

Northpoint Horizons

CAVS™ (Content Academic Vocabulary System) Math – K-2 Correlated to the Texas State Mathematics Standards for Texas Essential Knowledge and Skills

Grade 2

This document provides a correlation to the extensive math directives offered throughout the *CAVS* program that meet the Texas Mathematics Standards for TEKS.

Texas Essential Knowledge and Skills	CAVS Math Grades K-2 Teacher’s Guide Lessons
Knowledge and Skills	
2.1 Number, operation, and quantitative reasoning. The student understands how place value is used to represent whole numbers.	
<p>a. use concrete models of hundreds, tens, and ones to represent a given whole number (up to 999) in various ways</p>	<p>Students use the math content words: <i>number</i>, <i>numeral</i>, and <i>digit</i> while representing numbers with objects; writing numerals with digits; sequencing numbers from 1 to 10; and using numbers to count how many: Lesson 1 – TG pp. 1-6 <i>How do you count?</i></p> <p>Students use the math vocabulary words: <i>number line</i>, <i>zero</i>, <i>greater than</i>, and <i>less than</i> to use a number line to order whole numbers (1 to 10); to make a tally sheet for keeping track of game points; to compare numbers, using correct math terms <i>greater than</i> and <i>less than</i>; and to explore the meaning of zero: Lesson 3 – TG pp. 13-18 <i>How do numbers work together?</i></p> <p>This standard is also addressed in the <i>CAVS</i> Math Program Grades 3-5 with higher numbers.</p>
<p>b. use place value to read, write, and describe the value of whole numbers to 999;</p>	<p>Students use the math vocabulary words: <i>number line</i>, <i>zero</i>, <i>greater than</i>, and <i>less than</i> to use a number line to order whole numbers (1 to 10); to make a tally sheet for keeping track of game points; to compare numbers, using correct math terms <i>greater than</i> and <i>less than</i>; and to explore the meaning of zero: Lesson 3 – TG pp. 13-18</p>

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	<p><i>How do numbers work together?</i></p> <p>This standard is also addressed in the <i>CAVS Math Program Grades 3-5 with higher numbers.</i></p>
<p>c. use place value to compare and order whole numbers to 999 and record the comparisons using numbers and symbols (<, =, >)</p>	<p>Students use the math vocabulary words: <i>number line, zero, greater than, and less than</i> to use a number line to order whole numbers (1 to 10); to make a tally sheet for keeping track of game points; to compare numbers, using correct math terms <i>greater than</i> and <i>less than</i>; and to explore the meaning of zero: Lesson 3 – TG pp. 13-18 <i>How do numbers work together?</i></p> <p>This standard is also addressed in the <i>CAVS Math Program Grades 3-5 with higher numbers.</i></p>
<p>2.2 Number, operation, and quantitative reasoning. The student describes how fractions are used to name parts of whole objects or sets of objects</p>	
<p>a. use concrete models to represent and name fractional parts of a whole object (with denominators of 12 or less)</p>	<p>This standard is addressed in the <i>CAVS Math program Grades 3-5.</i></p>
<p>b. use concrete models to represent and name fractional parts of a set of objects (with denominators of 12 or less)</p>	<p>This standard is addressed in the <i>CAVS Math program Grades 3-5.</i></p>
<p>c. use concrete models to determine if a fractional part of a whole is closer to 0, $\frac{1}{2}$, or 1</p>	<p>This standard is addressed in the <i>CAVS Math program Grades 3-5.</i></p>
<p>2.3 Number, operation, and quantitative reasoning. The student adds and subtracts whole numbers to solve problems.</p>	
<p>a. recall and apply basic addition and subtraction facts (to 18)</p>	<p>Students use the math vocabulary words: <i>addition, plus, and sum</i> to find all the combinations of 6 and 7; to represent addition problems with equations, using symbols (+, =) correctly; and to make visual representations of addition problems: Lesson 4 – TG pp. 19-24 <i>Why do you add numbers?</i></p> <p>Students use the math vocabulary words: <i>subtraction, minus, and difference</i> to practice subtracting from 20 and to write subtraction facts, using math symbols:</p>

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	<p>Lesson 5 – TG pp. 25-30 <i>Why do you subtract numbers?</i></p> <p>This standard is also addressed in the <i>CAVS</i> Math program Grades 3-5 with multi-digit numbers.</p>
<p>b. model addition and subtraction of two-digit numbers with objects, pictures, words, and numbers</p>	<p>Students use the math vocabulary words: <i>addition, plus,</i> and <i>sum</i> to find all the combinations of 6 and 7; to represent addition problems with equations, using symbols (+, =) correctly; and to make visual representations of addition problems: Lesson 4 – TG pp. 19-24 <i>Why do you add numbers?</i></p> <p>Students use the math vocabulary words: <i>subtraction, minus,</i> and <i>difference</i> to practice subtracting from 20 and to write subtraction facts, using math symbols: Lesson 5 – TG pp. 25-30 <i>Why do you subtract numbers?</i></p> <p>This standard is also addressed in the <i>CAVS</i> Math program Grades 3-5 with multi-digit numbers.</p>
<p>c. select addition or subtraction to solve problems using two-digit numbers, whether or not regrouping is necessary</p>	<p>Students use the math vocabulary words: <i>addition, plus,</i> and <i>sum</i> to find all the combinations of 6 and 7; to represent addition problems with equations, using symbols (+, =) correctly; and to make visual representations of addition problems: Lesson 4 – TG pp. 19-24 <i>Why do you add numbers?</i></p> <p>Students use the math vocabulary words: <i>subtraction, minus,</i> and <i>difference</i> to practice subtracting from 20 and to write subtraction facts, using math symbols: Lesson 5 – TG pp. 25-30 <i>Why do you subtract numbers?</i></p> <p>This standard is also addressed in the <i>CAVS</i> Math program Grades 3-5 with multi-digit numbers.</p>

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d. determine the value of a collection of coins up to one dollar	<p>Students identify coin values, count to 50, add coins up to 50 cents, and trade coins, using equivalent values: Lesson 8 –TG pp. 43-48 <i>How do you use money?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
e. describe how the cent symbol, dollar symbol, and the decimal point are used to name the value of a collection of coins	<p>Students identify coin values, count to 50, add coins up to 50 cents, and trade coins, using equivalent values: Lesson 8 –TG pp. 43-48 <i>How do you use money?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
2.4 Number, operation, and quantitative reasoning. The student models multiplication and division	
a. model, create, and describe multiplication situations in which equivalent sets of concrete objects are joined	<p>Students use the math vocabulary words: <i>pattern</i>, <i>increasing</i>, <i>decreasing</i>, and <i>numeric</i> to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42 <i>What makes a pattern?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
b. model, create, and describe division situations in which a set of concrete objects is separated into equivalent sets	<p>Students use the math vocabulary words: <i>sort</i> and <i>group</i> to sort attribute blocks by color, shape, or size: Lesson 6 – TG pp. 31-36 <i>How are objects the same?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
2.5 Patterns, relationships, and algebraic thinking. The student uses patterns in numbers and operations.	
a. find patterns in numbers such as in a 100s chart	<p>Students use the math vocabulary words: <i>pattern</i>, <i>increasing</i>, <i>decreasing</i>, and <i>numeric</i> to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42</p>

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	<p><i>What makes a pattern?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
<p>b. use patterns in place value to compare and order whole numbers through 999</p>	<p>Students use the math vocabulary words: <i>number line</i>, <i>zero</i>, <i>greater than</i>, and <i>less than</i> when using a number line to order whole numbers (1 to 10); to make a tally sheet for keeping track of game points; to compare numbers, when using correct math terms <i>greater than</i> and <i>less than</i>; and to explore the meaning of zero: Lesson 3 – TG pp. 13-18 <i>How do numbers work together?</i></p> <p>Students use the math vocabulary words: <i>pattern</i>, <i>increasing</i>, <i>decreasing</i>, and <i>numeric</i> to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42 <i>What makes a pattern?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
<p>c. use patterns and relationships to develop strategies to remember basic addition and subtraction facts. Determine patterns in related addition and subtraction number sentences (including fact families) such as $8 + 9 = 17$, $9 + 8 = 17$, $17 - 8 = 9$, and $17 - 9 = 8$</p>	<p>Lesson 4 - TG pp. 19-24 <i>Why do you add numbers?</i></p> <p>Lesson 5 – TG pp. 25-30 <i>Why do you subtract numbers</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
<p>2.6 Patterns, relationships, and algebraic thinking. The student uses patterns to describe relationships and make predictions.</p>	
<p>a. generate a list of paired numbers based on a real-life situation such as number of tricycles related to number of wheels figures, including circles, triangles, rectangles, and squares (a special type of rectangle)</p>	<p>Students use the math vocabulary words: <i>pattern</i>, <i>increasing</i>, <i>decreasing</i>, and <i>numeric</i> to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42</p>

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	<p><i>What makes a pattern?</i></p> <p>Students use the math vocabulary words: <i>circle, rectangle, square, and triangle</i> to identify common geometric shapes (circle, rectangle, square, triangle): Lesson 19 – TG pp. 109-114 <i>What are some common shapes?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
<p>b. identify patterns in a list of related number pairs based on a real-life situation and extend the list</p>	<p>Students use the math vocabulary words: <i>pattern, increasing, decreasing, and numeric</i> to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42 <i>What makes a pattern?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
<p>c. identify, describe, and extend repeating and additive patterns to make predictions and solve problems</p>	<p>Students use the math vocabulary words: <i>pattern, increasing, decreasing, and numeric</i> to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42 <i>What makes a pattern?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
<p>2.7 Geometry and spatial reasoning. The student uses attributes to identify two- and three-dimensional geometric figures. The student compares and contrasts two- and three-dimensional geometric figures or both.</p>	
<p>a. describe attributes (the number of vertices, faces, edges, sides) of two- and three-dimensional geometric figures such as circles, polygons, spheres, cones, cylinders, prisms, and pyramids, etc.</p>	<p>Students use the math vocabulary words: <i>circle, rectangle, square, and triangle</i> to identify common geometric shapes (circle, rectangle, square, triangle): Lesson 19 – TG pp. 109-114 <i>What are some common shapes?</i></p> <p>Students use the math vocabulary words: <i>corner and side</i> to</p>

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	<p>compare geometric shapes: Lesson 20 – TG pp. 115-120 <i>How can you describe shapes?</i></p> <p>3-dimensional shapes are introduced in the <i>CAVS</i> Math program Grades 3-5.</p>
<p>b. use attributes to describe how 2 two-dimensional figures or 2 three-dimensional geometric figures are alike or different</p>	<p>Students use the math vocabulary words: <i>circle, rectangle, square, and triangle</i> to identify common geometric shapes (circle, rectangle, square, triangle): Lesson 19 – TG pp. 109-114 <i>What are some common shapes?</i></p> <p>Students use the math vocabulary words: <i>corner</i> and <i>side</i> to compare geometric shapes: Lesson 20 – TG pp. 115-120 <i>How can you describe shapes?</i></p> <p>Students use the math vocabulary words: <i>slide, flip, and turn</i> to describe and use geometric transformations: Lesson 21 – TG pp. 121-126 <i>How can you change shapes?</i></p> <p>3-dimensional shapes are introduced in the <i>CAVS</i> Math program Grades 3-5.</p>
<p>c. cut two-dimensional geometric figures apart and identify the new geometric figures formed</p>	<p>Students use the math vocabulary words: <i>circle, rectangle, square, and triangle</i> to identify common geometric shapes (circle, rectangle, square, triangle): Lesson 19 – TG pp. 109-114 <i>What are some common shapes?</i></p> <p>Students use the math vocabulary words: <i>corner</i> and <i>side</i> to compare geometric shapes: Lesson 20 – TG pp. 115-120 <i>How can you describe shapes?</i></p> <p>This standard is also addressed in the <i>CAVS</i> Math program Grades 3-5.</p>

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2.8 Geometry and spatial reasoning. The student recognizes that a line can be used to represent a set of numbers and its properties	
<p>a. The student is expected to use whole numbers to locate and name points on a number line</p>	<p>Students use the math vocabulary words: <i>number line</i>, <i>zero</i>, <i>greater than</i>, and <i>less than</i> when using a number line to order whole numbers (1 to 10); to make a tally sheet for keeping track of game points; to compare numbers, when using correct math terms <i>greater than</i> and <i>less than</i>; and to explore the meaning of zero: Lesson 3 – TG pp. 13-18 <i>How do numbers work together?</i></p> <p>This standard is also addressed in the <i>CAVS</i> Math program Grades 3-5.</p>
2.9 Probability and statistics. The student displays data in an organized form. Probability and statistics. The student displays data in an organized form.	
<p>a. identify concrete models that approximate standard units of length and use them to measure length</p>	<p>Students estimate standard units (<i>inch</i>, <i>foot</i>): Lesson 12 – TG pp. 67-72 <i>How do you tell how far or how long?</i></p> <p>This standard is addressed in the <i>CAVS</i> Math program Grades 3-5.</p>
<p>b. select a non-standard unit of measure such as square tiles to determine the area of a two-dimensional surface</p>	<p>Students use the math vocabulary words: <i>area</i>, <i>measuring cup</i>, and <i>volume</i> to practice measuring area and volume: Lesson 13 – TG pp.73-78 <i>How much space does it take up?</i></p> <p>This standard is addressed in the <i>CAVS</i> Math program Grades 3-5.</p>
<p>c. select a non-standard unit of measure such as a bathroom cup or a jar to determine the capacity of a given container</p>	<p>Students use the math vocabulary words: <i>area</i>, <i>measuring cup</i>, and <i>volume</i> to practice measuring area and volume; to understand appropriate uses of a measuring cup; and to compare two types of volume measurements: Lesson 13 – TG pp.73-78 <i>How much space does it take up?</i></p> <p>This standard is addressed in the <i>CAVS</i> Math program Grades 3-5.</p>

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<p>d. select a non-standard unit of measure such as beans or marbles to determine the weight/mass of a given object</p>	<p>Students use the math vocabulary words: <i>weight</i> and <i>pound</i> to use a balance scale to measure objects and to compare weights of different objects: Lesson 14 – TG pp. 79-84 <i>How much does it weigh</i></p> <p>This standard is addressed in the <i>CAVS</i> Math program Grades 3-5.</p>
<p>2.10 Measurement. The student uses standard tools to estimate and measure time and temperature (in degrees Fahrenheit).</p>	
<p>a. read a thermometer to gather data</p>	<p>Students use the math vocabulary words: <i>temperature</i> and <i>estimate</i> to discuss ways to keep the body warm or cool; when using background knowledge of temperature to identify appropriate seasonal clothing; and to make a chart: Lesson 15 – TG pp. 85-90 <i>How hot or cold is it?</i></p>
<p>b. read and write times shown on analog and digital clocks using five-minute increments</p>	<p>Students use the math vocabulary words: <i>clock</i>, <i>hour</i>, <i>minute</i>, and <i>second</i> to make a clock; to tell time by using an analog clock; to calculate elapsed time; and to estimate time: Lesson 9 – TG pp. 49-54 <i>How do you tell time?</i></p> <p>This standard is addressed in the <i>CAVS</i> Math program Grades 3-5.</p>
<p>c. describe activities that take approximately one second, one minute, and one hour</p>	<p>Students use the math vocabulary words: <i>clock</i>, <i>hour</i>, <i>minute</i>, and <i>second</i> to make a clock; to tell time by using an analog clock; to calculate elapsed time; and to estimate time: Lesson 9 – TG pp. 49-54 <i>How do you tell time?</i></p> <p>This standard is addressed in the <i>CAVS</i> Math program Grades 3-5.</p>
<p>2.11 Probability and statistics. The student organizes data to make it useful for interpreting information.</p>	
<p>a. construct picture graphs and bar-type graphs</p>	<p>Students use the math vocabulary words: <i>set</i>, <i>table</i>, and <i>graph</i> to collect data; to use a table to represent data; and to describe parts of the data as a whole to determine what the data show: Lesson 22 – TG pp. 127-132</p>

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	<p><i>How can you show facts?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
<p>b. draw conclusions and answer questions based on picture graphs and bar-type graphs</p>	<p>Students use the math vocabulary words: <i>set</i>, <i>table</i>, and <i>graph</i> to collect data; to use a table to represent data; and to describe parts of the data as a whole to determine what the data show: Lesson 22 – TG pp. 127-132 <i>How can you show facts?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
<p>c. use data to describe events as more likely or less likely such as drawing a certain color crayon from a bag of seven red crayons and three green crayons</p>	<p>Lesson 23 – TG pp. 133-138 <i>What do you think will happen?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades 3-5.</p>
<p>2.12 Underlying processes and mathematical tools. The student applies Grade 2 mathematics to solve problems connected to everyday experiences and activities in and outside of school.</p>	
<p>a. identify the mathematics in everyday situations</p>	<p>In the <i>CAVS</i> program there are many examples of using mathematics for everyday situations to help students apply their math skills and solve problems. Some examples: Lesson 8 – TG pp. 43-48 <i>How do you use money?</i></p> <p>Lesson 9 – TG pp. 49-54 <i>How do you tell time?</i></p> <p>Lesson 13 – TG pp. 73-78 <i>How much space does it take up?</i></p>
<p>b. solve problems with guidance that incorporates the processes of understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness</p>	<p>During each <i>CAVS Math</i> 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></p>
<p>c. select or develop an appropriate problem-solving plan or strategy including drawing a picture, looking for a pattern, systematic guessing and checking, or acting</p>	<p>Approach: <i>Engage</i>: Concept Posters and Math Vocabulary Cards are used to introduce the math concept and vocabulary as a whole group</p>

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<p>it out in order to solve a problem</p>	<p>activity.</p> <p><i>Explore and Learn:</i> Students use hands-on Activity Placemats with manipulatives as a small group inquiry activity. Students complete the Record Sheet – many times, by drawing pictures, and then discuss the activity and compare observations with classmates.</p> <p><i>Explain Concepts and Vocabulary:</i> The teacher leads a discussion and models the use of academic vocabulary words through the Flip Book. Oral Language activities are provided as extensions and for differentiated instruction.</p> <p><i>Elaborate:</i> Students apply newly learned concepts when working with a partner to complete the Concept Webs. As a small group 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). Some examples: Lesson 7 – TG pp. 37-42 <i>What makes a pattern?</i></p> <p>Lesson 6 – TG pp. 31-36 <i>How are objects the same?</i></p> <p>Lesson 24 – TG pp. 139-144 <i>How do we solve problems?</i></p>
<p>d. use tools such as real objects, manipulatives, and technology to solve problems</p>	<p>In the <i>CAVS Math</i> program, students use real objects, manipulatives, and technology in each lesson.</p> <p>During the <i>Explore and Learn</i> section of each lesson, children use real objects and manipulatives such as crayons, pencils, beans, coins, stickers, interlocking cubes, bear counters, etc. in hands-on, small group, inquiry activities.</p> <p>During the <i>Elaborate</i> section of each lesson, students practice listening to, reading, writing, and speaking each academic vocabulary word with the Radius Audio System™. Children then complete one or more of the small group activities in their Math</p>

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	<p>Journals using the lesson's math vocabulary. Some examples: Lesson 1 – TG pp. 1-6 <i>How do you count?</i></p> <p>Lesson 5 – TG pp. 25-30 <i>Why do you subtract numbers?</i></p> <p>Lesson 9 – TG pp. 49-54 <i>How do you tell time?</i></p>
2.13 Underlying processes and mathematical tools. The student communicates about Grade 2 mathematics using informal language.	
a. explain and record observations using objects, words, pictures, numbers, and technology	<p>Students explain and record observations in each <i>CAVS</i> lesson. They have opportunities to communicate in whole group, small group, and individual/teacher activities. Each section of the lesson includes the following materials: <i>Engage</i>: Concept Posters and Math Vocabulary Cards. <i>Explore</i> and <i>Learn</i>: Activity Placemats with manipulatives, Record Sheet (Students complete the Record Sheet – many times, by drawing pictures to record their observations, and then discuss the activity and compare observations with classmates). <i>Explain</i> Concepts and Vocabulary: Flip Book and Math Content Picture Dictionary <i>Elaborate</i>: Concept Webs. And Radius Audio System™ and Math Journals <i>Evaluate</i>: Interactive Transparencies and Lesson Review sheets Some examples: Lesson 3 – TG pp. 13-18 <i>How do numbers work together?</i></p> <p>Lesson 18 – TG pp. 103-108 <i>Which way do you go?</i></p> <p>Lesson 22 – TG pp. 127-132 <i>How can you show facts?</i></p>
b. relate informal language to mathematical language and symbols.	
2.14 Underlying processes and mathematical tools. The student uses logical reasoning.	
a. justify his or her thinking using objects, words,	Lesson 23 - TG pp. 133-138

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pictures, numbers, and technology.	<i>What do you think will happen?</i>