

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

Subject: MATH

Standard: Number Sense, Numeration, And Numerical Operations

Strand: The Learner Will Recognize, Model, And Write Numbers Through 10.

Substrand Titles that Address the Substrand

(Gr. K) 1.02 Read, write and count using whole numbers; rote count forward to 30 or beyond and backward from 10.

Quarter Mile Math Level 1

(Gr. K) 1.03 Use 1-1 correspondence to identify how many (0 - 10).

Quarter Mile Math Level 1

(Gr. K) 1.04 Recognize numerals and match to sets 0 - 10.

Quarter Mile Math Level 1

(Gr. K) 1.05 Write numerals 0-9 in meaningful contexts.

Quarter Mile Math Level 1

(Gr. K) 1.09 Estimate quantities less than 20.

Quarter Mile Math Level 1

Subject: MATH

Standard: Number Sense, Numeration, And Numerical Operations

Strand: The Learner Will Read, Write, And Model Numbers Through 100 And Compute With Whole Numbers.

Substrand Titles that Address the Substrand

(Gr. 1) 1.01 Count using one-to-one correspondence to 30.

Quarter Mile Math Level 1

(Gr. 1) 1.02 Rote count by 1's, 5's and 10's to 100; by 2's to 20.

Quarter Mile Math Level 1

(Gr. 1) 1.03 Make sets and match numerals up to 30.

Quarter Mile Math Level 1

(Gr. 1) 1.04 Compare and order sets and numerals up to 30.

Quarter Mile Math Level 1

(Gr. 1) 1.05 Read and write numerals to 100.

Quarter Mile Math Level 1

(Gr. 1) 1.06 Read number words zero to ten.

Quarter Mile Math Level 1

(Gr. 1) 1.08 Group and count objects by 2's, 5's, and 10's.

Quarter Mile Math Level 1

(Gr. 1) 1.09 Identify one more/less/before/after/between.

Quarter Mile Math Level 1

(Gr. 1) 1.10 Identify equal and unequal numerals and sets.

Quarter Mile Math Level 1

(Gr. 1) 1.11 Represent numbers in a variety of ways: using tallies, building models to 100.

Quarter Mile Math Level 1

(Gr. 1) 1.12 Estimate quantities up to 30. Recognize when solutions to problems are reasonable.

Quarter Mile Math Level 1

(Gr. 1) 1.14 Model concept of addition; know the combinations for sums to 10.

Quarter Mile Math Level 1

(Gr. 1) 1.15 Model concept of subtraction as take-away, comparison, and missing addends.

Quarter Mile Math Level 1

(Gr. 1) 1.16 Model the division of sets into two, three or four equal parts; explain solution.

Quarter Mile Math Level 1

(Gr. 1) 1.17 Relate addition and subtraction to symbolic notation and write equations.

Quarter Mile Math Level 1

(Gr. 1) 1.18 Find sums and differences using counting strategies such as counting on and counting back.

Quarter Mile Math Level 1

(Gr. 1) 1.19 Memorize addition and subtraction facts to 10.

Quarter Mile Math Level 1

(Gr. 1) 1.22 Create and solve problems using addition and subtraction. Use problem-solving strategies: modeling with manipulatives, acting out, drawing, using diagrams; use calculators as appropriate. Explain solutions.

Quarter Mile Math Level 1

Subject: MATH

Standard: Number Sense, Numeration, And Numerical Operations

Strand: The Learner Will Read, Write, And Model Numbers Through 1000, And Compute With Numbers Less Than 1000.

Substrand Titles that Address the Substrand

(Gr. 2) 1.01 Rote count up to 1000.

Quarter Mile Math Level 1

(Gr. 2) 1.02 Identify and use 10 more and 10 less.

Quarter Mile Math Level 1

(Gr. 2) 1.03 Compare and order numbers; identify missing numbers in a sequence to 100.

Quarter Mile Math Level 1

(Gr. 2) 1.04 Read word names for numbers to 100.

Quarter Mile Math Level 1

(Gr. 2) 1.05 Use counting strategies such as skip counting by 2's, 5's, and 10's and grouping objects by 3's and 4's.

Quarter Mile Math Level 1

(Gr. 2) 1.06 Identify odd and even numbers using objects.

Quarter Mile Math Level 1

(Gr. 2) 1.07 Group objects into ones, tens, and hundreds and record in standard form.

Quarter Mile Math Level 1

(Gr. 2) 1.08 Model 3-digit numbers; identify, read, and write correct numerals.

Quarter Mile Math Level 1

(Gr. 2) 1.09 Indicate the value of each digit in any 2 or 3-digit number.

Quarter Mile Math Level 1

(Gr. 2) 1.10 Use problem-solving strategies such as diagrams, organized lists, manipulatives, act out, guess and check, pictures; use calculators when appropriate.

Quarter Mile Math Level 1

(Gr. 2) 1.12 Make reasonable estimates up to 100 objects.

Quarter Mile Math Level 1

(Gr. 2) 1.13 Identify missing addends for addition facts to 18.

Quarter Mile Math Level 1

(Gr. 2) 1.14 Add 3 single-digit numbers.

Quarter Mile Math Level 1

(Gr. 2) 1.15 Model 2-digit addition and subtraction using manipulatives and alternative strategies; record, and explain.

Quarter Mile Math Level 1

(Gr. 2) 1.16 Memorize addition/subtraction facts up to 18.

Quarter Mile Math Level 1

(Gr. 2) 1.17 Add 2- and 3- digit numbers with and without regrouping.

Quarter Mile Math Level 1

(Gr. 2) 1.18 Use addition/subtraction strategies to solve problems.

Quarter Mile Math Level 1

(Gr. 2) 1.19 Divide regions/sets into halves, thirds, and fourths. Record in fractional form.

Quarter Mile Math Level 1

(Gr. 2) 1.20 Model repeated addition (multiplication) and sharing equally (division); record solutions.

Quarter Mile Math Level 1

Subject: MATH

Standard: Spatial Sense, Measurement, And Geometry

Strand: The Learner Will Recognize, Understand, And Use Basic Geometric Properties, And Standard Units Of Metric And Customary Measurement.

Substrand

Titles that Address the Substrand

(Gr. 2) 2.15 Solve problems using money. Estimate costs and make change using coins up to \$1.00.

Quarter Mile Math Level 2

Subject: MATH

Standard: Number Sense, Numeration, And Numerical Operations

Strand: The Learner Will Model, Identify And Compute With Numbers Less Than 10,000.

Substrand Titles that Address the Substrand

(Gr. 3) 1.01 Read and write word names for numbers to 1,000.

Quarter Mile Math Level 1

(Gr. 3) 1.02 Relate standard and expanded notation to 3- and 4-digit numbers.

Quarter Mile Math Level 1

(Gr. 3) 1.03 Compare and order numbers less than 10,000.

Quarter Mile Math Level 1

(Gr. 3) 1.04 Use estimation techniques in determining solutions to problems.

Quarter Mile Math Level 1

(Gr. 3) 1.05 Identify odd and even numbers; generalize ways to determine odd or even.

Quarter Mile Math Level 1

(Gr. 3) 1.07 Compare and order fractions using models; describe comparisons.

Quarter Mile Math Level 2

(Gr. 3) 1.09 Subtract 2- and 3-digit numbers.

Quarter Mile Math Level 1

(Gr. 3) 1.10 Model and explain multiplication in a variety of ways including repeated addition, rectangular arrays, and skip counting.

Quarter Mile Math Level 1

(Gr. 3) 1.13 Memorize multiplication facts/tables through 10.

Quarter Mile Math Level 1

(Gr. 3) 1.15 Solve meaningful, multi-step problems involving addition, subtraction and multiplication using a variety of strategies; use calculators as appropriate.

Quarter Mile Math Level 1

Subject: MATH

Standard: Patterns, Relationships, And Functions

Strand: The Learner Will Demonstrate An Understanding Of Classification, Patterning, And Seriation.

Substrand Titles that Address the Substrand

(Gr. 3) 3.02 Describe and demonstrate patterns in skip counting and multiplication; continue sequences beyond memorized or modeled numbers.

Quarter Mile Math Level 1

Subject: MATH

Standard: Spatial Sense, Measurement, And Geometry

Strand: The Learner Will Recognize, Understand, And Use Basic Geometric Properties, And Standard Units Of Metric And Customary Measurement.

Substrand**Titles that Address the Substrand**

(Gr. 3) 2.10 Estimate and compute the cost of items up to \$5.00; make change up to \$5.00.

Quarter Mile Math Level 2

Subject: MATH

Standard: Number Sense, Numeration, And Numerical Operations

Strand: The Learner Will Read, Write, Model, And Compute With Rational Numbers.

Substrand**Titles that Address the Substrand**

(Gr. 4) 1.01 Read and write numbers less than one million using standard and expanded notation.

Quarter Mile Math Level 2

(Gr. 4) 1.02 Use estimation techniques in determining solutions to problems.

Quarter Mile Math Level 2

(Gr. 4) 1.05 Identify and compare rational numbers in decimal form (tenths and hundredths) using models and pictures.

Quarter Mile Math Level 2

(Gr. 4) 1.06 Relate decimals and fractions (tenths and hundredths) to each other using models and pictures.

Quarter Mile Math Level 2

(Gr. 4) 1.07 Use models and pictures to add and subtract decimals, explaining the processes and recording results.

Quarter Mile Math Level 2

(Gr. 4) 1.08 Use models and pictures to add and subtract rational numbers with like denominators.

Quarter Mile Math Level 2

(Gr. 4) 1.11 Memorize the division facts related to the multiplication facts/tables through 10.

Quarter Mile Math Level 2

(Gr. 4) 1.12 Identify missing factors in multiplication facts.

Quarter Mile Math Level 2

(Gr. 4) 1.13 Round rational numbers to the nearest whole number and justify.

Quarter Mile Math Level 2

(Gr. 4) 1.14 Estimate solutions to problems.

Quarter Mile Math Level 2

(Gr. 4) 1.15 Multiply 2- or 3- digit numbers by 1-digit numbers or a 2-digit multiple of 10.

Quarter Mile Math Level 2

(Gr. 4) 1.16 Divide using single-digit divisors, with and without remainders.

Quarter Mile Math Level 2

(Gr. 4) 1.17 Use order of operations with addition, subtraction, multiplication, and division.

Quarter Mile Math Level 2

(Gr. 4) 1.18 Solve multi-step problems; determine if there is sufficient data given, then select additional strategies including: make a chart or graph look for patterns make a simpler problem use logic work backwards break into parts. Verify and interpret results with respect to the original problem; use calculators as appropriate. Discuss alternate methods for solution.

Quarter Mile Math Level 2

Grades 5 - 5

Subject: MATH

Standard: Data, Probability, And Statistics

Strand: The Learner Will Demonstrate An Understanding And Use Of Graphing, Probability And Data Analysis.

Substrand Titles that Address the Substrand

(Gr. 5) 4.06 Use the range, median, mean and mode to describe a set of data.

Quarter Mile Math Level 2

Subject: MATH

Standard: Number Sense, Numeration, And Numerical Operations

Strand: The Learner Will Understand And Compute With Rational Numbers.

Substrand Titles that Address the Substrand

(Gr. 5) 1.01 Use place value through millions in real-world situations including reading, writing, estimating, and comparing numbers in a variety of forms.

Quarter Mile Math Level 2

(Gr. 5) 1.02 Estimate products; multiply any whole number by a 2- or 3-digit factor.

Quarter Mile Math Level 2

(Gr. 5) 1.03 Relate exponential notation to repeated multiplication.

Quarter Mile Math Level 2

(Gr. 5) 1.04 Estimate and solve division problems with 2- and 3- digit divisors; explain solution.

Quarter Mile Math Level 2

(Gr. 5) 1.05 Use the order of operations to simplify numerical expressions.

Quarter Mile Math Level 2

(Gr. 5) 1.06 Find multiples, common multiples, and least common multiple of numbers; explain.

Quarter Mile Math Level 2

(Gr. 5) 1.07 Find the factors, common factors, and greatest common factor of numbers; explain.

Quarter Mile Math Level 2

(Gr. 5) 1.09 Identify equivalent decimals and fractions at the symbolic level. Explain the equivalence.

Quarter Mile Math Level 2

(Gr. 5) 1.10 Compare and order numbers with decimals to the thousandths place; explain solution.

Quarter Mile Math Level 2

(Gr. 5) 1.11 Compare and order fractions which are given with the same numerators or the same denominators; explain solution.

Quarter Mile Math Level 2

(Gr. 5) 1.12 Add and subtract fractions with like denominators.

Quarter Mile Math Level 2

(Gr. 5) 1.13 Multiply a fraction by a whole number.

Quarter Mile Math Level 2

(Gr. 5) 1.14 Use models and pictures to add and subtract fractions and mixed numbers with unlike denominators; record solutions.

Quarter Mile Math Level 2

(Gr. 5) 1.15 Estimate results and compute sums and differences with decimal numbers.

Quarter Mile Math Level 2

(Gr. 5) 1.16 Use models and pictures to multiply a whole number by a decimal number; record and explain.

Quarter Mile Math Level 2

(Gr. 5) 1.17 Determine if there is sufficient information to solve a problem; identify missing or extraneous data in problem-solving situations.

Quarter Mile Math Level 2

(Gr. 5) 1.18 Solve multi-step problems using an organized approach, and selecting additional strategies including restate the problem classify lists write a number sentence Verify and interpret results with respect to the original problem; use calculators as appropriate.

Quarter Mile Math Level 2

Subject: MATH

Standard: Patterns, Relationships, And Functions

Strand: The Learner Will Demonstrate An Understanding Of Patterns, Relationships, And Elementary Algebraic Representation.

Substrand

Titles that Address the Substrand

(Gr. 5) 3.01 Investigate patterns that occur when changing numerators or denominators of fractions. Model with concrete materials and extend to calculator investigations.

Quarter Mile Math Level 2

(Gr. 5) 3.02 Identify and use the rules for divisibility.

Quarter Mile Math Level 2

Subject: MATH

Standard: Number Sense, Numeration, And Numerical Operations

Strand: The Learner Will Understand And Compute With Rational Numbers.

Substrand

Titles that Address the Substrand

(Gr. 6) 1.02 Relate fractions, decimals, and percents.

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6) 1.03 Compare and order fractions, decimals, and percents.

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6) 1.04 Multiply and divide fractions, mixed numbers, and decimals using models and pictures; record solution.

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6) 1.05 Multiply and divide fractions, mixed numbers, and decimals.

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6) 1.06 Add and subtract fractions and mixed numbers with unlike denominators.

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6) 1.07 Use estimation and mental math to solve problems with fractions, decimals, and percents; explain solution.

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6) 1.08 Solve problems using prime factorization, common factors and common multiples. Explain solutions.

Quarter Mile Math Level 2

(Gr. 6) 1.11 Compare and order integers.

Quarter Mile Math Level 2

Quarter Mile Math Level 3

(Gr. 6) 1.12 Use the order of operations to simplify numerical expressions with parentheses and exponents.

Quarter Mile Math Level 2

Quarter Mile Math Level 3

Subject: MATH

Standard: Number Sense, Numeration, And Numerical Operations

Strand: The Learner Will Understand And Compute With Real Numbers.

Substrand

Titles that Address the Substrand

(Gr. 7) 1.03 Model addition, subtraction, multiplication, and division of integers; record.

Quarter Mile Math Level 3

(Gr. 7) 1.04 Compute with integers.

Quarter Mile Math Level 3

(Gr. 7) 1.05 Write and solve proportions.

Quarter Mile Math Level 3

(Gr. 7) 1.06 Estimate and solve problems using ratio, proportion and percent including discounts, taxes, commissions, and simple interest.

Quarter Mile Math Level 2

Subject: MATH

Standard: Patterns, Relationships, And Functions

Strand: The Learner Will Demonstrate An Understanding Of Patterns, Relationships, And Fundamental Algebraic Concepts.

Substrand

Titles that Address the Substrand

(Gr. 7) 3.01 Evaluate algebraic expressions.

Quarter Mile Math Level 3

(Gr. 7) 3.04 Write a problem given a simple linear equation or inequality.

Quarter Mile Math Level 3

Grades 8 - 8

Subject: MATH

Standard: Data, Probability, And Statistics

Strand: The Learner Will Demonstrate An Understanding And Use Of Graphing, Probability And Data Analysis.

Substrand Titles that Address the Substrand

(Gr. 8) 4.03 Interpret the mean, explain its sensitivity to extremes, and explain its use in comparison with the median and the mode.

Quarter Mile Math Level 2

Subject: MATH

Standard: Number Sense, Numeration, And Numerical Operations

Strand: The Learner Will Understand And Compute With Real Numbers.

Substrand Titles that Address the Substrand

(Gr. 8) 1.02 Estimate and compute with rational numbers.

Quarter Mile Math Level 3

(Gr. 8) 1.03 Compare, order, and convert among fractions, decimals (terminating and non-terminating), and percents.

Quarter Mile Math Level 3

(Gr. 8) 1.04 Solve problems involving percent of increase and percent of decrease.

Quarter Mile Math Level 3

(Gr. 8) 1.06 Use rules of exponents.

Quarter Mile Math Level 2

(Gr. 8) 1.08 Solve problems involving exponents and scientific notation.

Quarter Mile Math Level 2

(Gr. 8) 1.11 Simplify algebraic expressions.

Quarter Mile Math Level 3

Subject: MATH

Standard: Patterns, Relationships, And Functions

Strand: The Learner Will Demonstrate An Understanding Of Patterns, Relationships, And Fundamental Algebraic Concepts.

Substrand Titles that Address the Substrand

(Gr. 8) 3.02 Solve one and two-step linear equations and inequalities.

Quarter Mile Math Level 3

Subject: MATH

Standard: Data, Probability, And Statistics

Strand: Discrete Mathematics

Substrand Titles that Address the Substrand

(Gr. 9-12) 4.03 Solve problems using addition and multiplication principles.

Quarter Mile Math Level 3

Subject: MATH

Standard: Number Sense, Numeration, And Numerical Operations

Strand: Introductory Mathematics

Substrand **Titles that Address the Substrand**

(Gr. 9-12) 1.03 Compare, order, and convert among fractions, decimals (terminating and non-terminating), and percents.

Quarter Mile Math Level 2

(Gr. 9-12) 1.04 Solve problems involving percent of increase and percent of decrease.

Quarter Mile Math Level 2

(Gr. 9-12) 1.06 Use rules of exponents.

Quarter Mile Math Level 2

(Gr. 9-12) 1.07 Solve problems involving exponents and scientific notation.

Quarter Mile Math Level 2

(Gr. 9-12) 1.11 Simply algebraic expressions.

Quarter Mile Math Level 2

Quarter Mile Math Level 3

Subject: MATH

Standard: Patterns, Relationships, And Functions

Strand: Introductory Mathematics

Substrand **Titles that Address the Substrand**

(Gr. 9-12) 3.01 Use formulas in problem-solving situations.

Quarter Mile Math Level 3

(Gr. 9-12) 3.02 Solve one and two-step linear equations and inequalities.

Quarter Mile Math Level 3