



Elementary Math  
Grade 3-5  
Vertical Alignment Guide

**Developed at the Oklahoma State Department of Education  
2014 Summer Convening**



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## 3rd Grade Math | Priority Academic Student Skills

**Standard 1: Algebraic Reasoning: Patterns and Relationships - - The student will use a variety of problem-solving approaches to extend and create patterns.**

- 3.1.1** Describe (orally or in written form), create, extend and predict patterns in a variety of situations (e.g., 3, 6, 9, 12 . . . , use a function machine to generate input and output values for a table, show multiplication patterns on a hundreds chart, determine a rule and generate additional pairs with the same relationship).
- 3.1.2** Find unknowns in simple arithmetic problems by solving open sentences (equations) and other problems involving addition, subtraction, and multiplication.
- 3.1.3** Recognize and apply the commutative and identity properties of multiplication using models and manipulative to develop computational skills (e.g.,  $3 \cdot 5 = 5 \cdot 3$ ,  $7 \cdot 1 = 7$ )

**Standard 2: Number Sense and Operation The student will use numbers and number relationships to acquire basic facts. The student will estimate and compute with whole numbers.**

### **3.2.1** Number Sense

#### **3.2.1a** *Place Value*

**3.2.1ai** Model the concept of place value through 4 digits (e.g., base-10 blocks, bundles of 10s, place value mats).

**3.2.1aii** Read and write whole numbers up to 4 digits (e.g., expanded form, standard form).

#### **3.2.1b** *Whole Numbers and Fractions*

**3.2.1bi** Compare and order whole numbers up to 4 digits.

**3.2.1bii** Create and compare physical and pictorial models of equivalent and nonequivalent fractions including halves, thirds, fourths, eighths, tenths, twelfths, and common percents (25%, 50%, 75%, 100%) (e.g., fraction circles, pictures, egg cartons, fraction strips, number lines).

### **3.2.2** Number Operations

**3.2.2a** Estimate and find the sum or difference (with and without regrouping) of 3- and 4-digit numbers using a variety of strategies to solve application problems

#### **3.2.2b** *Multiplication Concepts and Fact Families*

**3.2.2bi** Use physical models and a variety of multiplication algorithms to find the product of multiplication problems with one-digit multipliers.

**3.2.2bii** Demonstrate fluency (memorize and apply) with basic multiplication facts up to  $10 \times 10$  and the associated division facts (e.g.,  $5 \times 6 = 30$  and  $30 \div 6 = 5$ )

**3.2.2biii** Estimate the product of 2-digit by 2-digit numbers by rounding to the nearest multiple of 10 to solve application problems.

**Standard 3: Geometry - The student will use geometric properties and relationships to recognize and describe shapes.**

- 3.3.1** Identify and compare attributes of two- and three- dimensional shapes and develop vocabulary to describe the attributes (e.g., count the edges and faces of cube, the radius is half of a circle, lines of symmetry)
- 3.3.2** Analyze the effects of combining and subdividing two- and three-dimensional (e.g., folding paper, tiling, nets, and rearranging pieces of solids)
- 3.3.3** Make and use coordinate systems to specify locations and shapes on a grid with ordered pairs and to describe paths from one point to another point on a grid.

**Standard 4: Measurement - The student will use appropriate units of measure to solve problems.**

**3.4.1 Measurement**

- 3.4.1a** Choose an appropriate measurement instrument and measure the length of objects to the nearest inch or half-inch and the weight of objects to the nearest pound or ounce.
- 3.4.1b\*** Choose an appropriate measurement instrument and measure the length of objects to the nearest meter or centimeter and the weight of objects to the nearest gram or kilogram.
- 3.4.1c\*** Develop and use the concept of perimeter of different shapes to solve problems.
- 3.4.1d\*** Develop and use strategies to choose an appropriate unit and measurement instrument to estimate measurements (e.g., use parts of the body as benchmarks for measuring length)

**3.4.2 Time and Temperature**

- 3.4.2a** Solve simple addition problems with time (e.g., 15 minutes added to 1:10)
- 3.4.2b** Tell time on a digital and analog clock to the nearest 5 minutes
- 3.4.2c** Read a thermometer and solve for temperature change.
- 3.4.3 Money:** Determine the correct amount of change when a purchase is made with a five-dollar bill.

**Standard 5: Data Analysis - The student will demonstrate an understanding of collection, display, and interpretation of data and probability.**

**3.5.1 Data Analysis**

- 3.5.1a\*** Pose questions, collect, record, and interpret data to help answer questions (e.g., which was the most popular booth at our carnival?).
- 3.5.1b** Read graphs and charts, identify the main idea, draw conclusions, and make predictions based on the data (e.g., predict how many children will bring their lunch based on a menu).
- 3.5.1c** Construct bar graphs, frequency tables, line graphs (plots), and pictographs with labels and a title from a set of data.
- 3.5.2 Probability:** Describe the probability (more, less, or equally likely) of chance events.

## 4<sup>th</sup> Grade Math | Priority Academic Student Skills

**Standard 1: Algebraic Reasoning: Patterns and Relationships - The student will use a variety of problem-solving approaches to create, extend, and analyze patterns.**

- 4.1.1 Discover, describe, extend, and create a wide variety of patterns using tables, graphs, rules, and verbal models (e.g., determine the rule from a table or “function machine”, extend visual and number patterns).
- 4.1.2 Find variables in simple arithmetic problems by solving open sentences (equations) and other problems involving addition, subtraction, multiplication, and division with whole numbers.
- 4.1.3 Recognize and apply the associative property of multiplication.  
(e.g.,  $6 \cdot (2 \cdot 3) = (6 \cdot 2) \cdot 3$ )

**Standard 2: Number Sense and Operation – The student will use numbers and number relationships to acquire basic facts. The student will estimate and compute with whole numbers and fractions.**

### **4.2.1 Number Sense**

#### **4.2.1a Place Value**

**4.2.1ai** Apply the concept of place value through 6 digits (e.g., write numbers in expanded form).

**4.2.1aii** Model, read, write and rename decimal numbers to the hundredths (e.g., money, numerals to words).

#### **4.2.1b Whole Numbers, Fractions and Decimals**

**4.2.1bi** Compare and order whole numbers and decimals to the hundredths place (e.g., pictures of shaded regions of two-dimensional figures, use  $>$ ,  $<$ ,  $=$  symbols).

**4.2.1bii** Use 0,  $\frac{1}{2}$ , and 1 or 0, 0.5, and 1 as benchmarks and place additional fractions, decimals, and percents on a number line (e.g.,  $\frac{1}{3}$ ,  $\frac{3}{4}$ , 0.7, 0.4, 62%, 12%)

**4.2.1biii** Compare, add, or subtract fractional parts (fractions with like denominators and decimals) using physical or pictorial models. (e.g., egg cartons, fraction strips, circles, and squares).

**4.2.1biv\*** Explore and connect negative numbers using real world situations (e.g. owing money, temperature, measuring elevations above and below sea level).

### **4.2.2 Number Operations**

**4.2.2a** Estimate and find the product of up to three-digit by three-digit using a variety of strategies to solve application problems.

#### **4.2.2b Division Concepts and Fact Families**

**4.2.2bi** Demonstrate fluency (memorize and apply) with basic division facts up to  $144 \div 12$  and the associated multiplication facts  
(e.g.,  $144 \div 12 = 12$  and  $12 \times 12 = 144$ )

**4.2.2bii** Estimate the quotient with one- and two-digit divisors and a two- or three-digit dividend to solve application problems.

**4.2.2biii** Find the quotient (with and without remainders) with 1-digit divisors and a 2- or 3-digit dividend to solve application problems.

**Standard 3: Geometry - The student will use geometric properties and relationships to analyze shapes.**

**4.3.1** Identify, draw, and construct models of intersecting, parallel, and perpendicular lines.

**4.3.2** Identify and compare angles equal to, less than, or greater than 90 degrees (e.g., use right angles to determine the approximate size of other angles).

- 4.3.3** Identify, draw, and construct models of regular and irregular polygons including triangles, quadrilaterals, pentagons, hexagons, heptagons, and octagons to solve problems.
- 4.3.4** Describe the effects on two-dimensional objects when they slide (translate), flip (reflect), and turn (rotate) (e.g., tessellations).

**Standard 4: Measurement The student will solve problems using appropriate units of measure in a variety of situations.**

**4.4.1 Measurement**

**4.4.1a** Estimate the measures of a variety of objects using customary units.

**4.4.1b** Establish benchmarks for metric units and estimate the measures of a variety of objects (e.g., mass: the mass of a raisin is about 1 gram, length: the width of a finger is about 1 centimeter).

**4.4.1c** Select appropriate customary and metric units of measure and measurement instruments to solve application problems involving length, weight, mass, area, and volume.

**4.4.1d** Develop and use the concept of area of different shapes using grids to solve problems.

**4.4.2 Time and Temperature**

**4.4.2a** Solve elapsed time problems.

**4.4.2b** Read thermometers using different intervals (intervals of 1, 2, or 5) and solve for temperature change.

**4.4.3 Money:** Determine the correct amount of change when a purchase is made with a twenty-dollar bill.

**Standard 5: Data Analysis - The student will demonstrate an understanding of collection, display, and interpretation of data and probability.**

**4.5.1 Data Analysis**

**4.5.1a** Read and interpret data displays such as tallies, tables, charts, and graphs and use the observations to pose and answer questions (e.g., choose a table in social studies of population data and write problems).

**4.5.1b** Collect, organize and record data in tables and graphs (e.g., line graphs (plots), bar graphs, pictographs).

**4.5.2 Probability:** Predict the probability of outcomes of simple experiments using words such as certain, equally likely, impossible (e.g., coins, number cubes, spinners).

**4.5.3 Central Tendency:** Determine the median (middle), and the mode (most often) of a set of data.

# Elementary Math | PASS Process Skills Standards

## Grades 1-5

### Process Standard 1: Problems Solving

- 1.1 Use problem-solving approaches (e.g., act out situations, represent problems with drawings and lists, use concrete, pictorial, graphical, oral, written, and/or algebraic models, understand a problem, devise a plan, carry out the plan, look back).
- 1.2 Formulate problems from every day and mathematical situations (e.g., how many forks are needed?, how many students are absent?, how can we share/divide these cookies?, how many different ways can we find to compare these fractions?).
- 1.3 Develop, test, and apply strategies to solve a variety of routine and non-routine problems (e.g., look for patterns, make a table, make a problem simpler, process of elimination, trial and error).
- 1.4 Verify and interpret results with respect to the original problem (e.g., students explain verbally why an answer makes sense, explain in a written format why an answer makes sense, verify the validity of each step taken to obtain a final result).
- 1.5 Distinguish between necessary and irrelevant information in solving problems (e.g., play games and discuss “best” clues, write riddles with sufficient information, identify unnecessary information in written story problems).

### Process Standard 2: Communication

- 2.1 Express mathematical ideas coherently and clearly to peers, teachers, and others (e.g., with verbal ideas, models or manipulatives, pictures, or symbols).
- 2.2 Extend mathematical knowledge by considering the thinking and strategies of others (e.g., agree or disagree, rephrase another student’s explanation, analyze another student’s explanation).
- 2.3 Relate manipulatives, pictures, diagrams, and symbols to mathematical ideas.
- 2.4 Represent, discuss, write, and read mathematical ideas and concepts. Start by relating everyday language to mathematical language and symbols and progress toward the use of appropriate terminology (e.g., “add more” becomes “plus”, “repeated addition” becomes “multiplication”, “fair share” becomes “divide”, “balance the equation” becomes “solve the equation”).

### **Process Standard 3: Reasoning**

- 3.1 Explain mathematical situations using patterns and relationships (e.g., identify patterns in situations, represent patterns in a variety of ways, and extend patterns to connect with more general cases).
- 3.2 Demonstrate thinking processes using a variety of age-appropriate materials and reasoning processes (e.g., manipulatives, models, known facts, properties and relationships, inductive [specific to general], deductive [general to specific], spatial, proportional, logical reasoning ["and" "or" "not"] and recursive reasoning).
- 3.3 Make predictions and draw conclusions about mathematical ideas and concepts. Predictions become conjectures and conclusions become more logical as students mature mathematically.

### **Process Standard 4: Connections**

- 4.1 Relate various concrete and pictorial models of concepts and procedures to one another (e.g., use two colors of cubes to represent addition facts for the number 5, relate patterns on a hundreds chart to multiples, use base-10 blocks to represent decimals).
- 4.2 Link concepts to procedures and eventually to symbolic notation (e.g., represent actions like snap, clap, clap with symbols A B B, demonstrate  $3 \times 4$  with a geometric array, divide a candy bar into 3 equal pieces that represent one piece as  $\frac{1}{3}$ ).
- 4.3 Recognize relationships among different topics within mathematics (e.g., the length of an object can be represented by a number, multiplication facts can be modeled with geometric arrays, can be written as .5 and 50%).
- 4.4 Use mathematical strategies to solve problems that relate to other curriculum areas and the real world (e.g., use a timeline to sequence events, use symmetry in art work, explore fractions in quilt designs and to describe pizza slices).

### **Process Standard 5: Representation**

- 5.1 Create and use a variety of representations appropriately and with flexibility to organize, record, and communicate mathematical ideas (e.g., dramatizations, manipulatives, drawings, diagrams, tables, graphs, symbolic representations).
- 5.2 Use representations to model and interpret physical, social, and mathematical situations (e.g., counters, pictures, tally marks, number sentences, geometric models; translate between diagrams, tables, charts, graphs).

## 5<sup>th</sup> Grade Math | Priority Academic Student Skills

**Standard 1: Algebraic Reasoning: Patterns and Relationships - The student will use algebraic methods to describe patterns and solve problems in a variety of contexts.**

- 5.1.1** Describe rules that produce patterns found in tables, graphs, and models, and use variables (e.g., boxes, letters, pawns, number cubes, or other symbols) to solve problems or to describe general rules in algebraic expression or equation form.
- 5.1.2** Use algebraic problem-solving techniques (e.g., use a balance to model an equation and show how subtracting a number from one side requires subtracting the same amount from the other side) to solve problems.
- 5.1.3** Recognize and apply the commutative, associative, and distributive properties to solve problems. e.g.,  $3 \times (2+4) = (3 \times 2) + (3 \times 4)$

**Standard 2: Number Sense and Operation The student will use numbers and number relationships to acquire basic facts. The student will estimate and compute with whole numbers, fractions, and decimals.**

### **5.2.1 Number Sense**

**5.2.1a** Apply the concept of place value of whole numbers through hundred millions (9 digits) and model, read, and write decimal numbers through the thousandths

**5.2.1b** Represent with models the connection between fractions and decimals, compare and order fractions and decimals, and be able to convert from one representation to the other to solve problems. (e.g., use 10x10 grids, base 10 blocks).

**5.2.1c** Identify and compare integers using real world situations. (e.g., owing money, temperature, or measuring elevations above and below sea level).

**5.2.1d** \* Identify and apply factors, multiples, prime, and composite numbers in a variety of problem-solving situations (e.g., build rectangular arrays for numbers 1-100 and classify as prime or composite, use common factors to add fractions).

### **5.2.2 Number Operations**

**5.2.2a** Estimate, add, or subtract decimal numbers with same and different place values to solve problems (e.g.,  $3.72 + 1.4$ ,  $\$4.56 - \$2.12$ ).

**5.2.2b** *Estimate add, or subtract fractions (including mixed numbers) to solve problems using a variety of methods (e.g., use fraction strips, use area models, find a common denominator).*

**5.2.2c** Estimate and find the quotient (with and without remainders) with two-digit divisors and a two- or three-digit dividend to solve application problems.

**Standard 3: Geometry - The student will apply geometric properties and relationships.**

**5.3.1** Compare and contrast the basic characteristics of circle and polygons (triangles, quadrilaterals, pentagons, hexagons, heptagons, octagons).

**5.3.2** Classify angles (e.g., acute, right, obtuse, straight).

**Standard 4: The student use appropriate units of measure to solve problems in a variety outcontexts.**

**5.4.1 Measurement**

**5.4.1a** Compare, estimate, and determine the measurement of angle

**5.4.1b** Develop and use the formula for perimeter and area of a square and rectangle to solve application problems.

**5.4.1c** Convert basic measurements of volume, mass and distance within the same system for metric and customary units (e.g., inches to feet, hours to minutes, centimeters to meters).

**5.4.5 Money:** Determine the correct amount of change when a purchase is made with a twenty-dollar bill.

**Standard 5: Data Analysis - Convert basic measurements of volume, mass and distance within the same system for metric and customary units (e.g., inches to feet, hours to minutes, centimeters to meters).**

**5.5.1 Data Analysis**

**5.5.1a** Compare and translate displays of data and justify the selection of the type of table of graph (e.g., charts, tables, bar graphs, pictographs, line graphs, circle graphs, Venn diagrams).

**5.5.1b** Formulate questions, design investigations, consider samples, and collect, organize, and analyze data using observation, measurement, surveys, or experiments (e.g., how far can 5th graders throw a softball based on where it first hits the ground?).

**5.5.2 Probability**

**5.5.2a** Determine the probability of events occurring in familiar contexts or experiments and express probabilities as fractions from zero to one (e.g., find the fractional probability of an event given a biased spinner)

**5.5.2b** Use the fundamental counting principle on sets with up to four items to determine the number of possible combinations (e.g. create a tree diagrams to see possible combinations).

**5.5.3 Central Tendency:** Determine the range (spread), mode (most often), and median (middle) of set of data.

## Major Concepts for 3<sup>rd</sup> Grade

The Major Concepts are defined in PASS, however the educators at the convening used the testing blueprints to determine if some needed to be added. While these are the heaviest weighted standards for the assessment, **they are not all of the standards**. For a complete list of standards, refer to the first page of this document.

1. Develop an understanding of multiplication and division and acquire strategies for basic multiplication facts and related division facts (fact families).

Blueprint of Testing - 20% (Number Operations)

Student Performance

I can add and subtract 3 and 4 digit numbers using different strategies.

I can easily and accurately multiply facts up to 10 times 10, understanding the related division facts.

2. Develop an understanding of fractional parts and fraction equivalence.

Blueprint of Testing - 20% (Number Sense)

Student Performance:

I can use diagrams and models to compare and order equivalent and non-equivalent fractions.

I can create diagrams and models of equivalent and non-equivalent fractions.

3. Apply the concepts of time, money, temperature, and measurement to real life situations.

Blueprint of Testing - 18% (Measurement)

Student Performance:

I can choose the right tool and correctly measure length and weight of objects.

I can find the perimeter of an object.

I can add time.

I can tell and write time to the nearest 5 minutes.

I can read a thermometer and calculate temperature change.

I can make change from a 5 dollar bill.

4. Describe and analyze various properties of two- and three-dimensional shapes.

Blueprint of Testing - 14% (Geometric Properties)

Student Performance:

I can compare and classify shapes by attributes, sides and angles.

I can define attributes of shapes with the correct vocabulary.

I can create different figures using basic shapes.

## Major Concepts for 4<sup>th</sup> Grade

The Major Concepts are defined in PASS, however the educators at the convening used the testing blueprints to determine if some needed to be added. While these are the heaviest weighted standards for the assessment, **they are not all of the standards**. For a complete list of standards, refer to the first page of this document.

1. Develop quick recall of multiplication facts and related division facts (fact families) and fluency with whole number multiplication.

Blueprint of Testing - 20% (Number Operations)

Student Performance

- I can easily remember and use the basic math facts up to 12x12 and 144/12.
- I can estimate the product of a problem up to a three digit by three digit number
- I can find the product of a problem up to a three digit by one digit number.

2. Develop an understanding of decimals and their connection to fractions.

Blueprint of Testing - 16% (Number Sense)

Student Performance:

- I can model, read, write and rename decimals to the hundredths place.
- I can compare and order numbers to the hundredths place.
- I can place decimals, fractions and percents on a numberline using 0, 0.5 and 1 as benchmarks.
- I can use a model to compare, add or subtract fractions.

3. Use Customary and Metric Measurement Systems to solve application problems

Blueprint of Testing - 10%

Student Performance:

- I can estimate a variety of objects using customary units.
- I can use metric measurements to estimate and measure a variety of objects.
- I can choose the appropriate measurement instrument to solve problems.
- I can use grids to measure the area of shapes.

4. Develop an understanding of area and acquire strategies for finding area of two-dimensional shapes.

Blueprint of Testing - One part of the 10% for Measurement (Number 3 above)

Student Performance:

- I can identify and draw intersecting, parallel and perpendicular lines.
- I can identify the different types of angles.
- Identify, draw, and construct models of regular and irregular polygons.
- I can identify and draw the different types of polygons.
- I can describe the transformations of 2-D objects.

## Major Concepts for 5<sup>th</sup> Grade

The Major Concepts are defined in PASS, however the educators at the convening used the testing blueprints to determine if some needed to be added. While these are the heaviest weighted standards for the assessment, **they are not all of the standards**. For a complete list of standards, refer to the first page of this document.

1. Develop an understanding of and fluency with division of whole numbers.

Blueprint of Testing - 16% (Number Operations)

Student Performance:

I can estimate and find the quotient with and without remainders.

I can find whole number quotients using a variety of strategies.

I can easily and accurately divide whole numbers.

2. Develop an understanding of and fluency with addition and subtraction of fractions and decimals.

Blueprint of Testing - 32% (Number Sense and Number Operations)

Student Performance:

### *Number Sense*

I can read, write, and model numbers through the thousandths place value.

I can convert between fractions and decimal forms of a number.

I can identify integers in real world situations.

### *Number Operations*

I can add and subtract decimal numbers with the same or different place values.

I can use a variety of methods to add and subtract fractions, including improper fractions.

3. Algebraic Reasoning: Recognize patterns and their associated rules and develop basic algebraic strategies for solving problems with variables.

Blueprint of Testing - 26% (Algebraic Reasoning)

Student Performance:

I can use rules to create patterns.

I can use the order of operations to solve problems.

I can apply the multiplication properties to solve problems.

I can use algebraic problem-solving techniques to solve problems.

## Vertical Alignment of Major Concepts 3<sup>rd</sup> through 5<sup>th</sup> Grades

Major concepts, defined by grade level in PASS, aligned with 3 <sup>rd</sup> Grade blueprint			
3 <sup>rd</sup> Grade	4 <sup>th</sup> Grade	Blueprint 4 <sup>th</sup> Grade	5 <sup>th</sup> Grade
Develop an understanding of fractional parts and fraction equivalence.	Develop quick recall of multiplication facts and related division facts (fact families) and fluency with whole number multiplication.	<b>20%</b> 4.2.2 Number Operations	Develop an understanding of and fluency with division of whole numbers
Develop an understanding of multiplication and division and acquire strategies for basic multiplication facts and related division facts (fact families).	Develop an understanding of decimals and their connection to fractions.	<b>16%</b> 4.2.1 Number Sense	Develop an understanding of and fluency with addition and subtraction of fractions and decimals.
Apply the concepts of time, money, temperature, and measurement to real life situations.	Use Customary and Metric Measurement Systems to solve application problems and an understanding of area and acquire strategies for finding area of two-dimensional shapes.	<b>10%</b> 4.1 Measurement	
Describe and analyze various properties of two- and three-dimensional shapes.	Develop an understanding of geometric properties and relationships of shapes.	<b>18%</b>	
			Algebraic Reasoning: Recognize patterns and their associated rules and develop basic algebraic strategies for solving problems with variables.

## Vertical Alignment of Major Concepts Kindergarten through Fourth Grades

Major concepts, defined by grade level in PASS, aligned with 3 <sup>rd</sup> Grade blueprint					
Kindergarten	1 <sup>st</sup> Grade	2 <sup>nd</sup> Grade	3 <sup>rd</sup> Grade	Blueprint 3 <sup>rd</sup> Grade	4 <sup>th</sup> Grade
Demonstrate an understanding of the relationship between numbers and quantities.	Demonstrate an understanding of whole number relationships.	Demonstrate an understanding of the base-ten system and place value within that system.	Develop an understanding of fractional parts and fraction equivalence.	20%	Develop quick recall of multiplication facts and related division facts (fact families) and fluency with whole number multiplication.
N/A	Demonstrate an understanding of basic addition and subtraction concepts and facts.	Demonstrate quick recall of addition and subtraction facts as well as fluency with multi-digit addition and subtraction.	Develop an understanding of multiplication and division and acquire strategies for basic multiplication facts and related division facts (fact families).	20%	Develop an understanding of decimals and their connection to fractions.
Demonstrate an understanding of the concepts of nonstandard and standard measurement.	Demonstrate an understanding of linear measurement skills.	Demonstrate an understanding of the use of appropriate units of measure in a variety of situations.	Apply the concepts of time, money, temperature, and measurement to real life situations.	18%	Develop an understanding of area and acquire strategies for finding area of two-dimensional shapes.
Identify the common geometric shapes.	Recognize and describe basic two- and three-dimensional shapes.	Use geometric properties and relationships to recognize and describe shapes.	Describe and analyze various properties of two- and three-dimensional shapes.	14%	Develop an understanding of geometric properties and relationships of shapes

## Vertical Alignment of Blueprints 3<sup>rd</sup> through 6<sup>th</sup> Grades

This chart shows the vertical alignment of the OCCT Math Blueprints from 3<sup>rd</sup> through 6<sup>th</sup> grade. It was designed so you have an at-a-glance look at the progression of major concepts in each grade level as well as the percentage of the test which will be made up of that concept.

	3 <sup>rd</sup> Grade		4 <sup>th</sup> Grade		5 <sup>th</sup> Grade		6 <sup>th</sup> Grade	
<b>Standard 1: Algebraic Reasoning: Patterns and Relationships</b>	7	14%		7	14%		13	26%
1.1. Algebra Patterns	2			3			5	
1.2. Equations	2			2			4	1.2. Expressions & Equations
1.2. Number Properties	3			2			4	
								1.4. Solving Equations
<b>Standard 2: Number Sense and Operations</b>	20	40%		18	36%		16	32%
2.1. Number Sense	10			8			8	
2.2. Number Operations	10			10			8	
<b>Standard 3: Geometry</b>	7	14%		9	18%		7	14%
3.1. Properties of Shapes	3		3.1. Lines	2		3.1. Circles & Polygons	4	
3.2. Spatial Reasoning	2		3.2. Angles	2		3.2. Angles	3	
3.3. Coordinate Geometry	2		3.3. Polygons	3				3.3. Coordinate Geometry
			3.4. Transformations	2				
<b>Standard 4: Measurement</b>	9	18%		9	18%		7	14%
4.1. Measurement	4			5			5	4.1. Circles
4.2. Time & Temperature	2			2		4.2. Money	2	4.2. Conversions
4.3. Money	2			2				
<b>Standard 5: Data Analysis</b>	7	14%		7	14%		7	14%
5.1. Data Analysis	4			2			3	
5.2. Probability	4		5.2. Central Tendency	3		5.2. Central Tendency	2	5.2. Central Tendency
			5.3. Probability	2		5.3. Probability	2	5.3. Probability

## Sample Pacing/Sequence Guide Kindergarten, 1<sup>st</sup> and 2<sup>nd</sup> Grade Math PASS Objectives

This chart is intended as a starting point for a more specific pacing guide aligned with your district's school calendar. We recognize that not all districts operate on a 9 month schedule from September to May. This table provides guidance as to the general amount of time to be spent on each strand. It was created to aid in the vertical alignment and progression leading to the 3<sup>rd</sup> grade Math OCCT using the 3<sup>rd</sup> Grade Math OCCT blueprints as the reference point.

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
<b>Kindergarten</b>									
Standard 1: Algebraic Reasoning									
Standard 2: Number Sense and Operations									
Standard 3: Geometry									
Standard 4: Measurement									
Standard 5: Data Analysis									
<b>1<sup>st</sup> Grade</b>									
Standard 1: Algebraic Reasoning									
Standard 2: Number Sense and Operations									
Standard 3: Geometry									
Standard 4: Measurement									
Standard 5: Data Analysis									
<b>2<sup>nd</sup> Grade</b>									
Standard 1: Algebraic Reasoning									
Standard 2: Number Sense and Operations									
Standard 3: Geometry									
Standard 4: Measurement									
Standard 5: Data Analysis									

	Do not teach at this time
	Strands to be the focus of classroom instruction and assessment
	Strands to be practiced, reviewed and maintained through whole group instruction, centers, small groups, interventions, remediation, etc.

## Sample Pacing/Sequence Guide 3<sup>rd</sup> through 5<sup>th</sup> Grade Math PASS Objectives

This chart is intended as a starting point for a more specific pacing guide aligned with your district’s school calendar. We recognize that not all districts operate on a 9 month schedule from September to May. This table provides guidance as to the general amount of time to be spent on each strand. It was created to aid in the vertical alignment and progression going through the 3<sup>rd</sup> through 5<sup>th</sup> grade Math OCCT using the Math OCCT blueprints as the reference points.

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
<b>3<sup>rd</sup> Grade</b>									
Standard 1: Algebraic Reasoning									
Standard 2: Number Sense and Operations									
Standard 3: Geometry									
Standard 4: Measurement									
Standard 5: Data Analysis									
<b>4<sup>th</sup> Grade</b>									
Standard 1: Algebraic Reasoning									
Standard 2: Number Sense and Operations									
Standard 3: Geometry									
Standard 4: Measurement									
Standard 5: Data Analysis									
<b>5<sup>th</sup> Grade</b>									
Standard 1: Algebraic Reasoning									
Standard 2: Number Sense and Operations									
Standard 3: Geometry									
Standard 4: Measurement									
Standard 5: Data Analysis									

	Do not teach at this time
	Strands to be the focus of classroom instruction and assessment
	Strands to be practiced, reviewed and maintained through whole group instruction, centers, small groups, interventions, remediation, etc.

