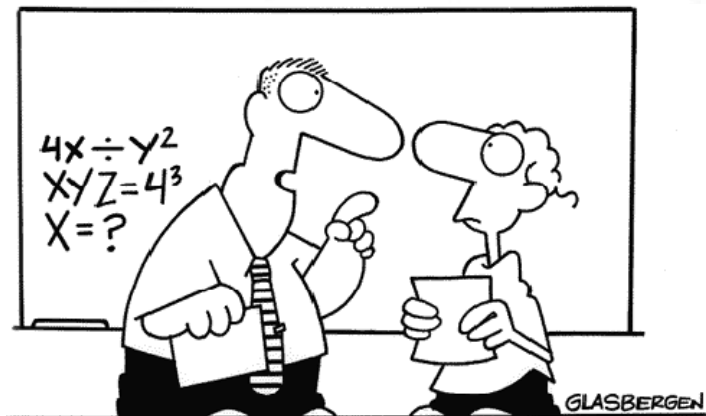


Quantiles:

Powerful New Way to Track Student Progress

Jan Scott, Ph.D.
jscott@scholastic.com

National Council of Supervisors of Mathematics
Indianapolis, Indiana
April 11, 2011



“Algebra class will be important to you later in life because there’s going to be a test six weeks from now.”

The importance of algebra . . .

Q:

How important is algebra to a student's chance of attending college?

A:

Students who take a year of algebra and follow with a year of geometry nearly **DOUBLE** their chances of going to college -- by doing that alone!

Students who complete Algebra II are more than twice as likely to **GRADUATE** from college.

College Board and the National Math Panel

Challenges you face . . .



Which skill is the most difficult for students?

- Create equivalent amounts with different coins and bills 460Q
- Analyze patterns and translate the patterns into another pattern (e.g. from letters to numbers) 460Q
- Divide using single-digit divisors with and without remainders 460Q

The Quantile Framework™ of Mathematics

- Developed by MetaMetrics®, Inc.
- Measures Student Achievement
- Measures Math Concepts

The image shows a portion of the Quantile Framework for Mathematics chart. The chart is a grid with columns representing grade levels (from 1st to 12th) and rows representing math concepts. Each cell in the grid contains a quantile level (e.g., 460Q, 470Q, 480Q, etc.) and a brief description of the concept. The chart is titled 'The Quantile Framework for Mathematics' and is published by MetaMetrics.

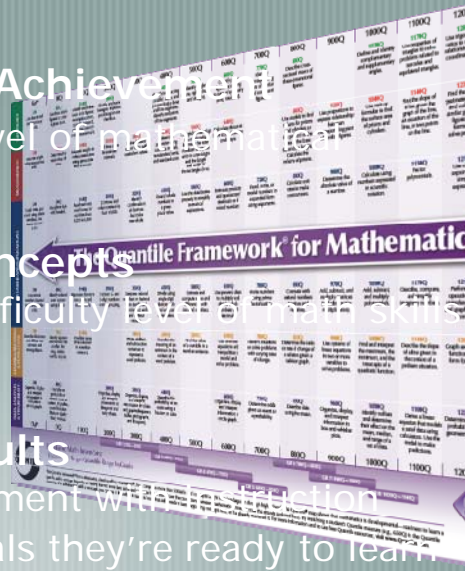
What is a Quantile Measure

➤ **Measures Student Achievement**
A student's overall level of mathematical understanding

➤ **Measures Math Concepts**
The "solvability" or difficulty level of math skills and concepts

Results

Effectively link assessment with instruction
Match learners to materials they're ready to learn



The Quantile Framework is NOT:

- An indicator of mastery of specific skills
- A list of mathematical skills
- A curriculum for mathematics
- A mathematics program
- A grade equivalent
- A measurement for a worksheet or a test

Quantiles: A New Way to Connect Assessment and Instruction

Quantiles make test scores
"actionable"

- identify how well students will likely be able to solve problems and apply mathematics
- identify which skills and concepts students are ready to learn

Quantiles: A New Way to Connect Assessment and Instruction

Quantiles make test scores
"actionable"

- Facilitates differentiated instruction
- Enables benchmarking

Defining Key Terms

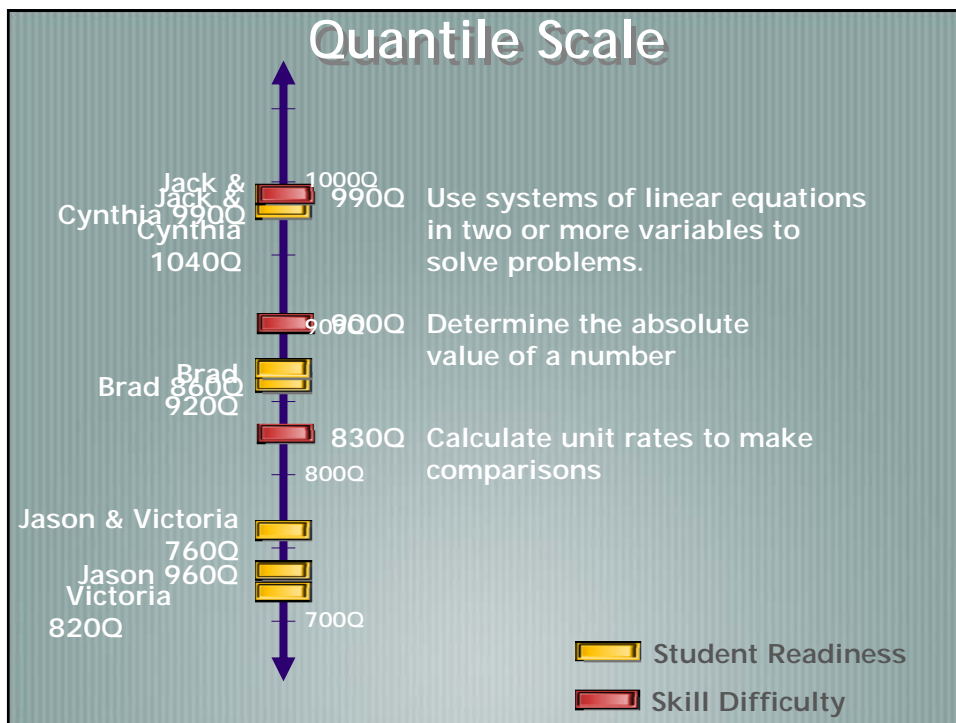
Quantile Measure

When applied to Students = *readiness for instruction*

When applied to Skills & Concepts = *solvability level*

QTaxon

A skill or concept included in the Quantile Framework taxonomy



Using Quantile Ranges

Student's
Instructional
Quantile
Range
Learning
Frontier



+ 50Q

Student's
Quantile
measure

- 50Q



Grade Average Annual Increase for On-level Students

Grade	Annual Increase
2	150Q
3	205Q
4	110Q
5	85Q
6	85Q
7	40Q
8	65Q

Why Quantiles?

More specific information about individual students

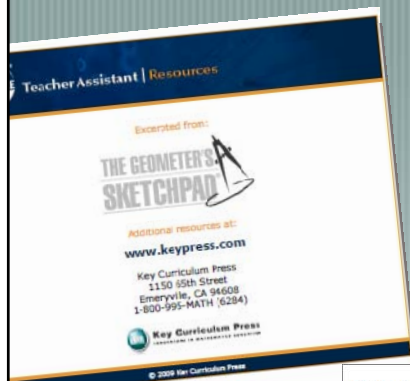
Teachers, parents, & even students



Why Quantiles?

Links assessment to instructions

Curriculum, textbooks, & other resources



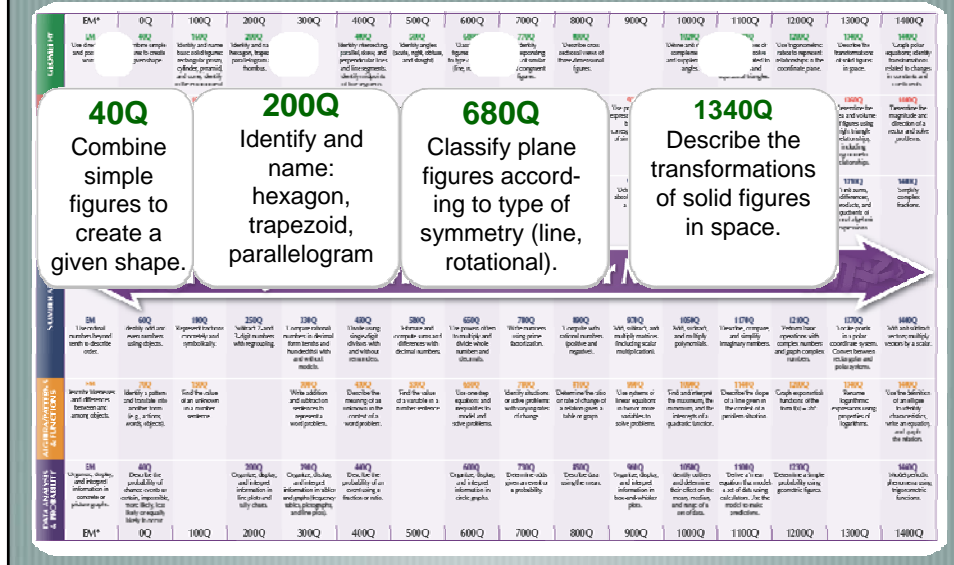
Information Related to the Attached Activity—

QTaxon(s): QT-N-413
QT-G-460
QT-A-603
Quantile® measure: HMC

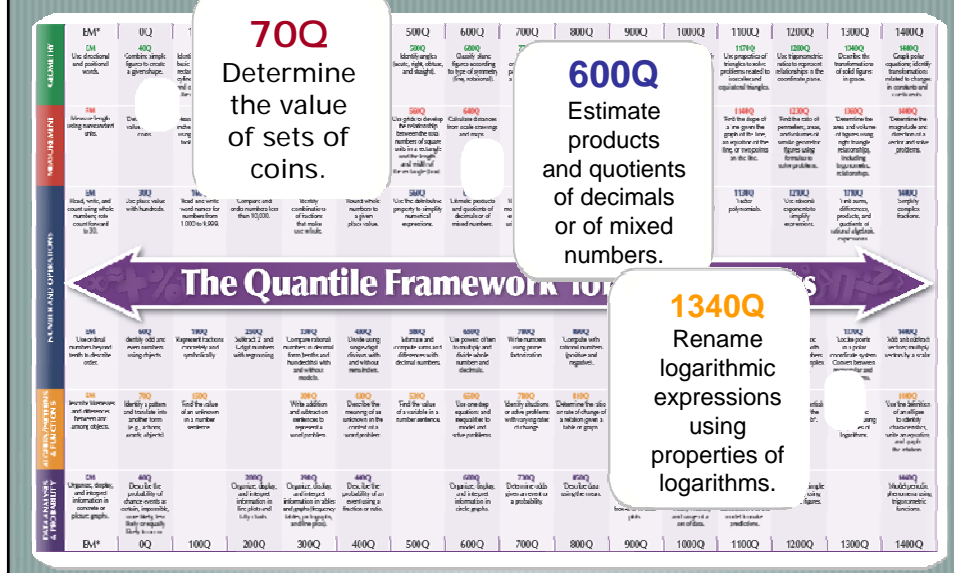
Information Related to the Attached Activity—

QTaxon(s): **QT-N-413**
QT-G-460
QT-A-603
Quantile® measure: **HMC**

Quantiles: Developmental within a strand



Quantiles: Developmental across the strands



Quantiles: Developmental across the strands

	EM*	10Q	100Q	200Q	300Q	400Q	500Q	600Q	700Q	800Q	900Q	1000Q	1100Q	1200Q	1300Q	1400Q
GEOMETRY	EM1 Use directional language to describe a geometric figure.	10Q1 Compare simple figures to those in the environment.	100Q1 Identify and name basic geometric shapes, polygons, and circles.	200Q1 Identify and name basic geometric shapes, polygons, and circles.	300Q1 Identify and name basic geometric shapes, polygons, and circles.	400Q1 Identify and name basic geometric shapes, polygons, and circles.	500Q1 Identify and name basic geometric shapes, polygons, and circles.	600Q1 Identify and name basic geometric shapes, polygons, and circles.	700Q1 Identify and name basic geometric shapes, polygons, and circles.	800Q1 Identify and name basic geometric shapes, polygons, and circles.	900Q1 Identify and name basic geometric shapes, polygons, and circles.	1000Q1 Identify and name basic geometric shapes, polygons, and circles.	1100Q1 Identify and name basic geometric shapes, polygons, and circles.	1200Q1 Identify and name basic geometric shapes, polygons, and circles.	1300Q1 Identify and name basic geometric shapes, polygons, and circles.	1400Q1 Identify and name basic geometric shapes, polygons, and circles.
MEASUREMENT	EM2 Measure length using standard units.	10Q2 Measure length using standard units.	100Q2 Measure length using standard units.	200Q2 Measure length using standard units.	300Q2 Measure length using standard units.	400Q2 Measure length using standard units.	500Q2 Measure length using standard units.	600Q2 Measure length using standard units.	700Q2 Measure length using standard units.	800Q2 Measure length using standard units.	900Q2 Measure length using standard units.	1000Q2 Measure length using standard units.	1100Q2 Measure length using standard units.	1200Q2 Measure length using standard units.	1300Q2 Measure length using standard units.	1400Q2 Measure length using standard units.
NUMBER AND OPERATIONS	EM3 Read, write, and count whole numbers up to 100.	10Q3 Read, write, and count whole numbers up to 100.	100Q3 Read, write, and count whole numbers up to 100.	200Q3 Read, write, and count whole numbers up to 100.	300Q3 Read, write, and count whole numbers up to 100.	400Q3 Read, write, and count whole numbers up to 100.	500Q3 Read, write, and count whole numbers up to 100.	600Q3 Read, write, and count whole numbers up to 100.	700Q3 Read, write, and count whole numbers up to 100.	800Q3 Read, write, and count whole numbers up to 100.	900Q3 Read, write, and count whole numbers up to 100.	1000Q3 Read, write, and count whole numbers up to 100.	1100Q3 Read, write, and count whole numbers up to 100.	1200Q3 Read, write, and count whole numbers up to 100.	1300Q3 Read, write, and count whole numbers up to 100.	1400Q3 Read, write, and count whole numbers up to 100.
ALGEBRA AND FUNCTIONS	EM4 Identify and describe simple patterns.	10Q4 Identify and describe simple patterns.	100Q4 Identify and describe simple patterns.	200Q4 Identify and describe simple patterns.	300Q4 Identify and describe simple patterns.	400Q4 Identify and describe simple patterns.	500Q4 Identify and describe simple patterns.	600Q4 Identify and describe simple patterns.	700Q4 Identify and describe simple patterns.	800Q4 Identify and describe simple patterns.	900Q4 Identify and describe simple patterns.	1000Q4 Identify and describe simple patterns.	1100Q4 Identify and describe simple patterns.	1200Q4 Identify and describe simple patterns.	1300Q4 Identify and describe simple patterns.	1400Q4 Identify and describe simple patterns.
DATA ANALYSIS AND PROBABILITY	EM5 Organize, display, and interpret data.	10Q5 Organize, display, and interpret data.	100Q5 Organize, display, and interpret data.	200Q5 Organize, display, and interpret data.	300Q5 Organize, display, and interpret data.	400Q5 Organize, display, and interpret data.	500Q5 Organize, display, and interpret data.	600Q5 Organize, display, and interpret data.	700Q5 Organize, display, and interpret data.	800Q5 Organize, display, and interpret data.	900Q5 Organize, display, and interpret data.	1000Q5 Organize, display, and interpret data.	1100Q5 Organize, display, and interpret data.	1200Q5 Organize, display, and interpret data.	1300Q5 Organize, display, and interpret data.	1400Q5 Organize, display, and interpret data.

650Q
Use powers of ten to multiply and divide whole numbers and decimals.

The
Use one-step equations and inequalities to model and solve problems.

Mathematics

A Research-based Taxonomy

	EM*	10Q	100Q	200Q	300Q	400Q	500Q	600Q	700Q	800Q	900Q	1000Q	1100Q	1200Q	1300Q	1400Q
GEOMETRY	EM1 Use directional language to describe a geometric figure.	10Q1 Compare simple figures to those in the environment.	100Q1 Identify and name basic geometric shapes, polygons, and circles.	200Q1 Identify and name basic geometric shapes, polygons, and circles.	300Q1 Identify and name basic geometric shapes, polygons, and circles.	400Q1 Identify and name basic geometric shapes, polygons, and circles.	500Q1 Identify and name basic geometric shapes, polygons, and circles.	600Q1 Identify and name basic geometric shapes, polygons, and circles.	700Q1 Identify and name basic geometric shapes, polygons, and circles.	800Q1 Identify and name basic geometric shapes, polygons, and circles.	900Q1 Identify and name basic geometric shapes, polygons, and circles.	1000Q1 Identify and name basic geometric shapes, polygons, and circles.	1100Q1 Identify and name basic geometric shapes, polygons, and circles.	1200Q1 Identify and name basic geometric shapes, polygons, and circles.	1300Q1 Identify and name basic geometric shapes, polygons, and circles.	1400Q1 Identify and name basic geometric shapes, polygons, and circles.
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I am a 4th grader with a 500Q. I am on grade level and here are the things I'm ready to learn!

The Quantile Framework

Scholastic Math Inventory: End-of-Year Target Quantile Range by Grade

EM* to 100Q, 100Q to 200Q, 200Q to 300Q, 300Q to 400Q, 400Q to 500Q, 500Q to 600Q, 600Q to 700Q, 700Q to 800Q, 800Q to 900Q, 900Q to 1000Q, 1000Q to 1100Q, 1100Q to 1200Q, 1200Q to 1300Q, 1300Q to 1400Q

The Quantile Framework for Mathematics, Inc., reserves more than 500 skills and concepts taught from kindergarten through high school. The Quantile map shows that mathematics is developmental—students learn a specific skill or concept depending on having learned more basic skills and concepts. It also shows the connections between mathematics content across the strands (shown here). By meeting a student's Quantile measure (e.g., 600Q) on the Quantile measure of a student's skill or concept, you can see the student's ready to learn that skill, or has already mastered it. For more information, visit www.Quantile.com.

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A Research-based Taxonomy

Framework[®] for Mathematics

Domain	Grade	Skill ID	Description
GEOMETRY	EM4	8C2	Use dimensional analysis to solve a given problem.
	8C2	8C2	Combine simple figures to form a given shape.
MEASUREMENT	EM6	7B2	Measure length using conventional units.
	7B2	7B2	Determine the value of one of more.
NUMBER OPERATIONS	EM6	8B2	Read, write, and compare whole numbers using place value.
	8B2	8B2	Use place value to compare whole numbers.
ALGEBRA	EM6	8B2	Use distributive property to simplify numerical expressions.
	8B2	8B2	Estimate products and quotients of decimals and mixed numbers.
DATA ANALYSIS & PROBABILITY	EM6	8B2	Organize, display and interpret information in context of simple graphs.
	8B2	8B2	Describe the probability of chance events and compute theoretical probabilities.

Scholastic Math Inventory: End-Of-Year Target Quantile Range by Grade

Quantile Framework for Mathematics, developed by Metacognition, Inc., connects more than 500 skills and concepts taught from kindergarten through high school. The Quantile map shows that mathematics is developmental—students learn a specific skill to concept depth on having learned more basic skills and concepts. It also shows the connections between mathematics content across the strands included here. By matching a student's Quantile measure (e.g., 850Q) to the Quantile measure of mathematical skill or concept, you can see if the student is ready to learn that skill, needs to learn supporting concepts first, or has already mastered it. For more information visit us on the Quantile resources, visit www.Quantile.com.

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Math Skill Database

QTaxon Search

- ❖ Knowledge Clusters
- ❖ Curriculum Alignment
- ❖ Textbook Alignment
- ❖ Instructional Resources

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Quantiles are an "open standard"

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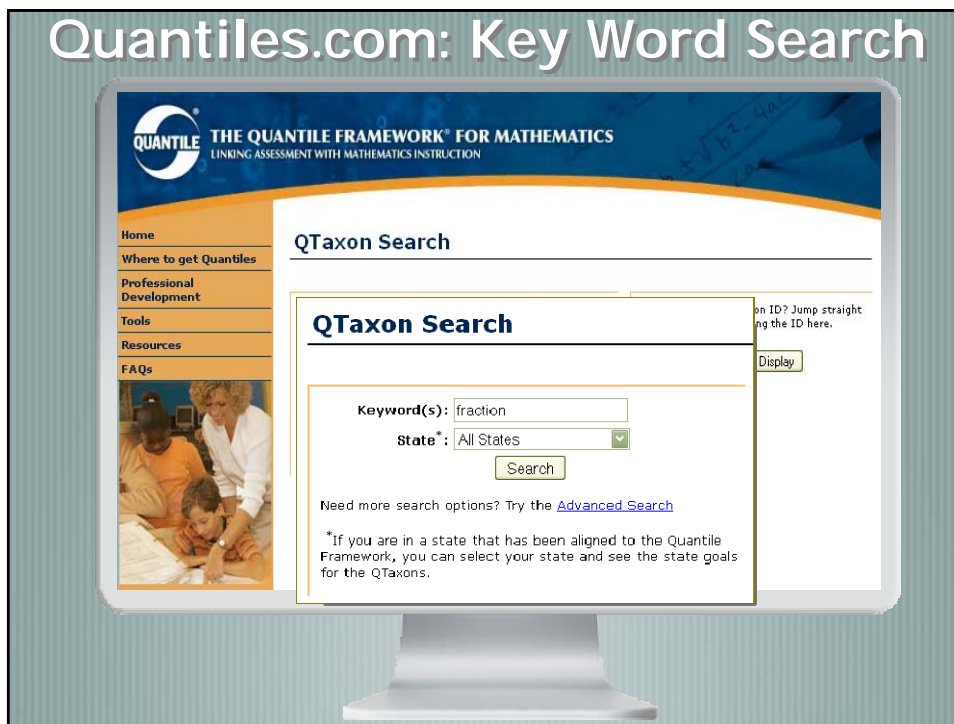
Quantile Terminology

- **Emerging Mathematician (EM):**
 - has a Quantile measure of zero or below
- **Not Measurable in Quantiles (NMQ):**
 - is extensively diverse in QTaxons or strands
- **Higher Mathematical Content (HMC):**
 - is above the precalculus level

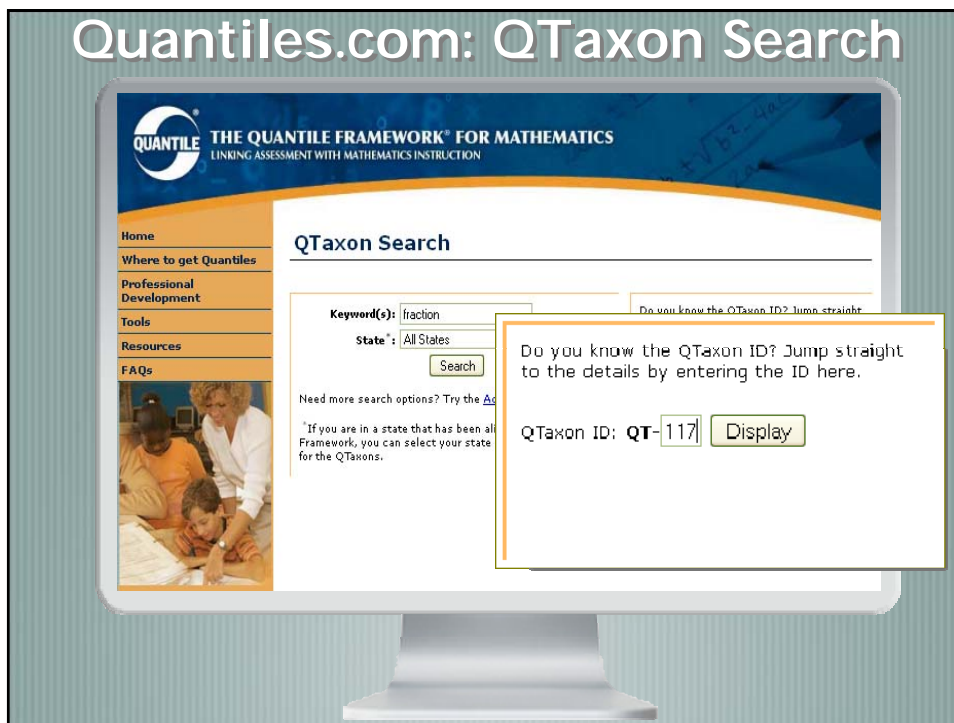
Quantiles.com

The screenshot shows the homepage of Quantiles.com. At the top left is the logo for 'THE QUANTILE FRAMEWORK FOR MATHEMATICS' with the tagline 'LINKING ASSESSMENT WITH MATHEMATICS INSTRUCTION'. Below the logo is a photograph of students in a classroom. To the right of the photo, under the heading 'INFORMATION FOR:', are three categories: 'Departments of Education', 'Principals & Educators', and 'Families & Students'. Below this is a 'RESOURCES' section with four icons and corresponding text: 'Search the Math Skill Database', 'Math@Home NEW & IMPROVED', 'Find your Math Textbook', and 'Quantile Teacher Assistant'. On the left side of the page, there is a 'FREQUENTLY ASKED QUESTIONS' section with four bullet points: 'How do I get a Quantile measure?', 'What does my Quantile measure mean?', 'How can I use Quantile measures in the classroom?', and 'How can I align my product/service to the Quantile framework?'. At the bottom left, there is a 'MetaMetrics' logo and the text 'Frequently Asked About MetaMetrics'.

Quantiles.com: Key Word Search



Quantiles.com: QTaxon Search



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QTaxon Details

QTaxon ID: QT-N-199
QMeasure: 670Q
Strand: Numbers and Operations
Description: Add and subtract fractions with like denominators.

Find out more

Find out more

[Knowledge Cluster](#) | [Related Terms](#) | [State Standards](#) | [Textbook Lessons](#) | [Resources](#)

Quantiles.com: Knowledge Cluster

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Resources
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Knowledge Cluster

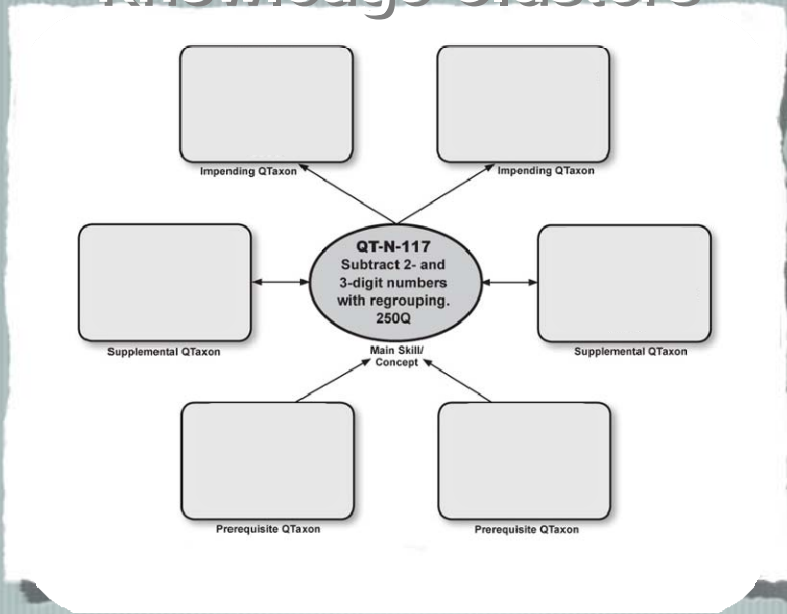
Prerequisite QTaxons

QTaxon ID	QMeasure	Description
QT-N-546	610Q	Model and identify mixed numbers and their equivalent improper fractions.
QT-N-668	590Q	Write and simplify equivalent fractions.

Supplemental QTaxons

QTaxon ID	QMeasure	Description
QT-P-185	440Q	Describe the probability of an event using a fraction or ratio.

Knowledge Clusters



Quantiles.com: Math Terms

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Description: Add and subtract fractions with like denominators.

Related Math Terms

- numerator
- mixed number
- denominator
- fraction

[Return to top](#)

Quantiles.com: State Standards

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QTaxon Details

QTaxon ID: QT-N-199
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Strand: Numbers and Operations
Description: Add and subtract fractions with like denominators.

State Standards

CCSSI

Goal	Description	Grade
4.NF.B3.a	Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.	4
4.NF.B3.b	Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using properties of operations and the relationship between addition and subtraction.	4
4.NF.B3.c	Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.	4

Quantiles.com: Resources

THE QUANTILE FRAMEWORK® FOR MATHEMATICS
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Harcourt Math 5	Harcourt	5	10 - Add and Subtract Fractions	7 - Add and Subtract Like Fractions
Harcourt Math 5 Florida Edition	Harcourt	5	16 - Add and Subtract Fractions	1 - Add and Subtract Like Fractions
Holt Mathematics Course 1	Holt, Rinehart, Winston	6	4 - Number Theory and Fractions	8 - Adding and Subtracting with Like Denominators
Holt McDougal Mathematics Course 1	Holt McDougal	6	4 - Number Theory and Fractions	8 - Adding and Subtracting with Like Denominators
Holt McDougal Mathematics Course 2	Holt McDougal	7	3 - Applying Rational Numbers	7 - Adding and Subtracting Fractions
Holt McDougal Mathematics Course 2	Holt McDougal	7	3 - Applying Rational Numbers	8 - Adding and Subtracting Mixed Numbers

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Home
Where to get Quantiles
Professional Development
Tools
Resources
FAQs

QTaxon Details

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QMeasure: 670Q
Strand: Numbers and Operations
Description: Add and subtract fractions with like denominators.

Resources

Web Resources

Web Resource	Link	Additional Resources
Adding Fractions with Common Denominators Show Directions	http://www.conceptuamath.com/FractionMats.html#tcol=additionMat	
Subtracting Fractions with Common Denominators Show Directions	http://www.conceptuamath.com/FractionMats.html#tcol=subtractionMat	
Shodor Education Resources Show Directions	http://www.shodor.org/interactivate/activities	

Web Resources

conceptua MATH

Sample Lesson Plan: Addition with Common Denominators

	Standards and Key Concepts
Grade Level	Fractions, Addition with Common Denominators
Common Core Standards	<p>Grade 3-5: Understand the meaning of operations and how they relate to one another.</p> <ul style="list-style-type: none"> Understand the meaning and effects of arithmetic operations with fractions, decimals, and integers. <p>Grade 4: Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.</p> <p>3. Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.</p> <ul style="list-style-type: none"> Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
Big Idea	Fractions are numbers that can be added to solve problems.
IEP Objectives	Given an addition example of two fractions with common denominators and various models (circle, area, horizontal bar, vertical bar, sets) the student will accurately use the models to determine the sum, and correctly record the sum for 6 or more examples on three non-interactive occasions.
Lesson Outcomes	<ol style="list-style-type: none"> Students will add like fractions using both models and numbers and justify their answer. Students will explain what it means when fractions have a common denominator using the term "like fractions". Students will identify sets of addends that result in a given sum.
Preparation:	<p>Use the vocabulary words and definitions on the board or chart paper</p> <p>Use the video to use the Identify Fractions tool video at http://www.conceptuamath.com/fractions.html#AddnoCD</p> <p>Preview the Adding with Common Denominator Tool: Set up the Adding with Common Denominator Tool: Click the Hide/Show fraction button to hide the fraction number.</p>
Overview:	This lesson plan is an introduction to adding fractions. Through the use of story problems students also learn that addition of fractions is similar to whole numbers in that two or more parts are "joined" resulting in the sum. Students learn that fractions that have the same denominator are called like fractions and having the same or "common" denominator makes adding fractions easier.

conceptua MATH

Issue | Log Out | Settings | Feedback

1

1

1

1

Play/Hide Fraction

1

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Tools

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Resources

Web Resources

Download Resources

Downloadable Resource	Link
Fractions through the School Day	QuantileResource33901.pdf
Fractions on the Trail	QuantileResource33902.pdf
Adding & Subtracting Fractions	QuantileResource33903.pdf
Addition of Fractions	QuantileResource42040.pdf
Subtraction of Fractions	QuantileResource42043.pdf
...	...

Subtraction

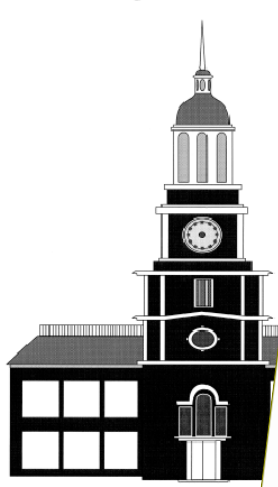
Students will subtract using mixed numbers

Checking for Subtraction of Fractions

Lesson 3

Objective: Students will subtract using mixed numbers

"Lights Out" Gameboard

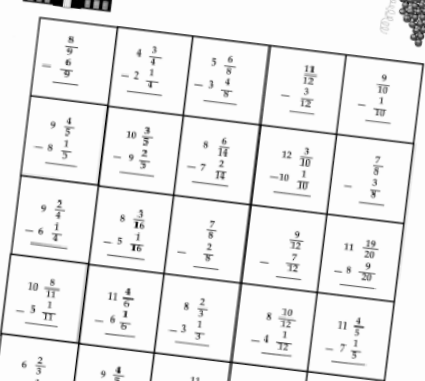


Downloadable Resources

Subtraction

Objective: Students will subtract using mixed numbers

"Lights Out" Cards



Quantiles.com: Textbook Search

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Home
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Professional Development
Tools
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Textbook Details

Title: Scott Foresman-Addison Wesley enVisionMATH 3
Publisher: Pearson
ISBN: 0328272825

Lesson Details 8 - Making Change (Show QTaxons) 470Q

Textbook	Grade/Course	Chapter	Lesson
Scott Foresman-Addison Wesley enVisionMATH K	K	13 - Money	6 - Problem Solving: Act It Out
Scott Foresman-Addison Wesley enVisionMATH K	K	13 - Money	6 - Problem Solving: Act It Out

Web Resource	Link	Additional Resources
Interactive Activity at Maths Is Fun Show Directions	http://www.mathsisfun.com/games/money-master.html	

Download Resources

Downloadable Resource	Link
Worksheet QT-M-147	QuantileResource6672.pdf
Three Spins to Win	QuantileResource32351.pdf
Mr. Mole's Money	QuantileResource32352.pdf

Quantiles.com: Math@Home

Math@Home Because math is too important to leave at school

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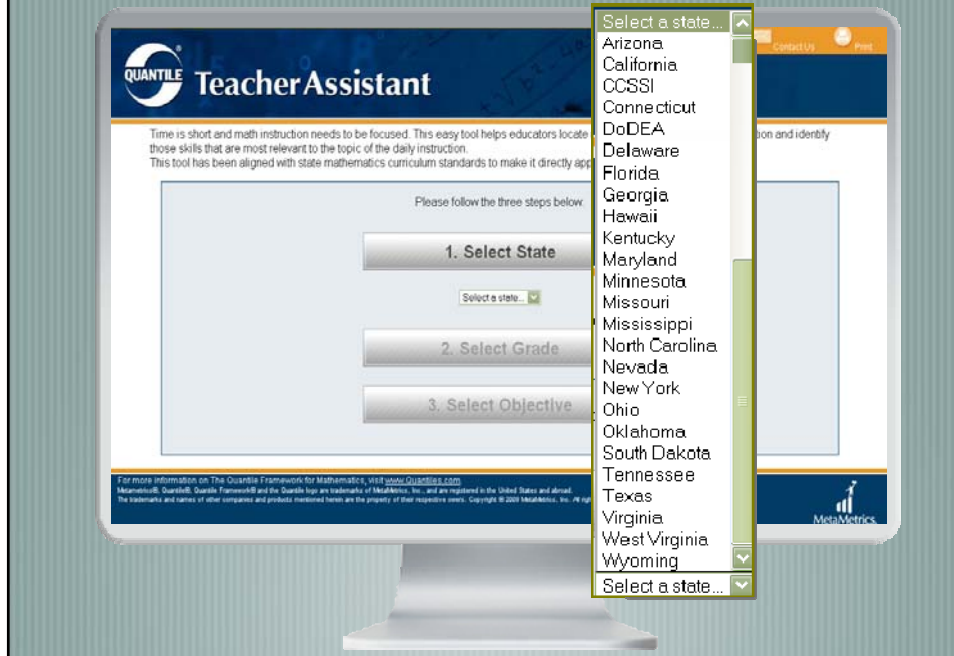
Are you struggling with math?
Do you just need extra help with your lesson?

New & Improved

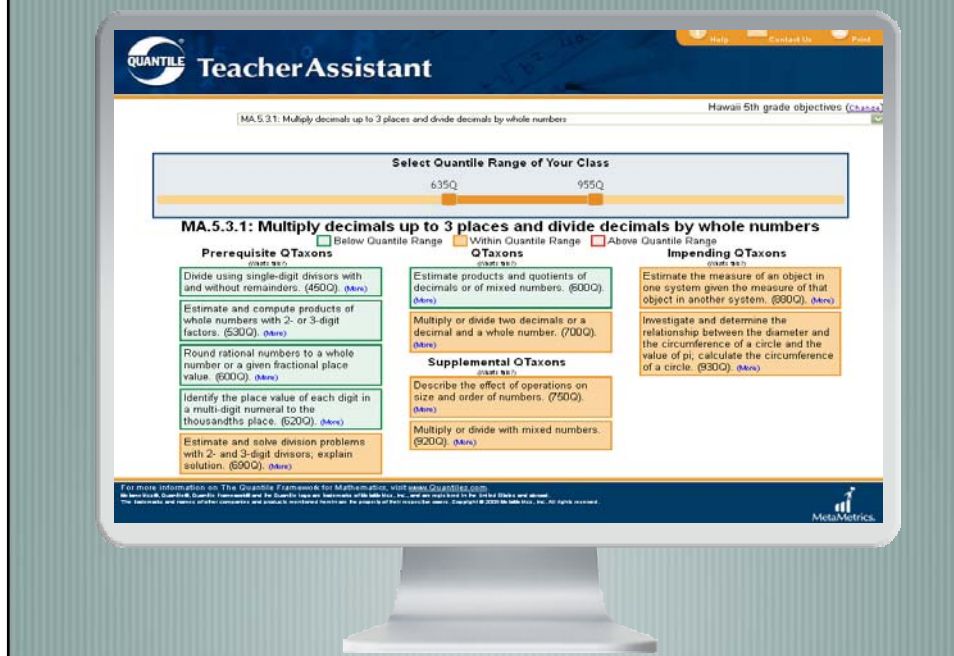
Math@Home
Because math is too important to leave at school

Get Started!

Quantiles.com: Teacher Assistant



Quantiles.com: Teacher Assistant



Quantiles.com: Teacher Assistant

The screenshot shows the 'Teacher Assistant' interface for the standard MA.5.3.1. A slider at the top allows selecting a quantile range from 500Q to 955Q. Below the slider, the standard is listed: 'MA.5.3.1: Multiply decimals up to 3 places and divide decimals by whole numbers'. Three categories of QTaxons are displayed: Prerequisite, QTaxons, and Impending. Each category contains several boxes with descriptions and associated codes.

Select Quantile Range of Your Class
500Q — 955Q

MA.5.3.1: Multiply decimals up to 3 places and divide decimals by whole numbers
 Below Quantile Range Within Quantile Range Above Quantile Range

Prerequisite QTaxons

- Divide using single-digit divisors with and without remainders. (450Q) (4.NF.A.2)
- Estimate and compute products of whole numbers with 2- or 3-digit factors. (630Q) (4.NF.A.2)
- Round rational numbers to a whole number or a given fractional place value. (600Q) (4.NF.A.2)
- Identify the place value of each digit in a multi-digit numeral to the thousandths place. (620Q) (4.NF.A.2)
- Estimate and solve division problems with 2- and 3-digit divisors; explain solution. (690Q) (4.NF.A.2)

QTaxons

- Estimate products and quotients of decimals or of mixed numbers. (600Q) (4.NF.A.2)
- Multiply or divide two decimals or a decimal and a whole number. (700Q) (4.NF.A.2)

Supplemental QTaxons

- Describe the effect of operations on size and order of numbers. (750Q) (4.NF.A.2)
- Multiply or divide with mixed numbers. (920Q) (4.NF.A.2)

Impending QTaxons

- Estimate the measure of an object in one system given the measure of that object in another system. (880Q) (4.NF.A.2)
- Investigate and determine the relationship between the diameter and the circumference of a circle and the value of pi; calculate the circumference of a circle. (930Q) (4.NF.A.2)

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<http://data.quantiles.com/ntaxons.html/0A177/#>

Quantiles.com: Teacher Assistant

The screenshot shows the 'Teacher Assistant' interface for the standard MA.5.3.1. A slider at the top allows selecting a quantile range from 900Q to 1140Q. Below the slider, the standard is listed: 'MA.5.3.1: Multiply decimals up to 3 places and divide decimals by whole numbers'. Three categories of QTaxons are displayed: Prerequisite, QTaxons, and Impending. Each category contains several boxes with descriptions and associated codes.

Select Quantile Range of Your Class
900Q — 1140Q

MA.5.3.1: Multiply decimals up to 3 places and divide decimals by whole numbers
 Below Quantile Range Within Quantile Range Above Quantile Range

Prerequisite QTaxons

- Divide using single-digit divisors with and without remainders. (450Q) (4.NF.A.2)
- Estimate and compute products of whole numbers with 2- or 3-digit factors. (630Q) (4.NF.A.2)
- Round rational numbers to a whole number or a given fractional place value. (600Q) (4.NF.A.2)
- Identify the place value of each digit in a multi-digit numeral to the thousandths place. (620Q) (4.NF.A.2)
- Estimate and solve division problems with 2- and 3-digit divisors; explain solution. (690Q) (4.NF.A.2)

QTaxons

- Estimate products and quotients of decimals or of mixed numbers. (600Q) (4.NF.A.2)
- Multiply or divide two decimals or a decimal and a whole number. (700Q) (4.NF.A.2)

Supplemental QTaxons

- Describe the effect of operations on size and order of numbers. (750Q) (4.NF.A.2)
- Multiply or divide with mixed numbers. (920Q) (4.NF.A.2)

Impending QTaxons

- Estimate the measure of an object in one system given the measure of that object in another system. (880Q) (4.NF.A.2)
- Investigate and determine the relationship between the diameter and the circumference of a circle and the value of pi; calculate the circumference of a circle. (930Q) (4.NF.A.2)

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Quantile Alignments

NCTM Focal Points Alignment with
The Quantile Framework® for Mathematics*



NAEP Alignment with The Quantile Framework® for Mathematics*



National Mathematics Panel Report Alignment
with The Quantile Framework® for Mathematics*



QTaxon Number**	QF Strand	QTaxon Description	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7
79	1	Add 2- and 3-digit numbers without regrouping.	1.1.1				
117	1	Subtract 2- and 3-digit numbers with regrouping.	1.1.1				
121	1	Use multiplication facts through 144.					
146	5	Determine perimeter using concrete mod units.					
153	1	Apply appropriate type of estimation for					
154	1	Identify the place value of each digit in a place.					



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Quantile Vocabulary Terms

Feature	Definition
QTaxon	Mathematical skill/concept included in the Framework
Quantile measure	Measure on the Scale that delineates student achievement level and the difficulty level of skills & concepts.
Knowledge Clusters	Related QTaxons
Impending QTaxons	Skills and Concepts that enrich the learning.
Supplemental QTaxons	Skills and Concepts that extend or build the learning.
Prerequisite QTaxon	Skills and concepts that are foundational to the learning.
Learning Frontier	The learning frontier -50Q above and below the student's Quantile measure.

Things to think about . . .

Meeting Students' Needs

- Instructional needs of students
- Lesson Planning with Knowledge Clusters
- Differentiated Lesson Plans
- Individual Education Plans (IEPs)
- Plan to chart student growth during a certain semester or year

Things to remember . . .

- Quantile Framework places the mathematics curriculum, the materials to teach, and the students ALL on the same scale

Target Instruction

Anticipate Understanding

Inform Instruction

Improve Achievement

Quantiles: Powerful New Way to Track Student Progress

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