i-Ready Classroom Mathematics

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to the

California Common Core State Standards for Mathematics

Grade 3

California Common Core State Standards for Mathematics Grade 3	i-Ready Classroom Mathematics Lessons Grade 3

Grade 3	
3.OA	**Operations and Algebraic Thinking**
	Represent and solve problems involving multiplication and division.
3.OA.1	Interpret products of whole numbers, e.g., interpret 5 × 7 as the total number of objects in 5 groups of 7 objects each. *For example, describe a context in which a total number of objects can be expressed as 5 × 7 .*	**Lesson 4:** *Understand* the Meaning of Multiplication **Supporting Content:** Lesson 8: Use Order and Grouping to Multiply; Lesson 9: Use Place Value to Multiply; Lesson 19: Scaled Graphs **Math in Action**: pp. 284–291
3.OA.2	Interpret whole-number quotients of whole numbers, e.g., interpret 56 ÷ 8 as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. *For example, describe a context in which a number of shares or a number of groups can be expressed as 56 ÷ 8 .*	**Lesson 10:** *Understand* the Meaning of Division **Lesson 11**: *Understand* How Multiplication and Division Are Connected **Supporting Content**: **Math in Action**: pp. 284–291
3.OA.3	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	**Lesson 5:** Multiply with 0, 1, 2, 5, and 10 **Lesson 6:** Multiply with 3, 4, and 6 **Lesson 7:** Multiply with 7, 8, and 9 **Lesson 17:** Solve One-Step Word Problems Using Multiplication and Division **Supporting Content**: Lesson 4: *Understand* the Meaning of Multiplication; Lesson 8: Use Order and Grouping to Multiply; Lesson 12: Multiplication and Division Facts; Lesson 15: Multiply to Find Area; Lesson 16: Add Areas; Lesson 18: Solve Two-Step Word Problems Using the Four Operations; Lesson 19: Scaled Graphs; Lesson 28: Liquid Volume; Lesson 29: Mass; Lesson 32: Area and Perimeter of Shapes **Math in Action:** pp. 284–291**,** 442–449

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3.OA.4	Determine the unknown whole number in a multiplication or division equation relating three whole numbers. *For example, determine the unknown number that makes the equation true in each of the equations* $8 \times ? = 48$, $5 = \_ \div 3$, $6 \times 6 = ?$	**Lesson 12:** Multiplication and Division Facts **Supporting Content:** Lesson 17: Solve One-Step Word Problems Using Multiplication and Division; Lesson 18: Solve Two-Step Word Problems Using the Four Operations **Math in Action**: pp. 442–449
	Understand properties of multiplication and the relationship between multiplication and division.	
3.OA.5	Apply properties of operations as strategies to multiply and divide. *Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$, or by $5 \times 2 = 10$, then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.)*	**Lesson 5:** Multiply with 0, 1, 2, 5, and 10 **Lesson 6:** Multiply with 3, 4, and 6 **Lesson 7:** Multiply with 7, 8, and 9 **Lesson 8:** Use Order and Grouping to Multiply **Supporting Content:** Lesson 9: Use Place Value to Multiply; Lesson 10: *Understand* the Meaning of Division; Lesson 12: Multiplication and Division Facts; Lesson 16: Add Areas **Math in Action:** pp. 284–291
3.OA.6	Understand division as an unknown-factor problem. *For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8.*	**Lesson 11:** *Understand* How Multiplication and Division Are Connected **Supporting Content:** Lesson 12: Multiplication and Division Facts; Lesson 17: Solve One-Step Word Problems Using Multiplication and Division **Math in Action:** pp. 284–291

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Multiply and divide within 100.		
3.OA.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 × 5 = 40, one knows 40 ÷ 5 = 8) or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	**Lesson 5:** Multiply with 0, 1, 2, 5, and 10 **Lesson 6:** Multiply with 3, 4, and 6 **Lesson 7:** Multiply with 7, 8, and 9 **Lesson 12:** Multiplication and Division Facts **Supporting Content:** Lesson 9: Use Place Value to Multiply; Lesson 17: Solve One-Step Word Problems Using Multiplication and Division; Lesson 18: Solve Two-Step Word Problems Using the Four Operations; Lesson 28: Liquid Volume; Lesson 29: Mass; Lesson 32: Area and Perimeter of Shapes **Math in Action:** pp. 284–291
Solve problems involving the four operations, and identify and explain patterns in arithmetic.		
3.OA.8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	**Lesson 18:** Solve Two-Step Word Problems Using the Four Operations **Supporting Content:** **Math in Action:** pp. 442–449
3.OA.9	Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. *For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends .*	**Lesson 13:** *Understand* Patterns

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3.NBT	**Number and Operations in Base Ten**	
	Use place value understanding and properties of operations to perform multi-digit arithmetic.	
3.NBT.1	Use place value understanding to round whole numbers to the nearest 10 or 100.	**Lesson 1:** Use Place Value to Round Numbers **Supporting Content:** Lesson 2: Add Three-Digit Numbers; Lesson 3: Subtract Three-Digit Numbers; Lesson 18: Solve Two-Step Word Problems Using the Four Operations **Math in Action:** pp. 76–83
3.NBT.2	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.	**Lesson 2:** Add Three-Digit Numbers **Lesson 3:** Subtract Three-Digit Numbers **Supporting Content:** Lesson 18: Solve Two-Step Word Problems Using the Four Operations; Lesson 28: Liquid Volume; Lesson 29: Mass; Lesson 32: Area and Perimeter of Shapes **Math in Action:** pp. 76–83, 442–449, 660–667, 754–761
3.NBT.3	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.	**Lesson 9:** Use Place Value to Multiply **Supporting Content:** **Math in Action:** pp. 76–83, 284–291
3.NF	**Number and Operations—Fractions**	
	Develop understanding of fractions as numbers.	
3.NF.1	Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.	**Lesson 20:** *Understand* What a Fraction Is **Supporting Content:** Lesson 21: *Understand* Fractions on a Number Line; Lesson 22: *Understand* Equivalent Fractions; Lesson 24: *Understand* Comparing Fractions; Lesson 33: Partition Shapes into Parts with Equal Areas **Math in Action**: pp. 572–579, 754–761

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3.NF.2	Understand a fraction as a number on the number line; represent fractions on a number line diagram.	
3.NF.2.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.	**Lesson 21:** *Understand* Fractions on a Number Line **Supporting Content:** Lesson 22: *Understand* Equivalent Fractions; Lesson 23: Find Equivalent Fractions; Lesson 24: *Understand* Comparing Fractions; Lesson 25: Use Symbols to Compare Fractions; Lesson 26: Measure Length and Plot Data on Line Plots **Math in Action:** pp. 572–579
3.NF.2.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.	**Lesson 21:** *Understand* Fractions on a Number Line **Supporting Content:** Lesson 22: *Understand* Equivalent Fractions; Lesson 23: Find Equivalent Fractions; Lesson 24: *Understand* Comparing Fractions; Lesson 25: Use Symbols to Compare Fractions; Lesson 26: Measure Length and Plot Data on Line Plots **Math in Action**: pp. 572–579
3.NF.3	Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.	
3.NF.3.a	Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.	**Lesson 22:** *Understand* Equivalent Fractions **Supporting Content:** Lesson 23: Find Equivalent Fractions **Math in Action:** pp. 572–579
3.NF.3.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.	**Lesson 23:** Find Equivalent Fractions **Supporting Content**: Lesson 25: Use Symbols to Compare Fractions; Lesson 33: Partition Shapes into Parts with Equal Areas **Math in Action:** pp. 572–579

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3.NF.3.c	Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. *Examples: Express 3 in the form 3 = 3/1; recognize that 6/1 = 6; locate 4/4 and 1 at the same point of a number line diagram.*	**Lesson 23:** Find Equivalent Fractions <u>Supporting Content</u>: Lesson 22: Understand Equivalent Fractions
3.NF.3.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.	**Lesson 24:** *Understand* Comparing Fractions **Lesson 25:** Use Symbols to Compare Fractions <u>Supporting Content:</u> Lesson 33: Partition Shapes into Parts with Equal Areas **Math in Action:** pp. 572–579
3.MD	**Measurement and Data**	
	Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.	
3.MD.1	Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.	**Lesson 27:** Time <u>Supporting Content:</u> **Math in Action:** pp. 660–667
3.MD.2	Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems 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.	**Lesson 28:** Liquid Volume **Lesson 29:** Mass <u>Supporting Content:</u> **Math in Action:** pp. 660–667

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	Represent and interpret data.	
3.MD.3	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 scaled bar graphs. *For example, draw a bar graph in which each square in the bar graph might represent 5 pets .*	**Lesson 19:** Scaled Graphs
3.MD.4	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 numbers, halves, or quarters.	**Lesson 26:** Measure Length and Plot Data on Line Plots
	Geometric measurement: understand concepts of area and relate area to multiplication and to addition.	
3.MD.5	Recognize area as an attribute of plane figures and understand concepts of area measurement.	
3.MD.5.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.	**Lesson 14:** *Understand* Area

Supporting Content:
Math in Action: pp. 754–761 |
| 3.MD.5.b | 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. | **Lesson 14:** *Understand* Area

Supporting Content:
Math in Action: pp. 754–761 |
| 3.MD.6 | Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units). | **Lesson 14:** *Understand* Area

Supporting Content:
Lesson 15: Multiply to Find Area
Math in Action: pp. 754–761 |

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3.MD.7	Relate area to the operations of multiplication and addition.	
3.MD.7.a	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.	**Lesson 15:** Multiply to Find Area **Supporting Content:** Lesson 16: Add Areas; Lesson 17: Solve One-Step Word Problems Using Multiplication and Division; Lesson 32: Area and Perimeter of Shapes **Math in Action**: pp. 754–761
3.MD.7.b	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.	**Lesson 15:** Multiply to Find Area **Supporting Content:** Lesson 16: Add Areas; Lesson 17: Solve One-Step Word Problems Using Multiplication and Division; Lesson 32: Area and Perimeter of Shapes **Math in Action:** pp. 754–761
3.MD.7.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.	**Lesson 16:** Add Areas
3.MD.7.d	Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.	**Lesson 16:** Add Areas
	Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.	
3.MD.8	Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.	**Lesson 32:** Area and Perimeter of Shapes **Supporting Content:** **Math in Action**: pp. 754–761

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3.G	**Geometry**	
	Reason with shapes and their attributes.	
3.G.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). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	**Lesson 30:** *Understand* Categories of Shapes **Lesson 31:** Classify Quadrilaterals **Supporting Content:** Lesson 32: Area and Perimeter of Shapes **Math in Action**: pp. 754–761
3.G.2	Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.*	**Lesson 33:** Partition Shapes into Parts with Equal Areas **Supporting Content:** Lesson 20: *Understand* What a Fraction Is **Math in Action**: pp. 754–761