

**Curriculum Map  
Grade 3  
Advanced Math**

Unit	Essential Question	Content	Skills	Assessment	Standards
Unit 1  5-7 Weeks	<p>How does knowing basic multiplication facts help you to solve division problems and multiply with multiples of 10?</p> <p>What is multiplication? division? addition? subtraction?</p> <p>What strategies can be used when adding and subtracting?</p> <p>When is the appropriate time to use each operation?</p> <p>When might you need to round numbers, and when might you need to solve for an exact answer?</p> <p>When might you need to know the value of a digit in a multi-digit number?</p>	<p><i>Students will understand that...</i></p> <p>...products of whole numbers can be interpreted as repeated addition or equal groups of objects.</p> <p>...division is a set of objects partitioned equally into a number of shares.</p> <p>...the unknown in a division problem can be solved using known multiplication facts.</p> <p>...whole numbers can be rounded to the nearest 10 or 100.</p> <p>...that regrouping/trading may be necessary when adding or subtracting 2 digit whole numbers.</p> <p>...that basic multiplication facts can be used when solving problems with multiples of 10.</p>	<p>Create a multiplication sentence when given a repeated addition sentence.</p> <p>Create an addition sentence when given a multiplication sentence.</p> <p>Create an array or a pictorial representation of a multiplication sentence.</p> <p>Create a multiplication sentence from an array or pictorial representation.</p> <p>Solve division problems involving equal grouping and equal sharing.</p> <p>Know how to use multiplication facts to solve for an unknown number in a division sentence (and division facts for a multiplication sentence).</p> <p>Round to any place.</p> <p>Compare multi-digit numbers up to one million.</p>	<p>Fist-to-Five/Thumbs Up or Down/Etc.</p> <p>Games/Activities</p> <p>Practice Pages</p> <p>Slate Drills</p> <p>Teacher Observation</p> <p>Quiz</p> <p>Teacher-Made Test</p> <p>State Model Assessment</p> <p>Renaissance Learning STAR Math</p> <p>Accelerated Math Program</p> <p>Reflex Math Online Program</p>	<p>3.OA.1</p> <p>3.OA.2</p> <p>3.OA.4</p> <p>3.OA.7</p> <p>3.NBT.1</p> <p>3.NBT.2</p> <p>3.NBT.3</p> <p>3.MD.6</p> <p>3.MD.7a</p> <p>3.MD.7b</p> <p>4.NBT.1</p> <p>4.NBT.2</p> <p>4.NBT.3</p> <p>4.NBT.4</p> <p>4.OA.1</p> <p>4.OA.2</p>

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	<p>How can area be determined?</p>	<p>...values of numbers into the millions.</p> <p>...the value of a digit in one place represents ten times what it represents in the place to its right.</p> <p>...area is represented by square units.</p> <p><i>Students will know...</i></p> <p>...easier multiplication facts (0, 1, 2, 5, and 10).</p> <p>...an array represents equal grouping of sets of objects.</p> <p>...a set of objects can be divided into an equal number of groups and/or groups containing an equal of objects.</p> <p>...that a fact family uses 3 numbers to create 2 multiplication and 2 division sentences.</p> <p>...that numbers can be rounded</p>	<p>Write number in numerals, words, and expanded form.</p> <p>Determine the area of a rectangular array by either counting square units or multiplying side lengths.</p>		

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		<p>to any place.</p> <p>...strategies and algorithms for adding and subtracting within 1,000.</p> <p>...strategies for multiplying one-digit numbers by multiples of 10.</p> <p>...places of a multi-digit number, up to one million.</p> <p>...a square with side length 1 unit, called “a unit square”, is said to have “one square unit” of area, and can be used to measure area.</p> <p>...a plane figure can be covered without gaps or overlaps by <math>n</math> squares is said to have an area of <math>n</math> square units.</p> <p>...the area of a rectangular array can be found by multiplying side lengths.</p>			

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Unit 2  5-7 Weeks	<p>What are the commutative, associative, and distributive properties?</p> <p>What strategies can be used when multiplying?</p> <p>What strategies can be used to determine the area of a rectangle?</p>	<p><i>Students will understand that...</i></p> <p>...the commutative, associative, and distributive properties can be used as strategies to add and multiply whole numbers.</p> <p>...the unknown in a division problem can be solved using know multiplication facts.</p> <p>...there are multiple strategies that can be used to solve multiplication problems.</p> <p>...the space within a rectangle is called the area and is measured in square units.</p> <p>...a rectangle can be broken in to smaller rectangular sections, and the area of the large rectangle will equal the sum of the areas of the smaller rectangles.</p>	<p>Use the commutative, associative, and distributive properties to solve multiplication and addition problems.</p> <p>Solve problems involving parentheses.</p> <p>Solve division of whole numbers by representing the problem as an unknown factor problem.</p> <p>Multiply and divide within 40 using strategies such as the relationship between multiplication and division.</p> <p>Use multiplication with 10 to solve word problems by creating drawings or arrays.</p> <p>Write equations to represent equal groups or arrays.</p>	<p>Fist-to-Five/Thumbs Up or Down/Etc.</p> <p>Games/Activities</p> <p>Practice Pages</p> <p>Slate Drills</p> <p>Teacher Observation</p> <p>Quiz</p> <p>Teacher-Made Test</p> <p>State Model Assessment</p> <p>Renaissance Learning STAR Math</p> <p>Accelerated Math Program</p> <p>Reflex Math Online Program</p>	<p>3.OA.3</p> <p>3.OA.5</p> <p>3.OA.6</p> <p>3.OA.7</p> <p>3.OA.9</p> <p>3.MD.6</p> <p>3.MD.7c</p> <p>3.MD.7d</p>

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		<p><i>Students will know...</i></p> <p>...changing the order of the addends or factors does not change the sum or product. (commutative property)</p> <p>...that when adding or multiplying 3 or more numbers the way that they are grouped does not affect the sum or product. (associative property)</p> <p>...a product can be made by using the partial products algorithm. (distributive property)</p> <p>...that multiplication strategies include creating drawings or arrays, using the relationship between multiplication and division, repeated addition, and multiplication tables.</p> <p>...multiplication facts where 3 or 4 is one of the factors.</p> <p>...the area of a rectangular array can be found by counting square</p>	<p>Explain patterns in addition or multiplication tables using the properties of operations.</p> <p>Determine the area of a rectangular array by either counting square units or multiplying side lengths.</p> <p>Separate a large rectangle into smaller rectangles, find the area of each part, and then add to determine the total area.</p>		

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		units.  ...the area of a rectangular array can be found by multiplying side lengths.			

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Unit 3  5-7 Weeks	<p>How can fractions be represented?</p> <p>What strategies can be used when multiplying?</p> <p>What units are used for the various types of measurement?</p> <p>When is the appropriate time to use each operation?</p> <p>How can fractions be represented?</p>	<p><i>Students will understand that...</i></p> <p>...time is a unit of measurement.</p> <p>...measurement should be done with appropriate tools and in appropriate units.</p> <p>...fractions can represent parts of a set or parts of a whole.</p> <p>...a letter may be used to represent an unknown value.</p> <p>...errors can be detected if you assess the reasonableness of the answer.</p> <p>...some word problems require more than one step to solve.</p> <p>...some division word problems may include remainders which must be interpreted.</p> <p><i>Students will know...</i></p> <p>...which tools to use for which</p>	<p>Tell time to the nearest minute.</p> <p>Calculate elapsed time.</p> <p>Convert units of measurement within a system (in a 2-column chart).</p> <p>Compare liquid volumes and masses using appropriate units.</p> <p>Write fractions that represent part(s) of a set and part(s) of a whole.</p> <p>Make a drawing of a number line with fractional sections marked.</p> <p>Fluently multiply and divide within 50, using strategies such as the relationship between multiplication and division.</p>	<p>Fist-to-Five/Thumbs Up or Down/Etc.</p> <p>Games/Activities</p> <p>Practice Pages</p> <p>Slate Drills</p> <p>Teacher Observation</p> <p>Quiz</p> <p>Teacher-Made Test</p> <p>State Model Assessment</p> <p>Renaissance Learning STAR Math</p> <p>Accelerated Math Program</p> <p>Reflex Math Online Program</p>	<p>3.MD.1</p> <p>3.MD.2</p> <p>3.NF.1</p> <p>3.NF.2</p> <p>3.G.2</p> <p>3.OA.7</p> <p>3.OA.8</p> <p>4.OA.3</p> <p>4.NBT.5</p> <p>4.MD.1</p>

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		<p>measurement task.</p> <p>...relative sizes of measurement.</p> <p>...the denominator represents the number of equal parts it takes to make a whole region or set.</p> <p>...the numerator represents the number of parts of the whole or set that are being referenced.</p> <p>...on a number line the spaces between the whole numbers can be represented as fractions.</p> <p>...multiplication facts where 6 or 7 is one of the factors.</p> <p>...strategies for multiplying multi-digit numbers.</p>	<p>Find the value of an unknown (expressed as a letter) in an equation.</p> <p>Solve two step word problems.</p> <p>Assess the reasonableness of the answer.</p> <p>Illustrate and explain calculations by using equations, rectangular arrays, and/or area models.</p> <p>Interpret remainders in division word problems.</p> <p>Multiply a whole number of up to 4 digits by a 1-digit whole number.</p> <p>Multiply 2 2-digit whole #s.</p>		

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Unit 4 5-7 Weeks **Note: According to June 2014 Revisions to the NJDOE Model Curriculum, the graphing SLOs have been deleted. However the <u>standards</u> still appear in Unit 5 and on PARCC Evidence Tables.	<p>What strategies can be used when multiplying?</p> <p>What are some visual representations that make it easier to understand data?</p> <p>What do fractions represent and how can they be compared?</p> <p>How can area be determined?</p> <p>Where would you see tenths and/or hundredths in the real world?</p>	<p><i>Students will understand that...</i></p> <p>...two fractions are equivalent (equal) if they are the same size, or the same point on a number line.</p> <p>...whole numbers can be expressed as fractions.</p> <p>...data can be represented visually. (line plot, bar graph, etc.)</p> <p>...comparisons are valid only when the two fractions refer to the same whole.</p> <p>...area is represented by square units.</p> <p>...fractions can be expressed as decimals.</p> <p><i>Students will know...</i></p> <p>...multiplication facts when 8 or 9 is one of the factors.</p>	<p>Fluently multiply and divide within 80 using strategies such as the relationship between multiplication and division.</p> <p>Compare fractions.</p> <p>Read a fractional number line.</p> <p>Recognize and generate simple equivalent fractions.</p> <p>Explain why fractions are equivalent or not equivalent using visual fraction models.</p> <p>Compare two fractions with the same numerator or the same denominator by reasoning about their size.</p> <p>Record the results of comparisons with the symbols <math>&gt;</math>, <math>=</math>, and <math>&lt;</math>.</p>	<p>Fist-to-Five/Thumbs Up or Down/Etc.</p> <p>Games/Activities</p> <p>Practice Pages</p> <p>Slate Drills</p> <p>Teacher Observation</p> <p>Quiz</p> <p>Teacher-Made Test</p> <p>State Model Assessment</p> <p>Renaissance Learning STAR Math</p> <p>Accelerated Math Program</p> <p>Reflex Math Online Program</p>	<p>3.NF.3a</p> <p>3.NF.3b</p> <p>3.NF.3c</p> <p>3.NF.3d</p> <p>3.MD.3</p> <p>3.MD.4</p> <p>3.MD.5a</p> <p>3.OA.7</p> <p>4.NF.6</p> <p>4.NF.7</p>

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		<p>...simple equivalent fractions. (ex. <math>\frac{1}{2} = \frac{2}{4}</math>)</p> <p>...that <math>a/1 = a</math> as a whole number.</p> <p>...that <math>a/a = 1</math>.</p> <p>...the meaning of the symbols <math>&gt;</math>, <math>&lt;</math>, and <math>=</math>.</p> <p>...where halves and fourths are on a ruler.</p> <p>...that measuring to the nearest half inch or quarter inch includes the whole number.</p> <p>...that each x on a line plot represents one unit of data.</p> <p>...a square with side length 1 unit, called "a unit square", is said to have "one square unit" of area, and can be used to measure area.</p> <p>...a plane figure can be covered</p>	<p>Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.</p> <p>Solve one and two step "how many more" and "how many less" problems using information presented in scaled bar graphs.</p> <p>Measure to the nearest half and nearest quarter inch.</p> <p>Make a line plot.</p> <p>Find the area of a rectangle in square units.</p> <p>Convert fractions with denominators of 10 or 100 to decimals.</p>		

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		without gaps or overlaps by $n$ squares is said to have an area of $n$ square units.  ...places for decimals, to the hundredths.	Generate equivalent fractions by multiplying the numerator and denominator by the same number.		

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Unit 5  5-7 Weeks	<p>What strategies can be used when multiplying?</p> <p>What strategies can be used when adding and subtracting?</p> <p>How can knowing attributes of shapes help you when calculating area and perimeter?</p> <p>When would you need to calculate perimeter? Area?</p>	<p><i>Students will understand that...</i></p> <p>...shapes in different categories may share attributes, and that the shared attributes can define a larger category.</p> <p>...area is represented in square units.</p> <p>...multiplication and addition strategies for calculating area allow you to arrive at the same answer.</p> <p>...that you can find the area of a large rectangle by dividing it into 2 smaller rectangles.</p> <p>...perimeter is a linear measurement.</p> <p>...rectangles can have the same perimeter but different areas.</p> <p>...rectangles can have the same area but different perimeters.</p>	<p>Categorize shapes based on their attributes.</p> <p>Give examples of quadrilaterals.</p> <p>Draw examples of quadrilaterals that are not rhombuses, rectangles, or squares.</p> <p>Find the area of rectangles by tiling.</p> <p>Find the area of a rectangle by multiplying length x width.</p> <p>Apply area and perimeter concepts to real world situations.</p> <p>Separate a large rectangle into smaller rectangles, find the area of each part, and then add</p>	<p>Fist-to-Five/Thumbs Up or Down/Etc.</p> <p>Games/Activities</p> <p>Practice Pages</p> <p>Slate Drills</p> <p>Teacher Observation</p> <p>Quiz</p> <p>Teacher-Made Test</p> <p>State Model Assessment</p> <p>Renaissance Learning STAR Math</p> <p>Accelerated Math Program</p> <p>Reflex Math Online Program</p>	<p>3.G.1</p> <p>3.MD.6</p> <p>3.MD.7a</p> <p>3.MD.7b</p> <p>3.MD.7c</p> <p>3.MD.7d</p> <p>3.MD.8</p> <p>3.NBT.2</p> <p>3.OA.7</p> <p>4.G.1</p> <p>4.MD.3</p>

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		<p>...the value of a digit depends on its place in the number.</p> <p><i>Students will know...</i></p> <p>...categories for classifying shapes. (rhombuses, rectangles, and others)</p> <p>...that quadrilateral is a 4 sided polygon.</p> <p>...rhombuses, rectangles, and squares are examples of quadrilaterals.</p> <p>...area can be calculated using multiplication (length x width) or addition (tiling) strategies.</p> <p>...distributive property can be used to find the area of a rectangle.</p> <p>...multiplication facts when 0 through 10 are the factors.</p>	<p>to determine the total area.</p> <p>Fluently multiply and divide within 100 using strategies such as the relationship between multiplication and division.</p> <p>Calculate the perimeter of a plane figure.</p> <p>Calculate an unknown side length when given the perimeter.</p> <p>Create rectangles with the same perimeter but different areas.</p> <p>Create rectangles with the same area but different perimeters.</p> <p>Fluently add and subtract within 1,000.</p>		

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		<p>...that perimeter is calculated by adding side lengths for a plane figure.</p> <p>...strategies and algorithms for adding and subtracting within 1,000.</p> <p>...characteristics of points, lines, line segments, rays, angles (right, acute, obtuse), parallel lines, perpendicular lines.</p>	<p>Give the value of a digit based on its place in a number.</p>		