

Third Grade Mathematics Goals

Operations & Algebraic Thinking				
Standard	Mastery Expectations	First Trimester Goal	Second Trimester Goal	Third Trimester Goal
3.OA.1	Interpret multiplication in terms of equal groups.	Represent multiplication as equal groups with concrete objects, drawings, and arrays.	Interpret multiplication in terms of equal groups.	Ongoing practice and application.
3.OA.2	Interpret division in terms of equal shares or equal groups.	Represent equal shares with drawings and number models	Interpret division in terms of equal shares or equal groups.	Ongoing practice and application.
3.OA.3	Use multiplication and division to solve number stories. Model number stories involving multiplication and division.	Use multiplication or division to solve number stories involving equal groups or equal shares.	Use multiplication and division to solve number stories. Model number stories involving multiplication	Use multiplication and division to solve number stories. Model number stories involving multiplication and division.
3.OA.4	Determine the unknown in multiplication and division equations.	Determine the unknown product or factor in multiplication and division equations involving 1s, 2s, 5s, and 10s facts.	Determine the unknown product or factor in multiplication and division equations involving square products, and 0s, 1s, 2s, 3s, 5s, 9s, and 10s facts.	Determine the unknown in multiplication and division equations.
3.OA.5	Apply properties of operations to multiply or divide.	Illustrate the “turn-around rule”	Use strategies such as adding/subtracting a group, near squares, and doubling to multiply and divide.	Apply properties of operations to multiply or divide.
3.OA.6	Understand division as an unknown-factor problem.		Use multiplication to determine the unknown factor in division equations involving 1s, 2s, 5s, 10s, square products, and 0s, 3s, and 9s facts.	Understand division as an unknown-factor problem.
3.OA.7	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.	Know all products of one-digit numbers $\times 1$, $\times 2$, $\times 5$, and $\times 10$.	Know all square products of one-digit numbers. Know all products of one-digit numbers $\times 0$, $\times 1$, $\times 2$, $\times 3$, $\times 5$, $\times 9$, and $\times 10$.	Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations. By the end of Grade 3, know from memory all products of two one-digit numbers.
3.OA.8	Solve two-step word problems using the four operations. Represent these problems using equations with a letter	Use drawings, diagrams, mental computation and estimation strategies, including rounding, to determine	Solve 2-step number stories using two of the four operations.	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.	whether answers to addition and subtraction problems are reasonable. Use pictures, words, or numbers to solve 2-step number stories involving addition and subtraction. Represent problems using equations with a ? standing for the unknown quantity.		standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.
3.OA.9	Identify arithmetic patterns and explain them using properties of operations.		Use the multiplication table to help identify whether products of 2 even factors, 2 odd factors, and 1 even and 1 odd factor are even or odd. Use doubling as a strategy to solve multiplication facts.	Identify arithmetic patterns and explain them using properties of operations.

Number & Operations in Base 10

Standard	Mastery Expectations	First Trimester Goal	Second Trimester Goal	Third Trimester Goal
3.NBT.1	Use place value understanding to round whole numbers to the nearest 10 or 100.	Use open number lines to round 2-digit numbers to the nearest 10 and 3-digit numbers to the nearest 100	Use place value understanding to round whole numbers to the nearest 10 or 100.	On-going practice and application
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.	Add and subtract within 1000 using partial-sums addition, and counting up and expand and trade subtraction or other strategies.	Fluently add within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction; fluently subtract within 1000 using counting up, expand and trade, trade first, or other strategies.	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.
3.NBT.3	Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations.			Multiply one-digit whole numbers by multiples of 10 in the range 10-90 using strategies based on place value and properties of operations.

Number & Operations – Fraction				
Standard	Mastery Expectations	First Trimester Goal	Second Trimester Goal	Third Trimester Goal
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 $1/b$		Identify and represent given unit ($1/b$) and non-unit (a/b) fractions using pictures, words, and fraction circles.	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 $1/b$
3.NF.2; 3.NF.2a	Understand a fraction as a number on the number line; represent fractions on a number line diagram. 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.			Understand a fraction as a number on the number line; represent fractions on a number line diagram. 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.
3.NF.2 3.NF.2b	Understand a fraction as a number on the number line; represent fractions on a number line diagram. 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.			Understand a fraction as a number on the number line; represent fractions on a number line diagram. 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.
3.NF.3; 3.NF.3a	Explain equivalence of fractions in special cases, and			Explain equivalence of fractions in special cases, and

	<p>compare fractions by reasoning about their size.</p> <p>Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.</p>			<p>compare fractions by reasoning about their size.</p> <p>Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.</p>
3.NF.3; 3.NF.3b	<p>Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent.</p>			<p>Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent.</p>
3.NF.3; 3.NF.3c	<p>Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.</p>			<p>Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.</p>
3.NF.3; 3.NF.3d	<p>Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>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.</p>		<p>Use tools, such as fraction circle pieces, to justify the conclusions of fraction comparisons.</p>	<p>Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>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.</p>

Measurement & Data				
Standard	Mastery Expectations	First Trimester Goal	Second Trimester Goal	Third Trimester Goal
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.	Tell and write time to nearest five minutes using various strategies.	Solve word problems involving addition and subtraction of time intervals in minutes.	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.
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.		Estimate the mass of objects by comparing benchmark masses to the masses of various items. Use addition and subtraction to solve one-step number stories about mass.	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.
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.	Represent a data set with several categories on a given scaled bar graph and use the information presented in the graph to solve one-step “how many more” and “how many less” problems.	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.	Ongoing practice and application.
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.	Measure lengths to the nearest half-inch and inch using rulers marked with wholes, halves, and fourths of an inch. Represent length data on a line plot where the horizontal scale is marked off in whole numbers and halves.	Measure lengths to the nearest half-inch using rulers marked with wholes, halves, and fourths of an inch. Represent length data on a line plot where the horizontal scale is marked off in whole numbers and halves.	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.
3.MD.5; 3.MD.5a	Recognize area as an attribute of plane figures and understand concepts of area measurement. A square with side length 1 unit, called “a unit square,” is	Recognize area as an attribute of plane figures.	Recognize area as an attribute of plane figures and understand concepts of area measurement. A square with side length 1 unit, called “a unit square,” is	Ongoing practice and application.

	said to have “one square unit” of area, and can be used to measure area.		said to have “one square unit” of area, and can be used to measure area.	
3.MD.5; 3.MD.5b	Recognize area as an attribute of plane figures and understand concepts of area measurement. 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.	Recognize area as an attribute of plane figures.	Recognize area as an attribute of plane figures and understand concepts of area measurement. 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.	Ongoing practice and application.
3.MD.6	Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units)	Measure areas by counting unit squares (square cm, square m, square in, square ft, and improvised units)	Ongoing practice and application.	
3.MD.7; 3.MD.7a	Relate area to the operation of multiplication and addition. 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.	Find the area of a rectangle with whole number side lengths by tiling it.	Relate area to the operation of multiplication and addition. 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.	Ongoing practice and application.
3.MD.7; 3.MD.7b	Relate area to the operations of multiplication and addition. 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.		Multiply side lengths to find areas of rectangles.	Relate area to the operations of multiplication and addition. 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.
3.MD.7; 3.MD.7c	Relate area to the operations of multiplication and addition. Use tiling to show in a concrete case that the area of		Explain how a given area model, fully labeled, with a side length decomposed into 2	Relate area to the operations of multiplication and addition. 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.		addends can be used to solve a multiplication problem.	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.
3.MD.7; 3.MD.7d	Relate area to the operations of multiplication and addition. 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.			Relate area to the operations of multiplication and addition. 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.
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.	Solve problems involving perimeters of polygons.	Distinguish between area and perimeter.	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.

Geometry				
Standard	Mastery Expectations	First Trimester Goal	Second Trimester Goal	Third Trimester Goal
3.G.1	Understand that shapes in different categories may share attributes and that the shared attributes can define a larger category. Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.		Understand that shapes in different categories may share attributes that can define a larger category. Recognize specified subcategories of quadrilaterals.	Understand that shapes in different categories may share attributes and that the shared attributes can define a larger category. Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.
3.G.2	Partition shapes into parts with equal areas. Express the area	Partition rectangles into parts with equal areas.	Partition shapes into parts with equal areas. Express the	Ongoing practice and application.

	of each part as a unit fraction of the whole.		area of each part as a unit fraction of the whole.	
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