Operations and Algebraic Thinking

1) Represent and solve problems involving multiplication and division. (OA1-4)

	1 Area of Concern	2 Emerging	3 Progressing	4 Secure
Tri 1	Exhibits little understanding of how to: ● Use drawings to interpret whole-number quotients of whole numbers. ● Solve word problems in situations involving equal groups and arrays by using drawings, repeated addition, or skip counting to represent the problem. ● Interpret multiplication in terms of equal groups by drawing arrays or equal groups to match number stories.	Requires considerable support to: ● Use drawings to interpret whole-number quotients of whole numbers. ● Solve word problems in situations involving equal groups and arrays by using drawings, repeated addition, or skip counting to represent the problem. ● Interpret multiplication in terms of equal groups by drawing arrays or equal groups to match number stories.	With minimal support can: ● Use drawings to interpret whole-number quotients of whole numbers. ● Solve word problems in situations involving equal groups and arrays by using drawings, repeated addition, or skip counting to represent the problem. ● Interpret multiplication in terms of equal groups by drawing arrays or equal groups to match number stories.	Can consistently and independently: ● Use drawings to interpret whole-number quotients of whole numbers. ● Solve word problems in situations involving equal groups and arrays by using drawings, repeated addition, or skip counting to represent the problem. ● Interpret multiplication in terms of equal groups by drawing arrays or equal groups to match number stories.
Tri 2	Exhibits little understanding of how to: ● Interpret multiplication in terms of equal groups by drawing arrays or equal	Requires considerable support to: ● Interpret multiplication in terms of equal groups by drawing arrays or equal	With minimal support can: ● Interpret multiplication in terms of equal groups by drawing arrays or equal	Can consistently and independently: ● Interpret multiplication in terms of equal groups by drawing arrays or equal

	groups and writing number stories. ● Use multiplication within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations ● Interpret products of whole numbers.	groups and writing number stories. ● Use multiplication within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations ● Interpret products of whole numbers.	groups and writing number stories. ● Use multiplication within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations ● Interpret products of whole numbers.	groups and writing number stories. ● Use multiplication within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations ● Interpret products of whole numbers.
Tri 3	Exhibits little understanding of how to: ● Determine the unknown whole number in multiplication or division relating three whole numbers. (Unit 6 & 9) ● Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations with a symbol for the unknown number to represent the problem. (Units 6,8,9)	Requires considerable support to: ● Determine the unknown whole number in multiplication or division relating three whole numbers. (Unit 6 & 9) ● Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations with a symbol for the unknown number to represent the problem. (Units 6,8,9)	With minimal support can: ● Determine the unknown whole number in multiplication or division relating three whole numbers. (Unit 6 & 9) ● Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations with a symbol for the unknown number to represent the problem. (Units 6,8,9)	Can consistently and independently: ● Determine the unknown whole number in multiplication or division relating three whole numbers. (Unit 6 & 9) ● Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities by using drawings and equations with a symbol for the unknown number to represent the problem. (Units 6,8,9)

2) Understand properties of multiplication and the relationship between multiplication and division. (OA5-6)

	1 Area of Concern	2 Emerging	3 Progressing	4 Secure
Tri 1				
Tri 2	Exhibits little understanding of how to: ● Use the turn around rule (commutative property) as a strategy to solve problems. ● Use adding a group and subtracting a group (applications of the distributive property) as strategies to multiply.	Requires considerable support to: ● Use the turn around rule (commutative property) as a strategy to solve problems. ● Use adding a group and subtracting a group (applications of the distributive property) as strategies to multiply.	With minimal support can: ● Use the turn around rule (commutative property) as a strategy to solve problems. ● Use adding a group and subtracting a group (applications of the distributive property) as strategies to multiply.	Can consistently and independently: ● Use the turn around rule (commutative property) as a strategy to solve problems. ● Use adding a group and subtracting a group (applications of the distributive property) as strategies to multiply.
Tri 3	Exhibits little understanding of how to: ● Use doubling (an application of the distributive and associative properties), and break-apart (an application of the distributive property) as strategies to multiply. ● Understand division as an unknown-factor problem. ● Apply properties of operations as strategies to multiply and divide.	Requires considerable support to: ● Use doubling (an application of the distributive and associative properties), and break-apart (an application of the distributive property) as strategies to multiply. ● Understand division as an unknown-factor problem. ● Apply properties of operations as strategies to multiply and divide.	With minimal support can: ● Use doubling (an application of the distributive and associative properties), and break-apart (an application of the distributive property) as strategies to multiply. ● Understand division as an unknown-factor problem. ● Apply properties of operations as strategies to multiply and divide.	Can consistently and independently: ● Use doubling (an application of the distributive and associative properties), and break-apart (an application of the distributive property) as strategies to multiply. ● Understand division as an unknown-factor problem. ● Apply properties of operations as strategies to multiply and divide.

3) Multiply and divide within 100. (OA7)

	1 Area of Concern	2 Emerging	3 Progressing	4 Secure
Tri 1	Exhibits little understanding of how to: ● Fluently multiply using strategies for all products of 1-digit numbers and 1,2,5, 10.	Requires considerable support to: ● Fluently multiply using strategies for all products of 1-digit numbers and 1,2,5, 10.	With minimal support can: ● Fluently multiply using strategies for all products of 1-digit numbers and 1,2,5, 10.	Can consistently and independently: ● Fluently multiply using strategies for all products of 1-digit numbers and 1,2,5, 10.
Tri 2	Exhibits little understanding of how to: ● Recognize the relationship between multiplication and division. ● Know from memory all products of one-digit numbers and 10, and fluently multiply within 100 using strategies including adding and subtracting a group.	Requires considerable support to: ● Recognize the relationship between multiplication and division. ● Know from memory all products of one-digit numbers and 10, and fluently multiply within 100 using strategies including adding and subtracting a group.	With minimal support can: ● Recognize the relationship between multiplication and division. ● Know from memory all products of one-digit numbers and 10, and fluently multiply within 100 using strategies including adding and subtracting a group.	Can consistently and independently: ● Recognize the relationship between multiplication and division. ● Know from memory all products of one-digit numbers and 10, and fluently multiply within 100 using strategies including adding and subtracting a group.
Tri 3	Exhibits little understanding of how to: ● Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division. ● Know from memory all products of two one-digit numbers.	Requires considerable support to: ● Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division. ● Know from memory all products of two one-digit numbers.	With minimal support can: ● Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division. ● Know from memory all products of two one-digit numbers.	Can consistently and independently: ● Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division. ● Know from memory all products of two one-digit numbers.

4) Solve problems involving the four operations, and identify patterns in arithmetic. (OA8-9)

	1 Area of Concern	2 Emerging	3 Progressing	4 Secure
Tri 1	Exhibits little understanding of how to: ● Make sense of and represent two-step number stories involving add/ subtract.	Requires considerable support to: ● Make sense of and represent two-step number stories involving add/ subtract.	With minimal support can: ● Make sense of and represent two-step number stories involving add/ subtract.	Can consistently and independently: ● Make sense of and represent two-step number stories involving add/ subtract.
Tri 2	Exhibits little understanding of how to: ● Represent and solve two-step number stories involving addition and subtraction, and assess the reasonableness of answers using estimation, including rounding. ● Make sense of and solve two-step number stories using the four operations; represent those number stories with equations; and assess the reasonableness of answers using mental computation and estimation strategies, incl. rounding. ● Identify arithmetic patterns and explain them.	Requires considerable support to: ● Represent and solve two-step number stories involving addition and subtraction, and assess the reasonableness of answers using estimation, including rounding. ● Make sense of and solve two-step number stories using the four operations; represent those number stories with equations; and assess the reasonableness of answers using mental computation and estimation strategies, incl. rounding. ● Identify arithmetic patterns and explain them.	With minimal support can: ● Represent and solve two-step number stories involving addition and subtraction, and assess the reasonableness of answers using estimation, including rounding. ● Make sense of and solve two-step number stories using the four operations; represent those number stories with equations; and assess the reasonableness of answers using mental computation and estimation strategies, incl.rounding. ● Identify arithmetic patterns and explain them.	Can consistently and independently: ● Represent and solve two-step number stories involving addition and subtraction, and assess the reasonableness of answers using estimation, including rounding. ● Make sense of and solve two-step number stories using the four operations; represent those number stories with equations; and assess the reasonableness of answers using mental computation and estimation strategies, incl. rounding. ● Identify arithmetic patterns and explain them.
Tri 3				

Numbers and Operations in Base Ten

5) Use place value understanding and properties of operations to perform multi-digit arithmetic. (NBT1-3)

	1 Area of Concern	2 Emerging	3 Progressing	4 Secure
Tri 1	Exhibits little understanding of how to: ● Use place value to round whole numbers to the nearest 10 for 2-digit numbers or 100 for 3-digit numbers using an open number line. ● Add and subtract within 1000 using tools along with strategies based on place value and/or the relationship between addition and subtraction.	Requires considerable support to: ● Use place value to round whole numbers to the nearest 10 for 2-digit numbers or 100 for 3-digit numbers using an open number line. ● Add and subtract within 1000 using tools along with strategies based on place value and/or the relationship between addition and subtraction.	With minimal support can: ● Use place value to round whole numbers to the nearest 10 for 2-digit numbers or 100 for 3-digit numbers using an open number line. ● Add and subtract within 1000 using tools along with strategies based on place value and/or the relationship between addition and subtraction.	Can consistently and independently: ● Use place value to round whole numbers to the nearest 10 for 2-digit numbers or 100 for 3-digit numbers using an open number line. ● Add and subtract within 1000 using tools along with strategies based on place value and/or the relationship between addition and subtraction.
Tri 2	Exhibits little understanding of how to: ● Add and subtract within 1000 using partial-sum addition, and counting-up and expand-and-trade-	Requires considerable support to: ● Add and subtract within 1000 using partial-sum addition, and counting-up and expand-and-trade-	With minimal support can: ● Add and subtract within 1000 using partial-sum addition, and counting-up and expand-and-trade-	Can consistently and independently: ● Add and subtract within 1000 using partial-sum addition, and counting-up and expand-and-trade-

	subtraction, or other strategies.	subtraction, or other strategies.	subtraction, or other strategies.	subtraction, or other strategies.
Tri 3	Exhibits little understanding of how to: ● Fluently add and subtract within 1000 using strategies, algorithms based on place value, properties of operations, and/or relationship between addition and subtraction. ● Multiply one-digit whole numbers by multiples of 10 in the range of 10-90 using strategies based on place value and properties of operations.	Requires considerable support to: ● Fluently add and subtract within 1000 using strategies, algorithms based on place value, properties of operations, and/or relationship between addition and subtraction. ● Multiply one-digit whole numbers by multiples of 10 in the range of 10-90 using strategies based on place value and properties of operations.	With minimal support can: ● Fluently add and subtract within 1000 using strategies, algorithms based on place value, properties of operations, and/or relationship between addition and subtraction. ● Multiply one-digit whole numbers by multiples of 10 in the range of 10-90 using strategies based on place value and properties of operations.	Can consistently and independently: ● Fluently add and subtract within 1000 using strategies, algorithms based on place value, properties of operations, and/or relationship between addition and subtraction. ● Multiply one-digit whole numbers by multiples of 10 in the range of 10-90 using strategies based on place value and properties of operations.

Number and Operations- Fractions

6) Develop understanding of fractions as numbers. (NF1-3)

	1 Area of Concern	2 Emerging	3 Progressing	4 Secure
Tri 1				
Tri 2	Exhibits little understanding of how to: ● Identify and represent given unit (*1/b*) and non-unit (*a/b*) fractions using pictures, words, and fraction circles.	Requires considerable support to: ● Identify and represent given unit (*1/b*) and non-unit (*a/b*) fractions using pictures, words, and fraction circles.	With minimal support can: ● Identify and represent given unit (*1/b*) and non-unit (*a/b*) fractions using pictures, words, and fraction circles.	Can consistently and independently: ● Identify and represent given unit (*1/b*) and non-unit (*a/b*) fractions using pictures, words, and fraction circles.
Tri 3	Exhibits little understanding of how to: ● Identify and represent unit (*1/b*) and non-unit (*a/b*) fractions using fraction tools and standard notation. ● Understand a fraction as a number on a number line and use tools to represent and locate on a number line. ● Use fraction tools to generate two equivalent fractions, compare two fractions with the same	Requires considerable support to: ● Identify and represent unit (*1/b*) and non-unit (*a/b*) fractions using fraction tools and standard notation. ● Understand a fraction as a number on a number line and use tools to represent and locate on a number line. ● Use fraction tools to generate two equivalent fractions, compare two fractions with the same	With minimal support can: ● Identify and represent unit (*1/b*) and non-unit (*a/b*) fractions using fraction tools and standard notation. ● Understand a fraction as a number on a number line and use tools to represent and locate on a number line. ● Use fraction tools to generate two equivalent fractions, compare two fractions with the same	Can consistently and independently: ● Identify and represent unit (*1/b*) and non-unit (*a/b*) fractions using fraction tools and standard notation. ● Understand a fraction as a number on a number line and use tools to represent and locate on a number line. ● Use fraction tools to generate two equivalent fractions, compare two fractions with the same

	numerator or the same denominator, and express whole numbers as fractions.	numerator or the same denominator, and express whole numbers as fractions.	numerator or the same denominator, and express whole numbers as fractions.	numerator or the same denominator, and express whole numbers as fractions.

Measurement and Data

7) Solve problems involving measurement and estimation. (MD1-2)

	1 Area of Concern	2 Emerging	3 Progressing	4 Secure
Tri 1	Exhibits little understanding of how to: ● Tell and write time to the nearest 5 minutes and use a number line to add time intervals in minutes.	Requires considerable support to: ● Tell and write time to the nearest 5 minutes and use a number line to add time intervals in minutes.	With minimal support can: ● Tell and write time to the nearest 5 minutes and use a number line to add time intervals in minutes.	Can consistently and independently: ● Tell and write time to the nearest 5 minutes and use a number line to add time intervals in minutes.
Tri 2				
Tri 3	Exhibits little understanding of how to: ● Use standard units of grams and kilograms to measure masses of objects; and solve one-step number stories involving masses given in the same units.	Requires considerable support to: ● Use standard units of grams and kilograms to measure masses of objects; and solve one-step number stories involving masses given in the same units.	With minimal support can: ● Use standard units of grams and kilograms to measure masses of objects; and solve one-step number stories involving masses given in the same units.	Can consistently and independently: ● Use standard units of grams and kilograms to measure masses of objects; and solve one-step number stories involving masses given in the same units.

	● 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 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 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 the nearest minute and measure time intervals in minutes. ● Solve word problems involving addition and subtraction of time intervals in minutes.

8) Represent and interpret data. (MD3-4)

	1 Area of Concern	2 Emerging	3 Progressing	4 Secure
Tri 1				
Tri 2	Exhibits little understanding of how to: ● 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. ● Measure lengths to the nearest half-inch and represent the data on a line	Requires considerable support to: ● 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. ● Measure lengths to the nearest half-inch and represent the data on a line	With minimal support can: ● 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. ● Measure lengths to the nearest half-inch and represent the data on a line	Can consistently and independently: ● 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. ● Measure lengths to the nearest half-inch and represent the data on a line

	plot where the horizontal scale is marked off in whole numbers and halves.	plot where the horizontal scale is marked off in whole numbers and halves.	plot where the horizontal scale is marked off in whole numbers and halves.	plot where the horizontal scale is marked off in whole numbers and halves.
Tri 3	Exhibits little understanding of how to: ● Measure lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot with a horizontal scale marked in appropriate units.	Requires considerable support to: ● Measure lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot with a horizontal scale marked in appropriate units.	With minimal support can: ● Measure lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot with a horizontal scale marked in appropriate units.	Can consistently and independently: ● Measure lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot with a horizontal scale marked in appropriate units.

9) Understand concepts of area and relate area to multiplication and addition. (MD5-7)

	1 Area of Concern	2 Emerging	3 Progressing	4 Secure
Tri1				
Tri 2	Exhibits little understanding of how to: ● Recognize area as an attribute of plane figures. ● Measure areas by counting unit squares. ● Find the area of a rectangle with whole-number side lengths by tiling. ● Recognize that the area of a rectangle with whole-number side lengths can be found by multiplying the side lengths.	Requires considerable support to: ● Recognize area as an attribute of plane figures. ● Measure areas by counting unit squares. ● Find the area of a rectangle with whole-number side lengths by tiling. ● Recognize that the area of a rectangle with whole-number side lengths can be found by multiplying the side lengths.	With minimal support can: ● Recognize area as an attribute of plane figures. ● Measure areas by counting unit squares. ● Find the area of a rectangle with whole-number side lengths by tiling. ● Recognize that the area of a rectangle with whole-number side lengths can be found by multiplying the side lengths.	Can consistently and independently: ● Recognize area as an attribute of plane figures. ● Measure areas by counting unit squares. ● Find the area of a rectangle with whole-number side lengths by tiling. ● Recognize that the area of a rectangle with whole-number side lengths can be found by multiplying the side lengths.
Tri 3				

10) Recognize perimeter. (MD8)

	1 Area of Concern	2 Emerging	3 Progressing	4 Secure
Tri 1				

Tri 2	Exhibits little understanding of how to: ● Solve problems involving perimeters of polygons.	Requires considerable support to: ● Solve problems involving perimeters of polygons.	With minimal support can: ● Solve problems involving perimeters of polygons.	Can consistently and independently: ● Solve problems involving perimeters of polygons.
Tri 3				

Geometry

11) Reason with shapes and their attributes. (G1-2)

	1 Area of Concern	2 Emerging	3 Progressing	4 Secure
Tri 1				
Tri 2	Exhibits little understanding of how to: ● Understand that shapes in different categories may share attributes.	Requires considerable support to: ● Understand that shapes in different categories may share attributes.	With minimal support can: ● Understand that shapes in different categories may share attributes.	Can consistently and independently: ● Understand that shapes in different categories may share attributes.
Tri 3	Exhibits little understanding of how to: ● Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. ● Understand that shapes different categories may	Requires considerable support to: ● Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. ● Understand that shapes different categories may	With minimal support can: ● Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. ● Understand that shapes different categories may	Can consistently and independently: ● Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. ● Understand that shapes 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.	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.	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.	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.