

Grade 5:	Unit: Operations and Algebraic Thinking – Envisions Topic 8		Time:	
Critical Skills: (Student Outcomes)	NJ Learning Standards:	Samples/Exemplars:	Resources:	Assessments:
A. Write and interpret numerical expressions.	5.OA.A.1 Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.		Text(Units/Pages) 8-2, 8-3, 8-4 Technology/Open Resources Using Operations and Parentheses Watch Out For Parentheses 1	Unit Standard Assessment 1 Unit Standard Assessment 2 Unit Standard Assessment 3 Unit Standards Assessment 4 Unit Standards Assessment 5
	5.OA.A.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them.	<i>Express the calculations “add 8 and 7, then multiply by 2 as $2 \times (8+7)$. Recognize that $3 \times (18932 + 921)$ is 3 times as large as $18932 + 921$, without having to calculate the indicated sum or product.</i>	Text(Units/Pages) 8-1, 8-8, 8-9 Technology/Open Resources	
B. Analyze patterns and relationships	5.OA.B.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from two patterns, and graph the ordered pairs on a coordinate plane.	<i>Given the rule “add 3” and the starting number 0, and given the rule “add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the</i>	Text(Units/Pages) 8-5, 8-6, 8-7 Technology/Open Resources Sidewalk Patterns	

		<i>corresponding terms in the other sequence. Explain informally why this is so.</i>		
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Grade 5:	Unit: Understand the place value system. Envisions Topics 1-7		Time:	
Critical Skills: (Student Outcomes)	NJ Learning Standards:	Samples/Exemplars:	Resources:	Assessments:
A. Understand the place value system.	<p>5.NBT.A. 1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left.</p> <p><i>5.NBT.A. Int 1 Demonstrate understanding of the place value system by combining or synthesizing knowledge and skills articulated in 5.NBT.A</i></p>		<p>Text(Units/Pages) 1-1, 1-3</p> <p>Technology/Open Resources Which Number Is It?</p> <p>Millions and Billions of People</p>	<p>Unit Standard Assessment 1</p> <p>Unit Standard Assessment 2</p> <p>Unit Standard Assessment 3</p> <p>Unit Standards Assessment 4</p> <p>Unit Standards Assessment 5</p>
	<p>5.NBT.A.2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10.</p>		<p>Text(Units/Pages) 3-2, 3-4, 6-1, 7-1</p> <p>Technology/Open Resources</p> <p>Multiplying Decimals by 10</p> <p>Marta's Multiplication Error</p>	
	<p>5.NBT.A.3. Read, write, and compare decimals to thousandths.</p>	<p>$347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times$</p>	<p>Text(Units/Pages) 1-6,</p> <p>Technology/Open</p>	

		(1/1000).	Resources Placing Thousandths On The Number Line	
	5. NBT.A.3a Read and write decimals to thousandths using base-ten numerals, number names, and expanded form.		Text(Units/Pages) 1-2, 1-4 Technology/Open Resources Rounding to Tenths and Hundredths	
	5.NBT.A.3.b Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.		Text(Units/Pages) 1-5 Technology/Open Resources	
	5.NBT.A.4a Use place value understanding to round decimals to any place.		Text(Units/Pages) 2-2 Technology/Open Resources	
B. Perform operations with multi-digit whole numbers and with decimals to hundredths.	5.NBT.B.5 Fluently multiply multi-digit whole numbers using the standard algorithm.		Text(Units/Pages) 3-3, 3-5, 3-6, 3-7, 3-8, 3-9 Technology/Open Resources Elmer's Multiplication Error	
	5.NBT.B.6. Find whole-number quotients of whole numbers		Text(Units/Pages) 3-1, 4-1 through 4-7, 5-1	

	<p>with up to four-digit dividends and two-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.</p>		<p>through 5-8</p> <p>Technology/Open Resources</p>	
	<p>5.NBT.B.7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.</p> <p><i>5.NBT. Int.1 Perform exact or approximate multiplications and/or divisions that are best done mentally by applying concepts of place value, rather than by applying multi-digit algorithms or written strategies.</i></p>		<p>Text(Units/Pages) 2-1, 2-3 through 2-8, 7-2 through 7-7, 6-2 through 6-7</p> <p>Technology/Open Resources</p> <p><u>The Value of Education</u></p>	

Grade 5:	Unit: Number and Operations/Fractions Topic 9-11		Time:	
Critical Skills: (Student Outcomes)	NJ Learning Standards:	Samples/Exemplars:	Resources:	Assessments:
A. Use equivalent fractions as a strategy to add and subtract fractions.	5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.	$\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.)	Text(Units/Pages) 9-1, 9-2, 9-5 through 9-9 10-1, 10-4 through 10-7 Technology/Open Resources Making S'Mores Measuring Cups Fractions on a Line Plot	Unit Standard Assessment 1 Unit Standard Assessment 2 Unit Standard Assessment 3 Unit Standards Assessment 4 Unit Standards Assessment 5
	5.NF.A.2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers.	Recognize an incorrect result $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$, by observing that $\frac{3}{7} < \frac{1}{2}$.	Text(Units/Pages) 9-3, 9-4, 9-10 10-2, 10-3 Technology/Open Resources Do These Add Up?	
B. Apply and extend previous understandings of multiplication and division to multiply and divide fractions.	5.NF.B.3 Interpret a fraction as division of the numerator by the denominator ($\frac{a}{b} = a \div b$). Solve word problems involving	Interpret $\frac{3}{4}$ as the result of dividing 3 by 4, noting that $\frac{3}{4}$ multiplied by 4 equals	Text(Units/Pages) 11-1	

	division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.	<i>3, and that when 3 wholes are shared equally among 4 people each person has a share of size $\frac{3}{4}$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?</i>	Technology/Open Resources How Much Pie? Converting Fractions of a Unit into a Smaller Unit What's 25 Divided by 5?	
	5.NF.B.4.a Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$	<i>. For example, use a visual fraction model to show $(\frac{2}{3}) \times 4 = \frac{8}{3}$, and create a story context for this equation. Do the same with $(\frac{2}{3}) \times (\frac{4}{5}) = \frac{8}{15}$. (In general, $(a/b) \times (c/d) = ac/bd$.)</i>	Text(Units/Pages) 11-2, 11-4, 11-6 Technology/Open Resources	
	5.NF.B.4.b Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as		Text(Units/Pages) 11-5 Technology/Open Resources Cravone's Bathroom Tile New Park	

	rectangular areas.			
	5.NF.B.5.a Interpret multiplication as scaling (resizing), by: a. Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication.		Text(Units/Pages) 11-3 Technology/Open Resources Comparing Heights of Buildings Grass Seedlings	
	5.NF.B.5.b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a)/(n \times b)$ to the effect of multiplying a/b by 1.		Text(Units/Pages) 11-7 Technology/Open Resources Mrs. Gray's Homework Assignment	
	5.NF.B.6. Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using		Text(Units/Pages) 11-8	

	visual fraction models or equations to represent the problem.		Technology/Open Resources To Multiply or Not To Multiply	
	5.NF.B. 7. a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients.	<i>Create a story context for $(1/3) \div 4$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.</i>	Text(Units/Pages) 11-11 Technology/Open Resources Banana Pudding Salad Dressing	
	5. NF.B. 7. b. Interpret division of a whole number by a unit fraction, and compute such quotients.	<i>Create a story context for $4 \div (1/5)$, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.</i>	Text(Units/Pages) 11-9 Technology/Open Resources	
	5. NF.B.7.c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem.	<i>How much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$-cup servings are in 2 cups of raisins?</i>	Text(Units/Pages) 11-10 Technology/Open Resources	

Grade 5:	Unit: Measurement and Data Topics 12-14		Time:	
Critical Skills: (Student Outcomes)	NJ Learning Standards:	Samples/Exemplars:	Resources:	Assessments:
A. Convert like measurement units within a given measurement system.	5.MD.A .1 Convert among different-sized standard measurement units within a given measurement system and use these conversions in solving multi-step, real world problems.	Convert 5 cm to 0.05 m	Text(Units/Pages) 13-1 through 13-7 Technology/Open Resources	Unit Standard Assessment 1 Unit Standard Assessment 2 Unit Standard Assessment 3 Unit Standards Assessment 4 Unit Standards Assessment 5
B. Represent and interpret data.	5.MD.A.2. Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots.	<i>Given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i>	Text(Units/Pages) 14-1 through 14-4 Technology/Open Resources	
C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.	5.MD.C.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.		Text(Units/Pages) 12-1 Technology/Open Resources	

	5.MD.C.3. a A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.		Text(Units/Pages) 12-2, 12-4, Technology/Open Resources	
	5.MD.C.3.b A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.		Text(Units/Pages) 12-4 Technology/Open Resources Box of Clay	
	5.MD.C.4 Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and non-standard units.		Text(Units/Pages) 12-7 Technology/Open Resources	
	5.MD.C.5 Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.		Text(Units/Pages) 12-3 Technology/Open Resources Breaking Apart Composite Solids	
	5.MD.C.5.a Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by		Text(Units/Pages) 12-5 Technology/Open	

	<p>multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication.</p>		<p>Resources</p> <p>Using Volume to Understand Associative Property</p>	
	<p>5.MD.C.5.b. Apply the formulas $V = l \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real world and mathematical problems.</p>		<p>Text(Units/Pages) 12-5</p> <p>Technology/Open Resources</p> <p>Cari's Aquarium</p>	
	<p>5.MD.C.5.c Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.</p>		<p>Text(Units/Pages) 12-6</p> <p>Technology/Open Resources</p>	

Grade 5:	Unit: Geometry – Topics 14-16	Time:		
Critical Skills: (Student Outcomes)	NJ Learning Standards:	Samples/Exemplars:	Resources:	Assessments:
A. Graph points on the coordinate plane to solve real world and mathematical problems.	5.G.A.1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond.	x-axis and x-coordinate, y-axis and y-coordinate	Text(Units/Pages) 16-1, 16-2, 16-3, 16-4 Technology/Open Resources Battleship Using Grid Paper	Unit Standard Assessment 1 Unit Standard Assessment 2 Unit Standard Assessment 3 Unit Standards Assessment 4 Unit Standards Assessment 5
	5.G.A.2 Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation.		Text(Units/Pages) 14-5, 16-4, 16-5 Technology/Open Resources Meerkat Coordinate Plane Task	
B. Classify two-dimensional figures into	5.G.B.3 Understand that	<i>All rectangles have</i>	Text(Units/Pages)	

<p>categories based on their properties.</p>	<p>attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.</p>	<p><i>four right angles and squares are rectangles, so all squares have four right angles.</i></p>	<p>15-1 through 15-4, 15-6 Technology/Open Resources <u>Always, Sometimes, Never</u></p>	
	<p>5.G.B. 4 Classify two-dimensional figures in a hierarchy based on properties.</p>		<p>Text(Units/Pages) 15-5 Technology/Open Resources <u>What is a trapezoid?</u></p>	