

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

Subject: MATH
Standard: Number And Operations
Strand: 1. Students understand numbers, ways of representing numbers, relationships among numbers, and number systems.

Substrand Titles that Address the Substrand

(Gr. K-1) Represent and use whole numbers and commonly-used fractions with denominators no larger than four.
Quarter Mile Math Level 1

(Gr. K-1) Compare, order, estimate, group and count (skip count, count on, count back) whole numbers less than one hundred.
Quarter Mile Math Level 1

(Gr. K-1) Identify and use ten as a unit in counting.
Quarter Mile Math Level 1

Subject: MATH
Standard: Number And Operations
Strand: 2. Students understand the meaning of operations and how they relate to each other.

Substrand Titles that Address the Substrand

(Gr. K-1) Understand meaning of addition (e.g., combine) and different meanings of subtraction (e.g., separate, compare, add on) of whole numbers.
Quarter Mile Math Level 1

(Gr. K-1) Identify and describe situations when multiplication (e.g., equal groupings) and division (e.g., sharing/partitioning) are appropriate.
Quarter Mile Math Level 1

(Gr. K-1) Explain that addition and subtraction of whole numbers can undo each other.
Quarter Mile Math Level 1

Subject: MATH
Standard: Number And Operations
Strand: 3. Students use computational tools and strategies fluently and when appropriate, use estimation.

Substrand Titles that Address the Substrand

(Gr. K-1) Develop and use strategies to solve number problems.
Quarter Mile Math Level 1

(Gr. K-1) Develop fluency with single-digit addition facts.
Quarter Mile Math Level 1

(Gr. K-1) Recognize whether numerical solutions are reasonable.

Quarter Mile Math Level 1

Subject: MATH

Standard: Number And Operations

Strand: 1. Students understand numbers, ways of representing numbers, relationships among numbers, and number systems.

Substrand Titles that Address the Substrand

(Gr. 2-3) Represent and use whole numbers up to one hundred and commonly-used fractions with denominators no larger than ten.

Quarter Mile Math Level 1

Quarter Mile Math Level 2

(Gr. 2-3) Recognize and use equivalent forms of common fractions; and compare commonly-used fractions with denominators no larger than ten.

Quarter Mile Math Level 2

(Gr. 2-3) Compare, order, estimate, group (e.g., even and odd), and count whole numbers up to one thousand.

Quarter Mile Math Level 1

Quarter Mile Math Level 2

(Gr. 2-3) Extend place value to recognize and use one hundred as a unit and one-tenth as a unit.

Quarter Mile Math Level 2

Subject: MATH

Standard: Number And Operations

Strand: 2. Students understand the meaning of operations and how they relate to each other.

Substrand Titles that Address the Substrand

(Gr. 2-3) Use the properties of addition of whole numbers (associativity, commutativity, and zero as an addend).

Quarter Mile Math Level 1

(Gr. 2-3) Explain that subtraction of whole numbers is neither associative nor commutative.

Quarter Mile Math Level 1

(Gr. 2-3) Explain that multiplication and division of whole numbers can undo each other.

Quarter Mile Math Level 1

Subject: MATH

Standard: Number And Operations

Strand: 3. Students use computational tools and strategies fluently and when appropriate, use estimation.

Substrand Titles that Address the Substrand

(Gr. 2-3) Develop and use strategies, including mental arithmetic and calculator and invent algorithms to find sums and differences up to one hundred.

Quarter Mile Math Level 1

(Gr. 2-3) Extend fluency with single-digit addition facts to include single-digit subtraction and multiplication facts; and fluently add, subtract, and multiply with multiples of ten.

Quarter Mile Math Level 1

(Gr. 2-3) Recognize whether numerical solutions are reasonable, and estimate quantities.

Quarter Mile Math Level 1

Subject: MATH

Standard: Data Analysis, Statistics And Probability

Strand: 2. Students interpret data using methods of exploratory data analysis.

Substrand Titles that Address the Substrand

(Gr. 4-5) Describe the shape and important features of a set of organized data (e.g., range, mean, mode, median where appropriate).

Quarter Mile Math Level 2

Subject: MATH

Standard: Number And Operations

Strand: 1. Students understand numbers, ways of representing numbers, relationships among numbers, and number systems.

Substrand Titles that Address the Substrand

(Gr. 4-5) Recognize and use primes, factors, multiples, fractions, decimals, whole number percents, and ratios.

Quarter Mile Math Level 2

(Gr. 4-5) Represent and use whole numbers, fractions, ratios, decimals, and percents in equivalent forms to solve problems.

Quarter Mile Math Level 2

(Gr. 4-5) Compare and order whole numbers, fractions, decimals, and percents.

Quarter Mile Math Level 2

(Gr. 4-5) Relate fractions to decimals, decimals to percents, and fractions to percents and convert among them.

Quarter Mile Math Level 2

(Gr. 4-5) Extend place value concepts to recognize and use numbers smaller than tenths and larger than thousands.

Quarter Mile Math Level 2

Subject: MATH

Standard: Number And Operations

Strand: 2. Students understand the meaning of operations and how they relate to each other.

Substrand Titles that Address the Substrand

(Gr. 4-5) Represent multiplication and division in various ways (e.g., multiplication as repeated addition, cartesian product, area, and array).

Quarter Mile Math Level 2

(Gr. 4-5) Describe situations involving addition, subtraction, multiplication, and division of fractions.

Quarter Mile Math Level 2

(Gr. 4-5) Use associative, commutative, and distributive properties as they apply to multiplication and division of whole numbers.

Quarter Mile Math Level 2

(Gr. 4-5) Use properties of zero and one as they apply to all four whole number operations.

Quarter Mile Math Level 2

Subject: MATH

Standard: Number And Operations

Strand: 3. Students use computational tools and strategies fluently and when appropriate, use estimation.

| Substrand | Titles that Address the Substrand |
|------------------|--|
|------------------|--|

(Gr. 4-5) Recall all single-digit multiplication facts and their related division facts.

Quarter Mile Math Level 2

(Gr. 4-5) Develop and use strategies, including mental arithmetic strategies, and invent algorithms to find products and quotients.

Quarter Mile Math Level 2

(Gr. 4-5) Develop algorithms for fraction operations.

Quarter Mile Math Level 2

(Gr. 4-5) Choose appropriate computational procedures and tools to solve problems.

Quarter Mile Math Level 2

(Gr. 4-5) Use estimation to solve problems and determine reasonableness of results, and decide when it is more appropriate to estimate than to compute.

Quarter Mile Math Level 2

Subject: MATH

Standard: Patterns, Functions, And Algebra

Strand: 2. Students use symbolic forms to represent, model, and analyze mathematical situations.

| Substrand | Titles that Address the Substrand |
|------------------|--|
|------------------|--|

(Gr. 4-5) Represent unknown quantities and relationships among them with symbols.

Quarter Mile Math Level 2

(Gr. 4-5) Identify and represent properties of operations (e.g., $+$ = $+$).

Quarter Mile Math Level 2

Subject: MATH

Standard: Number And Operations

Strand: 1. Students understand numbers, ways of representing numbers, relationships among numbers, and number systems.

| Substrand | Titles that Address the Substrand |
|------------------|--|
|------------------|--|

(Gr. 6-8) Recognize and use signed numbers (e.g., order and compare integers and rationals), proportions, and percents (e.g., use 15.1% or $4\frac{2}{3}\%$).

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6-8) Explain and apply number theory concepts, (e.g., triangular and square numbers, prime and composite numbers, factors and multiples).

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6-8) Represent and use exponents, absolute values, scientific notation, and square and cube roots.

Quarter Mile Math Level 2

Subject: MATH
Standard: Number And Operations
Strand: 2. Students understand the meaning of operations and how they relate to each other.

Substrand **Titles that Address the Substrand**

(Gr. 6-8) Describe situations when addition, subtraction, multiplication, and division of integers, rationals, and numbers involving whole number non-negative exponents are appropriate.

Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6-8) Recognize and use properties (closure, associative, commutative, distributive, identity, and inverse) and order of operations on rational numbers.

Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6-8) Understand and use inverse relationships among and within operations of addition and subtraction, multiplication and division, and squares and square roots.

Quarter Mile Math Level 2
Quarter Mile Math Level 3

Subject: MATH
Standard: Number And Operations
Strand: 3. Students use computational tools and strategies fluently and when appropriate, use estimation.

Substrand **Titles that Address the Substrand**

(Gr. 6-8) Select and use appropriate strategies for computing with rationals, ratios, exponents, square roots.

Quarter Mile Math Level 2
Quarter Mile Math Level 3

(Gr. 6-8) Use estimation as a means to check the reasonableness of results; and form upper and lower bounds.

Quarter Mile Math Level 2

Subject: MATH
Standard: Patterns, Functions, And Algebra
Strand: 1. Students understand various types of patterns and functional relationships.

Substrand **Titles that Address the Substrand**

(Gr. 6-8) Use patterns to solve problems.

Quarter Mile Math Level 2
Quarter Mile Math Level 3

Subject: MATH
Standard: Patterns, Functions, And Algebra
Strand: 2. Students use symbolic forms to represent, model, and analyze mathematical situations.

Substrand **Titles that Address the Substrand**

(Gr. 6-8) Represent and translate among a variety of patterns, relations and functions with tables, graphs, verbal rules, and symbolic rules.

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6-8) Use symbolic algebra to represent and solve situations involving change, rates of change, linear equations, and inequalities.

Quarter Mile Math Level 2

Quarter Mile Math Level 3