



Completed May 2026

Louisiana Student Standards for Mathematics (June 2025 draft)

DM = Dimensions Math

Kindergarten

Standard	Standard Description	DM	Chapter	Lesson
Numeracy & Operational Fluency				
Know number names and the count sequence.				
K.NOF.A.1	Count forward to 100 by ones and tens (i.e., multiples of 10s-30,40,50, etc), beginning with any given number. a. Count forward to 10 and backward from 10 by ones. b. Count forward to 20 and backward from 20 by ones.	KA	3	4, 5
		KB	7	2, 8
			12	1-8
K.NOF.A.2	Read, write, and represent whole numbers from 0 to 20 with a written numeral, objects, or pictures.	KA	2	6-11
			3	7-10
		KB	7	2-9
Count to tell the number of objects.				
K.NOF.B.3	Understand the relationship between numbers and quantities; connect counting to cardinality, with cardinality referring to the number that connects the final count number to its quantity of an entire set. a. When counting objects in standard order, say the number names as they relate to each object in the group, demonstrating one-to-one correspondence. b. Understand that the last number name said tells the number of objects counted(cardinality). The number of objects is the same regardless of their arrangement or the order in which they were counted. c. Understand that each successive number name refers to a quantity that is one larger, which may include the use of objects or visual representations.	KA	2	1-11
			3	1-12
		KB	7	1-11



Standard	Standard Description	DM	Chapter	Lesson
K.NOF.B.4	Answer "How many?" questions by subitizing (perceptually and conceptually) and counting. a. Subitize within 5. b. Subitize or count objects up to 20, arranged in a line, a rectangular array, or a circle. c. Subitize or count objects up to 10 in a scattered configuration. d. When given a number from 1-20, count out that many objects.	KA	2	1-11
			3	1-10
		KB	7	1-11
Compare numbers. Students compare numbers within 10 only in DM K. They compare numbers within 20 in DM 1A.				
K.NOF.C.5	Compare sets of objects up to at least 20 in each set using comparative language, e.g., by using matching and counting strategies.	KA	6	1, 2
		1A	5	4
K.NOF.C.6	Use comparative language to describe numbers up to 20 presented as written numerals.	1A	5	4
Add and subtract within 5.				
K.NOF.D.7	Fluently add and subtract within 5, varying placement of the equal sign, while also ensuring accurate reading of the equation from left to right. For example: • $5 = 2 + 3$ (five equals two plus three) • $2 + 2 = 4$ (two plus two is equal to four) • $3 = 3 - 0$ (three is equal to three minus zero) • $4 - 1 = 3$ (four minus one equals three) In DM K, students add and subtract within 10, but fluency is expected only within 5.	KB	8	5, 6
			9	1-8
			10	1-5
			11	1-6
Work with numbers 11-19 to gain foundations for place value.				
K.NOF.E.8	Gain an understanding of place value. a. Understand that the numbers 11-19 are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. b. Compose and decompose numbers 11 to 19 using place value (e.g., by using	KB	7	1-4



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	objects, drawings, or verbal responses identifying tens and ones). c. Record each composition or decomposition using a drawing or equation For example: 18 is one ten and eight ones, $18 = 1 \text{ ten} + 8 \text{ ones}$, $18 = 10 + 8$.			
Algebraic Reasoning				
Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.				
K.AR.A.1	Represent addition and subtraction of two whole numbers from 0 to 10 with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations.	KB	8	1-14
			9	1-12
			10	1-12
K.AR.A.2	Add and subtract within 10, e.g., by using objects or drawings to represent the problem. a. Solve addition and subtraction real-world mathematical tasks and explain the strategies used with spoken words, models, and/or equations.	KB	9	1-12
			10	1-12
			11	1-6
K.AR.A.3	Decompose numbers less than or equal to 10 (identified as the whole) into parts in more than one way to demonstrate the part: whole relationship. a. Record each decomposition with a drawing or equation.	KB	9	1-12
			10	1-12
K.AR.A.4	For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using spoken words, objects, models, and/or equations.	KB	8	11
Geometric Reasoning & Logic				
Identify and describe shapes (Squares, Circles, Triangles, Rectangles, Hexagons, Cubes, Cones, Cylinders, and Spheres).				
K.GL.A.1	Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as <i>above</i> , <i>below</i> , <i>beside</i> , <i>in front of</i> , <i>behind</i> , and <i>next to</i> .	KA	4	4-7



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K.GL.A.2	Correctly name shapes regardless of their orientations or overall size. <ul style="list-style-type: none"> Identify examples and nonexamples of those shapes. 	KA	4	3-12
K.GL.A.3	Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). <ul style="list-style-type: none"> Identify faces of three-dimensional shapes as two-dimensional geometric figures. 	KA	4	1, 2
Analyze, compare, create, and compose shapes.				
K.GL.B.4	Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).	KA	4	4-8, 10
K.GL.B.5	Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes.	KA	4	1-12
K.GL.B.6	Compose simple shapes to form larger shapes.	KA	4	10
Data Analysis & Measurement				
Describe and compare measurable attributes.				
K.DM.A.1	Describe measurable attributes of objects, such as length or weight. <ul style="list-style-type: none"> Given a single object, describe several measurable attributes. 	KA	5	1-10
K. DM.A.2	Directly compare two objects with a measurable attribute in common, to describe the differences (more of, less of, etc.).	KA	5	1-10
Classify objects and count the number of objects in each category.				
K.DM.B.3	Classify objects into two given categories based on their attributes (limit category counts to less than or equal to 20). <ul style="list-style-type: none"> Count numbers of objects in each category. Order the categories by count. 	KA	1	2-6
			4	11



Standard	Standard Description	DM	Chapter	Lesson
Work with money.				
K.DM.C.4	Identify pennies, nickels, dimes, and quarters by name and value. <ul style="list-style-type: none"> • Identify fair-trade values within a dime: <ul style="list-style-type: none"> ○ 10 pennies = 1 dime ○ 2 nickels = 1 dime ○ 5 pennies = 1 nickel 	KB	14	1-4



Grade 1

Standard	Standard Description	DM	Chapter	Lesson
Numeracy & Operational Fluency				
Add and subtract.				
1.NOF.A.1	Relate counting to addition and subtraction. For example, by counting on 2 to add 2.	1A	3	5
			4	3
1.NOF.A.2	Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. a. Use mental strategies such as: <ul style="list-style-type: none"> • counting on or counting back; • using a number line or path; • making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); • decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); • using the part-whole relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and • creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$). 	1A	4	3
			6	1, 2, 3
			7	1, 2, 3
1.NOF.A.3	Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count. a. Justify the reasoning used when computing mentally with an oral and/or written explanation.	1B	12	3
			16	3
			17	2, 9
Extending the counting sequence.				
1.NOF.B.4	Count to 120, starting at any number less than 120. a. Count forward and backward to 120 by ones, fives, and tens. b. In this range, read, write, and identify numerals and number names written in words.	1B	12	1, 2
			16	1



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	Students count within 100, not 120, in the DM textbook. The DM Teacher’s Guide 1B has an extension for counting to 120.			
Understand place value.				
1.NOF.C.5	Understand that the two digits of a two-digit number represent amounts of tens and ones. a. Read, write, and represent two-digit numbers up to 99 using base-ten numerals/standard form, word form, and unit form (i.e., 42 and 4 tens 2 ones). Understand the following as special cases: <ul style="list-style-type: none"> • 10 can be thought of as a bundle of ten ones—called a “ten.” • The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. • The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). 	1A	5	1
		1B	12	1, 2, 3
			16	1, 2, 3
Algebraic Reasoning				
Represent and solve problems involving addition and subtraction.				
1.AR.A.1	Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions. a. Represent these situations using models and equations, elevating the concrete-representational-abstract instructional framework.	1A	3	1-6
			4	1-8
			5	5, 6
			6	1-5
			7	1-4
1B	11	1, 2		
1.AR.A.2	Solve real-world mathematical tasks that call for addition of three whole numbers whose sum is less than or equal to 20. a. Represent these situations using models and equations, elevating the concrete-	1B	13	7



Standard	Standard Description	DM	Chapter	Lesson
	representational-abstract instructional framework.			
Understand and apply properties of operations and the relationship between addition and subtraction.				
1.AR.B.3	Apply properties of operations as strategies to add and subtract.	1A	3	4
			4	7
			6	1, 2, 3
			7	1, 2, 3
		1B	13	7
1.AR.B.4	Understand subtraction as an unknown-addend problem.	1A	4	1-7
		1B	12	6
Work with addition and subtraction equations.				
1.AR.C.5	Interpret the meaning of the equal sign. a. Understand that the equal sign represents a relationship where expressions on each side of the equal sign represent the same value(s). b. Determine if equations involving addition and subtraction are true or false.	1A	3	1, 4
			7	1, 2
1.AR.C.6	Determine the unknown whole number in an addition or subtraction equation relating three whole numbers.	1A	3	4
			4	3, 6, 10
			5	2
Compare numbers.				
1.AR.D.7	Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$ and the words <i>greater than</i> , <i>equal to</i> and <i>less than</i> . <i>Symbols are not used until DM 2A.</i>	1B	12	4
			16	4
Use place-value understanding and properties of operations to add and subtract.				
1.AR.E.8	Add up to 99, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10. a. Use concrete models or drawings and strategies based on place value, properties of operations, and/or the part:whole relationship between	1B	13	1, 3, 4
			16	2, 3
			17	1, 2, 3



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	addition and subtraction; relate the strategy to a number sentence. b. Understand that in adding two-digit numbers, add tens and tens, ones and ones; and sometimes it is necessary to compose a ten. c. Justify the reasoning of methods for addition used with an oral and/or written explanation.			
1.AR.E.9	Subtract two digit numbers, limited to multiples of 10 using concrete models or drawings and strategies based on place value, properties of operations, and/or the part:whole relationship between addition and subtraction. a. Justify the reasoning used when choosing the model or strategy to compute with an oral and/or written explanation. Subtraction of two-digit numbers is not limited to multiples of 10 in DM 1.	1B	12	3
			16	3
			17	2, 9
Geometric Reasoning & Logic				
Reason with shapes and their attributes.				
1.GL.A.1	Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size). a. Build and draw shapes that possess defining attributes. b. Verbally describe why a shape belongs to a given category.	1A	8	1, 2
1.GL.A.2	Compose two-dimensional shapes to create a composite shape, and compose new shapes from the composite shape, building understanding of the part:whole relationships.	1A	8	3



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1.GL.A.3	<p>Partition circles and rectangles into two and four equal shares, describe the shares using the words <i>halves</i>, <i>fourths</i>, and <i>quarters</i>, and use the phrases <i>half of</i>, <i>fourth of</i>, and <i>quarter of</i>. Describe the whole as two of, or four of the shares.</p> <p>a. Understand for these examples that decomposing into more equal shares creates smaller shares.</p> <p>b. Identify examples and non-examples of halves and fourths.</p>	1B	15	1, 2
Data Analysis & Measurement				
Measure lengths indirectly and by iterating length units.				
1.DM.A.1	<p>Apply knowledge of “longer than” and “shorter than.”</p> <p>a. Order three objects by length.</p> <p>b. Compare the lengths of two objects indirectly by using a third object.</p>	1B	10	1, 2
1.DM.A.2	<p>Express the length of an object as a whole number of length units by laying multiple copies of a shorter object (the length unit) end to end.</p> <p>a. Understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps.</p> <p>In DM 1, students learn to measure to the nearest whole unit and use the word “about.”</p>	1B	10	3
Tell and write time.				
1.DM.B.3	<p>Tell and write time in hours and half hours using analog and digital clocks.</p> <p>In DM 1, students also learn to tell time to the nearest 5-minute mark.</p>	1B	18	1, 2
Represent and interpret data.				
1.DM.C.4	<p>Use tally marks and t-charts/tables with up to three categories to:</p> <p>a. Create bar graphs and/or picture graphs to represent data precisely with accurate scaling within a scale of 1 or 2; and</p>	1B	11	3
		2B	14	1, 2



Standard	Standard Description	DM	Chapter	Lesson
	<p>b. Interpret data represented in a chart or graph by asking and answering questions about:</p> <ul style="list-style-type: none"> • the total number of data points; • how many in each category; and • how many more or less are in one category than in another? <p>Students create and interpret picture graphs only in DM 1. They use tally marks and create bar graphs in DM 2.</p>			
Work with money.				
1.DM.D.5	<p>Determine the value of a collection of coins up to 50 cents. (Pennies, nickels, dimes, and quarters in isolation; not to include a combination of different coins.)</p> <p>In DM 1, students learn to determine the value of a set of coins up to 100¢, and a set of bills up to \$100.</p>	1B	19	1



Grade 2

Standard	Standard Description	DM	Chapter	Lesson
Numeracy & Operational Fluency				
Add and subtract within 20.				
2.NOF.A.1	Fluently add and subtract within 20 using mental strategies. By the end of Grade 2, know from memory all sums of two one-digit numbers.	2A	2	1-4
Understand place value.				
2.NOF.B.2	Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. Understand the following as special cases: a. 100 can be thought of as a bundle of 10 tens—called a “hundred.” b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones).	2A	1	4, 5
2.NOF.B.3	Count forward and backward up to 1000. a. skip-count by 2s, 5s, 10s, and 100s. <i>In DM 2A, while students do count to 1,000, they skip count by 2s to 20 and 5s to 50. In DM 2B, they count by 5s to 100 in the context of counting nickels and telling time to the 5-minute mark.</i>	2A	1	4, 7
			7	1, 2, 7
		2B	10	1
			12	1
2.NOF.B.4	Read and write numbers to 1000 using base-ten numerals, number names, and expanded form.	2A	1	4, 5
2.NOF.B.5	Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons.	2A	1	6
Use place-value understanding and properties of operations to add and subtract.				
2.NOF.C.6	Fluently add and subtract up to 100 using strategies based on place value, properties of operations, and/or the part-whole relationship between addition and subtraction.	1B	17	1-12
		2A	2	1, 2, 3
			3	1-7



Standard	Standard Description	DM	Chapter	Lesson
	Students learn to fluently add and subtract up to 100 in DM 1. In DM 2 addition and subtraction to 100 are within lessons where they learn to add and subtract within 1,000.			
2.NOF.C.7	Add up to four two-digit numbers using strategies based on place value and properties of operations. DM 2A textbook lessons cover adding up to three 3-digit numbers. DM Teacher's Guide 2A has an extension on adding up to four 2-digit numbers.	2A	3	3, 6
2.NOF.C.8	For a given number 100-900: a. Mentally add 10 or 100; and b. Mentally subtract 10 or 100.	2A	1	2, 7
2.NOF.C.9	Construct a written explanation or drawing for why addition and subtraction strategies work, using place value understanding and the properties of operations. Students are not required to explain the strategies with written words only in DM, but rather use diagrams involving number bonds.	2A	2	1-4
			3	1-10
		2B	8	1-9
Algebraic Reasoning				
2.AR.A.1	Use addition and subtraction within 100 to solve one- and two-step real-world mathematical tasks involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions for one or two operations. a. Represent these situations using models and equations, elevating the concrete-representational-abstract instructional framework. In DM 2, students solve one- and two-step word problems within 1000, not just 100.	2A	3	1-12
			4	8
			5	3, 4
		2B	10	6, 7, 8
2.AR.A.2	Add and subtract up to 1000 using concrete models or drawings and strategies based on place value, properties of operations, and/or the part: whole relationship between addition and subtraction.	2A	3	1-12
		2B	8	1-10



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	a. Understand that in adding or subtracting three-digit numbers, add or subtract hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. b. Justify the reasoning used when choosing the model or strategy to compute with a written explanation.			
Work with equal groups of objects to gain foundations for multiplication.				
2.AR.B.3	Determine whether a group of objects (up to 20) has an odd or even number of members. a. Represent these situations by pairing objects or counting them by 2s. b. Write an equation to express an even number as a sum of equal addends.	3A	4	6
2.AR.B.4	Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns. a. Write an equation to express the total as a sum of equal addends (a repeated addition equation). This standard is covered in DM 1B for totals within 40. Students learn to multiply by 2, 3, 4, 5, and 10 in DM 2.	1B	14	1
		2A	6	1, 2, 3
Geometric Reasoning & Logic				
Reason with shapes and their attributes.				
2.GL.A.1	Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes.	2B	15	2, 5
2.GL.A.2	Apply spatial structuring to partition a rectangle into rows and columns of same-size units, interpreting both as a collection of units and as single units, and count to find the total number of units. The rectangle should not be divided up into more than 5	2B	11	1, 2



Standard	Standard Description	DM	Chapter	Lesson
	columns and 5 rows to correlate with 2.AR.B.4. Multiplication concepts are taught using arrays and students are not required to equally partition rectangles other than with some activities when learning about fractions with denominators up to 10 in DM 2.			
2.GL.A.3	Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words <i>halves</i> , <i>thirds</i> , <i>half of</i> , <i>a third of</i> , etc., and describe the whole as two halves, three thirds, four fourths. a. Identify examples and non-examples of halves, thirds, and fourths.	2B	11	1, 2, 3
Data Analysis and Measurement				
Measure and estimate lengths in standard units.				
2.DM.A.1	Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes.	2A	4	1-7
2.DM.A.2	Measure the length of an object twice, using length units of different lengths for the two measurements a. Describe how the two measurements relate to the size of the unit chosen with a written response. Students are not specifically asked in the curriculum to provide a written response.	2A	4	1
2.DM.A.3	Estimate lengths using units of inches, feet, centimeters, and meters to the nearest whole unit.	2A	4	2, 4, 7
2.DM.A.4	Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit.	2A	4	1, 5
Relate addition and subtraction to length.				
2.DM.B.5	Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using	2A	4	1, 3, 5, 8



Standard	Standard Description	DM	Chapter	Lesson
	<p>drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem.</p>			
2.DM.B.6	<p>Create a number line diagram with equally spaced points corresponding to whole numbers (0, 1, 2, etc.), using 0 or another whole number as a starting point.</p> <p>b. Recognize that each mark on a number line represents one whole number and that each position corresponds to a single value.</p> <p>c. Represent whole numbers as lengths from 0.</p> <p>d. Represent whole-number sums and differences up to 100 on a number line diagram.</p> <p>Students do not use or create a number line to add or subtract past 20 in Dimensions Math since addition and subtraction strategies focus on place-value concepts. Number lines with units of 1, 10, 100, or 1,000 are used in 3A to introduce rounding and to illustrate specific mental math strategies.</p>			
Work with time and money.				
2.DM.C.7	<p>Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m.</p> <p>a. Express portions of an hour using the fractional terms half an hour, half past, quarter of an hour, quarter after, and quarter til.</p> <p>Students learn to tell time to the nearest minute in DM 2.</p>	1B	18	3
		2B	12	1, 3
2.DM.C.8	<p>Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ and ¢ symbols appropriately.</p> <p>Students learn the decimal representation for money in dollars and cents (e.g. \$4.56 is 4 dollars and 56 cents, 456¢ = \$4.56) in DM 2.</p>	2B	10	1, 2, 3, 6, 7



Standard	Standard Description	DM	Chapter	Lesson
Represent and interpret data.				
2.DM.D.9	Generate measurement data by measuring lengths of several objects to the nearest whole unit or by making repeated measurements of the same object. a. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units. Line plots are not covered until DM 4A. In DM 4A, measurements include fractions and students do not make repeated measurements of the same object.	4B	9	3
2.DM.D.10	Draw a picture graph and a bar graph (with a scale of 1, 2, 5, or 10) to represent a data set with up to four categories. a. Solve simple put-together, take-apart, and compare real-world mathematical tasks using information presented in a picture graph or bar graph. DM 2B lessons include situations involving multiplication and are not limited to four categories. They include scales of 3 and 4.	2B	14	1, 2, 3



Grade 3

Standard	Standard Description	DM	Chapter	Lesson
Numeracy & Operational Fluency				
Develop understanding of fractions as numbers. Fractions are not limited to those with denominators of 2, 3, 4, 6, and 8 in DM 3. They also learn to add and subtract proper fractions with the same denominator.				
3.NOF.A.1	Understand and interpret a fraction with denominators 2, 3, 4, 6, and 8. a. Understand a unit fraction $1/b$ as the quantity formed by 1 part when a whole or a set is partitioned into b equal parts where b is a non-zero whole number. b. Understand a fraction a/b as the quantity formed by a parts of size $1/b$. c. Represent fractions greater than zero and less than or equal to one using concrete objects, number lines, or pictorial models. d. Read and write fractions in standard form and written unit form. e. Solve real-world mathematical tasks involving partitioning an object or set of objects, identifying a fraction as parts of a whole.	2B	11	2, 3, 4
		3B	9	1-4
3.NOF.A.2	Understand a fraction with denominators 2, 3, 4, 6, and 8 as a number on the number line diagram. a. Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line. b. Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.	3B	9	2, 3, 4
			10	1



Standard	Standard Description	DM	Chapter	Lesson
3.NOF.A.3	Explain equivalence of fractions with denominators 2, 3, 4, 6, and 8 as fractions that have different numerators and denominators but are equal to the same value, and compare fractions by reasoning about their size. <ul style="list-style-type: none"> a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. b. Recognize and generate simple equivalent fractions, e.g., $1/2 = 2/4$, $4/6 = 2/3$. Explain why the fractions are equivalent, e.g., by using a visual fraction model. c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model or number line. 	3B	9	2, 3, 4
			10	1, 2, 3
Multiply and divide by 100.				
3.NOF.B.4	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of grade 3, know from memory all products of two one-digit numbers. Students multiply and divide within 100 when one of the factors is 2, 3, 4, 5, or 10 in DM 2 and learn the corresponding products. This is reviewed in DM 3.	2A	7	2, 5, 8, 9
		2B	9	2, 3, 6-9
		3A	4	1-10
		3B	8	1, 2, 6, 7



Standard	Standard Description	DM	Chapter	Lesson
Use place-value understanding and properties of operations to perform multi-digit arithmetic.				
3.NOF.C.5	Use place value understanding to: a. Round whole numbers to the nearest 10 or 100. b. Use compatible numbers to estimate solutions to real-world mathematical tasks.	3A	1	9, 10
			3	4, 5
3.NOF.C.6	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	2A	3	1-10
		3A	3	1, 2, 3
3.NOF.C.7	Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.	3A	5	1
Algebraic Reasoning				
Represent and solve problems involving multiplication and division.				
3.AR.A.1	Interpret products of whole numbers/factors. <i>DM 2 covers multiplication where one of the factors is 2, 3, 4, 5, or 10, and division by 2, 3, 4, 5, or 10. This is reviewed in DM 3.</i>	2A	6	1, 2
		3A	4	1, 2, 4
3.AR.A.2	Interpret whole-number quotients of whole numbers (i.e., dividends and divisors).	2A	6	4, 5
		3A	4	3, 4
3.AR.A.3	Use multiplication and division within 100 to solve real-world mathematical tasks in situations involving equal groups, arrays, and measurement quantities. a. Represent these situations by using models, drawings, and equations with a symbol for the unknown number to represent the problem.	2A	6	1-11
		2B	9	1-9
		3A	4	1-10
		3B	8	1, 2, 6, 7
3.AR.A.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers by representing the	2A	6	1-11
		2B	9	1-9
		3A	4	1-10



Standard	Standard Description	DM	Chapter	Lesson
	situation with a model or drawing and solving for the unknown.	3B	8	1, 2, 6, 7
Understand properties of multiplication and the relationship between multiplication and division.				
3.AR.B.5	Apply properties of operations as strategies to multiply and divide.	2A	6	1-11
			7	1-9
		2B	9	1-10
		3A	4	1-7
		3B	8	1-11
3.AR.B.6	Understand division as an unknown-factor problem, providing an explanation that leverages the relationship between and the properties of multiplication and division.	2A	6	4, 5
		3A	4	3, 4
Solve problems involving the four operations, and identify and explain patterns in arithmetic.				
3.AR.C.7	Solve real-world mathematical tasks involving at least two steps and using at least two of the four operations. a. Represent these problems using equations with a letter standing for the unknown quantity. b. Assess the reasonableness of answers using mental computation and estimation strategies, including rounding. <i>The DM textbooks and workbooks use blanks, not letters, for unknowns. The DM Teacher’s Guides 3, 4, and 5 include optional material where letters are used instead of blanks.</i>	3A	2	11, 12
			3	6, 7
			4	9, 10
			5	6-9
			6	5, 9
		3B	8	5, 10
			11	7, 8
3.AR.C.8	Identify, create, and extend arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations without the formal language of the properties.	3A	1	7
			2	5
		3B	8	1, 2, 6, 7
Compare whole numbers.				
3.AR.D.9	Using understanding of the base-ten system:	3A	1	4
		4A	1	1,4



Standard	Standard Description	DM	Chapter	Lesson
	a. Compare whole numbers up to 100,000, using $>$, $=$, and $<$ symbols to record the results of comparisons. b. Order a set of whole numbers up to 100,000. Students compare numbers up to 10,000 in DM 3, and up to 1,000,000 in DM 4.			
Geometric Reasoning & Logic				
Reason with shapes and their attributes.				
3.GL.A.1	Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). a. Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	3B	12	4, 5, 6
3.GL.A.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.	3B	9	1
Data Analysis & Measurement				
Solve problems involving measurement and estimation of liquid volumes and masses of objects.				
3.DM.A.1	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). a. Add, subtract, multiply, or divide to solve real-world mathematical tasks involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. DM 3B lessons include compound units, e.g. 4 kg 20 g.	2A	5	1, 2
		2B	13	1, 2
		3B	11	1-8



Standard	Standard Description	DM	Chapter	Lesson
Represent and interpret data.				
3.DM.B.2	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. a. Solve one- and two-step “how many more” and “how many less” real-world mathematical tasks using information presented in scaled bar graphs.	2B	14	1, 2, 3
		3A	7	1, 2, 3
3.DM.B.3	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. a. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. In DM 3 students do measure lengths to various fractions when learning about fractions, but line plots are not covered until DM 4B.	3B	10	1
		4B	9	3
Understand concepts of area and relate area to multiplication and to addition.				
3.DM.C.4	Recognize area as an attribute of plane figures and understand concepts of area measurement. a. 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. b. A plane figure has an area of n square units if it can be covered entirely, without any gaps or overlaps, by n unit squares.	3B	13	1, 2
3.DM.C.5	Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units).	3B	13	1, 2
3.DM.C.6	Relate area to the operations of multiplication and addition. a. Find the area of a rectangle with whole-number side lengths by tiling it, and connect that the area is the same as	3B	13	3, 4, 5, 9



Standard	Standard Description	DM	Chapter	Lesson
	<p>would be found by multiplying the side lengths.</p> <p>b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world mathematical tasks, and represent whole-number products as rectangular areas in mathematical reasoning.</p> <p>c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.</p>			
Recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.				
3.DM.D.7	<p>Solve real-world and mathematical problems involving perimeters of polygons, including:</p> <p>a. finding the perimeter given the side lengths,</p> <p>b. finding an unknown side length, and</p> <p>c. exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.</p>	3B	13	6, 7, 8
Work with time and money.				
3.DM.E.8	Understand time to the nearest minute.	2B	12	1-4
	<p>a. Tell, write, and represent time to the nearest minute and measure time intervals in minutes, within 60 minutes, on an analog and digital clock.</p> <p>b. Calculate elapsed time greater than 60 minutes to the nearest quarter and half hour on a number line diagram.</p> <p>c. Solve real-world mathematical tasks involving addition and subtraction of time intervals in minutes, e.g., by</p>	3B	14	1, 2, 3



Standard	Standard Description	DM	Chapter	Lesson
	representing the problem on a number line diagram. DM 3B lessons include calculating elapsed time to the nearest minute and adding and subtracting time intervals in hours and minutes, not just minutes.			
3.DM.E.9	Solve real-world mathematical tasks involving at least two steps and using the four operations with pennies, nickels, dimes, quarters, and bills greater than one dollar, using the \$ and ¢ symbols appropriately. Students use the decimal notation for money in DM 2B for amounts up to \$10.00, count sets of money including dollar bills and coins, including amounts in cents greater than \$1, convert between amounts represented in cents only and amounts represented in dollars and cents using the decimal notation, compare money amounts, and add and subtract money amounts in decimal notation. In DM 3, this is extended to amounts up to \$100.00.	2B	10	1-4
		3B	15	1-5



Grade 4

Standard	Standard Description	DM	Chapter	Lesson
Numeracy & Operational Fluency				
Extend understanding of fraction equivalence and ordering. Fractions in DM 4 are not limited to those with denominators of 2, 3, 4, 5, 6, 8, 10, 12, and 100.				
4.NOF.A.1	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. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.)	3B	10	1, 2, 3
		4A	6	1
4.NOF.A.2	Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, and by comparing to a benchmark fraction such as $1/2$. <ul style="list-style-type: none"> Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.) 	3B	10	1, 2
		4A	6	2
Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.				
4.NOF.B.3	Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.) a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, including mixed numbers and fractions greater than 1,	3B	10	7, 8, 9
		4A	6	3-6
			7	1



Standard	Standard Description	DM	Chapter	Lesson
	<p>recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model.</p> <p>c. Evaluate the reasonableness of sums and differences of fractions using benchmark fractions, 0, $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, 1, referring to the same whole.</p> <p>In DM 3, students add and subtract proper fractions with the same denominator. In DM 4, they also learn to add and subtract fractions with related denominators (one denominator is a simple multiple of the other). They do not estimate the answer to the closest fourth of a fraction.</p>			
4.NOF.B.4	<p>Add and subtract fractions with like denominators.</p> <p>a. 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.</p> <p>b. Solve real-world mathematical tasks involving addition and subtraction of fractions, including mixed numbers and fractions greater than 1, referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</p> <p>In DM 4, students also learn to add and subtract fractions with related denominators (one denominator is a simple multiple of the other).</p>	4A	7	1-7
4.NOF.B.5	<p>Multiply a fraction by a whole number. (Denominators are limited to 2, 3, 4, 5, 6, 8, 10, 12, and 100.)</p> <p>a. Understand a fraction $\frac{a}{b}$ as a multiple of $\frac{1}{b}$.</p> <p>b. Understand a multiple of $\frac{a}{b}$ as a multiple of $\frac{1}{b}$, and use this</p>	4A	8	1, 2, 3



Standard	Standard Description	DM	Chapter	Lesson
	<p>understanding to multiply a fraction by a whole number.</p> <p>c. Solve real-world mathematical tasks involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem.</p>			
Understand decimal notation for fractions, and compare decimal fractions.				
4.NOF.C.6	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.	4B	12	1-4
4.NOF.C.7	Use decimal notation and precise language for fractions with denominators 10 or 100.	4B	12	1-4
4.NOF.C.8	<p>Compare two decimals to hundredths by reasoning about their size.</p> <ul style="list-style-type: none"> Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model or number line diagram. 	4B	12	8
Gain familiarity with factors and multiples.				
4.NOF.D.9	<p>Using whole numbers in the range 1-100,</p> <p>a. Find all factor pairs for a given whole number.</p> <p>b. Recognize that a given whole number is a multiple of each of its factors.</p> <p>c. Determine whether a given whole number is a multiple of a given one-digit number.</p> <p>d. Determine whether a given whole number is prime or composite.</p>	4A	3	1, 3, 4
Generalize place-value understanding for multi-digit whole numbers.				
4.NOF.E.10	Recognize that in a multi-digit whole number less than or equal to 1,000,000, a digit in one place represents ten times what it represents in the place to its right.	4A	1	1, 2



Standard	Standard Description	DM	Chapter	Lesson
4.NOF.E.11	Read and write multi-digit whole numbers less than or equal to 1,000,000 using base-ten numerals/standard form, written form (number names), unit form, and expanded form.	4A	1	1, 2, 4
4.NOF.E.12	Use place-value understanding to a. Round multi-digit whole numbers up to 1,000,000, to any place. b. Use compatible numbers to estimate solutions to real-world mathematical tasks.	4A	1	5, 6
			2	1, 2, 6
			4	2, 3, 4, 6, 7, 8
			5	2, 3, 4
Add and subtract multi-digit numbers.				
4.NOF.F.13	Fluently add and subtract multi-digit whole numbers with sums less than or equal to 1,000,000, using a standard algorithm.	4A	2	1-4
Algebraic Reasoning				
Use the four operations with whole numbers to solve real-world mathematical tasks.				
4.AR.A.1	Interpret a multiplication equation as a comparison and represent verbal statements of multiplicative comparisons as multiplication equations.	3A	4	8, 9, 10
		4A	4	1-4
4.AR.A.2	Multiply or divide to solve real-world mathematical tasks involving multiplicative comparison. a. Represent these tasks by using drawings and/or equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	3A	4	8, 9, 10
		4A	4	1-4
4.AR.A.3	Solve multi-step real-world mathematical tasks involving more than one operation posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. a. Represent these problems using equations with a letter standing for the unknown quantity.	4A	2	1-5
			3	5
			4	4, 8
			5	4-7



Standard	Standard Description	DM	Chapter	Lesson
	<p>b. Assess the reasonableness of answers using mental computation and estimation strategies, including rounding.</p> <p>The DM textbook and workbook use blanks, not letters, for unknowns. The DM Teacher’s Guides 3, 4, and 5 include optional material where letters are used instead of blanks.</p>			
Generate and analyze patterns.				
4.AR.B.4	<p>Generate a number or shape pattern that follows a given rule.</p> <p>a. Identify apparent features of the pattern that were not explicit in the rule itself.</p> <p>This is not explicitly covered in a specific lesson in DM 4, other than increasing or decreasing by the digit in one or more places. Some problems in the workbook do include analyzing patterns.</p>	5B	12	5
Compare whole numbers				
4.AR.C.5	<p>Using understanding of the base-ten system:</p> <p>a. Compare multi-digit whole numbers up to 1,000,000 using $>$, $=$, and $<$ symbols to record the results of comparisons.</p> <p>b. Order a set of whole numbers up to 1,000,000.</p>	5A	1	4
Use place-value understanding and properties of operations to perform multi-digit arithmetic.				
4.AR.D.6	<p>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 understanding and the properties of operations.</p> <p>a. Illustrate and explain the calculation by using equations, rectangular arrays, number line diagrams, and/or area models.</p>	3A	5	1-9
		3B	8	2, 8
		4A	4	1-6



Standard	Standard Description	DM	Chapter	Lesson
	DM 3 lessons cover multiplying a whole number of up to three digits by a one-digit number.			
4.AR.D.7	Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value understanding, the properties of operations, and/or the relationship between multiplication and division. a. Represent and explain the calculation by using equations, rectangular arrays, and/or area models. DM 3 lessons cover dividing a whole number of up to three digits.	3A	6	1-9
		3B	8	2, 8
		4A	5	1, 2, 3
Geometric Reasoning & Logic				
Draw and identify lines and angles, and classify shapes by properties of their lines and angles.				
4.GL.A.1	Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures. Points, line segments, and rays are defined in the DM Teacher’s Guide 4B only with a supplementary activity.	4B	15	3
			16	1, 2, 3
4.GL.A.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. a. Recognize right triangles as a category, and identify right triangles.	4B	16	4, 5, 6
4.GL.A.3	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.	4B	16	5



Standard	Standard Description	DM	Chapter	Lesson
Data Analysis and Measurement				
Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.				
4.DM.A.1	Know relative sizes of measurement units within one system of units including ft, in; km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. a. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. b. Record measurement equivalents in a two-column table. (Conversions are limited to one-step conversions.) In DM 4, some two-step conversions are included.	4B	10	1-8
4.DM.A.2	Use the four operations to solve real-world mathematical tasks involving: <ul style="list-style-type: none"> distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving whole numbers and/or simple fractions, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. 	4B	10	1-8
			13	1-9
4.DM.A.3	Apply the area and perimeter formulas for rectangles in real-world mathematical tasks.	4B	11	1-6
Use place value understanding and properties of operations to perform multi-digit arithmetic.				
4.DM.B.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 real-world mathematical tasks involving the addition and subtraction of fractions by using information presented in line plots.	4A	9	3
Geometric measurement: understand concepts of angle and measure angles.				
4.DM.C.5	Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:	3B	12	1, 2, 3
		4B	15	1



Standard	Standard Description	DM	Chapter	Lesson
	<p>a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle.</p> <p>b. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles.</p> <p>c. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.</p>			
4.DM.C.6	Measure angles in whole-number degrees using a standard 180° protractor.	4B	15	2, 3
4.DM.C.7	<p>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.</p> <p>Solve addition and subtraction real-world mathematical tasks to find unknown angles on a diagram in real-world and mathematical problems, e.g., by using an equation with a letter for the unknown angle measure.</p>	4B	15	4, 5, 6
Relate area to operations of multiplication and addition.				
4.DM.D.8	Recognize area as additive.	3B	13	4
	a. Decompose two-dimensional composite figures whose sides meet at right angles into non-overlapping rectangles and squares. Apply area formulas to find the area of each part, and use addition or subtraction to determine the total area of the composite figure.	4B	11	3



Grade 5

Standard	Standard Description	DM	Chapter	Lesson
Numeracy & Operational Fluency				
Use equivalent fractions as a strategy to add and subtract fractions.				
5.NOF.A.1	Add and subtract fractions with unlike denominators (including mixed numbers and fractions greater than 1) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent equation with fractions with like denominators. DM 4A lessons cover adding and subtracting fractions with related denominators.	4A	7	2-7
		5A	4	2-9
5.NOF.A.2	Solve real-world mathematical tasks involving addition and subtraction of fractions. a. Add and subtract fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. b. Use benchmark fractions and number sense of fractions to estimate mentally and justify the reasonableness of answers.	5A	4	2-9
Apply and extend previous understandings of multiplication and division to multiply and divide fractions.				
5.NOF.B.3	Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve real-world mathematical tasks involving division of whole numbers in the form of fractions to include fractions greater than one or mixed numbers, e.g., by using visual fraction models, number line diagrams, or equations to represent the problem.	4A	6	7, 8
		5A	4	1
5.NOF.B.4	Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.	4A	8	1-9
		5A	5	1-11



Standard	Standard Description	DM	Chapter	Lesson
	<p>a. Interpret the product $(m/n) \times q$ as m parts of a partition of q into n equal parts; equivalently, as the result of a sequence of operations, $m \times q \div n$.</p> <p>b. Construct or critique a precise model to develop understanding of the concept of multiplying two fractions and create a story context for the equation. [In general, $(m/n) \times (c/d) = (mc)/(nd)$.]</p>			
5.NOF.B.5	<p>Interpret multiplication as scaling (resizing), by:</p> <p>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.</p> <p>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).</p> <p>c. Explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.</p> <p>d. Relating the principle of fraction equivalence.</p>	5A	5	2-8
5.NOF.B.6	<p>Represent and solve real-world mathematical tasks involving multiplication of fractions, including fractions greater than 1 and mixed numbers, e.g., by using visual fraction models, number line diagrams, or equations.</p>	5A	5	1-9
5.NOF.B.7	<p>Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions in the context of real-world mathematical tasks, e.g., by</p>	5A	6	1, 4



Standard	Standard Description	DM	Chapter	Lesson
	using visual fraction models, number line diagrams, or equations to represent the problem. a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. b. Interpret division of a whole number by a unit fraction, and compute such quotients.			
Understand the place-value system.				
5.NOF.C.8	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.	5A	1	1
		5B	9	6, 7
5.NOF.C.9	Use place-value understanding to a. Round multi-digit numbers with decimals to any place; and b. Use compatible numbers to estimate solutions to real-world mathematical tasks.	5A	3	1, 2, 5-8
		5B	9	4
			10	1, 2, 4, 6, 7, 9
Multiply multi-digit numbers.				
5.NOF.D.10	Fluently multiply multi-digit whole numbers using the standard algorithm. <i>DM 4A lessons cover multiplying a number of up to 5-digits by a 1-digit number and by a 2-digit number and a number of up to 3 digits by a 2-digit number. DM 5A lessons review multiplying by a two-digit number.</i>	4A	4	1-8
		5A	3	1, 2
Algebraic Reasoning				
Write and interpret numerical expressions.				
5.AR.A.1	Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols, attending to the order of operations and the properties of operations. a. Compare two simple expressions using $>$, $=$, or $<$ to record the comparison of	5A	2	3, 4, 7
			4	9
			5	11
			6	7



Standard	Standard Description	DM	Chapter	Lesson
	expressions limited to three operations and one grouping symbol. In DM 4, the expressions they compare are not limited to three operations and one grouping symbol.			
5.AR.A.2	Write simple expressions that record calculations with numbers, fractions, and decimals, and interpret numerical expressions without evaluating them. Students both interpret and evaluate all expressions in DM.	5A	2	1-4
			4	4, 9
			5	3, 4, 9, 11
		5B	9	2
Compare whole numbers				
5.AR.B.3	Generate and extend two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. a. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. b. Explain these relationships informally.	5B	12	5
Use place value understanding to apply patterns beyond whole numbers.				
5.AR.C.4	Construct a written explanation and apply patterns in the number of zeros of the product when multiplying a number by powers of 10. a. Explain and apply patterns in the values of the digits in the product or the quotient when a decimal is multiplied or divided by a power of 10. b. Use whole-number exponents to denote powers of 10. Students are not explicitly asked in the textbook to construct a written explanation for this standard.	5A	1	2-5
		5B	9	6, 7
5.AR.C.5	Using understanding of the base-ten system: a. Read and write decimals to thousandths using base-ten numerals/standard form, written form	5B	9	1, 2, 3



Standard	Standard Description	DM	Chapter	Lesson
	(number names), unit form, and expanded form. b. Compare and order multi-digit whole numbers and decimals to thousandths based on the values of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.			
Perform operations with multi-digit whole numbers and with decimals to hundredths.				
5.AR.D.6	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value understanding, the properties of operations, subtracting multiples of the divisor, and/or the relationship between multiplication and division. a. Illustrate and/or explain the calculation by using equations, rectangular arrays, or area models, or other strategies based on place value.	5A	3	4-9
5.AR.D.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 or multiplication and division a. Justify the reasoning of methods used for calculation with a written explanation. Students are not specifically asked to write solely written explanations. DM 4A lessons cover adding and subtracting decimals to hundredths and multiplying and dividing decimals to hundredths by a 1-digit whole number. DM 5B lessons cover adding and subtracting decimals to thousandths, multiplying decimals to thousandths by a decimal of up to 2 digits, dividing	4B	13	1-9
			14	1-9
		5B	10	1-10



Standard	Standard Description	DM	Chapter	Lesson
	decimals by a 2-digit whole number, and dividing a whole number by a decimal.			
Geometric Reasoning & Logic				
Generate and analyze patterns.				
5.GL.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. <ul style="list-style-type: none"> Understand that in an ordered pair, the first number indicates how far to move along the x-axis, and the second number indicates how far to move along the y-axis from the origin. 	5B	12	4
5.GL.A.2	Represent real-world mathematical tasks by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. DM 4A covers line graphs.	4A	9	1, 2
		5B	12	4, 5, 6
Classify two-dimensional figures into categories based on their properties.				
5.GL.B.3	Analyze and relate attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category.	5B	11	3, 6
5.G.B.4	Classify quadrilaterals in a hierarchy based on properties. <ol style="list-style-type: none"> Justify the reasoning for classification with a written response. Students do not make up their own hierarchy and are not required to justify it in writing in DM.	5B	11	3, 6
Data Analysis & Measurement				
Convert like measurement units within a given measurement system.				
5.DM.A.1	Convert among different-sized standard measurement units within a given measurement system, and use these	4B	10	1-8
		5A	7	1
		5B	9	8



Standard	Standard Description	DM	Chapter	Lesson
	conversions in solving multi-step, real-world mathematical tasks involving: <ul style="list-style-type: none"> distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving whole numbers, decimals, and fractions. 			
Compare whole numbers.				
5.DM.B.2	Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). <ul style="list-style-type: none"> Use operations on fractions for this grade to solve problems involving information presented in line plots. 	4A	9	3
		5B	12	3
Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.				
5.DM.C.3	Recognize volume as an attribute of solid figures and understand concepts of volume measurement. <ol style="list-style-type: none"> 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. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of cubic units. 	5A	8	1
5.DM.C.4	Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units.	5A	8	1
5.DM.C.5	Relate volume to the operations of multiplication and addition and solve real-world mathematical tasks involving volume. <ol style="list-style-type: none"> Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and connect that the volume is the same as would be found by multiplying the edge lengths, also by multiplying the height by the area of the base. 	5A	8	2-8



Standard	Standard Description	DM	Chapter	Lesson
	<ul style="list-style-type: none"> • Represent threefold whole-number products as volumes, e.g., to represent the associative property of multiplication. 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 mathematical tasks. 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. 			
Geometric measurement: extend previous understandings of area and multiplication to multiply fractions.				
5.DM.D.6	Apply and extend previous understandings of area and multiplication to multiply a fraction or whole number by a fraction. <ul style="list-style-type: none"> a. 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. b. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. c. Compose and decompose rectangular regions to calculate area. 	5A	7	2, 3