

**THE FOLLOWING STATE CURRICULUM STANDARDS ARE ADDRESSED BY
THE QUARTER MILE MATH SOFTWARE
FOR THE STATE OF KENTUCKY**

Grades PK - 5

Subject: MATH

Standard: Algebraic Thinking

Strand: Concepts - Students will describe properties of, define, give examples of, and apply to both real-world and mathematical situations:

Substrand Titles that Address the Substrand

(Gr. PreK-5) MA-E-4.1.2 Number sentences with a missing value or variable

Quarter Mile Math Level 1

Quarter Mile Math Level 2

Subject: MATH

Standard: Number/Computation

Strand: Relationships - Students will make connections between concepts and skills, show how connections are made, explain why procedures work, and/or make generalizations about mathematical situations:

Substrand Titles that Address the Substrand

(Gr. PreK-5) MA-E-1.3.1 How fractions, decimals, and whole numbers relate (equivalence, order)

Quarter Mile Math Level 1

Quarter Mile Math Level 2

(Gr. PreK-5) MA-E-1.3.2 How properties (commutative, associative, identity properties of addition and multiplication, zero property of multiplication) are used in computation

Quarter Mile Math Level 1

Quarter Mile Math Level 2

(Gr. PreK-5) MA-E-1.3.3 How the base 10 number system relates to place value (e.g., ten tens make one hundred, ten hundredths make one-tenth)

Quarter Mile Math Level 1

Subject: MATH

Standard: Number/Computation

Strand: Skills - Students will perform mathematical operations and procedures accurately and efficiently, explain how the skills work in real-world or mathematical situations:

Substrand Titles that Address the Substrand

(Gr. PreK-5) MA-E-1.2.1 Read, write, and rename whole numbers

Quarter Mile Math Level 1

Quarter Mile Math Level 2

(Gr. PreK-5) MA-E-1.2.2 Add, subtract, multiply, and divide whole numbers using a variety of methods (e.g., mental, paper and pencil, calculator)

Quarter Mile Math Level 1
Quarter Mile Math Level 2

(Gr. PreK-5) MA-E-1.2.3 Add and subtract fractions with like denominators; add and subtract decimals through hundredths

Quarter Mile Math Level 2

(Gr. PreK-5) MA-E-1.2.4 Skip-count forward and backward

Quarter Mile Math Level 1

(Gr. PreK-5) MA-E-1.2.6 Estimate computational results using an appropriate strategy

Quarter Mile Math Level 1
Quarter Mile Math Level 2

(Gr. PreK-5) MA-E-1.2.8 Determine least common multiple (LCM)

Quarter Mile Math Level 2

(Gr. PreK-5) MA-E-1.2.9 Order and compare ($>$, $<$, $=$) whole numbers and fractions

Quarter Mile Math Level 1
Quarter Mile Math Level 2

Subject: MATH

Standard: Number/Computation

Strand: Concepts - Students will describe properties of, give examples of, and apply to real-world or mathematical situations:

Substrand **Titles that Address the Substrand**

(Gr. PreK-5) MA-E-1.1.1 Whole numbers (0 to 100,000,000), fractions, mixed numbers, and decimals through thousandths

Quarter Mile Math Level 1
Quarter Mile Math Level 2

(Gr. PreK-5) MA-E-1.1.2 The operations of addition, subtraction, multiplication, and division

Quarter Mile Math Level 1
Quarter Mile Math Level 2

(Gr. PreK-5) MA-E-1.1.3 Odd and even numbers, composite and prime numbers, multiples, and factors

Quarter Mile Math Level 1
Quarter Mile Math Level 2

(Gr. PreK-5) MA-E-1.1.4 Place value, expanded form, number magnitude (order, compare) to 100,000,000, and decimals through thousandths

Quarter Mile Math Level 1
Quarter Mile Math Level 2

Subject: MATH

Standard: Probability/Statistics

Strand: Concepts - Students will describe properties of, define, give examples of, and apply to both real-world and mathematical situations:

Substrand **Titles that Address the Substrand**

(Gr. PreK-5) MA-E-3.1.1 Mean, median, mode, and range of a set of data

Quarter Mile Math Level 2

Subject: MATH

Standard: Probability/Statistics

Strand: Skills - Students will perform mathematical operations and procedures accurately and efficiently, explain how the skills work in real-world or mathematical situations:

Substrand Titles that Address the Substrand

(Gr. PreK-5) MA-E-3.2.6 Find mean, median, mode, and range of a set of data

Quarter Mile Math Level 2

Grades 6 - 8

Subject: MATH

Standard: Algebraic Ideas

Strand: Concepts - Students will describe properties of, define, give examples of, and/or apply to both real-world and mathematical situations:

Substrand Titles that Address the Substrand

(Gr. 6-8) MA-M-4.1.1 Variables, equations, inequalities, and algebraic expressions

Quarter Mile Math Level 2

Quarter Mile Math Level 3

Subject: MATH

Standard: Algebraic Ideas

Strand: Skills - Students will perform the following mathematical operations and/or procedures accurately and efficiently, and explain how they work in real-world and mathematical situations:

Substrand Titles that Address the Substrand

(Gr. 6-8) MA-M-4.2.1 Simplify numerical and algebraic expressions

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6-8) MA-M-4.2.2 Solve simple equations and inequalities

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6-8) MA-M-4.2.4 Use variables to describe numerical patterns

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6-8) MA-M-4.2.5 Represent and use functions through tables, graphs, verbal rules, and equations

Quarter Mile Math Level 2

Quarter Mile Math Level 3

Subject: MATH

Standard: Number/Computation

Strand: Concepts - Students will describe properties of, define, give examples of, and/or apply to both real-world and mathematical situations:

Substrand Titles that Address the Substrand

(Gr. 6-8) MA-M-1.1.1 Rational numbers (integers, fractions, decimals, percents)

Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6-8) MA-M-1.1.4 Place value of whole numbers and decimals

Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6-8) MA-M-1.1.5 Positive whole number exponents

Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6-8) MA-M-1.1.6 Representation of numbers and operations in a variety of equivalent forms using models, diagrams, and symbols (e.g., number lines, 10 by 10 grids, rectangular arrays, number sentences)

Quarter Mile Math Level 2
Quarter Mile Math Level 3

Subject: MATH

Standard: Number/Computation

Strand: Relationships - Students will show connections and how connections are made between concepts and skills, explain why procedures work, and make generalizations about mathematics in mathematical situations:

Substrand **Titles that Address the Substrand**

(Gr. 6-8) MA-M-1.3.1 How whole numbers, natural numbers, integers, fractions, decimals, percents, and irrational numbers (square roots and p only) relate to each other (e.g., convert between forms of rational numbers, compare, order)

Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6-8) MA-M-1.3.2 How properties such as commutative, associative, distributive, and identities show relationships among operations and may be used to justify steps in solving problems

Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6-8) MA-M-1.3.3 How operations (addition and subtraction; multiplication and division; squaring and taking the square root of a number) are inversely related.

Quarter Mile Math Level 2
Quarter Mile Math Level 3

Subject: MATH

Standard: Number/Computation

Strand: Skills - Students will perform the following mathematical operations and/or procedures accurately and efficiently, and explain how they work in real-world and mathematical situations:

Substrand **Titles that Address the Substrand**

(Gr. 6-8) MA-M-1.2.1 Add, subtract, multiply, and divide rational numbers (fractions, decimals, percents, integers) to solve problems

Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6-8) MA-M-1.2.2 Compute (e.g., estimate, use pencil and paper, use calculator, round, use mental math) large and small quantities and check for reasonable and appropriate computational results

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6-8) MA-M-1.2.3 Apply ratios, proportional reasoning, and percents (e.g., constant rate of change, unit pricing)

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6-8) MA-M-1.2.4 Identify and use number theory concepts[prime numbers, prime factorization, composite numbers, factors, multiples, divisibility, greatest common factor (GCF), least common multiple (LCM) to solve problems.

Quarter Mile Math Level 2

(Gr. 6-8) MA-M-1.2.5 Apply order of operations

Quarter Mile Math Level 2

Quarter Mile Math Level 3

Subject: MATH

Standard: Probability/Statistics

Strand: Concepts - Students will describe properties of, define, give examples of, and/or apply to both real-world and mathematical situations:

Substrand

Titles that Address the Substrand

(Gr. 6-8) MA-M-3.1.1 Meaning of central tendency (mean, median, mode)

Quarter Mile Math Level 2

Subject: MATH

Standard: Probability/Statistics

Strand: Skills - Students will perform the following mathematical operations and/or procedures accurately and efficiently, and explain how they work in real-world and mathematical situatio

Substrand

Titles that Address the Substrand

(Gr. 6-8) MA-M-3.2.3 Find mean, median, mode, and range; recognize outliers, gaps, and clusters of data

Quarter Mile Math Level 2

Grades 9 - 11

Subject: MATH

Standard: Algebraic Ideas

Strand: Concepts

Substrand

Titles that Address the Substrand

(Gr. 9-11) MA-H-4.1.6 Students will recognize, give examples of, and apply the laws of exponents.

Quarter Mile Math Level 2

Subject: MATH

Standard: Algebraic Ideas

Strand: Skills

Substrand

Titles that Address the Substrand

(Gr. 9-11) MA-H-4.2.1 Students will solve linear equations and linear inequalities.

Quarter Mile Math Level 3

Subject: MATH

Standard: Number/Computation

Strand: Relationships

Substrand	Titles that Address the Substrand
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(Gr. 9-11) MA-H-1.3.1 Students will understand how the following subsets of real numbers relate to each other: natural, whole, integers, rational, irrational, reals.

Quarter Mile Math Level 3

(Gr. 9-11) MA-H-1.3.2 Students will understand how real number properties (identity, inverse, commutative, associative, distributive, closure) are used to simplify expressions and solve equations.

Quarter Mile Math Level 3

(Gr. 9-11) MA-H-1.3.3 Students will understand how to use equivalence relations (reflexive, symmetric, transitive) and order relations (less than, greater than, equal to) to solve problems using real numbers.

Quarter Mile Math Level 3

Subject: MATH

Standard: Number/Computation

Strand: Skills

Substrand	Titles that Address the Substrand
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(Gr. 9-11) MA-H-1.2.1 Students will perform addition, subtraction, multiplication, and division with real numbers in problem-solving situations to specified accuracy.

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 9-11) MA-H-1.2.2 Students will simplify real number expressions such as those containing opposites, reciprocals, absolute values, exponents (integer), roots (square, cube), and factorials.

Quarter Mile Math Level 2

Quarter Mile Math Level 3