

Grade 3 Math

Instruction time focus: (1) Developing understanding of multiplication and division strategies for multiplication and division within 100; (2) developing understanding of fractions, especially unit fractions (fractions with numerator 1); (3) developing understanding of the structure of rectangular arrays and of area; and (4) describing and analyzing polygons based on the number of sides and vertices.

<p>Domain: Operations and Algebraic Thinking Clusters: Represent and solve problems involving multiplication and division. Understand properties of multiplication and the relationship between multiplication and division. Multiply and divide within 100. Solve problems involving the four operations, and identify and extend patterns in arithmetic.</p>						
Standard	Topic	Essential Question	Vocabulary	Skills/Performance Indicators	Assessment	Activities
3.OA.1 3.OA.3	Understand the Meaning of Multiplication	What is multiplication? When do we use multiplication? How do we combine equal groups to multiply?	Equation Multiply Factor Product Array	Interpret products of whole numbers. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.	Lesson 1 Quiz Assessments: Mid-Unit End -of-Unit	DOK1: Flash cards Xtra Math Reflex Math DOK2: Students model arrays (stickers, pictures, tokens, counters) DOK3: Ready Center Activity 3.2 Students create own arrays with stickers and/or pictures. DOK4: Use technology to create a video that explains equal groups
3.OA.5 3.OA.1 3.OA.3	Use Order and Grouping to Multiply	How do we use order and grouping to	Array Multiply Factor	Apply properties of operations as strategies to multiply and divide.	Lesson 2, 3 Quiz	DOK1: Flash cards Xtra Math

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		<p>multiply?</p> <p>When do we use order and grouping to multiply?</p>	Product	<p>Interpret products of whole numbers.</p> <p>Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.</p>	<p>Assessments: Mid-Unit End -of-Unit</p>	<p>Reflex Math</p> <p>DOK2: Student Practice and Problem Solving book pages 11-20 (Lesson 2), pages 23-30 (Lesson 3)</p> <p>DOK3: Ready Center Activity 3.9</p> <p>DOK4:</p>
<p>3.OA.5 3.OA.1 3.OA.3</p>	Split Numbers to Multiply	How do we split numbers to multiply?	<p>Array Multiply Factor Product</p>	<p>Apply properties of operations as strategies to multiply and divide.</p> <p>Interpret products of whole numbers.</p> <p>Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.</p>	<p>Lesson 2, 3</p> <p>Quiz</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1: Flash cards Xtra Math Reflex Math</p> <p>DOK2: Student Practice and Problem Solving book pages 11-20 (Lesson 2), pages 23-30 (Lesson 3)</p> <p>DOK3: Ready Center Activity 3.13</p> <p>DOK4:</p>

<p>3.OA.2 3.OA.3</p>	<p>Understand the Meaning of Division</p>	<p>What is division? When do we use division?</p>	<p>Division Divide Array</p>	<p>Interpret whole-number quotients of whole numbers. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.</p>	<p>Lesson 4 Quiz Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1: Flash cards Xtra Math Reflex Math DOK2: Student Practice and Problem Solving book pages 33-38. DOK3: Students create a poster demonstrating/ modeling the strategies to solve division problem. DOK4:</p>
<p>3.OA.6 3.OA.4</p>	<p>Understand How Multiplication and Division Are Connected</p>	<p>How are multiplication and division related?</p>	<p>Dividend Divisor Quotient Multiply Division Factor Product</p>	<p>Understand division as an unknown-factor problem. Determine the unknown whole number in a multiplication or division equation relating to three whole numbers.</p>	<p>Lesson 5 Quiz Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1: Flash cards Xtra Math Reflex Math DOK2: Student Practice and Problem Solving book pages 41-46 DOK3: Students provide 2 numbers to a partner. Partner creates a fact family around those numbers having to fill in the third number on their own.</p>

						DOK4:
<p>3.OA.4 3.OA.7 3.OA.3 3.OA.5 3.OA.6</p>	Multiplication and Division Facts	<p>How do we multiply and divide?</p> <p>When do we multiply?</p> <p>When do we divide?</p>	<p>Fact family Multiply Factor Product Division Dividend Divisor Quotient</p>	<p>Determine the unknown whole number in a multiplication or division equation relating to three whole numbers.</p> <p>Fluently solve single-digit multiplication and related divisions, using strategies such as the relationship between multiplication and division or properties of operations.</p> <p>Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.</p> <p>Apply properties of operations as strategies to multiply and divide.</p> <p>Understand division as an unknown-factor problem.</p>	<p>Quizzes: Lesson 6</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1: Flash cards Xtra Math Reflex Math</p> <p>DOK2: Create fact family Center activity: Roll a Number</p> <p>DOK3: Extend a multiplication table to 15, ask students to use their understanding of patterns to fill in the missing products (Teachers Guide page 51, challenge activity)</p> <p>DOK4:</p>
3.OA.9	Understand Patterns	<p>What is a pattern?</p> <p>How do we identify a pattern?</p> <p>How do we extend a</p>	<p>Pattern Rule Even number Odd number</p>	<p>Identify and extend arithmetic patterns (including patterns in the addition table or multiplication table).</p>	<p>Lesson 7</p> <p>Quiz</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1: Flash cards Xtra Math Reflex Math</p> <p>DOK2: Students highlight a (+___ pattern) on two separate hundred charts and describe</p>

		<p>pattern?</p> <p>When do we use patterns?</p>				<p>how patterns are alike and different (Teachers Guide page 53, Hands On Activity activity)</p> <p>DOK3:</p> <p>DOK4:</p>
<p>3.OA.3 3.OA.5 3.OA.6</p>	<p>Solve One-Step Word Problems Using Multiplication and Division</p>	<p>How do we solve one-step word problems using multiplication and division?</p>	<p>Array Multiply Division Equation</p>	<p>Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.</p> <p>Apply properties of operations as strategies to multiply and divide.</p> <p>Understand division as an unknown-factor problem.</p>	<p>Lesson 11</p> <p>Quiz</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1: Flash cards Xtra Math Reflex Math</p> <p>DOK2:</p> <p>DOK3:</p> <p>DOK4: Write and share word problems with another class via Google Hangouts</p>
<p>3.OA.8 3.OA.4 3.OA.6 3.NBT.2</p>	<p>Model Two-Step Word Problems Using the Four Operations</p>	<p>How do we model two-step word problems using the four operations?</p>	<p>Operation Equation Round To Estimate An Estimate</p>	<p>Solve two-step word problems posed with whole numbers and having whole-number answers using the four operations.</p> <p>Determine the unknown whole number in a multiplication or division equation relating three whole numbers.</p> <p>Understand division as an unknown-factor problem.</p>	<p>Lesson 12, 13</p> <p>Quiz</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1: Flash cards Xtra Math Reflex Math</p> <p>DOK2: Ready Center Activity 3.15</p> <p>DOK3: Students create own 2 step problems with or without a partner and then share with</p>

				Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.		others to solve. DOK4: Write and share word problems with another class via Google Hangouts
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Domain: Number and Operations in Base Ten						
Cluster: Use place value understanding and properties of operations to perform multi-digit arithmetic.						
Standard	Topic	Essential Question	Vocabulary	Skills/Performance Indicators	Assessment	Activities
3.NBT.1 3.OA.5 3.NBT.3	Use Place Value to Round Numbers	How do we round numbers?	Round To estimate An estimate	Use place value understanding to round whole numbers to the nearest 10 and 100. Apply properties of operations as strategies to multiply and divide. Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations.	Lesson 8 Quiz Assessments: Mid-Unit End -of-Unit	DOK1: Learn the rounding riddles DOK2: Use number lines and rules for rounding to determine which 10 or 100 a number rounds to DOK3: Students create their own problems for partners to solve DOK4: Students need to determine whether a number would be better rounded to the nearest ten, or hundred when ordering items for a school fundraiser

<p>3.NBT.2</p>	<p>Use Place Value to Add and Subtract</p>	<p>How do we use place value to add and subtract?</p>	<p>Sum Difference Place-value Regroup</p>	<p>Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and /or the relationship between addition and subtraction.</p>	<p>Lesson 9 Quiz Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1: Introduce base ten blocks Students model numbers with base ten blocks DOK2: With manipulatives students regroup ten ones for one ten or ten tens for one hundred when adding or subtracting two and three digit numbers DOK3: Students create their own problems and share with peers Challenge activity page 91 DOK4: Share challenge activity with another class with a Seesaw visual trip to the cities listed</p>
<p>3.NBT.3 3.OA.1 3.OA.5 3.OA.7 3.NBT.1</p>	<p>Use Place Value to Multiply</p>	<p>How do we use place value to multiply?</p>	<p>Multiply Factor product</p>	<p>Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations.</p> <p>Interpret products of whole numbers.</p> <p>Apply properties of operations as strategies to multiply and divide.</p> <p>Fluently solve single-digit multiplication and related</p>	<p>Lesson 10 Quiz Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1: Fact practice sheets DOK2: DOK3: DOK4:</p>

				<p>division, using strategies such as the relationship between multiplication and division or properties of operations.</p> <p>Use place value understanding to round whole numbers to the nearest 10 and 100.</p>		
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Domain: Number and Operations -- Fractions						
Clusters: Develop an understanding of fractions as numbers.						
Standard	Topic	Essential Question	Vocabulary	Skills/Performance Indicators	Assessment	Activities
3.NF.1	Understand What a Fraction Is	<p>What is a fraction?</p> <p>When do we use fractions?</p> <p>Where do we see fractions?</p>	<p>Fraction</p> <p>Numerator</p> <p>Denominator</p> <p>Unit fraction</p>	<p>Understand a unit fraction, $1/b$, is the quantity formed by 1 part when a whole is partitioned into b equal parts.</p> <p>Understand a fraction a/b is the quantity formed by a parts of size $1/b$.</p> <p>Note: Fractions are limited to those with denominators 2, 3, 4, 6, and 8.</p>	<p>Lesson 14</p> <p>Quiz</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1 : Label the parts of a fraction.</p> <p>Fraction Strips</p> <p>DOK2: My Name in Fractions activity (found in shared fraction folder)</p> <p>Fidget Spinner Fraction game (found in shared fraction folder)</p> <p>DOK3: Create a fraction match game for a partner to solve</p>

						DOK4:
3.NF.2a 3.NF.2b	Understand Fractions on a Number Line	<p>How do we represent a fraction on a number line?</p> <p>Why do we use a number line to represent fractions?</p>	Fraction Numerator Denominator Unit fraction	<p>Understand a fraction as a number on the number line; represent fractions on a number line.</p> <p>Note: Fractions are limited to those with denominators 2, 3, 4, 6, and 8.</p> <p>Represent a fraction $1/b$ on a number line 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 starting at 0 locates the number $1/b$ on the number line.</p> <p>Represent a fraction a/b on a number line 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.</p>	Lesson 15 Quiz Assessments: Mid-Unit End -of-Unit	<p>DOK1: Find fractions on a number line</p> <p>DOK2: Use a blank number line divided into a specific number of spaces (ex. 6 places means sixths) and label specific fractions.</p> <p>DOK3: Ready Center Activity 3.25</p> <p>DOK4: Use technology to create a video that explains fractions on a numberline</p>
3.NF.3a	Understand Equivalent Fractions	What is an equivalent fraction?	Equivalent fraction Fraction Numerator Denominator Unit fraction	<p>Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.</p> <p>Note: Fractions are limited to those with denominators 2, 3, 4, 6, and 8.</p>	Lesson 16 Quiz Assessments: Mid-Unit End -of-Unit	<p>DOK1: Identify if two fractions are equivalent.</p> <p>DOK2: Student Practice and Problem Solving book pages 177-182</p>

						<p>DOK3: Students can give a partner two fractions, and they have to find them on a number line and decide if they are equal. Students can create a poster showing equivalent fractions.</p> <p>DOK4:</p>
<p>3.NF.3b 3.NF.3c</p>	<p>Find Equivalent Fractions</p>	<p>What makes fractions equivalent?</p> <p>When do we use equivalent fractions?</p>	<p>Fraction Numerator Denominator Unit fraction Equivalent fraction</p>	<p>Recognize and generate equivalent fractions. e.g., $1/2 = 2/4$, $4/6 = 2/3$</p> <p>Explain why the fractions are equivalent. e.g., using a visual fraction model.</p> <p>Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. e.g., Express 3 in the form $3 = 3/1$, recognize that $6/3 = 2$, and locate $4/4$ and 1 at the same point on a number line.</p>	<p>Lesson 17</p> <p>Quiz</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1:</p> <p>DOK2:</p> <p>DOK3:</p> <p>DOK4:</p>
<p>3.NF.3d</p>	<p>Understand Comparing Fractions</p> <p>Use Symbols to Compare Fractions</p>	<p>How do we compare fractions?</p>	<p>Compare Numerator Denominator Unit fraction</p> <p>Greater than symbol</p> <p>Less than</p>	<p>Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols</p>	<p>Lesson 18, 19</p> <p>Quiz</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1:</p> <p>DOK2:</p> <p>DOK3:</p>

			symbol Unit fraction	>, =, <, and justify the conclusions.		DOK4:
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Domain: Measurement and Data

Clusters: Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

Represent and interpret data.

Geometric measurement: understand concepts of area and relate area to multiplication and addition.

Geometric Measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

Standard	Topic	Essential Question	Vocabulary	Skills/Performance Indicators	Assessment	Activities
3.MD.1	Tell and Write Time Solve Problems About Time	How do we tell time? How do we write time? Why do we need to know how to tell time?	Hour Minute Hour hand Minute hand AM PM Elapsed time	Tell and write time to the nearest minute and measure time intervals in minutes. Solve one-step word problems involving addition and subtraction of time intervals in minutes. Note: This includes one-step problems that cross into a new hour.	Lesson 20 Lesson 21 Quiz Assessments: Mid-Unit End -of-Unit	DOK1: Student Clocks DOK2: Time Match Center Activity DOK3: DOK4:
3.MD.2	Liquid Volume Mass	How do we measure liquids? What do we use to measure liquid volume?	Liquid volume Liter Mass Gram Kilogram Measure	Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses	Lesson 22 Lesson 23 Quiz Assessments: Mid-Unit End -of-Unit	DOK1: DOK2: Use containers to experiment with liquid measurements

		What is mass? How do we measure mass?	To estimate An estimate	or liquid volumes that are given in the same units.		Solve Measurement Problems Center Activity DOK3: DOK4:
3.MD.3 3.OA.1	Solve Problems Using Scaled Graphs Draw Scaled Graphs	How do we read graphs? How do we draw graphs?	Scale Key Data Bar graph Picture graph	Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step "how many more and "how many less" problems using information presented in a scaled picture graph or scaled bar graph. Interpret products of whole numbers.	Lesson 24 Lesson 25 Quiz Assessments: Mid-Unit End -of-Unit	DOK1: DOK2: Make a Bar Graph Center Activity DOK3: DOK4:
3.MD.4	Measure Length and Plot Data on Line Plots	How do we measure length? How do we organize data on line plots?	Line plot Data	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot where the horizontal scale is marked off in appropriate units--whole number, halves, or quarters.	Lesson 26 Quiz Assessments: Mid-Unit End -of-Unit	DOK1: DOK2: Make a Line Plot Center Activity DOK3: DOK4:
3.MD.5a 3.MD.5b 3.MD.6	Understand Area	What is area? When do we need to know the area?	Area Square unit	Recognize area as an attribute of plane figures and understand concepts of area measurement. Recognize a square with side	Lesson 27 Quiz Assessments: Mid-Unit	DOK1: DOK2: Area Center Activity

				<p>length 1 unit, called “a unit square,”s said to have “one square unit” of area, and can be used to measure area.</p> <p>Recognize a plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.</p> <p>Measure areas by counting unit squares.</p> <p><u>Note:</u> Unit squares include square cm, square m, square in., square ft., and improvised units.</p>	End -of-Unit	<p>Square Units Center Activity</p> <p>Find Area Center Activity</p> <p>Area Game Center Activity</p> <p>DOK3:</p> <p>DOK4:</p>
<p>3.MD.7a 3.MD.7b</p>	Multiply to Find Area	How do we multiply to find area?	Area Square unit	<p>Relate area to the operations of multiplication and addition.</p> <p>Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.</p> <p>Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.</p>	<p>Lesson 28</p> <p>Quiz</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1:</p> <p>DOK2: Area Problems Center Activity</p> <p>DOK3:</p> <p>DOK4:</p>

<p>3.MD.7c 3.MD.7d</p>	<p>Add Areas</p>	<p>How do we add to find area?</p>	<p>Area Square unit Factor Product</p>	<p>Use tiling to show in a concrete case that the area of a rectangle with whole-number side length a and side length $b+c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.</p> <p>Recognize area as additive. Find areas of figures composed of non-overlapping rectangles, and apply this technique to solve real world problems.</p> <p>Note: Problems include no more than one unknown side length.</p>	<p>Lesson 29</p> <p>Quiz</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1:</p> <p>DOK2: Decompose to Find Area Center Activity</p> <p>DOK3:</p> <p>DOK4:</p>
<p>3.MD.8 3.G.1</p>	<p>Connect Area and Perimeter</p>	<p>How are area and perimeter related?</p> <p>How do we solve for area?</p> <p>How do we solve for perimeter?</p>	<p>Perimeter Area</p>	<p>Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths or finding one unknown side length given the perimeter and other side lengths.</p> <p>Recognize and classify polygons based on the number of sides and vertices (triangles, quadrilaterals, pentagons, and hexagons). Identify shapes that do not belong to one of the given subcategories.</p>	<p>Lesson 30</p> <p>Quiz</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1:</p> <p>DOK2: Work With Perimeter Center Activity</p> <p>DOK3:</p> <p>DOK4:</p>

Domain: Geometry Clusters: Reason with shapes and their attributes.						
Standard	Topic	Essential Question	Vocabulary	Skills/Performance Indicators	Assessment	Activities
3.G.1	Understand Properties of Shapes	What are the properties of shapes? How do we use a shape's properties to classify them?	Venn diagram Angle Rectangle Rhombus Pentagon Hexagon	Recognize and classify polygons based on the number of sides and vertices (triangles, quadrilaterals, pentagons, and hexagons). Identify shapes that do not belong to one of the given subcategories. Note: Include regular and irregular polygons, however, students need not use formal terms "regular" and "irregular," e.g., students should be able to classify an irregular pentagon as "a pentagon," but do not need to classify it as an "irregular pentagon."	Lesson 31 Quiz Assessments: Mid-Unit End -of-Unit	DOK1: DOK2: Geometry Vocabulary Center Activity DOK3: DOK4:
3.G.1	Classifying Quadrilaterals	What are quadrilaterals? How do we	Attribute Parallel Parallelogram Rectangle	Recognize and classify polygons based on the number of sides and vertices (triangles, quadrilaterals,	Lesson 32 Quiz	DOK1: DOK2:

		classify a polygon as a quadrilateral?	Quadrilateral	<p>pentagons, and hexagons). Identify shapes that do not belong to one of the given subcategories.</p> <p>Note: Include regular and irregular polygons, however, students need not use formal terms "regular" and "irregular," e.g., students should be able to classify an irregular pentagon as "a pentagon," but do not need to classify it as an "irregular pentagon."</p>	Assessments: Mid-Unit End -of-Unit	<p>Quadrilaterals Center Activity</p> <p>DOK3:</p> <p>DOK4:</p>
<p>3.G.2 3.MD.7 3.NF.1</p>	Divide Shapes into Parts with Equal Areas	How do we divide shapes into equal parts with equal areas?	Area Rectangle Fraction	<p>Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole.</p> <p>Relate area to the operations of multiplication and addition.</p> <p>Understand a unit fraction, $1/b$, is the quantity formed by 1 part when a whole is partitioned into b equal parts.</p> <p>Understand a fraction a/b is the quantity formed by a parts of size $1/b$.</p> <p>Note: Fractions are limited to those with denominators 2, 3, 4, 6, and 8.</p>	<p>Lesson 33</p> <p>Quiz</p> <p>Assessments: Mid-Unit End -of-Unit</p>	<p>DOK1:</p> <p>DOK2: Equal Areas Center Activity</p> <p>Divide Shapes Center Activity</p> <p>DOK3:</p> <p>DOK4:</p>