

Year: 2011-12

Month: All Months

September	SPIRALED SKILL:						
	* September Spiral Review ~ *						
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Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Place Value, comparing numbers and rounding	<ul style="list-style-type: none"> Read and write numbers to one million Read and write numbers in expanded form up to one million Read and write numbers up to one million in word form Order whole numbers to one million using , = Round numbers to the nearest underlined digit up to one million Write the value of the underlined digit up to one million 	<ul style="list-style-type: none"> Multi digit Base ten Expanded form Greater than > Less than < Equal to = Compare Whole number Place value rounding 			Envision Text Book Topic 1-1,1-2,1-3,1-4	4.NBT.2-Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. 4.NBT.3-Use place value understanding to round multi-digit whole numbers to any place. 4.N.1-Skip

		<ul style="list-style-type: none"> • skip count by 1,000's • Understand place value structure of base 10 system: 10 ones = 10; 10 tens = 100, up to 10 thousands = 10,000 					<p>count by 1,000's</p> <p>4.N.4 - Understand the place value structure of the base ten number system: 10 ones = 1 ten 10 tens = 1 hundred 10 hundreds = 1 thousand 10 thousands = 1 ten thousand</p>
	Relationship between fractions and decimals	<ul style="list-style-type: none"> • Read and write decimals to the hundredths • Compare decimals in tenths and hundredths using money as context • Understand decimals as part of a whole • Make change using combined coins and dollar amounts 	<ul style="list-style-type: none"> • Compare • Decimals • Hundreths • Reasoning • Whole • Symbols • Justify • Conclusion • Visual model • Comparison • Valid • Results 			Envision Text Book Topic 1-5, 1-6	<p>4.NF.7- Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$.</p> <p>4.M.8 - Make change, using</p>

							combined coins and dollar amounts
O c t o b e r	SPIRALED SKILL: * Spiral Review ~ * * *						
	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Standards
		Adding and Subtracting Whole Numbers	<ul style="list-style-type: none"> Estimate sums and differences by approximating whole numbers before calculation making addition and subtraction easier Add numbers in the hundred thousands with and without regrouping Subtract numbers in the hundred thousand 	<ul style="list-style-type: none"> add subtract multi-digit whole number estimate Visual model regrouping 			Envision Text Book 2-2,2-4,2-5,2-6, 2-7 4.NBT.4-Fluently add and subtract multi-digit whole numbers using the standard algorithm.

		<ul style="list-style-type: none"> ds with and without regrouping Subtract numbers with zeros up to the hundred thousands place Draw a picture or diagram to translate an everyday situation into a number sentence 					
	Multiplication Meaning and Facts	<ul style="list-style-type: none"> Write a multiplication problem as repeated addition Find patterns for multiples of 2, 5, 9 using a hundred 	<ul style="list-style-type: none"> Whole numbers Digits Multiply Place value Properties of operations Rectangular arrays Area models Strategies Equation Factors 			Envision Text Book 3-1, 3-2, 3-3, 3-4, 3-5, 3-6, 3-7	4.NBT.5- 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

			<p>ds chart</p> <ul style="list-style-type: none"> • Read and write multiplication sentences using the commutative property • Re-write multiplication sentences using the distributive property of multiplication • Find patterns for multiples of 10,11, 12 • Draw a picture or diagram to solve multiplication situations in 	<ul style="list-style-type: none"> • Prime numbers • Range • Odd/even • Multiples • product 				<p>operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 4.OA.1- Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. 4.OA.2- Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem,</p>
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			<p>word problems</p> <ul style="list-style-type: none"> • Explain the properties of odd/even numbers as a result of multiplication 				<p>distinguishing multiplicative comparison from additive comparison.1</p> <p>4.OA.4-Find all factor pairs for a whole number in the range 1â€™100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1â€™100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1â€™100 is prime or composite.</p> <p>4.N.13 - Develop an understanding of the properties of odd/even numbers as a result of multiplication</p>
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	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
		Division Meanings and Facts	<ul style="list-style-type: none">• Draw picture models to solve division problems• Draw arrays to write multiplication and division fact families• Explain the special division rules with 0 and 1• Explain that multiplication is the inverse operation of division• Draw picture models to	<ul style="list-style-type: none">• Division• Quotients• Remainder• Digit• Dividends• Place value• Properties of operations• Multiply• Inverse operation• Visual model			Envision Text Book 4-1,4-2,4-3,4-4,4-5	4.NBT.6-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. 4.OA.2-Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations

		solve division word problems					with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.1
	Multiplying by One Digit Numbers	<ul style="list-style-type: none">• Multiply by multiples of 10 and 100• Round factors to estimate products• Multiply a 2 digit number by a one digit number• Multiply a 3 digit number by a one digit number• Multiply a 4 digit number by a one digit number• Draw a picture to solve a word problem	<ul style="list-style-type: none">• Digit• Place value• Represent• Visual model• Round/estimate• Multiply• Multiple• Whole number• Rectangular array• Area model• Factors• Product			Envision Text Book 5-1, 5-3,5-4,5-6, 5-7, find a supplement for 4 digit by 1 digit, 5-8	4.NBT.1- 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. 4.NBT.3-Use place value understanding to round multi-digit whole numbers to any place. 4.NBT.5-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. 4.OA.2- Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.1
	Patterns and Expressions	<ul style="list-style-type: none"> Read and write expressions with variables and numbers Generate a number pattern 	<ul style="list-style-type: none"> Compare/comparison add subtract Multiply Divide Variable Expression Pattern Value 			Envision Text Book 6-1, 6-2, 6-3, 6-4	4.OA.2- Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with

b e r	Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
		Multiplying by 2-digit Numbers	<ul style="list-style-type: none"> Round factors to estimate products Multiply 2 digit numbers by multiple s of 10 Multiply 2 digit numbers by 2 digit numbers Solve multi-step word problems using four operations 	<ul style="list-style-type: none"> Round Estimate Factor Product Operations Multiply Multi-step 4 operations Remainder Unknown quantity Reasonableness Place value Multi-digit Whole numbers 			Envision Text Book 7-2, 7-4, 7-5, 7-7	<p>4.NBT.3-Use place value understanding to round multi-digit whole numbers to any place.</p> <p>4.NBT.5-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.</p> <p>4.OA.2-Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with</p>

							<p>a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.1</p> <p>4.OA.3-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.</p>
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Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Dividing by 1-digit divisors	<ul style="list-style-type: none"> Divide with remainders Divide 2 or 3 digit by one digit numbers with and without remainders List factors of a whole number in the range 1-100 Determine whether a given whole number 1-100 is prime or composite Solve multi-step word problems using four operations 	<ul style="list-style-type: none"> Division Quotient Remainders Dividends Divisors Place value Properties of operations Multi-digit Factors Whole numbers Prime Composite Multi-step Four operations Rectangular arrays Reasonableness Estimate range 			Envision Text Book 8-3,8-5,8-6,8-8,8-9,8-10	4.NBT.6-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. 4.OA.3-Solve multistep word problems posed with whole numbers and having whole-number answers using

							<p>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.</p> <p>4.OA.4-Find all factor pairs for a whole number in the range 1â€™100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1â€™100 is a multiple of a given one-digit</p>
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							number. Determine whether a given whole number in the range 1–100 is prime or composite.
	Lines, Angles, and Shapes	<ul style="list-style-type: none"> • Draw points, lines, line segments, rays and angles • Identify points, lines, and line segments in 2 dimensional figures • Measure and identify angles in whole number degrees using a protractor • Sketch angles of specified measure • Identify angles as right, acute, and obtuse • Classify 2 dimensional figures based on parallel or 	<ul style="list-style-type: none"> • Points • Line • Line segment • Rays • Angles (acute, right, obtuse) • Perpendicular • Parallel • 2 dimensional • Rhombus • Rectangle • Square • Quadrilateral • triangles • Right triangles • Identify • Protractor • Measure • Geometric shapes • Common endpoint • Center • Circular arc • Circle • Degree 			Envision Text Book 9-1,9-2,9-3,9-4, 9-5, 9-6	<p>4.G.1-Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.</p> <p>4.G.2- Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.</p> <p>4.MD.5- Recognize</p>

			<p>perpendicular lines or angles of specified size</p> <ul style="list-style-type: none"> • Recognize and identify right triangles • Draw angles and identify points and rays • Identify and name polygons recognizing that their names are related to the number of sides and angles (triangle, quadrilateral, pentagon, hexagon, octagon) 				<p>angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement</p> <p>4.MD.6- Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.</p> <p>4.G.1 - Identify and name polygons, recognizing that their names are related to the number of sides and angles (triangle, quadrilateral, pentagon, hexagon, and octagon)</p> <p>4.G.7 - Identify points and rays when drawing angles</p>
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	Adding and Subtracting Angles	<ul style="list-style-type: none"> • Add non-overlapping angles and decompose angle into non-overlapping parts. EX: $45^\circ + 45^\circ = 90^\circ$ or 90° can be broken down into $40^\circ + 50^\circ$ or $60^\circ + 30^\circ$ • Solve addition and subtraction problems to find unknown 	<ul style="list-style-type: none"> • Points • Angle measure • Additive • Decomposed • Non-overlapping parts • Equation • Protractor • angle 				<p>4.MD.7- 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.</p>
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		own angles on a diagram in real world • solve addition and subtraction problems to find unknown angles on a diagram in mathematical problems.					
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Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Understanding Fractions	• Review drawing regions and sets Estimate fractional	• Fraction • Equivalent • Fraction models • Recognize • Generate			Envision Text Book 10-1, 10-3, 10-4, 10-	4.NF.1- Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$

			<p>amounts to the nearest benchmark fractions</p> <ul style="list-style-type: none"> • Use models to demonstrate equivalent fractions • Use multiplication and division to make equivalent fractions • Reduce fractions to simplest form • Write improper fractions as mixed numbers and mixed numbers as improper fractions • Compare fractions with different numerators and denominators by creating common denominators or by comparing to a benchmark fraction, or 	<ul style="list-style-type: none"> • Numerator • Denominator • Benchmark fractions • Comparison • Symbols $, =$ • Whole • Compare • Estimate • Region • Set • Reduce • Simplest form • Improper fraction • Mixed number • Visual model 		<p>5,10-6,10-7, 10-8,10-9</p>	<p>— 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.</p> <p>4.NF.2- 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 $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole.</p>
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		by using a visual model, using the symbols , = • Understand the order of fractions on a number line and as divisions of whole numbers					Record the results of comparisons with symbols $>$, $=$, or $<$. 4.NF.3- Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$. 4.N.7 - Develop an understanding of fractions as locations on number lines and as divisions of whole numbers
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Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Adding and Subtracting Fractions	• Add and subtract fractions with like denominators	• Denominator • Fractions • Addition • Subtraction • Common denominator • Mixed numbers • Simplest form • Improper fraction • Mixed number • Visual			Envision Text Book 11-1	4.NF.3- Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$.

			model				
	Understanding Decimals	<ul style="list-style-type: none"> • Use models and place value charts to represent decimals to the hundredths • Use decimal notation for fractions with denominators 10 or 100 • Compare 2 decimals to hundredths, using $, =$ 	<ul style="list-style-type: none"> • Decimal • Fraction • Denominator • Compare • Symbols $, =$ • Hundredths • Whole • Place value • Decimal notation • Visual models 			Envision Text Book 12-1, 12-2, 12-3, 12-4	<p>4.NF.6-Use decimal notation for fractions with denominators 10 or 100.</p> <p>4.NF.7- Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or</p>
	Operations with Decimals	<ul style="list-style-type: none"> • Add and subtract decimals using a visual model • Add and subtract 	<ul style="list-style-type: none"> • Tenths • Hundredths • Decimals • Add • subtract • Place value • Decimal notation • Visual models 			Envision Text Book 13-3, 13-4	

			act deci mals in the tenths and hundredths					
	Area and Perimeter	<ul style="list-style-type: none">• Apply the area and perimeter formulas for rectangles in real world problems	<ul style="list-style-type: none">• Area• Perimeter• Area formula• Perimeter formula• Length• Width• Real world• Multiply• Add			Envision Text Book 14-1, 14-2, 14-6, 14-7, 14-8	4.MD.3- Apply the area and perimeter formulas for rectangles in real world and mathematical problems.	
	Multiplying Fractions	<ul style="list-style-type: none">• Multiply fractions (with denominators of 2,3,4,5,6,8,10, 12,100) by a whole number	<ul style="list-style-type: none">• Whole number• Multiply• Fraction• Multiple• Product• Equivalent fractions				4.NF.4a- Understand a fraction a/b as a multiple of 1/b. For example, use a visual fraction model to	

			<ul style="list-style-type: none"> understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. EX: $10/1 \times 1/3 = 5/1 \times 2/3$ Solve word problems involving multiplication of a fraction by a whole number. EX: by using visual fraction models and equations represent the problem Express a fraction with denominator 10 as an equivalent fraction with denominator 100 use understanding of fractions with denominator 10 as an equivalent fraction with denominator 100 and add two fractions with 	<ul style="list-style-type: none"> Denominator 				<p>represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.</p> <p>4.NF.4b- Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number.</p> <p>4.NF.4c-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.</p> <p>4.NF.4-Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <p>4.NF.5- Express a fraction with denominator 10 as an equivalent</p>
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			respective denominators of 10 and 100.EX: $\frac{3}{10} + \frac{4}{100} = \frac{30}{100} + \frac{4}{100}$				fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100.
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Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Solids	<ul style="list-style-type: none"> Classify and identify solids Define and identify vertices, faces, edges of 3 dimensional shapes 	<ul style="list-style-type: none"> Solid 3 dimensional Cube, rectangular prism, pyramid, cylinder, sphere Vertices Edges faces 			Envision Text Book 15-1, 15-2, 15-5	4.G.5 - Define and identify vertices, faces, and edges of three-dimensional shapes
	Measurement, Time, and Temperature	<ul style="list-style-type: none"> Measure length using customary units and metric (km, m, 	<ul style="list-style-type: none"> Measurement Units Customary system Metric system Length 			Envision Text Book 16-1, 16-2, 16-3, 16-5, 16-6, 16-7, 16-9, 16-10, 16-12	4.MD.1- Know relative sizes of measurement units within one system of units including km,

			cm, kg, g, lb, oz., l, ml, hr, min, sec) <ul style="list-style-type: none"> Express measurements in a larger unit in terms of a smaller unit (example know that 1 foot = 36 inches) Use the four operations to solve conversion problems involving distance, time, liquid volume, mass, money Use a ruler to measure to the nearest standard unit (whole, 	(kilometer, meter, centimeter, inches, feet, yards) <ul style="list-style-type: none"> Weight (kilogram, gram, pound, ounce) Capacity (milliliter, liter) Time (hour, second, minute, day, week, month) Four operations Distance Intervals of time Liquid volume Mass Fractional amounts Decimals Diagram quantity 			m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. 4.MD.2-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
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			<p>1/2, 1/4, whole feet, whole yards, whole centimeters, whole meters)</p> <ul style="list-style-type: none"> • select tools and units (customary and metric) appropriate for measuring length and mass (grams, kilograms) • measure capacity using milliliters and liters • calculate elapsed time in hours and half hours not crossing AM/PM • calculate elapsed time in days and 				<p>quantities using diagrams such as number line diagrams that feature a measurement scale.</p> <p>4.M.2 -Use a ruler to measure to the nearest standard unit (whole, $\frac{1}{2}$ and $\frac{1}{4}$ inches, whole feet, whole yards, whole centimeters, and whole meters)</p> <p>4.M.4 -Select tools and units appropriate to the mass of the object being measured (grams and kilograms)</p> <p>4.M.5 - Measure mass, using grams</p> <p>4.M.6 -Select tools and units appropriate to the capacity being measured (milliliters and liters)</p> <p>4.M.7-</p>
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			weeks, using a calendar				Measure capacity, using milliliters and liters 4.M.9 - Calculate elapsed time in hours and half hours, not crossing A.M./P.M. 4.M.10- Calculate elapsed time in days and weeks, using a calendar
	Data Graphs	<ul style="list-style-type: none"> • Interpret bar graphs • Interpret line graphs • Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$) • Make a bar graph using a data set • collect data using observations, surveys, 	<ul style="list-style-type: none"> • Bar graphs • Line graphs • Interpret • Data • Line plot • Fractional units • Observations • Survey • pictograph • tables • conclusions • predictions • data set • axis • labels • titles 			Envision Text Book 17-2,17-3,17-4,17-5, 17-10	4.MD.4- Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots.

			<p>and experiments and record appropriately</p> <ul style="list-style-type: none"> • represent data using tables, bar graphs, and pictographs • develop and make predictions based on data • formulate conclusions and make predictions from graphs 					
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Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources	Standards
	Transformations, Congruence, and Symmetry	<ul style="list-style-type: none"> • Recognize a line of symmetry for a 2 dimensional figure • Draw lines of 	<ul style="list-style-type: none"> • Recognize • Symmetry • Two dimensional figure • Line • Identify • 			Envision Text Book 19-5,19-6,	4.G.3- Recognize a line of symmetry for a two-dimensional figure as a line across

			symmetry	Symmetric figures <ul style="list-style-type: none">• Line of symmetry• Figure				the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.
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