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.	
a. use concrete models of hundreds, tens, and ones to represent a given whole number (up to 999) in various ways	Students use the math content words: *number, numeral,* and *digit* 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 *How do you count?* Students use the math vocabulary words: *number line, zero, greater than*, and *less than* 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 *greater than* and *less than*; and to explore the meaning of zero: Lesson 3 – TG pp. 13-18 *How do numbers work together?* This standard is also addressed in the *CAVS* Math Program Grades 3-5 with higher numbers.
b. use place value to read, write, and describe the value of whole numbers to 999;	Students use the math vocabulary words: *number line, zero, greater than*, and *less than* 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 *greater than* and *less than*; and to explore the meaning of zero: Lesson 3 – TG pp. 13-18

Texas Essential Knowledge and Skills	*CAVS* Math Grades K-2 Teacher's Guide Lessons
	How do numbers work together? This standard is also addressed in the *CAVS* Math Program Grades 3-5 with higher numbers.
c. use place value to compare and order whole numbers to 999 and record the comparisons using numbers and symbols (<, =, >)	Students use the math vocabulary words: *number line, zero, greater than*, and *less than* 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 *greater than* and *less than*; and to explore the meaning of zero: Lesson 3 – TG pp. 13-18 *How do numbers work together?* This standard is also addressed in the *CAVS* Math Program Grades 3-5 with higher numbers.
2.2 Number, operation, and quantitative reasoning. The student describes how fractions are used to name parts of whole objects or sets of objects	
a. use concrete models to represent and name fractional parts of a whole object (with denominators of 12 or less)	This standard is addressed in the *CAVS* Math program Grades 3-5.
b. use concrete models to represent and name fractional parts of a set of objects (with denominators of 12 or less)	This standard is addressed in the *CAVS* Math program Grades 3-5.
c. use concrete models to determine if a fractional part of a whole is closer to 0, 1/2, or 1	This standard is addressed in the *CAVS* Math program Grades 3-5.
2.3 Number, operation, and quantitative reasoning. The student adds and subtracts whole numbers to solve problems.	
a. recall and apply basic addition and subtraction facts (to 18)	Students use the math vocabulary words: *addition, plus*, and *sum* 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 *Why do you add numbers?* Students use the math vocabulary words: *subtraction, minus,* and *difference* to practice subtracting from 20 and to write subtraction facts, using math symbols:

Texas Essential Knowledge and Skills	*CAVS* Math Grades K-2 Teacher's Guide Lessons
	Lesson 5 – TG pp. 25-30 *Why do you subtract numbers?* This standard is also addressed in the *CAVS* Math program Grades 3-5 with multi-digit numbers.
b. model addition and subtraction of two-digit numbers with objects, pictures, words, and numbers	Students use the math vocabulary words: *addition, plus*, and *sum* 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 *Why do you add numbers?* Students use the math vocabulary words: *subtraction, minus,* and *difference* to practice subtracting from 20 and to write subtraction facts, using math symbols: Lesson 5 – TG pp. 25-30 *Why do you subtract numbers?* This standard is also addressed in the *CAVS* Math program Grades 3-5 with multi-digit numbers.
c. select addition or subtraction to solve problems using two-digit numbers, whether or not regrouping is necessary	Students use the math vocabulary words: *addition, plus*, and *sum* 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 *Why do you add numbers?* Students use the math vocabulary words: *subtraction, minus,* and *difference* to practice subtracting from 20 and to write subtraction facts, using math symbols: Lesson 5 – TG pp. 25-30 *Why do you subtract numbers?* This standard is also addressed in the *CAVS* Math program Grades 3-5 with multi-digit numbers.

Texas Essential Knowledge and Skills	*CAVS* Math Grades K-2 Teacher's Guide Lessons
d. determine the value of a collection of coins up to one dollar	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 *How do you use money?* This standard is also addressed in the *CAVS* Math program Grades 3-5.
e. describe how the cent symbol, dollar symbol, and the decimal point are used to name the value of a collection of coins	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 *How do you use money?* This standard is also addressed in the *CAVS* Math program Grades 3-5.
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	Students use the math vocabulary words: *pattern, increasing, decreasing,* and *numeric* to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42 *What makes a pattern?* This standard is also addressed in the *CAVS* Math program Grades 3-5.
b. model, create, and describe division situations in which a set of concrete objects is separated into equivalent sets	Students use the math vocabulary words: *sort* and *group* to sort attribute blocks by color, shape, or size: Lesson 6 – TG pp. 31-36 *How are objects the same?* This standard is also addressed in the *CAVS* Math program Grades 3-5.
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	Students use the math vocabulary words: *pattern, increasing, decreasing,* and *numeric* to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42

Texas Essential Knowledge and Skills	*CAVS* Math Grades K-2 Teacher's Guide Lessons
	What makes a pattern? This standard is also addressed in the *CAVS* Math program Grades 3-5.
b. use patterns in place value to compare and order whole numbers through 999	Students use the math vocabulary words: *number line, zero, greater than*, and *less than* 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 *greater than* and *less than*; and to explore the meaning of zero: Lesson 3 – TG pp. 13-18 *How do numbers work together?* Students use the math vocabulary words: *pattern, increasing, decreasing,* and *numeric* to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42 *What makes a pattern?* This standard is also addressed in the *CAVS* Math program Grades 3-5.
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	Lesson 4 - TG pp. 19-24 *Why do you add numbers?* Lesson 5 – TG pp. 25-30 *Why do you subtract numbers* This standard is also addressed in the *CAVS* Math program Grades 3-5.
2.6 Patterns, relationships, and algebraic thinking. The student uses patterns to describe relationships and make predictions.	
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)	Students use the math vocabulary words: *pattern, increasing, decreasing,* and *numeric* to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42

Texas Essential Knowledge and Skills	*CAVS* Math Grades K-2 Teacher's Guide Lessons
	What makes a pattern? Students use the math vocabulary words: *circle, rectangle, square*, and *triangle* to identify common geometric shapes (circle, rectangle, square, triangle): Lesson 19 – TG pp. 109-114 *What are some common shapes?* This standard is also addressed in the *CAVS* Math program Grades 3-5.
b. identify patterns in a list of related number pairs based on a real-life situation and extend the list	Students use the math vocabulary words: *pattern, increasing, decreasing,* and *numeric* to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42 *What makes a pattern?* This standard is also addressed in the *CAVS* Math program Grades 3-5.
c. identify, describe, and extend repeating and additive patterns to make predictions and solve problems	Students use the math vocabulary words: *pattern, increasing, decreasing,* and *numeric* to create repeating patterns with simple body movements and to identify increasing, decreasing, and numeric patterns: Lesson 7 – TG pp. 37-42 *What makes a pattern?* This standard is also addressed in the *CAVS* Math program Grades 3-5.
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.	
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.	Students use the math vocabulary words: *circle, rectangle, square*, and *triangle* to identify common geometric shapes (circle, rectangle, square, triangle): Lesson 19 – TG pp. 109-114 *What are some common shapes?* Students use the math vocabulary words: *corner* and *side* to

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

Texas Essential Knowledge and Skills	*CAVS* Math Grades K-2 Teacher's Guide Lessons
2.8 Geometry and spatial reasoning. The student recognizes that a line can be used to represent a set of numbers and its properties	
a. The student is expected to use whole numbers to locate and name points on a number line	Students use the math vocabulary words: *number line, zero, greater than*, and *less than* 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 *greater than* and *less than*; and to explore the meaning of zero: Lesson 3 – TG pp. 13-18 *How do numbers work together?* This standard is also addressed in the *CAVS* Math program Grades 3-5.
2.9 Probability and statistics. The student displays data in an organized form. Probability and statistics. The student displays data in an organized form.	
a. identify concrete models that approximate standard units of length and use them to measure length	Students estimate standard units (*inch, foot*): Lesson 12 – TG pp. 67-72 *How do you tell how far or how long?* This standard is addressed in the *CAVS* Math program Grades 3-5.
b. select a non-standard unit of measure such as square tiles to determine the area of a two-dimensional surface	Students use the math vocabulary words: *area, measuring cup*, and *volume* to practice measuring area and volume: Lesson 13 – TG pp.73-78 *How much space does it take up?* This standard is addressed in the *CAVS* Math program Grades 3-5.
c. select a non-standard unit of measure such as a bathroom cup or a jar to determine the capacity of a given container	Students use the math vocabulary words: *area, measuring cup*, and *volume* 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 *How much space does it take up?* This standard is addressed in the *CAVS* Math program Grades 3-5.

Texas Essential Knowledge and Skills	*CAVS* Math Grades K-2 Teacher's Guide Lessons
d. select a non-standard unit of measure such as beans or marbles to determine the weight/mass of a given object	Students use the math vocabulary words: *weight* and *pound* to use a balance scale to measure objects and to compare weights of different objects: Lesson 14 – TG pp. 79-84 *How much does it weigh* This standard is addressed in the *CAVS* Math program Grades 3-5.
2.10 Measurement. The student uses standard tools to estimate and measure time and temperature (in degrees Fahrenheit).	
a. read a thermometer to gather data	Students use the math vocabulary words: *temperature* and *estimate* 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 *How hot or cold is it?*
b. read and write times shown on analog and digital clocks using five-minute increments	Students use the math vocabulary words: *clock, hour, minute,* and *second* 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 *How do you tell time?* This standard is addressed in the *CAVS* Math program Grades 3-5.
c. describe activities that take approximately one second, one minute, and one hour	Students use the math vocabulary words: *clock, hour, minute,* and *second* 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 *How do you tell time?* This standard is addressed in the *CAVS* Math program Grades 3-5.
2.11 Probability and statistics. The student organizes data to make it useful for interpreting information.	
a. construct picture graphs and bar-type graphs	Students use the math vocabulary words: *set, table,* and *graph* 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

Texas Essential Knowledge and Skills	*CAVS* Math Grades K-2 Teacher's Guide Lessons
	How can you show facts? This standard is also addressed in the *CAVS* Math program Grades 3-5.
b. draw conclusions and answer questions based on picture graphs and bar-type graphs	Students use the math vocabulary words: *set, table,* and *graph* 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 *How can you show facts?* This standard is also addressed in the *CAVS* Math program Grades 3-5.
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	Lesson 23 – TG pp. 133-138 *What do you think will happen?* This standard is also addressed in the *CAVS* Math program Grades 3-5.
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.	
a. identify the mathematics in everyday situations	In the *CAVS* 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 *How do you use money?* Lesson 9 – TG pp. 49-54 *How do you tell time?* Lesson 13 – TG pp. 73-78 *How much space does it take up?*
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	During each *CAVS* Math lesson, the teacher helps students determine the approach, materials, and strategies to be used to solve problems using the *5-E* Instructional Approach while highlighting math content academic vocabulary. The *5-E* Approach: *Engage*: Concept Posters and Math Vocabulary Cards are used to introduce the math concept and vocabulary as a whole group
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	

Texas Essential Knowledge and Skills	*CAVS* Math Grades K-2 Teacher's Guide Lessons
it out in order to solve a problem	activity. *Explore* and Learn: 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. *Explain* Concepts and Vocabulary: 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. *Elaborate*: 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™. *Evaluate*: 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 *What makes a pattern?* Lesson 6 – TG pp. 31-36 *How are objects the same?* Lesson 24 – TG pp. 139-144 *How do we solve problems?*
d. use tools such as real objects, manipulatives, and technology to solve problems	In the *CAVS* Math program, students use real objects, manipulatives, and technology in each lesson. During the *Explore and Learn* 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. During the *Elaborate* 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

Texas Essential Knowledge and Skills	*CAVS* Math Grades K-2 Teacher's Guide Lessons
	Journals using the lesson's math vocabulary. Some examples: Lesson 1 – TG pp. 1-6 *How do you count?* Lesson 5 – TG pp. 25-30 *Why do you subtract numbers?* Lesson 9 – TG pp. 49-54 *How do you tell time?*
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	Students explain and record observations in each *CAVS* lesson. They have opportunities to communicate in whole group, small group, and individual/teacher activities. Each section of the lesson includes the following materials: *Engage*: Concept Posters and Math Vocabulary Cards. *Explore* and Learn: 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). *Explain* Concepts and Vocabulary: Flip Book and Math Content Picture Dictionary *Elaborate*: Concept Webs. And Radius Audio System™ and Math Journals *Evaluate*: Interactive Transparencies and Lesson Review sheets Some examples: Lesson 3 – TG pp. 13-18 *How do numbers work together?* Lesson 18 – TG pp. 103-108 *Which way do you go?* Lesson 22 – TG pp. 127-132 *How can you show facts?*
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

Texas Essential Knowledge and Skills	*CAVS* Math Grades K-2 Teacher's Guide Lessons
pictures, numbers, and technology.	*What do you think will happen?*