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

**Math Skills**

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<thead>
<tr>
<th>MATH SKILLS</th>
<th>STUDENT MATH ABILITY</th>
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<tbody>
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<td>1300Q</td>
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<td>BEGINNER</td>
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**Definitions**

- **850Q**: Measure angles using a protractor.
- **680Q**: Use side and angle properties in quadrilaterals.
- **450Q**: Divide whole numbers.
- **150Q**: Find a missing number.
- **1350Q**: To graduate college- and career-ready, I want to engage in math around 1350Q.

**Assessments**

- 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 careers.

**Quantile measures**

- 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).

**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.**
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.

HOW EDUCATORS USE QUANTILE MEASURES

Search the QUANTILE® 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

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

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

VISIT QUANTILES.COM/EDUCATORS/FIND-YOUR-TEXTBOOK

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.

TODAY’S LESSON: PROPERTIES OF QUADRILATERALS

ON TARGET

My Quantile measure is 680Q. I’m ready for today’s lesson.

TODAY’S LESSON (680Q)
Which quadrilateral is a rectangle and a rhombus?

BELOW TARGET

My Quantile measure is 530Q. Need help preparing for this topic. I will review angles.

PREREQUISITE ACTIVITY (530Q)
Which angle appears to be an acute angle?

ABOVE TARGET

My Quantile measure is 800Q. I am going to be challenged with an enrichment activity.

ENRICHMENT ACTIVITY (1000Q)
Polygon KLMNP is concave. Which segment, with endpoints on the interior of the polygon, shows that KLMNP is concave?