



# QUANTILE FRAMEWORK FOR MATHEMATICS

## Linking Assessment With Mathematics Instruction

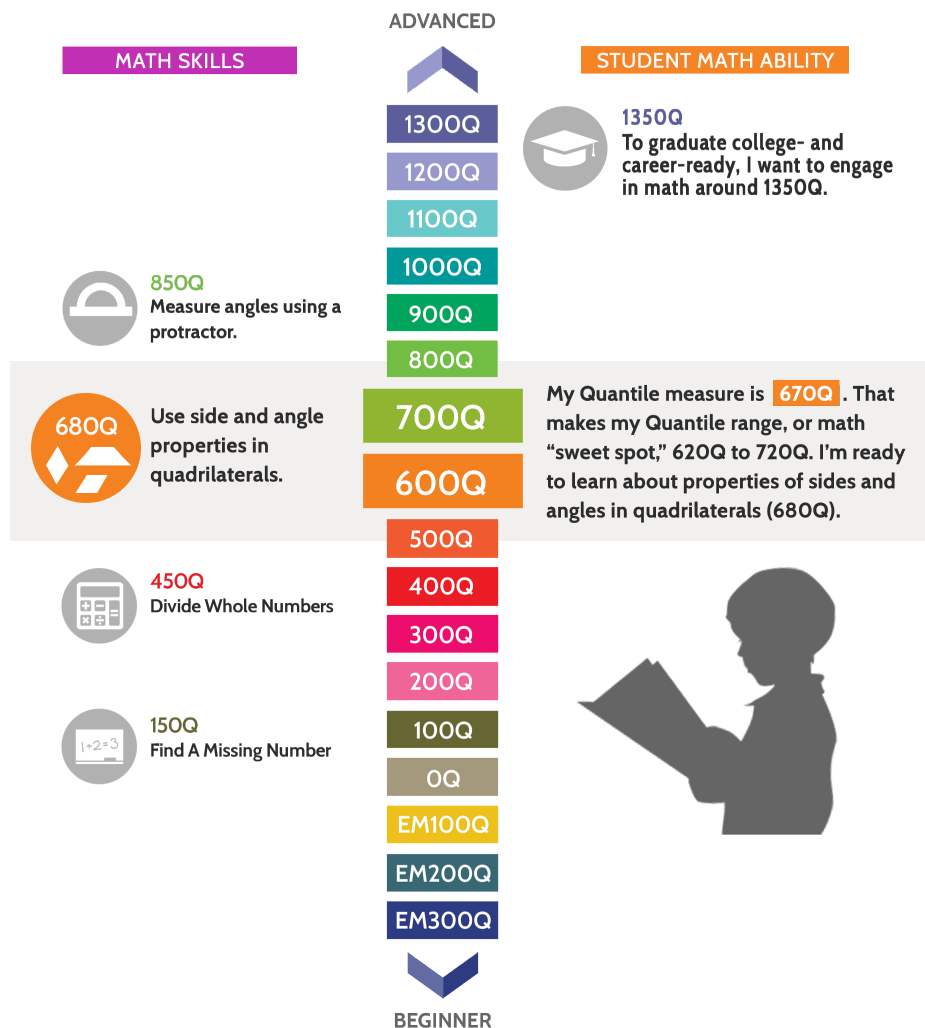
More than 700 textbooks and software programs with over 90,000 lessons, as well as over 4,500 online and downloadable resources, have been calibrated to the Quantile® scale.

## WHAT IS THE QUANTILE FRAMEWORK?

The Quantile Framework® for Mathematics measures both the difficulty of mathematical content and a student's readiness to learn new mathematics. Knowing the mathematical difficulty of specific materials and the abilities of individual students, you can:

- **Identify** the mathematical skills that a student is ready to learn.
- **Target** instruction with level-appropriate tasks and materials.
- **Monitor** student growth in math over time.
- **Forecast** performance on high-stakes assessments.
- **Communicate and engage** with students and parents regarding math progress.

### The Quantile Scale



Assessments used in all 50 states are linked with the Quantile Framework and report student Quantile measures – a number followed by a "Q." The Quantile scale ranges from Emerging Mathematician (below 0Q) to above 1600Q. As a student's Quantile measure increases, the mathematics concepts they are ready to learn become more complex. Research indicates that students need to engage in mathematics around 1350Q to be ready for the math demands of college and career.

Quantile measures describe students' mathematics ability, not their grade level. Within a given grade level, there will be a range of student Quantile measures as shown in this chart ([Quantiles.com/educators/grade-range](https://www.quantiles.com/educators/grade-range)).

## Featured Free Tools



Chart students' Quantile measures into the **QUANTILE GROWTH PLANNER™** to see if they're on the path to college and career readiness or if they need additional support.

[VISIT CCR.QUANTILES.COM](https://www.qlt.org/CCR/quantiles.com)



Search the **MATH SKILLS DATABASE** for Quantile skills and concepts that align with your state's math standards. The database contains free activities and resources matched by Quantile measure and math content.

[VISIT QUANTILES.COM/EDUCATORS/MATH-SKILLS-DATABASE](https://www.qlt.org/EDUCATORS/math-skills-database)



Use the **QUANTILE TEACHER ASSISTANT** to identify resources for math lessons. This tool is aligned with each state's math standards.

[VISIT QUANTILES.COM/EDUCATORS/QUANTILE-TEACHER-ASSISTANT](https://www.qlt.org/EDUCATORS/quantile-teacher-assistant)



Find targeted resources and the Quantile measure for each textbook lesson in the **FIND YOUR TEXTBOOK** search tool.

[VISIT QUANTILES.COM/EDUCATORS/FIND-YOUR-TEXTBOOK](https://www.qlt.org/EDUCATORS/find-your-textbook)

## SUPPORTING STUDENTS AT ALL LEVELS

The Quantile Framework defines over 550 mathematics skills and concepts. Each of these has a measure that shows how difficult one concept is in relation to the others. Using the Quantile Framework, you can identify gaps in students' conceptual understanding of math that may frustrate or impede their success. You can also find topics for math enrichment for students ready for more challenge.

In the example below, some students are ready for the 680Q lesson, while others may need to master some prerequisite skills first. More advanced students may be ready to go beyond the focus skill to something more challenging.

**TODAY'S LESSON: PROPERTIES OF QUADRILATERALS**

<b>FOCUS SKILL</b>	<div style="display: flex; align-items: center;"> <div style="margin-left: 20px;"> <div style="background-color: #f96; padding: 5px; border: 1px solid black; text-align: center;"><b>TODAY'S LESSON (680Q)</b></div> <p>Which quadrilateral is a rectangle and a rhombus?</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> </div> <div style="text-align: center;"> </div> </div> </div> </div>
<b>PREREQUISITE SKILL</b>	<div style="display: flex; align-items: center;"> <div style="margin-left: 20px;"> <div style="background-color: #f96; padding: 5px; border: 1px solid black; text-align: center;"><b>PREREQUISITE ACTIVITY (530Q)</b></div> <p>Which angle appears to be an acute angle?</p> <div style="display: flex; justify-content: space-around;"> </div> </div> </div>
<b>IMPENDING SKILL</b>	<div style="display: flex; align-items: center;"> <div style="margin-left: 20px;"> <div style="background-color: #2e8b57; color: white; padding: 5px; border: 1px solid black; text-align: center;"><b>ENRICHMENT ACTIVITY (1000Q)</b></div> <p>Polygon KLMNP is concave.</p> <p>Which segment, with endpoints on the interior of the polygon, shows that KLMNP is concave?</p> </div> </div>

## DIFFERENTIATING INSTRUCTION

With the various tools associated with the Quantile Framework, educators can use Quantile measures to differentiate instruction for the wide range of student abilities in any classroom. Working with struggling students is made easier by identifying activities and resources to build students' prerequisite skills and conceptual understanding. Likewise, working with students needing enrichment is also made easier by identifying activities and resources to plan instruction for focus and impending skills and concepts.