Wyoming Mathematics

Grade 3

Adopted 2021

Standards for Mathematical Practice

1. **Make sense of problems and persevere in solving them.** MP.1
2. **Reason abstractly and quantitatively.** MP.2
3. **Construct viable arguments and critique the reasoning of others.** MP.3
4. **Model with mathematics.** MP.4
5. **Use appropriate tools strategically.** MP.5
6. **Attend to precision.** MP.6
7. **Look for and make use of structure.** MP.7
8. **Look for and express regularity in repeated reasoning.** MP.8

Operations And Algebraic Thinking

A. Represent and solve problems involving multiplication and division. 3.OA.A

1. Represent the concept of multiplication of whole numbers using models including, but not limited to, equal-sized groups ("groups of"), arrays, area models, repeated addition, and equal "jumps" on a number line. 3.OA.A.1

A. Represent the concept of multiplication of whole numbers using models and strategies in multiple ways. 3.OA.A.1.AD.A

B. Create or write a scenario or model that represents the concept of multiplication of whole numbers. 3.OA.A.1.AD.B

P. Represent the concept of multiplication of whole numbers using models and strategies. 3.OA.A.1.P

Ba. Represent the concept of multiplication of whole numbers using models and strategies with partial success. 3.OA.A.1.BA

BeB. Recognize that a model represents the concept of multiplication of a whole number but may require counting individual items or other methods to solve the problem. 3.OA.A.1.BEB

2. Represent the concept of division of whole numbers (resulting in whole number quotients) using models including, but not limited to, partitioning, repeated subtraction, sharing, and inverse of multiplication. 3.OA.A.2

A. Represent the concept of division of whole numbers (resulting in whole number quotients) using models and strategies in multiple ways. 3.OA.A.2.AD.A

B. Create or write a scenario or model that represents the concept of division of whole numbers (resulting in whole number quotients). 3.OA.A.2.AD.B

P. Represent the concept of division of whole numbers (resulting in whole number quotients) using models and strategies. 3.OA.A.2.P

Ba. Represent the concept of division of whole numbers (resulting in whole number quotients) using models and strategies with partial success. 3.OA.A.2.BA

BeB. ecognize that a model represents the concept of division of a whole number. 3.OA.A.2.BEB

3. Solve multiplication and division word problems within 100 using appropriate modeling strategies and equations. 3.OA.A.3

A. Solve two-step multiplication and division word problems (with products and dividends) within 100 using appropriate modeling strategies and equations. 3.OA.A.3.AD.A

B. Solve multiplication and division word problems (with products and dividends) beyond 100 using appropriate modeling strategies and equations. 3.OA.A.3.AD.B

C. Write and solve a multiplication or division word problem (with products and dividends) within or beyond 100 using appropriate modeling strategies and equations. 3.OA.A.3.AD.C

P. Solve multiplication and division word problems (with products and dividends) within 100 using appropriate modeling strategies and equations. 3.OA.A.3.P

Ba. When provided a pictorial representation, solve multiplication and division word problems (with products and dividends) within 100 using appropriate modeling strategies and equations. 3.0A.A.3.BA

BeB. May be able to select the appropriate operation necessary to solve a multiplication or division word problem (with products or dividends) within 100. 3.0A.A.3.BEB

4. Determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is a missing factor, product, dividend, divisor, or quotient. (Students need not know formal terms.) 3.0A.A.4

Ad. Determine the unknown whole number in a multiplication or division equation relating at least one three digit whole number when the unknown is a missing factor, product, dividend, divisor, or quotient. 3.0A.A.4.AD

P. Determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is a missing factor, product, dividend, divisor, or quotient. (Students need not know formal terms.) 3.0A.A.4.P

Ba. Determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is a missing factor, product, dividend, divisor, or quotient with partial success. 3.0A.A.4.BA

BeB. May be able to, when provided pictorial support, determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is a missing factor, product, dividend, divisor, or quotient. 3.0A.A.4.BEB

B. Understand properties of multiplication and the relationship between multiplication and division. 3.OA.B

5. Apply properties of multiplication as strategies to multiply and divide. (Students need not use formal terms for these properties.) 3.OA.B.5

Ad. Apply properties of multiplication and division to:
Multiply two-digit numbers.
Divide dividends greater than 100 by a one-digit divisor. 3.OA.B.5.AD

P. Apply properties of multiplication including Commutative, Associative, and Distributive as strategies to multiply and divide. (Students need not use formal terms for these properties.) 3.OA.B.5.P

Ba. Apply at least one of the properties of multiplication including Commutative, Associative, and Distributive as strategies to multiply and divide. 3.OA.B.5.BA

BeB. May be able to recognize the Commutative Property of multiplication. 3.OA.B.5.BEB

6. Understand division as an unknown-factor problem. 3.OA.B.6

Ad. Apply the relationship between multiplication and division to find an unknown with a dividend of at least three digits. 3.OA.B.6.AD

P. Apply the relationship between multiplication and division to find the unknown. 3.OA.B.6.P

Ba. Apply the relationship between multiplication and division to find an unknown factor of a division problem when provided fact families. 3.OA.B.6.BA

BeB. May be able to apply the relationship between multiplication and division to find an unknown factor of a division problem when provided fact families with partial success. 3.OA.B.6.BEB

C. Multiply and divide within 100. 3.OA.C

7. Fluently multiply and divide with factors 1 - 10 using mental strategies. By end of Grade 3, know automatically all products of one-digit factors based on strategies. 3.OA.C.7

Ad. Fluently multiply and divide two numbers with at least one factor greater than 10 using mental strategies. 3.OA.C.7.AD

P. Fluently multiply and divide with factors 1 - 10 using mental strategies. By end of Grade 3, know automatically all products of one-digit factors based on strategies. 3.OA.C.7.P

Ba. Multiply and divide with factors 1 - 10 using mental strategies and/or pictorial representation. 3.OA.C.7.BA

BeB. May be able to multiply and divide with factors 1 - 10 using mental strategies and/or pictorial representation with partial success. 3.OA.C.7.BEB

D. Solve problems involving the four operations, and identify and explain patterns in arithmetic. 3.OA.D

8. Solve two-step word problems (limited to the whole number system) using the four basic operations. Students should apply the Order of Operations when there are no parentheses to specify a particular order. 3.OA.D.8

   A. Represent these problems using equations with a symbol standing for the unknown quantity. 3.OA.D.8.A

   B. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. 3.OA.D.8.B

Ad. Given an equation with at least two operations, create and solve a word problem that matches the equation. 3.OA.D.8.AD

P. Solve two-step word problems (limited to the whole number system) using the four basic operations. Students should apply the Order of Operations when there are no parentheses to specify a particular order. 3.OA.D.8.P

   A. Represent these problems using equations with a symbol standing for the unknown quantity. 3.OA.D.8.P.A

   B. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. 3.OA.D.8.P.B

Ba. When provided a pictorial representation, solve two-step word problems (limited to the whole number system) using the four basic operations. Students should apply the Order of Operations when there are no parentheses to specify a particular order. 3.OA.D.8.BA

BeB. May be able to, when provided a pictorial representation, solve two-step word problems (limited to the whole number system) using the four basic operations. Students should apply the Order of Operations when there are no parentheses to specify a particular order with partial success. 3.OA.D.8.BEB

9. Identify arithmetic patterns and explain the relationships using properties of operations. 3.OA.D.9

Ad. The Advanced student is able to:
Identify a characteristic of a pattern that is not explicitly given. OR
Write an equation to find the nth term of the arithmetic pattern. OR
Identify arithmetic patterns and explain the relationships using properties of operations from a real-world problem. 3.OA.D.9.AD

P. Identify arithmetic patterns and explain the relationships using properties of operations. 3.OA.D.9.P

Ba. Predict the next term of a pattern. 3.OA.D.9.BA

BeB. May be able to predict the next term of a pattern with partial success. 3.OA.D.9.BEB

Number And Operations In Base Ten

E. Use place value understanding and properties of operations to perform multi-digit arithmetic (a range of algorithms may be used). 3.NBT.E

1. Use place value understanding to round whole numbers to the nearest 10 or 100. 3.NBT.E.1

Ad. The Advanced student is able to:
Round to the nearest 1,000. OR Round a multi-digit number to a given place value(s). 3.NBT.E.1.AD

P. Use place value understanding to round whole numbers to the nearest 10 or 100. 3.NBT.E.1.P

Ba. Round to the nearest 10 or 100 when provided a model such as a number line. 3.NBT.E.1.BA

BeB. May be able to round to the nearest 10 or 100 with partial success when provided a model such as a number line. 3.NBT.E.1.BEB

2. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of addition, and/or the relationship between addition and subtraction. 3.NBT.E.2

Ad. Fluently add and subtract beyond 1,000 using strategies and algorithms based on place value, properties of addition, and/or the relationship between addition and subtraction. 3.NBT.E.2.AD

P. Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of addition, and/or the relationship between addition and subtraction. 3.NBT.E.2.P

Ba. Add and subtract within 1000 using strategies and algorithms based on place value, properties of addition, and/or the relationship between addition and subtraction. 3.NBT.E.2.BA

BeB. May be able to add and subtract within 1000 using strategies and algorithms based on place value, properties of addition, and/or the relationship between addition and subtraction with partial success. 3.NBT.E.2.BEB

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 multiplication. 3.NBT.E.3

Ad. Multiply 2-digit whole numbers (less than 20) by multiples of 10. 3.NBT.E.3.AD

P. 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 multiplication. 3.NBT.E.3.P

Ba. Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 · 80, 5 · 60) when given a model or strategy based on place value. 3.NBT.E.3.BA

BeB. May be able to multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 · 80, 5 · 60) with partial success when given a model or strategy based on place value. 3.NBT.E.3.BEB

Measurement And Data

G. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects. 3.MD.G

1. Use analog clocks to 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.G.1

Ad. The Advanced student is able to:
Use analog clocks to tell and write time to the nearest minute and measure time intervals in minutes. Solve multi-step word problems involving addition and subtraction of time intervals in minutes. OR
Solve multi-step word problems involving multiplication of time intervals in minutes. OR
Solve multi-step word problems involving elapsed time. 3.MD.G.1.AD

P. Use analog clocks to 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.G.1.P

Ba. Use analog clocks to tell and write time to the nearest 5 minute intervals. Solve word problems involving addition and subtraction of time intervals of 5 minutes. 3.MD.G.1.BA

BeB. May be able to use analog clocks to tell and write time to the nearest 5 minute intervals with partial success. Solve word problems involving addition and subtraction of time intervals of 5 minutes with partial success. 3.MD.G.1.BEB

2. Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (L). (Excludes compound units such as cm^3 and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. (Excludes multiplicative comparison problems involving notions of "times as much.") 3.MD.G.2

Ad. The Advanced student is able to:
Solve one-step problems involving liquid measures and masses using the four operations requiring reading a measurement off of a scaled measurement tool. OR
Estimate the combined mass or volume of real-world objects or amounts with relative accuracy and calculate the actual mass or volume to determine accuracy. 3.MD.G.2.AD

P. Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (L). (Excludes compound units such as cm^3 and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. (Excludes multiplicative comparison problems involving notions of "times as much.") 3.MD.G.2.P

Ba. Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (L). (Excludes compound units such as cm^3 and finding the geometric volume of a container and excludes multiplicative comparison problems involving notions of "times as much.") 3.MD.G.2.BA

BeB. May be able to measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (L) with partial success. (Excludes compound units such as cm^3 and finding the geometric volume of a container

and excludes multiplicative comparison problems involving notions of "times as much.") 3.MD.G.2.BEB

H. Represent and interpret data. 3.MD.H

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 graphs. 3.MD.H.3

Ad. The Advanced student is able to:
Interpret how changes in the design of a graph can alter impressions of the data it represents OR
Use a scaled picture graph and a scaled bar graph to solve multi-step problems. 3.MD.H.3.AD

P. 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 graphs. 3.MD.H.3.P

Ba. Solve one- and two-step "how many more" and "how many less" problems using information presented in scaled picture graphs and scaled bar graphs. 3.MD.H.3.BA

BeB. May be able to solve one- and two-step "how many more" and "how many less" problems using information presented in scaled picture graphs and scaled bar graphs with partial success. 3.MD.H.3.BEB

4. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Use the data to create a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. 3.MD.H.4

Ad. Generate measurement data by measuring lengths using rulers marked with halves, fourths, and eighths of an inch. Use the data to create a line plot marking it in appropriate units—whole numbers, halves, quarters, or eighths. 3.MD.H.4.AD

P. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Use the data to create a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. 3.MD.H.4.P

Ba. Use given data to create a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. 3.MD.H.4.BA

BeB. May be able to use given data to create a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters with partial success. 3.MD.H.4.BEB

I. **Geometric measurement: understand concepts of area and relate area to multiplication and to addition.** 3.MD.I

5. Understand area as an attribute of plane figures and understand concepts of area measurement, such as square units without gaps or overlaps. 3.MD.I.5

Ad. Create a real-world scenario using area concepts. 3.MD.I.5.AD

P. Identify area as an attribute of plane figures and apply concepts of area measurement, such as square units without gaps or overlaps. 3.MD.I.5.P

Ba. Identify concepts of area measurement to determine appropriate representations, when given appropriate and inappropriate representations of area of a plane figure. 3.MD.I.5.BA

BeB. May be able to identify concepts of area measurement to determine appropriate representations, with partial success, when given appropriate and inappropriate representations of area of a plane figure. 3.MD.I.5.BEB

6. Measure areas by counting unit squares (square cm, square m, square in., square ft., and improvised units). 3.MD.I.6

Ad. The Advanced student is able to:
Estimate areas of non-rectangular polygons or find areas of combined rectangular figures by counting unit squares and labeling in appropriate units (square cm, square m, square in, square ft, and improvised units).
Find the area of a rectangle using a non-counting strategy. 3.MD.I.6.AD

P. Measure area by counting unit squares and labeling in appropriate units (square cm, square m, square in, square ft, and improvised units). 3.MD.I.6.P

Ba. Measure area by tiling with unit squares and labeling in square units. 3.MD.I.6.BA

BeB. May be able to measure area by tiling with unit squares and labeling in square units with partial success. 3.MD.I.6.BEB

7. Relate area to the operations of multiplication and addition. 3.MD.I.7

A. Find the area of a rectangle with whole-number side lengths (dimensions) by multiplying them. Show that this area is the same as when counting unit squares. 3.MD.I.7.A

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. 3.MD.I.7.B

C. Use area models to represent the Distributive Property in mathematical reasoning. 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 · b and a · c. 3.MD.I.7.C

Ad. Solve for a missing dimension or partial dimension when given area and one dimension and write an equation to support their thinking. 3.MD.I.7.AD

P. Relate area to the operations of multiplication and addition. 3.MD.I.7.P

A. Find the area of a rectangle with whole-number side lengths (dimensions) by multiplying them. Show that this area is the same as when counting unit

squares. 3.MD.I.7.P.A

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. 3.MD.I.7.P.B

C. Use area models to represent the Distributive Property in mathematical reasoning. 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 · b and a · c. 3.MD.I.7.P.C

Ba. Measure area by tiling with unit squares. 3.MD.I.7.BA

A. Find the area of a rectangle with whole-number side lengths (dimensions) by tiling them or using a pre-partitioned rectangle. 3.MD.I.7.BA.A

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 when given tiling or pre-partitioned rectangles. 3.MD.I.7.BA.B

BeB. May be able to measure area by tiling with unit squares. 3.MD.I.7.BEB

A. Find the area of a rectangle with whole-number side lengths (dimensions) by tiling them or using a pre-partitioned rectangle with partial success. 3.MD.I.7.BEB.A

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 with partial success when given tiling or pre-partitioned rectangles. 3.MD.I.7.BEB.B

J. Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures. 3.MD.J

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 area or with the same area and different perimeter. 3.MD.J.8

Ad. The Advanced student is able to:
Build a rectangle or polygon with given perimeter. OR
Find multiple possible perimeters of a rectangle with a given area. OR
Find multiple possible areas of a rectangle with a given perimeter. 3.MD.J.8.AD

P. 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 area or with the same area and different perimeter. 3.MD.J.8.P

Ba. Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, and finding an unknown side length when given a pictorial representation. 3.MD.J.8.BA

BeB. Say be able to solve real-world and mathematical problems involving perimeters of polygons, including:
Finding the perimeter, when given the side lengths, AND
Finding an unknown side length, when given a pictorial representation. 3.MD.J.8.BEB

Geometry

K. Reason with shapes and their attributes. 3.G.K

1. Use attributes of quadrilaterals to classify rhombuses, rectangles, and squares. Understand 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. 3.G.K.1

Ad. Generate possible categories and subcategories to classify and/or group polygons. 3.G.K.1.AD

P. Use attributes of quadrilaterals to classify rhombuses, rectangles, and squares. Understand 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. 3.G.K.1.P

Ba. Select attributes that correspond to a given quadrilateral or select quadrilaterals that correspond to given attributes. 3.G.K.1.BA

BeB. May be able to select attributes that correspond to a given quadrilateral or select quadrilaterals that correspond to given attributes with partial success. 3.G.K.1.BEB

2. Partition rectangles, regular polygons, and circles into parts with equal areas. Express the area of each part as a unit fraction of the whole. 3.G.K.2

Ad. Use a unit fraction to represent a fraction larger than one by partitioning geometric figure(s). 3.G.K.2.AD

P. Partition rectangles, regular polygons, and circles into parts with equal areas. Express the area of each part as a unit fraction of the whole. 3.G.K.2.P

Ba. Identify the unit fraction of the whole when given a rectangle, regular polygon, or circle that has been pre-partitioned into equal parts. 3.G.K.2.BA

BeB. May be able to identify the unit fraction of the whole with partial success when given a rectangle, regular polygon, or circle that has been pre-partitioned into equal parts. 3.G.K.2.BEB

Number And Operations - Fractions

F. Develop understanding of fractions as numbers. (Limited to denominators 2, 3, 4, 6, and 8) *use horizontal fractions. 3.NF.F

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. 3.NF.F.1

Ad. When given a fraction greater than 1 whole, understand a fraction 1/b as a quantity formed by one 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.F.1.AD

P. 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.F.1.P

Ba. Identify 1/b when given a pictorial representation of a whole partitioned into equal parts. 3.NF.F.1.BA

BeB. May be able to identify 1/b with partial success when given a pictorial representation of a whole partitioned into equal parts. 3.NF.F.1.BEB

2. Understand and represent fractions on a number line diagram. 3.NF.F.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. 3.NF.F.2.A

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. 3.NF.F.2.B

Ad. Understand and represent fractions on a number line diagram when extending to fractions beyond one whole: 3.NF.F.2.AD

A. Represent a fraction 1/b on a number line diagram by defining the interval from 0 to beyond 1 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.F.2.AD.A

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. 3.NF.F.2.AD.B

P. Understand and represent fractions on a number line diagram. 3.NF.F.2.P

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. 3.NF.F.2.P.A

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. 3.NF.F.2.P.B

Ba. Represent fractions on a number line diagram when given a number line pre-partitioned into equal parts from 0 to 1. 3.NF.F.2.BA

A. Represent a fraction 1/b on a number line diagram. 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.F.2.BA.A

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. 3.NF.F.2.BA.B

BaeB. May be able to represent fractions on a number line diagram when given a number line pre-partitioned into equal parts from 0 to 1 with partial success. 3.NF.F.2.BAEB

A. Represent a fraction 1/b on a number line diagram. 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.F.2.BEB.A

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. 3.NF.F.2.BEB.B

3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. 3.NF.F.3

A. Understand two fractions as equivalent if they are the same size, or the same point on a number line. 3.NF.F.3.A

B. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent. 3.NF.F.3.B

C. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. 3.NF.F.3.C

D. Compare two fractions with the same numerator or the same denominator, by reasoning about their size, Recognize that valid comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions. 3.NF.F.3.D

Ad. Compare fractions with different numerators or different denominators, by reasoning about their size, recognize that valid comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions. 3.NF.F.3.AD

P. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. 3.NF.F.3.P

A. Understand two fractions as equivalent if they are the same size, or the same point on a number line. 3.NF.F.3.P.A

B. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent. 3.NF.F.3.P.B

C. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. 3.NF.F.3.P.C

D. Compare two fractions with the same numerator or the same denominator, by reasoning about their size. Recognize that valid comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions. 3.NF.F.3.P.D

Ba. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size when given a pictorial representation. 3.NF.F.3.BA

- A. Understand two fractions as equivalent if they are the same size, or the same point on a number line. 3.NF.F.3.BA.A
- B. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent. 3.NF.F.3.BA.B
- C. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. 3.NF.F.3.BA.C
- D. Compare two fractions with the same numerator or the same denominator, by reasoning about their size. Recognize that valid comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions. 3.NF.F.3.BA.D

BeB. May be able to explain equivalence of fractions in special cases, and compare fractions by reasoning about their size with partial success when given a pictorial representation. 3.NF.F.3.BEB

- A. Understand two fractions as equivalent if they are the same size, or the same point on a number line. 3.NF.F.3.BEB.A
- B. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent. 3.NF.F.3.BEB.B
- C. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. 3.NF.F.3.BEB.C
- D. Compare two fractions with the same numerator or the same denominator, by reasoning about their size. Recognize that valid comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols >, =, or <, and justify the conclusions. 3.NF.F.3.BEB.D