

Northpoint Horizons

CAVS (Content Academic Vocabulary System) Math 3-5 Correlated to the California State Mathematic Content Standards

Grade 5

This document provides a correlation to the math directives offered throughout the *CAVS Math* program that meet the California Mathematics Content Standards. The n/a signifies the standards that are not directly met for this grade level.

Math Content Standard	CAVS Math Grades 3-5 Teacher's Guide Lessons
Number Sense	
1.0 Students compute with very large and very small numbers, positive integers, decimals, and fractions and understand the relationship between decimals, fractions, and percents. They understand the relative magnitudes of numbers:	
1.1 Estimate, round, and manipulate very large (e.g., millions) and very small (e.g., thousandths) numbers.	Students round whole numbers to nearest thousand and ten thousand: Lesson 1 – TG p. 1 <i>How can you put numbers in order?</i>
1.2 Interpret percents as a part of a hundred; find decimal and percent equivalents for common fractions and explain why they represent the same value; compute a given percent of a whole number.	Lesson 5 – TG p. 25 <i>How do you show that a number is not a whole?</i> Lesson 6 – TG p. 31 <i>How else can you show less than one whole?</i>
1.3 Understand and compute positive integer powers of nonnegative integers; compute examples as repeated multiplication.	n/a
1.4 Determine the prime factors of all numbers through 50 and write the numbers as the product of their prime factors by using exponents to show multiples of a factor (e.g., $24 = 2 \times 2 \times 2 \times 3 = 2^3 \times 3$).	Students examine <i>factors</i> and <i>prime numbers</i> : Lesson 3 – TG p. 13 <i>How do we count large amounts?</i>
1.5 Identify and represent on a number line decimals,	n/a

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fractions, mixed numbers, and positive and negative integers.	
2.0 Students perform calculations and solve problems involving addition, subtraction, and simple multiplication and division of fractions and decimals:	
2.1 Add, subtract, multiply, and divide with decimals; add with negative integers; subtract positive integers from negative integers; and verify the reasonableness of the results.	n/a
2.2 Demonstrate proficiency with division, including division with positive decimals and long division with multidigit divisors.	Students use math content vocabulary: <i>division, dividend, divisor, quotient, and remainder</i> to solve simple division problems with whole number dividends and single digit divisors. Lesson 4 – TG p. 19 <i>How do we make equal groups?</i>
2.3 Solve simple problems, including ones arising in concrete situations, involving the addition and subtraction of fractions and mixed numbers (like and unlike denominators of 20 or less), and express answers in the simplest form.	n/a
2.4 Understand the concept of multiplication and division of fractions.	n/a
2.5 Compute and perform simple multiplication and division of fractions and apply these procedures to solving problems.	n/a
Algebra and Functions	
1.0 Students use variables in simple expressions, compute the value of the expression for specific values of the variable, and plot and interpret the results:	
1.1 Use information taken from a graph or equation to answer questions about a problem situation.	Lesson 9 – TG p. 49 <i>How can math rules help you solve equations?</i>
1.2 Use a letter to represent an unknown number; write and evaluate simple algebraic expressions in one variable by substitution.	n/a
1.3 Know and use the distributive property in equations and expressions with variables.	Lesson 9 – TG p. 49 <i>How can math rules help you solve equations?</i>
1.4 Identify and graph ordered pairs in the four quadrants of the coordinate plane.	Students use the vocabulary words: <i>grid, x-axis, y-axis, coordinate, and ordered pair</i> to identify and interpret a grid; to

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	distinguish between the x-axis and y-axis; and to identify a location on a grid by using coordinates: Lesson 8 – TG p. 43 <i>How can you use models?</i>
1.5 Solve problems involving linear functions with integer values; write the equation; and graph the resulting ordered pairs of integers on a grid.	n/a
Measurement and Geometry	
1.0 Students understand and compute the volumes and areas of simple objects:	
1.1 Derive and use the formula for the area of a triangle and of a parallelogram by comparing it with the formula for the area of a rectangle (i.e., two of the same triangles make a parallelogram with twice the area; a parallelogram is compared with a rectangle of the same area by cutting and pasting a right triangle on the parallelogram).	Students explore the vocabulary word <i>area</i> : Lesson 12 - TG p. 67 <i>How do you measure flat shapes?</i> Students explore the vocabulary word <i>parallelogram</i> : Lesson 16 – TG p. 91 <i>How do we describe shapes with straight sides?</i> Students explore different triangles: Lesson 17 – TG p. 97 <i>How do we describe shapes with three sides?</i>
1.2 Construct a cube and rectangular box from two-dimensional patterns and use these patterns to compute the surface area for these objects.	Students explore the vocabulary word <i>area</i> : Lesson 12 - TG p. 67 <i>How do you measure flat shapes?</i> Students explore 2-dimensional shapes: Lesson 16 – TG p. 91 <i>How do we describe shapes with straight sides?</i> Students explore the vocabulary word <i>cube</i> : Lesson 19 - TG p. 109 <i>What attributes do solid shapes share?</i>
1.3 Understand the concept of volume and use the appropriate units in common measuring systems (i.e., cubic centimeter [cm ³], cubic meter [m ³], cubic inch [in ³], cubic yard [yd ³]) to compute the volume of rectangular solids.	n/a
1.4 Differentiate between, and use appropriate units of measures for, two-and three-dimensional objects (i.e., find the perimeter, area, volume).	Students explore the vocabulary words <i>area</i> and <i>perimeter</i> : Lesson 12 - TG p. 67 <i>How do you measure flat shapes?</i>

Math Content Standard	CAVS Math Grades 3-5 Teacher's Guide Lessons
	Students explore the vocabulary word <i>volume</i> : Lesson 13 – TG p. 73 <i>How do you measure solid shapes?</i> Students explore 2-dimensional shapes: Lesson 16 – TG p. 91 <i>How do we describe shapes with straight sides?</i> Students explore 3-dimensional shapes: Lesson 19 - TG p. 109 <i>What attributes do solid shapes share?</i>
2.0 Students identify, describe, and classify the properties of, and the relationships between, plane and solid geometric figures:	
2.1 Measure, identify, and draw angles, perpendicular and parallel lines, rectangles, and triangles by using appropriate tools (e.g., straightedge, ruler, compass, protractor, drawing software).	Students use a ruler and yardstick: Lesson 10 – TG p. 55 <i>What do you use to measure things?</i> Students use a ruler and yardstick: Lesson 11 – TG p. 61 <i>How do you measure?</i> Students identify perpendicular and parallel lines: Lesson 16 – TG p. 91 <i>How do we describe shapes with straight sides?</i> Students identify angles and triangles: Lesson 17 – TG p. 97 <i>How do we describe shapes with three sides?</i>
2.2 Know that the sum of the angles of any triangle is 180° and the sum of the angles of any quadrilateral is 360° and use this information to solve problems.	n/a
2.3 Visualize and draw two-dimensional views of three-dimensional objects made from rectangular solids.	Lesson 19 - TG p. 109 <i>What attributes do solid shapes share?</i>
Statistics, Data Analysis, and Probability	
1.0 Students display, analyze, compare, and interpret different data sets, including data sets of different sizes:	
1.1 Know the concepts of mean, median, and mode; compute and compare simple examples to show that they may differ.	Lesson 22 – TG p. 127 <i>How do you compare facts and information?</i>
1.2 Organize and display single-variable data in appropriate graphs and representations (e.g.,	Lesson 21 – TG p. 121 <i>Why do you need information?</i>

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histogram, circle graphs) and explain which types of graphs are appropriate for various data sets.	
1.3 Use fractions and percentages to compare data sets of different sizes.	n/a
1.4 Identify ordered pairs of data from a graph and interpret the meaning of the data in terms of the situation depicted by the graph.	Students use the vocabulary word: <i>ordered pair</i> . Lesson 8 – TG p. 43 <i>How can you use models?</i>
1.5 Know how to write ordered pairs correctly; for example, (x, y).	Students use the vocabulary word: <i>ordered pair</i> . Lesson 8 – TG p. 43 <i>How can you use models?</i>
Mathematical Reasoning	
1.0 Students make decisions about how to set up a problem:	
1.1 Analyze problems by identifying relationships, distinguishing relevant from irrelevant information, sequencing and prioritizing information, and observing patterns.	Students use vocabulary words: <i>relevant information</i> and <i>irrelevant information</i> to apply and adapt a variety of appropriate strategies to solve problems and reflect on the process of problem solving: Lesson 24 – TG p. 139 <i>How can you solve problems?</i>
1.2 Determine when and how to break a problem into simpler parts.	During each <i>CAVS</i> Math Lesson, the teacher helps students determine the approach, materials, and strategies to be used to solve problems using the <i>5-E</i> Instructional Approach while highlighting math content academic vocabulary. The <i>5-E</i> Approach: <i>Engage</i> : Concept Posters and Math Vocabulary Cards are used to introduce the math concept and vocabulary as a whole group activity. <i>Explore</i> and <i>Learn</i> : Students use hands-on Activity Placemats with manipulatives as a small group inquiry activity. Students complete the Record Sheet and then discuss the activity and compare observations with classmates. <i>Explain</i> Concepts and Vocabulary: Teacher and students and/or student pairs read and discuss the academic vocabulary words in context on the Reader Cards. Reader Card A is targeted to the reading levels of Beginning/Emerging English language learners. Reader Card B is targeted to the reading levels of the

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	<p>Intermediate/Expanding English language learners and native English speakers.</p> <p><i>Elaborate:</i> Students apply newly learned concepts when working with a partner to complete the Concept Webs. As a small group or paired activity, students practice listening to, reading, writing, and speaking each academic vocabulary word with the Radius Audio System™.</p> <p><i>Evaluate:</i> Teachers review the lesson's academic vocabulary words through Interactive Transparencies (whole group activity) and assess each lesson through the Lesson Review sheets (individual activity).</p>
2.0 Students use strategies, skills, and concepts in finding solutions:	
2.1 Use estimation to verify the reasonableness of calculated results.	Lesson 24 – TG p. 139 <i>How do you solve problems?</i>
2.2 Apply strategies and results from simpler problems to more complex problems.	Students have opportunities to apply lesson concepts, strategies, and results in the Now Try This activity at the end of the Activity Placemats in each CAVS lesson.
2.3 Use a variety of methods, such as words, numbers, symbols, charts, graphs, tables, diagrams, and models, to explain mathematical reasoning.	Lesson 21 – TG p. 121 <i>Why do you need information?</i>
2.4 Express the solution clearly and logically by using the appropriate mathematical notation and terms and clear language; support solutions with evidence in both verbal and symbolic work.	<p>Students learn to use appropriate mathematical terms in the CAVS Math program. The program is designed to help elementary students master content academic vocabulary that they will encounter in their textbooks and on their standardized state tests.</p> <p>Each CAVS lesson has a Record Sheet and Concept Web for students to complete by drawing pictures and/or completing charts/graphic organizers.</p>
2.5 Indicate the relative advantages of exact and approximate solutions to problems and give answers to a specified degree of accuracy.	Lesson 23 – TG p. 133 <i>Do you think it will happen?</i> Lesson 24 – TG p. 139 <i>How do you solve problems?</i>
2.6 Make precise calculations and check the validity of the results from the context of the problem.	Lesson 23 – TG p. 133 <i>Do you think it will happen?</i> Lesson 24 – TG p. 139 <i>How do you solve problems?</i>

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3.0 Students move beyond a particular problem by generalizing to other situations:	
3.1 Evaluate the reasonableness of the solution in the context of the original situation.	n/a
3.2 Note the method of deriving the solution and demonstrate a conceptual understanding of the derivation by solving similar problems.	n/a
3.3 Develop generalizations of the results obtained and apply them in other circumstances.	n/a