic range is 560Q. So, even though Leo and Latisha have similar Quantile measures, they are below and above the "dividing line" between Basic and Below Basic performance.

SAMPLE CLASSROOM SCENARIOS (CONT'D)

Scenario 3: Different Quantile Measures and Instructional Grade Levels, but the Same Performance Level

Mr. Thompson's Grade 5 students take the Placement test and he analyzes the results. Something on the report puzzles him. He notices that Maria and Mark have very different Quantile measures -- Maria's Quantile measure is 325Q and Mark's Quantile measure is 115Q. He sees that they are set to receive instruction at different levels -- Maria has an Instructional Grade Level of 4 and Mark has an Instructional Grade Level of 2 --- but he doesn't understand why they are both set to a Performance Level of Far Below Basic.

With the meaning of Performance Levels improved this year, Performance Levels and Instructional Grades do not necessarily coincide as they did last year. Mr. Thompson has two Grade 5 students with Quantile measures below 345Q, which means they are both classified as Far Below Basic. Because Mark's Quantile measure is significantly lower than Maria's, Mark is receiving instruction at a level lower than Maria.

Scenario 4: Different Instructional Grade Levels, but similar Quantile Measures and the Same Performance Level

Ms. Gordon gives the Placement test to her fifth graders, but something on the report doesn't add up to her. She sees that Diego and Dana both have a Performance Level of Below Basic, which makes sense. She also notes that Diego has a Quantile measure of 465Q and Dana has a similar Quantile measure of 500Q. What she is questioning on the report is why they have different Instructional Grade Levels -- Diego is set to work below grade at Instructional Grade Level of 4 and Dana is set to work on grade at Instructional Grade Level 5.

A student's Quantile measure helps to ensure that he or she will receive instruction at the appropriate level. While Dana's Quantile measure of 500Q falls within the range for students to receive Grade 5 instruction, Diego's Quantile measure falls just below the minimum Quantile measure for Grade 5 instruction. So Diego and Dana are working at different Instructional Grade Levels, but both are receiving the instruction appropriate for them.

SAMPLE CLASSROOM SCENARIOS (CONT'D)

Scenario 5: Different Assignment of a Booster Pack, but the Same Performance Level of Far Below Basic

Miss Lee has her Grade 5 class take the Placement test and she was not surprised to see that both Cheri and Cody have a Performance Level of Far Below Basic. On the report, she sees that Cheri has a Quantile measure of 130Q and Cody has a Quantile measure of 275Q. However, Miss Lee was surprised to learn that Cheri received a Booster Pack at the beginning of her pathway while Cody did not. She wondered why this was the case.

A Booster Pack is a group of precursor lessons that are assigned at the start of a pathway if a student's instructional grade level is 3 or more grade levels below his or her nominal grade. Cheri's Quantile measure of 130Q places her at Instructional Grade Level 2, which is 3 grade levels below her nominal grade, Grade 5. This qualifies her for a Booster pack. On the other hand, Cody's Quantile measure of 275Q places him at Instructional Grade Level 3, which is only 2 grades below his nominal grade, Grade 5. This means that Cody does not qualify for a Booster Pack. So, even though Cheri and Cody both have a performance level of Far Below Basic, only Cheri receives a Booster Pack.



TTM BENCHMARK: USING THE QUANTILE® FRAMEWORK TO INFORM INSTRUCTION

Resources Provided by Think Through Math

[Measuring Student Progress with Think Through Math and the Quantile® Framework \(PDF\)](#)

Provides an overview of TTM's new ability to measure on-going student progress by integrating The Quantile® Framework for Mathematics by MetaMetrics®.

[Screening, Placement, and Progress Monitoring: A Sampler of Items \(PDF\)](#)

Provides an overview of TTM's new adaptive placement and benchmark tests and a representative sampling of items found on the tests.

Resources Provided by MetaMetrics®

[Large Quantile® Map \(PDF\)](#)

Provides a high-level overview of The Quantile® Framework primarily for teachers. It illustrates the idea that the Quantile® Framework is an interconnected web of skills and concepts with varying degrees of difficulty.

[Small Quantile® Map \(PDF\)](#)

Designed for teachers to inform parents about The Quantile® Framework, such as in parent/teacher conferences. It highlights skills and concepts that students of different grades should be learning and shows the progression of related skills.

[Linking Assessment with Mathematics Instruction \(PDF\)](#)

Fact sheet about The Quantile® Framework, which uses a common, developmental scale to measure student mathematics achievement, the difficulty of mathematical skills and concepts, and the materials for teaching mathematics.

[A Parent's Guide to The Quantile® Framework for Mathematics \(PDF\)](#)

Provides an explanation of The Quantile® Framework for parents and introduces tools to build a customized list of materials and activities that match a child's unique ability level and learning goals.

[Quantile Measures in the Classroom and at Home \(PDF\)](#)

Provides information for teachers and parents about how to use The Quantile® Framework in the classroom and at home.

[Math Skills Database \(Website\)](#)

Searchable database containing targeted, free resources matched to students by Quantile® measure and math content.

[Quantile® Teacher Assistant \(Website\)](#)

Helps teachers locate resources that can help with instruction and identify skills that are most relevant to daily instruction. The Quantile® Teacher Assistant has been aligned with state mathematics curriculum standards to make it directly applicable to use in the classroom.

[Find Your Textbook \(Website\)](#)

Searchable textbook database to help teachers, parents and students find the Quantile® measure for each lesson in a textbook and find targeted resources to supplement textbook material.

[Research & Publications \(Website\)](#)

Provides links to published research, brochures, articles and videos about The Quantile® Framework.