

ADAMS Twelve Five Star Schools
Mathematics Curriculum Framework Grades 9-12

ADAMS TWELVE

Five Star Schools

MATHEMATICS
CURRICULUM FRAMEWORK
FOR REQUIRED
HIGH SCHOOL COURSEWORK

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Revised 2002

This document is a list of the content skills and processes identified as the mathematics curriculum for students in Adams Twelve Five Star High Schools. Each content standard identifies an area of focus for mathematics instruction. The Year 1 and Year 2 document identifies specifically what a student should know and be able to do. The continuum provides the classroom teacher with a guideline of the mathematical content, skills and procedures in the Year 1 and Year 2 high school curriculum.

The original document was approved by the Board of Education in March 1994. It incorporated the recommendations of the National Council of Teachers of Mathematics as identified in their 1989 publication, Curriculum and Evaluation Standards for School Mathematics. Recent revisions have been made to the district curriculum framework, using:

- 2000 National Council of Teachers of Mathematics' Principles and Standards for School Mathematics
- 2001 Colorado Department of Education's Ninth and Tenth Grade Mathematics Assessment Framework
- Colorado State Mathematics Content Standards.

The major change in this document is the limitation to only Year I and Year 2 mathematics curriculum. This revised document addresses the mathematics curriculum framework for the two-year graduation requirement. The original document contained ten standards. The first six standards which were content standards, are still intact. Each of the district's standards aligns directly with the state standards. The remaining four process standards are embedded into the six content standards. The first section in each standard incorporates thinking skills, problem solving and communication processes. The curriculum presents a holistic view of learning that applies mathematical skills in context.

This curriculum represents a work in progress by district teachers over the past ten years. It has been reviewed by teachers, administrators and parents and has been revised based on their input before its approval by the Board of Education. The content, skills, and processes specified in this guide -are not only research based, but also have been drawn from the collective experience of the district teachers who assisted in its development. Classroom teachers will adhere to this -curriculum framework-when designing instruction for Year 1 and Year 2 coursework.

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Number Sense

Content Standard 1: Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

State Model Content Standards	District Expectations For All Students (Year 1 and 2 coursework)
<p>1.0 Applying problem-solving processes daily using vocabulary, language, and notation to explain and support mathematical thinking through speaking, listening, and writing.</p>	<ul style="list-style-type: none"> • interpret oral and written presentations of mathematics and apply • the understanding to problem situations • apply the process of mathematical modeling to problem situations • use multiple solution paths in solving problems and explain the rationale • support mathematical ideas and conclusions by providing evidence to justify the reasoning • communicate mathematical ideas in oral and written forms
<p>Page or location: <i>CORD Algebra 1</i> See features “Four Step Plan” pages 29, 90, 158, 245, 317, 346, 423, 460, 534, 579, 642, 720; “Workplace Communication” pages 111, 172, 216, 302, 353, 401, 473, 509, 605, 705; “Think and Discuss”, “Practice and Problem Solving” and “Mixed Review” exercises at end of each lesson; “Math Applications” exercises at end of each chapter. <i>CORD Geometry</i> See “Think and Discuss”, “Practice and Problem Solving”, and “Mixed Review” exercises at the end of each lesson, “Math Application” exercises at the end of each chapter. See “Problem Solving: Using the Four-Step Plan” on pages 41, 100, 214, 338, 474, and “Workplace Communication” on pages 182, 351, 435, 462, 561</p>	

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<p>1.1 Demonstrating meanings for real numbers, absolute value, and scientific notation using physical materials and technology in problem solving situations.</p>	<ul style="list-style-type: none"> • demonstrate the relationships among subsets of the real number system, including counting, whole, integer, rational, and irrational numbers, to one another • compare and order sets of real numbers • demonstrate the meaning of absolute value as distance on the number line • convert between fractions, decimals and percents • use very large and very small numbers in real life situations to solve problems (<i>for example, understanding the size of the national debt</i>) • convert numbers to scientific notations, and vice versa
<p>Page or location: CORD Algebra I Lesson 1.1, 1.3, 1.7, 3.2 CORD Geometry None</p>	
<p>1.2 Developing, testing and explaining conjectures about properties of number systems and sets of numbers.</p>	<ul style="list-style-type: none"> • demonstrate that the field properties, including closure, commutative, associative, distributive, identity, and inverse properties, apply to the real number system • verify conjectures about number theory concepts applied to the real number system (<i>for example, the sum of two odd numbers is even</i>) • apply number theory concepts of GCF, LCM, prime factorization • verify and apply the laws of exponents
<p>Page or location: CORD Algebra I Lesson 3.1, 3.3, 10.2, 10.3, 10.4 CORD Geometry 95-102, 171</p>	

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<p>1.3 Using number sense to estimate and justify the reasonableness of solutions to problems involving real numbers.</p>	<ul style="list-style-type: none"> • determine if a problem requires estimation and/or exact computation • estimate, using appropriate techniques including rounding, solutions to problems involving real numbers (circumference, area, irrational solutions) • determine and justify the reasonableness of solutions obtained using both estimation and exact computations
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Page or location:
CORD Algebra 1 Throughout the book. Examples: 19-20, 40-41, 312-316, 349-355. Also, see features “**Four Step Plan**” pages 29, 90, 158, 245, 317, 346, 423, 460, 534, 579, 642, 720
CORD Geometry Indirect measurement: 245, 252, 302, 328-330, 331-334, 347, 359, 360, 365, 367-369, 383, 384, 387, 394, 718-720. Also, see "**Problem Solving: Using the Four-Step Plan**" on pages 41, 100, 214, 338, 474

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Algebraic Methods

Content Standard 2: Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

State Model Content Standards	District Expectations Per All Students (Year 1 and 2 coursework)
<p>2.0 Applying problem-solving processes daily using vocabulary, language, and notation to explain and support mathematical thinking through speaking, listening, and writing</p>	<ul style="list-style-type: none"> • interpret oral and written presentations of mathematics and apply the understanding to problem situations • apply the process of mathematical modeling to problem situations • use multiple solution paths in solving problems and explain the rationale • support mathematical ideas and conclusions by providing evidence to justify the reasoning • communicate mathematical ideas in oral and written forms
<p>Page or location: CORD Algebra 1 See features “Four Step Plan” pages 29, 90, 158, 245, 317, 346, 423, 460, 534, 579, 642, 720; “Workplace Communication” pages 111, 172, 216, 302, 353, 401, 473, 509, 605, 705; “Think and Discuss”, “Practice and Problem Solving” and “Mixed Review” exercises at end of each lesson; “Math Applications” exercises at end of each chapter. CORD Geometry See “Think and Discuss”, “Practice and Problem Solving”, and “Mixed Review” exercises at the end of each lesson, “Math Application” exercises at the end of each chapter. See “Problem Solving: Using the Four-Step Plan” on pages 41, 100, 214, 338, 474, and “Workplace Communication” on pages 182, 351, 435, 462, 561</p>	
<p>2.1 Modeling real-world phenomena (e.g.; distance-versus-time relationships, compound interest, amortization tables, mortality rates) using functions, equations, inequalities, and matrices</p>	<ul style="list-style-type: none"> • recognize when a pattern exists and use that information to represent and solve a problem • use linear and non-linear expressions, recursive processes or equations/inequalities to represent real world situations • use matrices to model real world problems
<p>Page or location: CORD Algebra 1 32-36, 56-58, 80-96, 128-143, 146-203, 206-277, 280-339, 442-493, 496-555, 620-677 CORD Geometry 41, 69, 70-73, 84, 140-161, 310-353, 390-455, 458-515, 518-579, 588, 596-663, 698-711, 729-730</p>	

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<p>2.2 Representing functional relationships using written explanations, tables, equations, and graphs, and describe the connections among these representations.</p>	<ul style="list-style-type: none"> • generate rules, equations, or graphs to describe relations/functions <ul style="list-style-type: none"> ---distinguish between independent and dependent variables • represent relations using written explanations, tables, equations, and graphs <ul style="list-style-type: none"> ---describe the connections among these representations ---convert between representations • graph equations and inequalities • interpret a graphical representation of a real world situation
<p>Page or location: <i>CORD Algebra I</i> 241-277, 280-339, 442-493, 496-555, 620-677 <i>CORD Geometry</i> 14, 41, 95-102, 140-161, 171, 183, 310-353, 390-455, 458-515, 518-579, 588, 596-663, 698-711, 729-730</p>	
<p>2.3 Solving problems involving functional relationships using graphing calculators and/or computers as well as appropriate paper-and-pencil techniques.</p>	<ul style="list-style-type: none"> • use order of operations, substitution principle, and number properties to evaluate/simplify expressions and solve problems • solve for a numerical result • solve equations with more than one variable for a given variable • manipulate polynomials <ul style="list-style-type: none"> ---simplify ---perform operations of +, -, ×, ÷ ---factor ---square and cube • identify linear equations represented in various forms <ul style="list-style-type: none"> ---general (any linear equation) ---standard ($ax+by=c$) ---slope-intercept ($y = mx + b$) • use a variety of approaches to solve linear equations/inequalities, linear systems, and quadratic equations <ul style="list-style-type: none"> ---algebraic techniques ---graphing ---technology ---tables
<p>Page or location: <i>CORD Algebra I</i> 146-203, 241-277, 280-339, 442-493, 496-555, 558-617, 620-677 <i>CORD Geometry</i> 14, 41, 95-102, 140-161, 171, 183, 310-353, 390-455, 458-515, 518-579, 588, 596-663, 698-711, 729-730, 739-744</p>	

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<p>2.4 Analyzing and explaining the behaviors, transformations, and general properties of types of equations and functions (e.g., linear, quadratic, exponential).</p>	<ul style="list-style-type: none"> • classify tables and graphs representing functions or relations • explore the general properties of linear, quadratic, and exponential equations • identify the domain and range for a given function • explore the effects of transformations on linear and quadratic relations • identify and interpret x and y intercepts in the context of a problem • use a graph to identify maximum and minimum values for a given domain
<p>Page or location: <i>CORD Algebra 1</i> 206-277, 280-337, 620-677 <i>CORD Geometry</i> 413-420</p>	
<p>2.5 Interpreting algebraic equations and inequalities geometrically, and describing geometric relationships algebraically.</p>	<ul style="list-style-type: none"> • analyze linear graphs <ul style="list-style-type: none"> ---slope ---intercepts ---equations of a line ---length ---midpoint • graph solutions to equalities or inequalities in one and two dimensions (number line and coordinate plane) • apply the Pythagorean Theorem on the coordinate plane • express perimeter, area, and volume relationships of geometric figures algebraically • use algebraic equations to describe properties of geometric figures such as square, rhombus, triangle and parallelogram
<p>Page or location: <i>CORD Algebra 1</i> 97-113, 128-143, 206-277, 496-555, 688-698 <i>CORD Geometry</i> 181, 256-307, 310-387, 390-455, 458-515, 518-579, 582-662</p>	

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Statistics and Probability

Content Standard 3: Students use data collection and analysis, statistics, and probability in problem-solving situations and communicate the reasoning and processes used in solving these problems.

State Model Content Standards	District Expectations For All Students (Year 1 and 2 coursework)
<p>3.0 Applying problem-solving processes daily using vocabulary, language, and notation to explain and support mathematical thinking through speaking, listening, and writing</p>	<ul style="list-style-type: none"> • interpret oral and written presentations of mathematics and apply the understanding to problem situations • apply the process of mathematical modeling to problem situations • use multiple solution paths in solving problems and explain the rationale • support mathematical ideas and conclusions by providing evidence to justify the reasoning • communicate mathematical ideas in oral and written forms
<p>Page or location: CORD Algebra 1 See features “Four Step Plan” pages 29, 90, 158, 245, 317, 346, 423, 460, 534, 579, 642, 720; “Workplace Communication” pages 111, 172, 216, 302, 353, 401, 473, 509, 605, 705; “Think and Discuss”, “Practice and Problem Solving” and “Mixed Review” exercises at end of each lesson; “Math Applications” exercises at end of each chapter. CORD Geometry See “Think and Discuss”, “Practice and Problem Solving”, and “Mixed Review” exercises at the end of each lesson, “Math Application” exercises at the end of each chapter. See “Problem Solving: Using the Four-Step Plan” on pages 41, 100, 214, 338, 474, and “Workplace Communication” on pages 182, 351, 435, 462, 561</p>	

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<p>3.1 Designing and conducting a statistical experiment to study a problem, and interpreting and communicating the results using the appropriate technology (e.g., graphing calculators, computer software).</p>	<ul style="list-style-type: none"> • select and use an appropriate display to represent and describe a set of data (for example, scatter plot, line graph, histogram) • collect data using appropriate data collection instruments and processes • determine the type of data (that is, categorical or numerical) to be collected in the design of a statistical study • determine factors which may affect the outcome of the survey (for example, biased questions or collection methods) • draw conclusions about a large population based upon a properly chosen random sample • use informal methods or technology to determine the correlation between two sets of data
<p>Page or location: <i>CORD Algebra I</i> 349-355, 390-439, 657-660, 662-663 <i>CORD Geometry</i> 57-58, 125, 416-417, 420, 493, 534-535, 539, 540, 595</p>	
<p>3.2 Analyzing statistical claims for erroneous conclusions or distortions.</p>	<ul style="list-style-type: none"> • check a graph, table, or summary for misleading characteristics • recognize the misuse of statistical data in written arguments • describe how data can be interpreted in more than one way or be used to support more than one position in a debate • describe how the responses to a survey can be affected by the way the questions are phrased and/or by the reader's bias
<p>Page or location: <i>CORD Algebra I</i> None <i>CORD Geometry</i> None</p>	

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<p>3.3 Fitting curves to scatter plots using informal methods or appropriate technology to determine the strength of the relationship between two data sets and to make predictions</p>	<ul style="list-style-type: none"> • graph data sets, create a scatter plot, and identify the control (independent) variable and the dependent variable • determine a line of best fit from a scatter plot using visual techniques • identify the relationship (correlation) between variables as to direction and strength of the correlation • predict values using the line of best fit • show how extrapolation may lead to faulty conclusions • use appropriate technology (for example, graphing calculator) as it relates to scatter plots, regression lines, and correlation • recognize which models, linear or nonlinear, fits the data most appropriately
<p>Page or location: <i>CORD Algebra 1</i> 404-410, 432, 437, 439, 518, 657-660, 662-663, 677 <i>CORD Geometry</i> 416-417, 420</p>	
<p>3.4 Drawing conclusions about distributions of data based on analysis of statistical summaries (e.g., the combination of mean and standard deviation, and differences between the mean and median).</p>	<ul style="list-style-type: none"> • differentiate between mean, median, and mode and demonstrate the appropriate use of each • recognize and classify various types of distributions (for example, bimodal, skewed, uniform, binomial, and normal) • use the mean and standard deviation to determine relative positions of data points in a normal distribution of authentic data • demonstrate how outliers affect representation of data
<p>Page or location: <i>CORD Algebra 1</i> 390-396, 397-403, 415-419, 420-425, 426-429, 430-439 <i>CORD Geometry</i> 416-417, 420</p>	

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<p>3.5 Using experimental and theoretical probability to represent and solve problems involving uncertainty (e.g., the chance of playing professional sports if a student is a successful high school athlete).</p>	<ul style="list-style-type: none"> • determine the probability of an identified event using the sample space • distinguish between experimental and theoretical probability and use each appropriately • differentiate between independent and dependent events to calculate the probability in real-world situations • use a complementary event to solve a problem • apply the addition rule or multiplication rule appropriately in probability problem-solving situations • use a geometric model to represent probabilities (for example, the probability of hitting the bull’s eye region in a target)
<p>Page or location: <i>CORD Algebra I</i> 342-387 <i>CORD Geometry</i> 492-496, 510, 513, 515, 548, 630, 711</p>	
<p>3.6 Solving real-world problems with informal use of combinations and permutations (e.g., determining the number of possible meals at restaurant featuring a given number of side dishes).</p>	<ul style="list-style-type: none"> • differentiate between and calculate permutations and combinations • apply the fundamental counting rule, a permutation, or a combination appropriately • determine probabilities of real-world problems using appropriate counting techniques • use tree diagrams, lists, and/or other methods to show outcomes
<p>Page or location: <i>CORD Algebra I</i> 356-361, 362-367, 368-373, 377 <i>CORD Geometry</i> 492-496, 510, 513, 515, 548, 630, 711</p>	

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Geometry

Content Standard 4: Students use geometric concepts, properties, and relationships in problem-solving situations and communicate the reasoning used in solving these problems.

State Model Content Standards	District Expectations For All Students (Year 1 and 2 coursework)
<p>4.0 Applying problem-solving processes daily using vocabulary, language, and notation to explain and support mathematical thinking through speaking, listening, and writing.</p>	<ul style="list-style-type: none"> • interpret oral and written presentations of mathematics and apply the understanding to problem situations • apply the process of mathematical modeling to problem situations • use multiple solution paths in solving problems and explain the rationale • support mathematical ideas and conclusions by providing evidence to justify the reasoning • communicate mathematical ideas in oral and written forms
<p>Page or location: CORD Algebra 1 See features “Four Step Plan” pages 29, 90, 158, 245, 317, 346, 423, 460, 534, 579, 642, 720; “Workplace Communication” pages 111, 172, 216, 302, 353, 401, 473, 509, 605, 705; “Think and Discuss”, “Practice and Problem Solving” and “Mixed Review” exercises at end of each lesson; “Math Applications” exercises at end of each chapter. CORD Geometry See “Think and Discuss”, “Practice and Problem Solving”, and “Mixed Review” exercises at the end of each lesson, “Math Application” exercises at the end of each chapter. See “Problem Solving: Using the Four-Step Plan” on pages 41, 100, 214, 338, 474, and “Workplace Communication” on pages 182, 351, 435, 462, 561</p>	
<p>4.1 Finding and analyzing relationships among geometric figures using transformations (e.g., reflections, translations, rotations, dilations) in coordinate systems.</p>	<ul style="list-style-type: none"> • draw geometric figures using a variety of techniques • describe and apply properties of similar and congruent figures • solve problems involving symmetry and transformations • use coordinate geometry and/or tessellations to solve problems using geometric transformation
<p>Page or location: CORD Algebra 1 None CORD Geometry 36-43, 204-210, 211-217, 218-223, 224-230, 231-236, 237-241, 242-252, 316-322, 323-330, 331-334, 335-340, 348-353, 354-360, 361-366, 367-372, 373-387, 489-491, 582-588, 589-595, 632-636, 666-673, 674-680, 681-687, 688-693, 694-697, 698-704, 705-711, 712-720, 721-730</p>	

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<p>4.2 Deriving and using methods to measure perimeter, area, and volume of regular and irregular geometric figures.</p>	<ul style="list-style-type: none"> • apply properties of similarity to solve problems using proportions, scale drawings, etc. • use the Pythagorean Theorem and its converse to solve real-world problems • use known properties and formulas of polygons to find areas of regular and irregular figures • use known properties and formulas of geometric solids to find volumes and surface areas of regular and irregular geometric solids • use known properties of geometric figures in real-world applications
<p>Page or location: CORD Algebra 1 97-102, 107-113, 155-156, 680-687, 688-693 CORD Geometry 256-261, 262-267, 268-272, 273-278, 279-284, 285-290, 291-296, 297-307, 316-322, 323-330, 331-334, 335-340, 341-347, 348-353, 354-360, 361-366, 367-369, 371-372, 373-387, 458-464, 465-470, 471-476, 477-480, 481-486, 487-491, 492-496, 497-503, 504-515, 582-588, 589-595, 596-604, 605-611, 612-618, 619-615, 626-631, 632-636, 642-649, 650-662</p>	
<p>4.3 Making and testing conjectures about geometric shapes and their properties, incorporating technology where appropriate.</p>	<ul style="list-style-type: none"> • develop an understanding of the following: bisect, perpendicular, parallel, congruent, and similar, incorporating the use of technology where appropriate • make conjectures for properties of geometric figures and uses inductive and/or deductive reasoning to verify those conjectures • use a logical process to prove geometric concepts (for example, direct, indirect, paragraph, or verbal proofs, flow charts, or constructions)
<p>Page or location: CORD Algebra 1 249, 251, 626, 680-687 CORD Geometry See Math Labs on pages 46-48, 122, 186-187, 239, 291, 369-371, 439-441, 501-503, 567-570, 643-646, 712-715. There are proofs throughout the text. Examples of two-column geometric proofs: 90, 157, 274, 341, 437, 547; flow-chart proofs: 90, 197, 220, 265, 404, 540; paragraph proofs: 90, 109, 220, 275, 344, 424; indirect proofs: 173-178, 194, 197, 200; coordinate proofs: 421-428, 453, 455. Conjectures can be found on pages 23, 24, 32-34, 44-45, 68-73, 74-79, 80-84, 85-88, 105, 115-121, 122, 127, 129, 130-132, 136, 137, 149, 154, 157, 161, 163-164, 172, 179, 230, 231, 235, 236, 239-241, 262, 263, 265, 279, 281, 287, 291-292, 318, 319, 323-325, 340, 341, 349, 353, 354, 366, 415, 427, 469, 583, 525, 528, 542-544, 551, 553, 557, 558, 605, 606, 618, 638, 699, 700, 708</p>	

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<p>4.4 Using trigonometric ratios in problem-solving situations (e.g. finding the height of a building from a given point, if the distance to the building and the angle of elevation are known).</p>	<ul style="list-style-type: none"> • use right triangle trigonometry to solve real-world problems • use properties of special right triangles to solve real-world problems • recognize the relationship between slope and the tangent ratio
<p>Page or location: <i>CORD Algebra 1</i> 699-708, 709-716, 722-726 <i>CORD Geometry</i> 331-334, 335-340, 341-347, 348-353, 354-360, 361-366, 367-372, 373-387</p>	

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Measurement

Content Standard 5: Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.

State Model Content Standards	District Expectations For All Students (Year 1 and 2 coursework)
<p>5.0 Applying problem-solving processes daily using vocabulary, language, and notation to explain and support mathematical thinking through speaking, listening, and writing.</p>	<ul style="list-style-type: none"> • interpret oral and written presentations of mathematics and apply the understanding to problem situations • apply the process of mathematical modeling to problem situations • use multiple solution paths in solving problems and explain the rationale • support mathematical ideas and conclusions by providing evidence to justify the reasoning • communicate mathematical ideas in oral and written forms
<p>Page or location: CORD Algebra 1 See features “Four Step Plan” pages 29, 90, 158, 245, 317, 346, 423, 460, 534, 579, 642, 720; “Workplace Communication” pages 111, 172, 216, 302, 353, 401, 473, 509, 605, 705; “Think and Discuss”, “Practice and Problem Solving” and “Mixed Review” exercises at end of each lesson; “Math Applications” exercises at end of each chapter. CORD Geometry See “Think and Discuss”, “Practice and Problem Solving”, and “Mixed Review” exercises at the end of each lesson, “Math Application” exercises at the end of each chapter. See “Problem Solving: Using the Four-Step Plan” on pages 41, 100, 214, 338, 474, and “Workplace Communication” on pages 182, 351, 435, 462, 561</p>	

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<p>5.1 Measuring quantities indirectly using techniques of algebra, geometry, or trigonometry.</p>	<ul style="list-style-type: none"> • explore techniques in algebra, geometry and trigonometry to measure quantities indirectly <ul style="list-style-type: none"> ---formulas ---similarity ---trigonometry ratios • use measurements to solve problems involving rate of change: e.g. distance traveled using rate and time • given the rate of change, model real-world problems algebraically or graphically • describe how changing the measure of one attribute of a geometric figure affects the other measurements
<p>Page or location: <i>CORD Algebra I</i> 89, 122, 125-127, 143, 234-240, 241-248, 262-263, 263-264, 291-295, 308-311, 323-324, 684-686, 688-693, 707, 709-716 <i>CORD Geometry</i> 245, 310-315, 316-322, 323-330, 331-334, 335-340, 341-347, 348-353, 354-360, 361-366, 367-369, 371-372, 373-387, 487-491, 632-636, 718-720</p>	
<p>5.2 Selecting and using appropriate techniques and tools to measure quantities in order to achieve specified degrees of precision, accuracy, and error (or tolerance) of measurements.</p>	<ul style="list-style-type: none"> • Given two- and three-dimensional figures, use appropriate measurement techniques, units, and tools to measure/calculate <ul style="list-style-type: none"> ---perimeter ---area ---surface area ---volume • perform a variety of measurements in order to achieve a specified degree of accuracy or error of measurement • use distance formula to find the distance between two points on a coordinate plane • use midpoint formula to find the midpoint between two points on a coordinate plane
<p>Page or location: <i>CORD Algebra I</i> 114-121, 691-692. See also the following Math Lab activities: pages 123-125, 185-186, 263-264 <i>CORD Geometry</i> 256-261, 390-396, 429-437, 444-455, 458-464, 465-470, 471-476, 477-480, 481-486, 487-491, 493-494, 496, 497-499, 499-501, 504-515, 528, 529-532, 541, 545, 549, 556, 573, 576, 577, 595, 596-604, 605-611, 612-618, 617, 619-625, 626-631, 632-636, 637-641, 647-649, 650-663, 673, 693, 697, 711</p>	

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<p>5.3 Determine the degree of accuracy of a measurement (e.g., by understanding and using significant digits).</p>	<ul style="list-style-type: none"> • determine the degree of accuracy of a measurement with appropriate number of significant digits • use and understand significant digits
<p>Page or location: <i>CORD Algebra 1</i> 114-121 <i>CORD Geometry</i> None</p>	

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Computation

Content Standard 6: Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving these problems.

State Model Content Standards	District Expectations For All Students (Year 1 and 2 coursework)
<p>6.0 Applying problem-solving processes daily using vocabulary, language, and notation to explain and support mathematical thinking through speaking, listening, and writing.</p>	<ul style="list-style-type: none"> • interpret oral and written presentations of mathematics and apply the understanding to problem situations • apply the process of mathematical modeling to problem situations • use multiple solution paths in solving problems and explain the rationale • support mathematical ideas and conclusions by providing evidence to justify the reasoning • communicate mathematical ideas in oral and written forms
<p>Page or location: CORD Algebra 1 See features “Four Step Plan” pages 29, 90, 158, 245, 317, 346, 423, 460, 534, 579, 642, 720; “Workplace Communication” pages 111, 172, 216, 302, 353, 401, 473, 509, 605, 705; “Think and Discuss”, “Practice and Problem Solving” and “Mixed Review” exercises at end of each lesson; “Math Applications” exercises at end of each chapter. CORD Geometry See “Think and Discuss”, “Practice and Problem Solving”, and “Mixed Review” exercises at the end of each lesson, “Math Application” exercises at the end of each chapter. See “Problem Solving: Using the Four-Step Plan” on pages 41, 100, 214, 338, 474, and “Workplace Communication” on pages 182, 351, 435, 462, 561</p>	
<p>6.1 Using ratios, proportions, and percents in problem solving situations.</p>	<ul style="list-style-type: none"> • convert from one set of units to another (for example, feet/minute to miles/hour) • solve a direct variation problem with proportions • compute percent increases and decreases • compute with rational numbers including decimals, fractions and integers
<p>Page or location: CORD Algebra 1 18-31, 44-48, 49-53, 93-96, 155-160, 291-295 CORD Geometry 310-315, 316-322, 323-330, 331-334, 335-340, 348-353, 487-491, 632-636, 705-711</p>	

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<p>6.2 Selecting and using appropriate methods for computing with real numbers in problem-solving situations from among mental arithmetic, estimation, paper- and-pencil, calculator, and computer methods, and determining whether the results are reasonable.</p>	<ul style="list-style-type: none"> • apply appropriate arithmetical operations and computational methods to solve multi-step problems involving real numbers • apply inverse operations of arithmetic and algebraic operations to solve problems involving real numbers • solve problems involving very large and very small numbers using scientific notation • simplify and perform basic arithmetic operations on radicals • determine the reasonableness of an answer • maintain computational skills with real numbers
<p>Page or location: CORD Algebra 1 18-31, 37-43, 146-203, 694-698. Also, see feature “Four Step Plan” pages 29, 90, 158, 245, 317, 346, 423, 460, 534, 579, 642, 720;</p>	
<p>6.3 Describing the limitations of estimation and assessing the amount of error resulting from estimation within acceptable tolerance limits.</p>	<ul style="list-style-type: none"> • determine when estimation is an appropriate method to solve a problem and describe what error might result from this estimate • demonstrate an appropriate upper/lower limit on an estimate
<p>Page or location: CORD Algebra 1 118-121, 304-311, 312-319, 349-355, 649-656. Also, see feature “Four Step Plan” pages 29, 90, 158, 245, 317, 346, 423, 460, 534, 579, 642, 720 CORD Geometry See "Problem Solving: Using the Four-Step Plan" on pages 41, 100, 214, 338, 474. See also, 501-503</p>	