Fourth Grade Math						
Common Core State Standards	<b>Objective/Skill (DOK)</b>	"I Can" Statements (Knowledge & Skills)	Curriculum Materials & Resources/Comments	Vocabulary, Signs, & Symbols	Assessment	
	<b>4.1i</b> Recall multiplication and division facts.	<ul> <li>I can recognize multiplication/division as inverse operations.</li> <li>I can memorize the product of two whole numbers through twelve times twelve.</li> <li>I can recognize multiplication strategies.</li> <li>I can write a multiplication equation based on given data.</li> </ul>	Envision Math Topic 1	product dividend divisor quotient fact family inverse		
Multiply or divide to solve word problems involving multiplicative	<b>4.2b</b> Determine the value of variable in equations; justify the process used to make the determination. (DOK 2)	<ul> <li>I can identify key words and relate words to operations.</li> <li>I can solve for variables by balancing both sides of the equation (what you do to one side you must do to the other side)using inverse operations.</li> <li>I can write an equation using a variable to represent the unknown.</li> </ul>		variable total sum equation product quotient remainder symbol inverse		
<b>4.OA.3</b> Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding		math and estimation.	Envision Math Topic 1 Envision Math Topic 2 Envision Math Topic 4 Envision Math Topic 5	factor product quotient		

1st 9 Weeks Pacing Guide

Find all factor pairs for a whole M	<b>.11</b> Aodel factors and multiples of whole umbers. (DOK 1)	<ul> <li>I can recognize prime and composite numbers.</li> <li>I can find the factors of a given number.</li> <li>I can check to see if a given whole number is a multiple of numbers one through 9.</li> </ul>	Envision Math Topic 1	prime composite factor multiple factor pair range digit	
Generate a number or shape A	<b>.2a</b> Analyze a given numeric pattern and enerate a similar pattern. (DOK 2)		Envision Math Topic 1 Envision Math Topic 2	generate pattern rule feature analyze	
<b>4.NBT.1</b> Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div$ 70 = 10 by applying concepts of place value and division.		<ul> <li>I can identify place values up to one million.</li> <li>I can use multiplication by a power of ten to determine the value of a digit in a multi-digit whole number.</li> </ul>	Envision Math Topic 3	whole number place value base ten system	

<ul> <li>4.1j</li> <li>Compose and decompose five-digit numbers and decimal numbers through hundredths with representations in words, physical models, and expanded and standard forms. (DOK 1)</li> <li>(FOCUS ON WHOLE NUMBERS)</li> </ul>	<ul><li>form up to ten thousand.</li><li>I can read and write numbers in expanded</li></ul>	Place Value Power points http://math.pppst.com/placeval	word form standard form expanded form value digit ones tens hundreds thousands ten thousands
<b>4.1h</b> Estimate products and quotients of whole numbers to include strategies such as rounding. (DOK 2		Envision Math Topic 3 Envision Math Topic 4 Envision Math Topic 5	round estimate whole number place value one tens hundreds thousands ten thousands hundred thousands millions

<b>4.NBT.4</b> Fluently add and subtract multi- digit whole numbers using the standard algorithm.	<b>4.1a</b> Add and subtract up to five-digit whole numbers with and without regrouping. (DOK 1)	numbers (to the nearest ten thousands place) with and without regrouping.	Envision Math Topic 4 digit addend Subtraction Manipulatives http://nlvm.usu.edu/en/nav/gra de_g_2.html Addition and Subtraction Practice Problems http://studyjams.scholastic.co m/studyjams/index.htm Addition and Subtraction Games http://www.mathchimp.com/4t hGrade.php http://www.math- play.com/4th-grade-math- games.html http://www.kidsnumbers.com/ http://www.ixil.com	
<b>4.NBT.5</b> Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two- digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	<ul> <li>4.2d</li> <li>Explain the properties of the basic operations using models, numbers, and variables:</li> <li>*Zero property of multiplication</li> <li>*Associative properties of addition and emultiplication</li> <li>*Commutative properties of addition and multiplication</li> <li>*Identity properties of addition and multiplication</li> <li>*Distributive properties of multiplication over addition and subtraction (DOK 2)</li> </ul>	<ul> <li>show examples.</li> <li>I can multiply a 2-digit number by a 1-digit number.</li> <li>I can illustrate and explain multiplication using rectangular arrays and area models.</li> <li>I can multiply two-digit by two-digit.</li> </ul>	associative property	

Common Core State	Objective/Skill (DOK)	"I Can" Statements (Knowledge & Skills)	Curriculum Materials &	Vocabulary, Signs,	Assessment
Standards			Resources/Comments	& Symbols	
problems involving		<ul> <li>I can identify key words and relate words to operations.</li> <li>I can solve for variables by balancing both sides of the equation (what you do to one side you must do to the other side)using inverse operations.</li> <li>I can write an equation using a variable to represent the unknown.</li> </ul>		variable total sum equation product quotient remainder symbol inverse	
<b>4.OA.3</b> Solve posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including roundingmultistep word problems		• I can justify my answers using mental math and estimation.	Envision Math Topic 6 Envision Math Topic 7 Envision Math Topic 8 Envision Math Topic 9 Envision Math Topic 10	factor product quotient	
<b>4.OA.4</b> Find all factor pairs for a whole number in the range 1–100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1–100 is prime or composite.	<b>4.11</b> Model factors and multiples of whole numbers. (DOK 1)	<ul> <li>I can recognize prime and composite numbers.</li> <li>I can find the factors of a given number.</li> <li>I can check to see if a given whole number is a multiple of numbers one through 9.</li> </ul>	Envision Math Topic 11	prime composite factor multiple factor pair range digit	

## 2nd 9 Weeks Pacing Guide Fourth Grade Math

<ul> <li>4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule "Add 3" and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</li> <li>4.2a Analyze a given numeric pattern and generate a similar pattern. (DOK 2)</li> </ul>	<ul> <li>I can identify a number or shape pattern that follows a given rule.</li> <li>I can generate a number or shaper pattern that follows a given rule.</li> <li>I can identify and extend patterns used in a set of numbers.</li> <li>I can identify and explain other features of my pattern.</li> </ul>		generate pattern rule feature analyze	
<b>4.NBT.1</b> Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div$ 70 = 10 by applying concepts of place value and division.	<ul> <li>I can identify place values up to one million.</li> <li>I can use multiplication by a power of ten to determine the value of a digit in a multi-digit whole number.</li> <li>I can multiply by multiples of 10 an d100</li> </ul>	Envision Math Topic 10	whole number place value base ten system	
<ul> <li>4.NBT.3</li> <li>Use place value understanding to Estimate products and quotients of whole round multi-digit whole numbers numbers to include strategies such as to any place.</li> <li>4.1h</li> <li>Use place value understanding to Estimate products and quotients of whole round multi-digit whole numbers numbers to include strategies such as rounding. (DOK 2</li> </ul>	<ul> <li>I can identify the steps in rounding numbers.</li> <li>I can round numbers up to to millions place.</li> <li>I can round two-digit factors to produce an estimated product.</li> </ul>	Envision Math Topic 6 Envision Math Topic 7	round estimate whole number place value one tens hundreds thousands ten thousands hundred thousands millions	

<b>4.NBT.5</b> Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	<ul> <li>4.2d</li> <li>Explain the properties of the basic operations using models, numbers, and variables:</li> <li>*Zero property of multiplication</li> <li>*Associative properties of addition and multiplication</li> <li>*Commutative properties of addition and multiplication</li> <li>*Identity properties of addition and multiplication</li> <li>*Distributive properties of multiplication over addition and subtraction (DOK 2)</li> </ul>	<ul> <li>I can classify examples of problems under the appropriate property.</li> <li>I recognize and construct models of each property by using concrete models to show examples.</li> <li>I can multiply a 3 and 4-digit number by a 1-digit number.</li> <li>I can illustrate and explain multiplication using rectangular arrays and area models.</li> <li>I can multiply two-digit by two-digit.</li> </ul>	Envision Math Topic 7 Envision Math Topic 8 Envision Math Topic 9 Envision Math Topic 10 http://studyjams.scholastic.com	variable associative property commutative property zero property identity property distributive property product
<b>4.NBT.6</b> Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.	<b>4.1d</b> Explain two or more methods of dividing four=digit dividends by one- two- digit divisors, with and without remainders, and justify the processes. (DOK 2)	<ul> <li>I can divide to solve word problems.</li> <li>I can divide a whole number up to four digits by a one digit divisor with/without regrouping.</li> <li>I can label divisor, dividend, quotient, and remainder of a division problem.</li> <li>I can identify steps of solving a division problem.</li> <li>I can use inverse operations to justify my answer.</li> </ul>	Envision Math Topic 9 Envision Math Topic 10	division divisor dividend quotient remainder inverse
<b>4.NF.1</b> Explain why a fraction $a/b$ is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.		<ul> <li>I can use visual representations to model fractions.</li> <li>I can recognize and generate equivalent fractions using multiplication and division.</li> <li>I can reduce fractions to simplest form.</li> <li>I can cross-multiply to determine if fractions are equivalent.</li> </ul>	Envision Math Topic 11	equivalent numerator denominator visual models generate unit

<ul> <li>4.NF.2</li> <li>Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as 1/2. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols &gt;, =, or &lt;, and justify the conclusions, e.g., by using a visual fraction model.</li> <li>4.1k Determine and use benchmark numbers such as 0, 0.5 (1/2), and 1 to judge the magnitude of whole numbers, decimals, and fractions. (DOK 2)</li> </ul>	<ul> <li>I can compare fractions that are parts of the same whole using symbols &gt;, &lt;, or =.</li> <li>I can justify my comparison of two fractions.</li> <li>I can compare two fractions by reasoning about their location on a number line.</li> </ul>	Envision Math Topic 11 benchmark fraction compare numerator common denominator justify greater than > less than < equal to =	
---	--	---	--

Fourth Grade Math						
Common Core State Standards	Objective/Skill (DOK)	"I Can" Statements (Knowledge & Skills)	Curriculum Materials & Resources/Comments	Vocabulary, Signs, & Symbols	Assessment	
4.NF.3a	4.1e	• I can create common denominators to	Envision Math Topic 12	joining		
Understand a fraction a/b with a >	Add and subtract fractions with like	compare two fractions with different		separating		
1 as a sum of fractions 1/b.	denominators. (DOK 1)	numerators and denominators.		unit		
a. Understand addition and		• I can add and subtract fractions with like		fractions		
subtraction of fractions as joining		denominators with/without using models.		whole		
and separating parts referring to		• I can distinguish between a numerator		numerator		
the same whole.		and a denominator.		denominator		
4.NF.3b				compare		
Decompose a fraction into a sum						
of fractions with the same						
denominator in more than one						
way, recording each						
decomposition by an equation.						
Justify decompositions, e.g., by						
using a visual fraction model.						
Examples: $3/8 = 1/8 + 1/8 + 1/8$ ;						
3/8 = 1/8 + 2/8						
4.NF.3c						
c. Add and subtract mixed						
numbers with like denominators,						
e.g., by replacing each mixed						
number with an equivalent						
fraction, and/or by using						
properties of operations and the						
relationship between addition and						
subtraction.						
4.NF.3d						
d. Solve word problems involving						
addition and subtraction of						
fractions referring to the same						
whole and having like						
denominators, e.g., by using						
visual fraction models and						
equations to represent the						
problem.						

## 3rd 9 Weeks Pacing Guide Fourth Grade Math

<b>4.NF.4</b> Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. a. Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to represent 5/4 as the product $5 \times$ (1/4), recording the conclusion by the equation $5/4 = 5 \times (1/4)$ . b. Understand a multiple of a/b as a multiple of 1/b, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times$ (1/5), recognizing this product as $6/5$ . (In general, $n \times (a/b) = (n \times a)/b$ .) c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat 3/8 of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?	<ul> <li>I can multiply a whole number by a fraction by changing the whole number into a fraction.</li> <li>I can create a fraction from a whole number by placing the whole number over 1.</li> <li>I can use models to represent a fraction times a whole number.</li> <li>I can solve multiplication problems by multiplying the whole number by the numerator.</li> <li>I can solve multiplication word problems involving fractions and whole numbers using visual models.</li> <li>I can solve multiplication word problems involving fractions and whole numbers using equations.</li> </ul>	multiplication multiply multiple whole number fraction numerator denominator fraction model equation unit fraction word problem product compose decompose
--	---	--

<b>4.NF.5</b> Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.4 For example, express $3/10$ as $30/100$ , and add $3/10 + 4/100 = 34/100$ .	<ul> <li>I can use base ten models to represent fractions.</li> <li>I can recognize that two fractions with denominators of 10 and 100 can be equivalent.</li> <li>I can add two fractions with denominators of 10 and 100.</li> <li>I can convert unlike denominators to like denominators and add fractions.</li> </ul>	fraction equivalent numerator denominator add subtract tenths hundredths decimals
4.NF.6       4.1g         Use decimal notation for fractions       Represent equivalence relationships between fractions and decimals using concrete example, rewrite 0.62 as 62/100; describe a length as 0.62 meters; locate 0.62 on a number line diagram.       Mathematical and the second s	• I can recognize equivalent fractions using	fraction decimal notation denominator numerator hundredths tenths compare convert equivalent
<ul> <li>4.NF.7</li> <li>Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same (bok 1) whole. Record the results of comparisons with the symbols &gt;, =, or &lt;, and justify the conclusions, e.g., by using a visual model.</li> <li>4.1j</li> <li>Compose and decompose five-digit numbers and decimal numbers through hundredths with representations in words, physical models, and expanded and standard forms. (DOK 1)</li> <li>(FOCUS ON DECIMALS)</li> <li>Add and subtract decimals through hundredths. (DOK 1)</li> </ul>	<ul> <li>I can read and write decimal numbers through hundredths.</li> <li>I can compare two numbers with decimals through hundredths and identify whether they are greater than, less than, or equal to another number.</li> <li>I can add decimals through hundredths.</li> <li>I can subtract decimals through hundredths.</li> <li>I can subtract decimals through hundredths.</li> </ul>	decimal point tenths hundredths greater than less than equal to compare equivalent whole

Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single	<b>4.4d</b> Use appropriate tools to determine, estimate, and compare units for measurement of weight/mass, area, size of angle, temperature, length, distance, and volume in English and metric systems and time in real-life situations.	<ul> <li>I can read a protractor.</li> <li>I can measure angles in whole number degrees using a protractor.</li> <li>I can sketch angles with a given measurement.</li> <li>I can determine the appropriate units of measurements.</li> <li>I can identify various measurement systems and how they are used in real-life situations.</li> </ul>		protractor acute right obtuse degrees measurement	
<b>4.MD.2</b> Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.		<ul> <li>I can solve word problems involving measurements.</li> <li>I can represent measurement quantities using a number line diagram.</li> </ul>	Envision Math Topic 13 Envision Math Topic 14	volume mass unit feet inch convert	

Common Core State Standards	Objective/Skill (DOK)	"I Can" Statements (Knowledge & Skills)	Curriculum Materials & Resources/Comments	Vocabulary, Signs, & Symbols	Assessment
<b>4.MD.2</b> Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.		<ul> <li>I can solve word problems involving measurements.</li> <li>I can represent measurement quantities using a number line diagram.</li> </ul>		volume mass unit feet inch convert	
Apply the area and perimeter formulas for rectangles in real world	<b>4.4c</b> Describe relationships of rectangular area to numerical multiplication. (DOK 2)	<ul> <li>I can calculate the area of a rectangle using the formula A= L x W.</li> <li>I can apply the area and perimeter formula to solve real world problems.</li> <li>I can calculate the perimeter of a rectangle using the formula P = S + S + S + S or P = 2S + 2S or P = 2L + 2W</li> </ul>		area perimeter formula length width	

## 4<sup>th</sup> 9 Weeks Pacing Guide Fourth Grade Math

Make a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.	<ul> <li>4.5a</li> <li>Draw, label, and interpret bar graphs, line graphs, and stem-and-leaf plots.</li> <li>(DOK 2)</li> <li>4.5c</li> <li>Compare data and interpret quantities represented on tables and graphs including line graphs, bar graphs, frequency tables, and stemand-leaf plots to make predictions and solve problems based on the information.</li> <li>(DOK 3)</li> </ul>	<ul> <li>I can answer questions about data measured on a line plot.</li> <li>I can create a line plot to display a data set that includes fractions or mixed numbers.</li> <li>I can add and subtract fractions using information from a line plot.</li> </ul>	Envision Math Topic 15	graph line plot fraction mixed number interpret
Recognize angles as geometric shapes that are formed wherever two		<ul> <li>I can recognize that a circle has 360 degrees.</li> <li>I can identify an angle.</li> <li>I can explain that an angle measurement is a fraction of a circle.</li> <li>I can recognize that angles are measured in degrees within a circle.</li> </ul>	Envision Math Topic 16	angles ray endpoints vertex degree circular arc center intersect geometric shapes

<b>4.MD.6</b> Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	<b>4.4a</b> Estimate and measure a given object to the nearest eighth of an inch. (Not addressed in Common Core) (DOK 2)	<ul> <li>I can read a protractor.</li> <li>I can measure angles in whole number degrees using a protractor.</li> <li>I can sketch angles with a given measurement.</li> <li>I can determine the appropriate units of measurements.</li> </ul>	Envision Math Topic 16	protractor acute right obtuse degrees measurement
<b>4.MD.7</b> Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.		<ul> <li>I can decompose (separate) angles into smaller angles.</li> <li>I can add angle measures to make a larger angle.</li> <li>I can use addition and subtraction to find unknown angles in real-world and mathematical problems.</li> <li>I can use an equation with a symbol for the unknown angle measure.</li> </ul>	Envision Math Topic 16	additive equations sum difference symbol variable angle decompose
<b>4.G.1</b> Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	<b>4.3b</b> Identify and analyze the relationships between and among points, lines, line segments, angles, and rays. (DOK 2)	<ul> <li>I can create and identify points, lines, line segments, rays, and angles.</li> <li>I can create and identify perpendicular and parallel line.</li> <li>I can identify types of angles (right, acute, obtuse) in two-dimensional figures.</li> </ul>	Envision Math Topic 16	point line line segment ray angle right angle acute angle obtuse angle perpendicular lines parallel lines two-dimensional

	<b>4.3a</b> Analyze and describe the similarities and differences between and among two-and three- dimensional geometric shapes, figures, and models using mathematical language. (DOK 2)	<ul> <li>I can identify parallel or perpendicular lines in two-dimensional figures.</li> <li>I can classify two-dimensional figures with or without parallel or perpendicular lines.</li> <li>I can classify two-dimensional figures based on size of angles (acute, right, and obtuse).</li> <li>I can identify and label a right triangle.</li> </ul>	parallel perpendicular right triangle polygon right angle acute angle obtuse angle	
<b>4.G.3</b> Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line- symmetric figures and draw lines of symmetry.		<ul> <li>I can recognize and define a line of symmetry.</li> <li>I can draw a line of symmetry.</li> <li>I can identify figures that have lines of symmetry.</li> <li>I can draw figures that have lines of symmetry.</li> </ul>	symmetry symmetrical matching parts line of symmetry	