

Northpoint Horizons

CAVS™ (Content Academic Vocabulary System) Math – 3-5 Correlated to the Texas State Mathematics Standards for Texas Essential Knowledge and Skills

Grade 3

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

Math Content Standard	CAVS Math Grades 3-5 Teacher’s Guide Lessons
Knowledge and Skills	
3.1 Number, operation, and quantitative reasoning. The student uses place value to communicate about increasingly large whole numbers in verbal and written form, including money.	
a. use place value to read, write (in symbols and words), and describe the value of whole numbers through 999,999	Students have opportunities to read and write whole numbers in <i>CAVS</i> lessons. They study place value to hundred thousands in: Lesson 1 – TG pp. 1-6 <i>How can you put numbers in order?</i>
b. use place value to compare and order whole numbers through 9,999	Students use the math vocabulary words: <i>place value, round, even number, odd number, positive number, and negative number</i> to identify the place value of numbers; to round numbers; to recognize and use positive and negative numbers; and to recognize and use even and odd numbers: Lesson 1 – TG pp. 1-6 <i>How can you put numbers in order?</i>
c. determine the value of a collection of coins and bills	Lesson 5 – TG p. 25 – Activity Placemat 5 - <i>Comparing Coins: How do you show that a number is not a whole?</i> This standard is also addressed in the <i>CAVS</i> Math program Grades K-2.
3.2 Number, operation, and quantitative reasoning. The student uses fraction names and symbols (with denominators of 12 or less) to describe fractional parts of whole objects or sets of objects.	
a. construct concrete models of fractions	Students use the math vocabulary words: <i>fraction, numerator, denominator, improper fraction, and mixed number</i> to identify a fraction and its numerator and denominator; to understand that an improper fraction is a value greater than one; and to know that a mixed number consists of a whole number and a fraction:

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	Lesson 5 – TG pp. 25-30 <i>How do you show that a number is not a whole?</i>
b. compare fractional parts of whole objects or sets of objects in a problem situation using concrete models	Students use the math vocabulary words: <i>fraction, numerator, denominator, improper fraction, and mixed number</i> to identify a fraction and its numerator and denominator; to understand that an improper fraction is a value greater than one; and to know that a mixed number consists of a whole number and a fraction: Lesson 5 – TG pp. 25-30 <i>How do you show that a number is not a whole?</i>
c. use fraction names and symbols to describe fractional parts of whole objects or sets of objects	Students use the math vocabulary words: <i>fraction, numerator, denominator, improper fraction, and mixed number</i> to identify a fraction and its numerator and denominator; to understand that an improper fraction is a value greater than one; and to know that a mixed number consists of a whole number and a fraction: Lesson 5 – TG pp. 25-30 <i>How do you show that a number is not a whole?</i>
d. construct concrete models of equivalent fractions for fractional parts of whole objects	Students use the math vocabulary words: <i>fraction, numerator, denominator, improper fraction, and mixed number</i> to identify a fraction and its numerator and denominator; to understand that an improper fraction is a value greater than one; and to know that a mixed number consists of a whole number and a fraction: Lesson 5 – TG pp. 25-30 <i>How do you show that a number is not a whole?</i> Students find equivalent fractions, decimals and percents: Lesson 6 – TG pp. 31-36 <i>How else can you show less than one whole?</i>
3.3 Number, operation, and quantitative reasoning. The student adds and subtracts to solve meaningful problems involving whole numbers.	
a. model addition and subtraction using pictures, words, and numbers	Lesson 2 – TG pp.7-12 <i>How do numbers tell a story?</i> This standard is also addressed in the <i>CAVS Math</i> program Grades K-2.
b. select addition or subtraction and use the operation to solve problems involving whole numbers through 999	Students use the math vocabulary words: <i>addends, sum, number sentence, and equation</i> to calculate the sum of two whole numbers; to identify the addends in an equation; to

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	<p>understand that an equation is made up of numbers, an operation sign, and an equal sign; and to know that another name for a number sentence is an equation: Lesson 2 – TG pp.7-12 <i>How do numbers tell a story?</i></p>
<p>3.4 Number, operation, and quantitative reasoning. The student recognizes and solves problems in multiplication and division situations.</p>	
<p>a. learn and apply multiplication facts through 12 by 12 using concrete models and objects</p>	<p>Students use the math vocabulary words: <i>multiplication, factor, product, array, prime number, and multiples</i> to define and understand multiplication; to determine the factors and the product of an equation; to understand and define multiples of a number; to define and recognize prime numbers; and to understand, read, and draw arrays: Lesson 3 – TG pp. 13-18 <i>How do we count large amounts?</i></p>
<p>b. solve and record multiplication problems (up to two digits times one digit)</p>	<p>Students use the math vocabulary words: <i>multiplication, factor, product, array, prime number, and multiples</i> to define and understand multiplication; to determine the factors and the product of an equation; to understand and define multiples of a number; to define and recognize prime numbers; and to understand, read, and draw arrays: Lesson 3 – TG pp. 13-18 <i>How do we count large amounts?</i></p>
<p>c. use models to solve division problems and use number sentences to record the solutions</p>	<p>Students use the math vocabulary words: <i>division, dividend, divisor, quotient, and remainder</i> to divide whole numbers with and without a remainder; to understand the meaning of division; to identify and label the divisor, dividend, quotient, and remainder; and to describe examples of division in: Lesson 4 – TG pp. 19-24 <i>How do we make equal groups?</i></p>
<p>3.5 Number, operation, and quantitative reasoning. The student estimates to determine reasonable results.</p>	
<p>a. round whole numbers to the nearest ten or hundred to approximate reasonable results in problem situations</p>	<p>Students use the math vocabulary words: <i>place value, round, even number, odd number, positive number, and negative number</i> to identify the place value of numbers; to round numbers; to recognize and use positive and negative numbers; and to recognize and use even and odd numbers: Lesson 1 – TG pp. 1-6</p>

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<p>b. use strategies including rounding and compatible numbers to estimate solutions to addition and subtraction problems</p>	<p><i>How can you put numbers in order?</i></p> <p>Students use the math vocabulary words: <i>place value, round, even number, odd number, positive number, and negative number</i> to identify the place value of numbers; to round numbers; to recognize and use positive and negative numbers; and to recognize and use even and odd numbers: Lesson 1 – TG pp. 1-6 <i>How can you put numbers in order?</i></p> <p>Students learn estimation skills: Unit 24 – TG pp. 139-144 <i>How can you solve problems?</i></p>
<p>3.6 Patterns, relationships, and algebraic thinking. The student uses patterns to solve problems.</p>	
<p>a. identify and extend whole-number and geometric patterns to make predictions and solve problems</p>	<p>Lesson 7 – TG pp. 37-42 <i>What is a pattern?</i></p>
<p>b. identify patterns in multiplication facts using concrete objects, pictorial models, or technology</p>	<p>Lesson 3 – TG pp. 13-18 <i>How do we count large amounts?</i></p> <p>Lesson 7 – TG pp. 37-42 <i>What is a pattern?</i></p>
<p>c. identify patterns in related multiplication and division sentences (fact families) such as $2 \times 3 = 6$, $3 \times 2 = 6$, $6 \div 2 = 3$, $6 \div 3 = 2$.</p>	<p>Students use the math vocabulary words: <i>multiplication, factor, product, array, prime number, and multiples</i> to define and understand multiplication; to determine the factors and the product of an equation; to understand and define multiples of a number; to define and recognize prime numbers; and to understand, read, and draw arrays: Lesson 3 – TG pp. 13-18 <i>How do we count large amounts?</i></p> <p>Students use the math vocabulary words: <i>division, dividend, divisor, quotient, and remainder</i> to divide whole numbers with and without a remainder; to understand the meaning of division; to identify and label the divisor, dividend, quotient, and remainder; and to describe examples of division in: Lesson 4 – TG pp. 19-24 <i>How do we make equal groups?</i></p>

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	Lesson 7 – TG pp. 37-42 <i>What is a pattern?</i>
3.7 Patterns, relationships, and algebraic thinking. The student uses lists, tables, and charts to express patterns and relationships.	
a. generate a table of paired numbers based on a real-life situation such as insects and legs	Students use the math vocabulary words: <i>repeating pattern</i> and <i>extend</i> to identify a repeating pattern; to extend patterns; and to explore number patterns; and to find the rule for a given pattern: Lesson 7 – TG pp. 37-42 <i>What is a pattern?</i>
b. identify and describe patterns in a table of related number pairs based on a meaningful problem and extend the table.	Students use the math vocabulary words: <i>repeating pattern</i> and <i>extend</i> to identify a repeating pattern; to extend patterns; and to explore number patterns; and to find the rule for a given pattern: Lesson 7 – TG pp. 37-42 <i>What is a pattern?</i>
3.8 Geometry and spatial reasoning. The student uses formal geometric vocabulary.	
a. The student is expected to identify, classify, and describe two- and three-dimensional geometric figures by their attributes. The student compares two- dimensional figures, three-dimensional figures, or both by their attributes using formal geometry vocabulary.	Lesson 16 - TG pp. 91-96 <i>How do we describe shapes with straight sides?</i> Lesson 17 – TG pp. 97-102 <i>How do we describe shapes with three sides?</i> Lesson 18 – TG pp. 103-108 <i>How do we draw different shapes?</i> Lesson 19 - TG pp. 109-114 <i>What attributes do solid shapes share?</i>
3.9 Geometry and spatial reasoning. The student recognizes congruence and symmetry.	
a. identify congruent two-dimensional figures	Students use the math vocabulary words: <i>attribute, congruent, similar, and symmetry</i> to identify and compare attributes of 2-dimensional shapes; to explore and describe congruence and similarity; and to identify and describe line symmetry in 2-dimensional shapes and designs: Lesson 18 – TG pp. 103-108 <i>How do we draw different shapes?</i>
b. create two-dimensional figures with lines of	Students use the math vocabulary words: <i>attribute, congruent,</i>

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symmetry using concrete models and technology	<i>similar</i> , and <i>symmetry</i> to identify and compare attributes of 2-dimensional shapes; to explore and describe congruence and similarity; and to identify and describe line symmetry in 2-dimensional shapes and designs: Lesson 18 – TG pp. 103-108 <i>How do we draw different shapes?</i>
c. identify lines of symmetry in two-dimensional geometric figures	Students use the math vocabulary words: <i>attribute</i> , <i>congruent</i> , <i>similar</i> , and <i>symmetry</i> to identify and compare attributes of 2-dimensional shapes; to explore and describe congruence and similarity; and to identify and describe line symmetry in 2-dimensional shapes and designs: Lesson 18 – TG pp. 103-108 <i>How do we draw different shapes?</i>
3.10 Geometry and spatial reasoning. The student recognizes that a line can be used to represent numbers and fractions and their properties and relationships.	
a. locate and name points on a number line using whole numbers and fractions, including halves and fourths	Lesson 1 – TG p. 2 Reader- Card B: <i>How can you put numbers in order?</i> Students use the math vocabulary words: <i>fraction</i> , <i>numerator</i> , <i>denominator</i> , <i>improper fraction</i> , and <i>mixed number</i> to identify a fraction and its numerator and denominator; to understand that an improper fraction is a value greater than one; and to know that a mixed number consists of a whole number and a fraction: Lesson 5 – TG pp. 25-30 <i>How do you show that a number is not a whole?</i> Students find equivalent fractions, decimals and percents: Lesson 6 – TG pp. 31-36 <i>How else can you show less than one whole?</i>
3.11 Measurement. The student directly compares the attributes of length, area, weight/mass, and capacity, and uses comparative language to solve problems and answer questions. The student selects and uses standard units to describe length, area, capacity/volume, and weight/mass.	
a. use linear measurement tools to estimate and measure lengths using standard units	Lesson 10 - TG pp. 55-60 <i>What do you use to measure things?</i> Lesson 11 - TG pp. 61-66 <i>How do you measure?</i>

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	Lesson 14 - TG pp. 79-84 <i>What are units of measurement?</i>
b. use standard units to find the perimeter of a shape	Lesson 12 - TG pp. 67-72 <i>How do you measure flat shapes?</i>
c. use concrete and pictorial models of square units to determine the area of two dimensional surfaces	Lesson 12 - TG pp. 67-72 <i>How do you measure flat shapes?</i>
d. identify concrete models that approximate standard units of weight/mass and use them to measure weight/mass	Students use the math vocabulary words: <i>capacity, volume, and mass</i> to identify capacity, volume, and mass of objects; to give examples of things measured by capacity, volume, or mass; to measure capacity, using cups of liquid; and to measure volume, using rice, sand or pasta: Lesson 13 - TG pp. 73-78 <i>How do you measure solid shapes?</i>
e. identify concrete models that approximate standard units for capacity and use them to measure capacity	Students use the math vocabulary words: <i>capacity, volume, and mass</i> to identify capacity, volume, and mass of objects; to give examples of things measured by capacity, volume, or mass; to measure capacity, using cups of liquid; and to measure volume, using rice, sand or pasta: Lesson 13 - TG pp. 73-78 <i>How do you measure solid shapes?</i>
f. use concrete models that approximate cubic units to determine the volume of a given container or other three-dimensional geometric figure	Students use the math vocabulary words: <i>capacity, volume, and mass</i> to identify capacity, volume, and mass of objects; to give examples of things measured by capacity, volume, or mass; to measure capacity, using cups of liquid; and to measure volume, using rice, sand or pasta: Lesson 13 - TG pp. 73-78 <i>How do you measure solid shapes?</i>
3.12 Measurement. The student reads and writes time and measures temperature in degrees Fahrenheit to solve problems.	
a. use a thermometer to measure temperature	Students are introduced to a thermometer (Concept Poster) and temperature in: The <i>CAVS</i> Math program Grades K-2.
b. tell and write time shown on analog and digital clocks	Students use the math vocabulary word: <i>elapsed time</i> to define elapsed time; to give examples of elapsed time; and to tell time, using elapsed time: Lesson 15 - TG pp. 85-90

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	<p><i>How long does it take?</i></p> <p>This standard is also addressed in the <i>CAVS Math</i> program Grades K-2.</p>
3.13 Probability and statistics. The student solves problems by collecting, organizing, displaying, and interpreting sets of data.	
<p>a. collect, organize, record, and display data in pictographs and bar graphs where each picture or cell might represent more than one piece of data</p>	<p>Lesson 21 – TG pp. 121-126 <i>Why do you need information?</i></p>
<p>b. interpret information from pictographs and bar graphs</p>	<p>Lesson 21 – TG pp. 121-126 <i>Why do you need information?</i></p>
<p>c. use data to describe events as more likely than, less likely than, or equally likely as</p>	<p>Lesson 23 – TG pp. 133-138 <i>Do you think it will happen?</i></p>
3.14 Underlying processes and mathematical tools. The student applies Grade 3 mathematics to solve problems connected to everyday experiences and activities in and outside of school.	
<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:</p> <p>Lesson 2 – TG pp. 7-12 <i>How do numbers tell a story?</i></p> <p>Lesson 7 – TG pp. 37-42 <i>What is a pattern?</i></p> <p>Lesson 10 – TG pp. 55-60 <i>What do you use to measure things?</i></p>
<p>b. solve problems that incorporate understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness;</p>	<p>During each <i>CAVS Math Lesson</i>, the teacher helps students determine the approach, materials, and strategies to be used to solve problems using the <i>5-E Instructional Approach</i> while</p>

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<p>c. select or develop an appropriate problem solving plan or strategy, including drawing a picture, looking for a pattern, systematic guessing and checking, acting it out, making a table, working a simpler problem, or working backwards to solve a problem</p>	<p>highlighting math content academic vocabulary. The <i>5-E Approach</i>:</p> <p><i>Engage</i>: Concept Posters and Math Vocabulary Cards are used to introduce the math concept and vocabulary as a whole group 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 and then discuss the activity and compare observations with classmates.</p> <p><i>Explain Concepts and Vocabulary</i>: Teacher and students 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 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 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:</p> <p>Lesson 6 – TG pp. 31-36 <i>How else can you show less than one whole?</i></p> <p>Lesson 11 - TG pp. 61-66 <i>How do you measure?</i></p> <p>Lesson 24 – TG pp. 139-144 <i>How can you solve problems?</i></p>

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<p>d. use tools such as real objects, manipulatives, and technology to solve problems</p>	<p>In the <i>CAVS</i> Math program, students use real objects, manipulatives, and technology in each lesson. During the <i>Explore and Learn</i> section of each lesson, children use real objects and manipulatives such as newspapers, computers, interlocking blocks, chairs, maps, coins, measuring cups, rulers, straws, etc. in hands-on, small group, inquiry activities. 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 Journals using the lesson's math vocabulary. Some examples: Lesson 1 – TG pp. 1-6 <i>How can you put numbers in order?</i></p> <p>Lesson 4 – TG pp. 19-24 <i>How do we make equal groups?</i></p> <p>Lesson 9 – TG pp. 49-54 <i>How can math rules help you solve equations?</i></p>
<p>3.15 Underlying processes and mathematical tools. The student communicates about Grade 3 mathematics using informal language.</p>	
<p>a. explain and record observations using objects, words, pictures, numbers, and technology</p>	<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 and Learn</i>: Activity Placemats with manipulatives, Record Sheet (Students complete the Record Sheet – many times by drawing pictures or completing charts to record their observations and then discuss the activity and compare observations with classmates). <i>Explain</i> Concepts and Vocabulary: Reader Cards and Math Content Picture Dictionary <i>Elaborate</i>: Concept Webs, Radius Audio System™ and Math Journals <i>Evaluate</i>: Interactive Transparencies and Lesson Review sheets</p>
<p>b. relate informal language to mathematical language and symbols</p>	

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	<p>Some examples: Lesson 3 – TG pp. 13-18 <i>How do we count large amounts?</i></p> <p>Lesson 12 - TG pp. 67-72 <i>How do you measure flat shapes?</i></p> <p>Lesson 21 – TG pp. 121-126 <i>Why do you need information?</i></p>
3.16 Underlying processes and mathematical tools. The student uses logical reasoning.	
<p>a. make generalizations from patterns or sets of examples and non-examples</p>	<p>Some examples: Lesson 7 – TG pp. 37-42 <i>What is a pattern?</i></p> <p>Lesson 9 – TG pp. 49-54 <i>How can math rules help you solve equations?</i></p> <p>Lesson 24 – TG pp. 139-144 <i>How can you solve problems?</i></p>
<p>b. justify why an answer is reasonable and explain the solution process</p>	<p>Some examples: Lesson 22 – TG pp. 127-132 <i>How do you compare facts and information?</i></p> <p>Lesson 23 – TG pp. 133-138 <i>Do you think it will happen?</i></p> <p>Lesson 24 – TG pp. 139-144 <i>How can you solve problems?</i></p>