

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

**Grades 3 - 5**

**Subject: MATH**

**Standard: Communication**

**Strand: Communication**

**Substrand**                      **Titles that Address the Substrand**

(Gr. 3-5 ) Realize that representing, discussing, reading and listening to mathematics are a vital part of learning and using mathematics.

**Quarter Mile Math Level 1**  
**Quarter Mile Math Level 2**

(Gr. 3-5 ) Prepare and deliver a mathematical presentation.

**Quarter Mile Math Level 1**  
**Quarter Mile Math Level 2**

**Subject: MATH**

**Standard: Connections**

**Strand: Connections**

**Substrand**                      **Titles that Address the Substrand**

(Gr. 3-5 ) See the applications of numeracy concepts and skills to all objects in their environment, not just mathematics manipulatives.

**Quarter Mile Math Level 1**  
**Quarter Mile Math Level 2**

(Gr. 3-5 ) Use simple mathematical tools and concepts such as a number line to perform everyday tasks such as measuring or dividing quantities.

**Quarter Mile Math Level 1**

**Subject: MATH**

**Standard: Content Of Math**

**Strand: Estimation/Computation**

**Substrand**                      **Titles that Address the Substrand**

(Gr. 3-5 ) Choose and apply an appropriate operation to solve a problem using whole numbers, fractions, and decimals.

**Quarter Mile Math Level 1**  
**Quarter Mile Math Level 2**

(Gr. 3-5 ) Apply estimation in working with quantities, measurement, computation, and problem-solving.

**Quarter Mile Math Level 2**



(Gr. 3-5 ) Use several problem-solving strategies such as guess and check, drawing a picture, making a model, working backwards, comparing with previous experiences.

**Quarter Mile Math Level 1**  
**Quarter Mile Math Level 2**

(Gr. 3-5 ) Identify appropriate operation required by a problem.

**Quarter Mile Math Level 1**  
**Quarter Mile Math Level 2**

**Subject: MATH**  
**Standard: Reasoning**  
**Strand: Reasoning**

**Substrand**                      **Titles that Address the Substrand**

(Gr. 3-5 ) Use patterns and relationships to analyze mathematical situations.

**Quarter Mile Math Level 2**

**Grades 6 - 8**

**Subject: MATH**  
**Standard: Communication**  
**Strand: Communication**

**Substrand**    **Titles that Address the Substrand**

(Gr. 6-8 ) Understand and appreciate the value of standard mathematical notation and its role in the development of mathematical ideas.

**Quarter Mile Math Level 2**  
**Quarter Mile Math Level 3**

**Subject: MATH**  
**Standard: Connections**  
**Strand: Connections**

**Substrand**                      **Titles that Address the Substrand**

(Gr. 6-8 ) Recognize the relationship between timelines and number lines, scale representations and measurements/proportions.

**Quarter Mile Math Level 2**  
**Quarter Mile Math Level 3**

**Subject: MATH**  
**Standard: Content Of Math**  
**Strand: Estimation/Computation**

**Substrand**                      **Titles that Address the Substrand**

(Gr. 6-8 ) Use models to explore operations on integers, fractions, decimals, and percents related to real world applications. Compute and estimate solutions to real problems.

**Quarter Mile Math Level 2**  
**Quarter Mile Math Level 3**

(Gr. 6-8 ) Solve problems involving equations, proportions, and percent increase/decrease.

**Quarter Mile Math Level 2**

(Gr. 6-8 ) Generate and explain equivalent expressions of portions of whole numbers in a variety of formats.

**Quarter Mile Math Level 2**

**Quarter Mile Math Level 3**

**Subject: MATH**

**Standard: Content Of Math**

**Strand: Functions/Relations**

**Substrand**

**Titles that Address the Substrand**

(Gr. 6-8 ) Represent patterns and relationships using concrete items, tables, graphs, and simple equations. Draw connections between these four types of representations.

**Quarter Mile Math Level 3**

(Gr. 6-8 ) Analyze functions to determine what pattern or rule can be used to explain how a change in one value results in or is a result of a change in other values.

**Quarter Mile Math Level 3**

**Subject: MATH**

**Standard: Content Of Math**

**Strand: Numeration**

**Substrand**

**Titles that Address the Substrand**

(Gr. 6-8 ) Demonstrate real world use of rationals, primes, multiples, factors, and patterns.

**Quarter Mile Math Level 2**

(Gr. 6-8 ) Use order relations for rational numbers: whole numbers, fractions, decimals, and integers.

**Quarter Mile Math Level 2**

**Quarter Mile Math Level 3**

(Gr. 6-8 ) Extend his/her understanding of whole number operations to fractions, decimals, and integers. Recognize when the expression  $a/b$  refers to division, ratios, or fractional measurement.

**Quarter Mile Math Level 2**

**Quarter Mile Math Level 3**

**Subject: MATH**

**Standard: Problem Solving**

**Strand: Problem Solving**

**Substrand**

**Titles that Address the Substrand**

(Gr. 6-8 ) Recognize that real problems may have many, one, or no mathematical solutions.

**Quarter Mile Math Level 3**

(Gr. 6-8 ) Select appropriate strategies such as guess and check, solve a simpler problem, find patterns, work backwards, model, or use technology to solve problems.

**Quarter Mile Math Level 2**

**Quarter Mile Math Level 3**

**Subject: MATH**

**Standard: Content Of Math**

**Strand: Estimation/Computation**

**Substrand Titles that Address the Substrand**

(Gr. 9-12) Compute with whole numbers, fractions, decimals, integers, rationals, and irrational numbers.

**Quarter Mile Math Level 3**

(Gr. 9-12) Apply the algebraic order of operations to computation problems.

**Quarter Mile Math Level 3**

**Subject: MATH**

**Standard: Content Of Math**

**Strand: Functions/Relations**

**Substrand Titles that Address the Substrand**

(Gr. 9-12) Identify when outcomes in real problems are a function of the input, define the relationship between input and output, create mathematical models to represent such situations and solve problems. Distinguish between independent and dependent variables.

**Quarter Mile Math Level 3**

**Subject: MATH**

**Standard: Content Of Math**

**Strand: Numeration**

**Substrand Titles that Address the Substrand**

(Gr. 9-12) Distinguish similarities and differences between different number systems such as whole numbers, integers, rational and irrational numbers.

**Quarter Mile Math Level 2**

**Quarter Mile Math Level 3**

(Gr. 9-12) Estimate quantities, determine the relative magnitude, and use multiple representations of real numbers.

**Quarter Mile Math Level 2**

**Quarter Mile Math Level 3**

(Gr. 9-12) Apply the properties of complex numbers.

**Quarter Mile Math Level 3**

**Subject: MATH**

**Standard: Problem Solving**

**Strand: Problem Solving**

**Substrand Titles that Address the Substrand**

(Gr. 9-12) Apply principles, concepts, and strategies from various strands of mathematics to solve problems that originate within the discipline of mathematics or in the real world.

**Quarter Mile Math Level 3**

(Gr. 9-12) Evaluate the role of various criteria in determining the optimal solution to a problem.

**Quarter Mile Math Level 2**

**Quarter Mile Math Level 3**