Ohio Mathematics - Extended Learning Standards

Grade 5

Operations and Algebraic Thinking

Write and interpret numerical expressions.

1 Use parentheses in numerical expressions and evaluate expressions with this symbol. Formal use of algebraic order of operations is not necessary. 5.OA.1

Complexity a

a Solve a two-step expression involving addition and subtraction and parentheses. For example, 5 + (6 - 3) = 5 + 3 = 8 (limit to one-digit whole numbers). 5.OA.1A

Complexity b

b Identify the first step in solving a two-step problem involving addition and subtraction. 5.OA.1B

Complexity c

b Identify parentheses as a marker of a group in a number sentence. 5.OA.1C

Learning Progression

- Identify a number sentence. 5.OA.1.LP.A
- Recognize the symbols for addition (+), subtraction, (–), multiplication (×), division (÷), and equals (=). 5.OA.1.LP.B
- Read and interpret a traditional one-step number sentence (2 × 3 = x). 5.OA.1.LP.C
- Relate a picture or objects to a number sentence. 5.OA.1.LP.D
- Know that a symbol x can represent a missing value. 5.OA.1.LP.E
- Know the parentheses are evaluated first within an expression. 5.OA.1.LP.F
- Engagement Statements (demonstration of engaged in the topic) 5.OA.1.LP.G
- Interact with linear models or physical objects (blocks) or drawings representing addition, subtraction, multiplication, or division. 5.OA.1.LP.H

2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as 2 × (8 + 7). Recognize that 3 × (18,932 + 921) is three times as large as 18,932 + 921, without having to calculate the indicated sum or product. 5.OA.2

Complexity a

a Write a two-step numerical expression when given a number sentence; do not calculate. 5.OA.2A

Complexity b

b Match a twostep number sentence with its expression. For example, add 2 and 2 then subtract 1 matches (2+2) -1. 5.OA.2B

Complexity c

c Complexity b 5.OA.2C

Learning Progression

- Identify a number sentence. 5.OA.2.LP.A
- Recognize the symbols for addition (+), subtraction, (–), multiplication (×), and equals (=). 5.OA.2.LP.B
- Read and interpret a traditional one-step number sentence in a context (2 × 3 = x). 5.OA.2.LP.C
- Relate a picture or objects to a number sentence. 5.OA.2.LP.D
- Know that a symbol x can represent a missing value. 5.OA.2.LP.E
- Know the parentheses are evaluated first within an expression. 5.OA.2.LP.F
- Engagement Statements (demonstration of engaged in the topic) 5.OA.2.LP.G
- Interact with linear models or physical objects (blocks) or drawings representing addition, subtraction, or multiplication. 5.OA.2.LP.H

Analyze patterns and relationships.

3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so. 5.OA.3

Complexity a

a Given a rule for a numerical pattern and a two- column table missing several terms, complete the table and graph in the first quadrant. Add 4 5.OA.3A

Complexity b

b Plot 2 ordered pairs in the first quadrant of a coordinate grid. 5.OA.3B

Complexity c

c Given a coordinate grid marked with locations of familiar locations (school, home, library, grocery), identify the location for an ordered pair. 5.OA.3C

Learning Progression

- Identify points on a horizontal number line (scale limited to whole numbers 1-10). 5.OA.3.LP.A
- Identify points on a vertical number line (scale limited to whole numbers 1-10). 5.OA.3.LP.B
- Understand a coordinate grid is formed by a vertical and horizontal number line. 5.OA.3.LP.C
- Engagement Statements (demonstration of engaged in the topic) 5.OA.3.LP.D
- Interact with coordinate grid. 5.OA.3.LP.E

Numbers and Operations in Base Ten

Understand the place value system.

1 Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and 1/10 of what it represents in the place to its left. 5.NBT.1

Complexity a

a Decompose multi-digit whole numbers by their place values and expanded form to show understanding that a digit in one place represents 10 times as much as it represents in the place to its right. 5.NBT.1A

Complexity b

b Decompose multi-digit whole numbers by their place values and expanded form up to 100,000 with physical and/or visual representations. For example, 457: 4 hundreds, 5 tens, 7 ones; four hundred fifty-seven; 400 + 50 + 7). 5.NBT.1B

Complexity c

c1 Given a whole number within the range of 1–999, decompose into place values of ones, tens, and hundreds using physical and/or visual representation. 5.NBT.1C1

c2 Given a whole number within the range of 1–999, identify the expanded form using physical and/or visual representations. 5.NBT.1C2

Learning Progression

- Count to 100 by ones and by tens. 5.NBT.1.LP.A
- Count to 1,000 by hundreds and by tens. 5.NBT.1.LP.B
- Recognize the numerals from 1 up to 1,000. 5.NBT.1.LP.C
- Represent numbers from 1 to 1,000 using physical objects or technology 5.NBT.1.LP.D
- Know the word names for the numbers 1-1,000. 5.NBT.1.LP.E
- Write numerals from 0 to 1,000. 5.NBT.1.LP.F
- Explore place value tools including with technology. 5.NBT.1.LP.G
- Base-10 blocks 5.NBT.1.LP.H
- Place value chart 5.NBT.1.LP.I
- 100's chart 5.NBT.1.LP.J
- Cuisenaire rods 5.NBT.1.LP.K
- Unifix cubes 5.NBT.1.LP.L
- Distribute objects into groups of hundreds, tens, and ones. 5.NBT.1.LP.M
- Compose and decompose numbers from 11 to 19 into a group of ten ones and some further ones by using objects. 5.NBT.1.LP.N
- Understand that these numbers are composed of a group of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. 5.NBT.1.LP.O

- Record the number of tens and ones in a group of objects or drawings. 5.NBT.1.LP.P
- Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones. 5.NBT.1.LP.Q
- Understand the following as special cases: 10 can be thought of as a bundle of ten ones — called a “ten;” 5.NBT.1.LP.R
- Understand the following as special cases: 100 can be thought of as a bundle of ten tens – called a “hundred” 5.NBT.1.LP.S
- Understand the following special cases: 1,000 can be thought of as a bundle of ten hundreds – called a “thousand” 5.NBT.1.LP.T
- Understand the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). 5.NBT.1.LP.U
- Understand the numbers 100, 200, 300, 400, 500, 600, 700, 800, and 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 ones). 5.NBT.1.LP.V
- Identify the location of the ones, tens, and hundreds on a place value chart. 5.NBT.1.LP.W
- Engagement Statements (demonstration of engaged in the topic) 5.NBT.1.LP.X
- Interact with physical objects (blocks) or drawings. 5.NBT.1.LP.Y

2 Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use wholenumber exponents to denote powers of 10. 5.NBT.2

Complexity a

a Identify the product of a two-digit decimal and a power of 10 (limit decimals to tenths and powers of 10 to 103). 5.NBT.2A

Complexity b

b Identify the power of 10 written as a base and an exponent for its multiplication sentence. For example, 10? = 10; 10? = 10 ×10; 10? = 10 ×10 × 10. Identify the product of a 2-digit whole number and a power of 10 (limit powers of 10 to 1,000 or 103). 5.NBT.2B

Complexity c

c Identify the number of zeroes in a product of a one-digit whole number and 10 or 100 using place value strategies or physical representations. 5.NBT.2C

Learning Progression

- Content works in conjunction with 5.NBT.5. 5.NBT.2.LP.A
- Create multiple groups of 10 using objects. 5.NBT.2.LP.B
- Repeatedly add groups of 10 using physical objects. 5.NBT.2.LP.C
- Relate counting to addition by counting on 10 to add 10. 5.NBT.2.LP.D

- Understand the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). 5.NBT.2.LP.E
- Know the symbols for multiplication (×) and equals (=). 5.NBT.2.LP.F
- Write a number sentence to represent a situation involving a multiple of 10. 5.NBT.2.LP.H
- Relate multiplication to repeated addition by writing a number sentence. 5.NBT.2.LP.G
- Interact with physical objects (blocks) or drawings (100s chart or multiplication chart). 5.NBT.2.LP.J
- Engagement Statements (demonstration of engaged in the topic) 5.NBT.2.LP.I

3 Read, write, and compare decimals to thousandths. a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., 347.392 = 3 × 100 + 4 × 10 + 7 × 1 + 3 × (1/10) + 9 × (1/100) + 2 × (1/1000). b. Compare two decimals to thousandths based on meanings of the digits in each place, using >, =, and < symbols to record the results of comparisons. 5.NBT.3

Complexity a

a Compare two decimal numerals written to the hundredths place using >, = and < symbols with visual and/ or physical representations. 5.NBT.3A

Complexity b

b Compare two decimal models to the tenths place using >, = and < symbols with visual and/or physical representations. 5.NBT.3B

Complexity c

c Match visual or physical representations or models of tenths and determine which is “more than”, “same as”, or “Less than”. 5.NBT.3C

Learning Progression

- Content works in conjunction with 5.NBT.4 and 5.NBT.7. 5.NBT.3.LP.A
- Recognize pennies and dimes. 5.NBT.3.LP.B
- Know the names and values of pennies and dimes. 5.NBT.3.LP.C
- Know the symbols for dollars ($), cents (¢), and decimal point (.). 5.NBT.3.LP.D
- Record the value of a collection of pennies using dollar and cent notation. 5.NBT.3.LP.E
- Explore place values using place value models. (pennies and dimes) 5.NBT.3.LP.F
- Recognize the word names for tenths and hundredths. 5.NBT.3.LP.G
- Understand the location of the decimal point on a place value chart. 5.NBT.3.LP.H
- Recognize the value of a decimal in hundredths using a place value chart. 5.NBT.3.LP.I

- Represent the value of a collection of pennies and dimes on a place value chart. 5.NBT.3.LP.J
- Use language of tenths and hundredths in real-world contexts. 5.NBT.3.LP.K
- Orally identify (without using inequality symbols) whether the number of objects in one group is greater/more than, less/fewer than, or the same as the number of objects in another group, not to exceed 10 objects in each group. 5.NBT.3.LP.L
- Compare (without using inequality symbols) two numbers between 0 and 10 when presented as written numerals. 5.NBT.3.LP.M
- Directly compare two objects with a measurable attribute in common to see which object has “more of” or “less of” the attribute, and describe the difference. For example, directly compare the heights of two children, and describe one child as taller/shorter. 5.NBT.3.LP.N
- Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps. 5.NBT.3.LP.O
- Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, =, and < symbols to record the results of comparisons. 5.NBT.3.LP.P
- Engagement Statements (demonstration of engaged in the topic) 5.NBT.3.LP.Q
- Interact with place value models. (pennies, dimes, place value charts, etc.) 5.NBT.3.LP.R

4 Use place value understanding to round decimals to any place, millions through hundredths. 5.NBT.4

Complexity a

a Round decimals to a given place using a number line or other physical/visual representation (limit rounding to the nearest tenth, one, ten or hundred). 5.NBT.4A

Complexity b

b Round decimals with a value in the tenths place to the nearest whole number using a number line or other physical/visual representation. 5.NBT.4B

Complexity c

c Identify whether a decimal is closer to 0 or 1 using physical and/or visual representations, including money (limit decimal place values to hundredths). 5.NBT.4C

Learning Progression

- Content works in conjunction with 5.NBT.3 and 5.NBT.7. 5.NBT.4.LP.A

- Know what a number line is. 5.NBT.4.LP.B
- Know the order of the numbers from 0 up to 99. 5.NBT.4.LP.C
- Identify a whole number on a vertical or a horizontal number line marked with whole numbers up to 99 (scale limited to whole numbers 1 or 10). 5.NBT.4.LP.D
- Identify 0 on a number line. 5.NBT.4.LP.E
- Identify a missing whole number value on a number line marked with whole numbers up to 99. 5.NBT.4.LP.F
- Compare distances of objects using a number line. 5.NBT.4.LP.G
- Understand that 2 is the distance from 0 to 2 and 3 is the distance from 0 to 3 using standard units for all lengths from 1 to 99. 5.NBT.4.LP.H
- Determine which tens a group of pennies comes between using a vertical or horizontal number line. 5.NBT.4.LP.I
- Determine which tenths a group of pennies and dimes comes between using a vertical or horizontal number line. 5.NBT.4.LP.J
- Engagement Statements (demonstration of engaged in the topic) 5.NBT.4.LP.K
- Interact with physical objects (blocks) or drawings (may include 100s chart) representing whole numbers up to 99. 5.NBT.4.LP.L

Perform operations with multi-digit whole numbers and with decimals to hundredths.

5 Fluently multiply multi-digit whole numbers using a standard algorithm. 5.NBT.5

Complexity a

a Multiply a 3-digit whole number by a 2-digit whole number with visual and/or physical representations. 5.NBT.5A

Complexity b

b Multiply 2-digit by 2-digit whole numbers with physical and/or visual representations 5.NBT.5B

Complexity c

c Multiply two 2-digit whole numbers, where one factor is a multiple of 10, using models with physical or/and visual representations 5.NBT.5C

Learning Progression

- Content works in conjunction with 5.NBT.2. 5.NBT.5.LP.A
- Count to 10. 5.NBT.5.LP.B
- Count to 10 using objects. 5.NBT.5.LP.C
- Count to 100 by 10s. 5.NBT.5.LP.D
- Create multiple groups of 10 using objects. 5.NBT.5.LP.E
- Repeatedly add groups of 10 using physical objects. 5.NBT.5.LP.F
- Relate counting to addition by counting on 10 to add 10. 5.NBT.5.LP.G
- Understand that the two digits of a two-digit number represent amounts of tens and ones. 5.NBT.5.LP.H
- Understand the following as special cases: 10 can be thought of as a bundle of ten ones — called a “ten”. 5.NBT.5.LP.I
- Understand the numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). 5.NBT.5.LP.J
- Know the symbols for multiplication (×) and equals (=). 5.NBT.5.LP.K
- Relate multiplication to repeated addition by writing a number sentence. 5.NBT.5.LP.L
- Represent a number with a set of physical objects or a drawing. 5.NBT.5.LP.M
- Record the number of tens and 0 ones in a group of objects or drawings for multiples of 10. 5.NBT.5.LP.N
- Engagement Statements (demonstration of engaged in the topic) 5.NBT.5.LP.O
- Interact with physical objects (blocks) or drawings (100s chart or multiplication chart). 5.NBT.5.LP.P

6 Find whole-number quotients of whole numbers with up to 4-digit dividends and 2-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. 5.NBT.6

Complexity a

a Divide whole numbers using strategies based on place value, the relationship between multiplication and division, the properties of operations and physical and/or visual representations (limit to 4-digit whole number by a 1-digit whole number, no remainders). 5.NBT.6A

Complexity b

b Divide whole numbers using strategies based on place value, the relationship between multiplication and division, the properties of operations and physical and/or visual representations (3-digit by 1-digit whole numbers with no zeroes in the tens place, no remainders). 5.NBT.6B

Complexity c

c Divide a 2-digit whole number by a 1-digit whole number using strategies based on place value, the relationship between multiplication and division, the properties of operations and using physical and/or visual representations (products limited to 100, no remainders). 5.NBT.6C

Learning Progression

- Identify 2, 3, 4, 5, 6, and 10 blocks. 5.NBT.6.LP.A
- Identify groups of blocks 2s, 3a, 4s, 5s, 6s, and 10s. 5.NBT.6.LP.B
- Share up to 10, 20, 30, 40, 50 objects equally between 2, 3, 4, 5, 6, and 10 people (without remainders). 5.NBT.6.LP.C
- Build groups of blocks into rows and columns (arrays). 5.NBT.6.LP.D
- Count the number of blocks in a given array. 5.NBT.6.LP.E
- Identify the number of blocks in each row and each column. 5.NBT.6.LP.F
- Recognize factors in an array. 5.NBT.6.LP.G
- Relate a picture or objects to a number sentence. 5.NBT.6.LP.H
- Identify a number sentence. 5.NBT.6.LP.I
- Recognize the symbols for multiplication (×), division (÷), and equals (=). 5.NBT.6.LP.J
- Read and interpret a traditional one-step number sentence (6 ÷ 3 = x). 5.NBT.6.LP.K
- Know that a symbol x can represent a missing value. 5.NBT.6.LP.L
- Recognize related multiplication and division number sentences. 5.NBT.6.LP.M
- Write the number sentence to express the total as a product of two factors. 5.NBT.6.LP.N

- Solve 1-step number sentences involving multiplication or division. 5.NBT.6.LP.O
- Engagement Statements (demonstration of engaged in the topic) 5.NBT.6.LP.P
- Interact with physical objects (blocks) or drawings representing multiplication and division. 5.NBT.6.LP.Q

7 Solve real-world problems by adding, subtracting, multiplying, and dividing decimals using concrete models or drawings and strategies based on place value, properties of operations, and/ or the relationship between addition and subtraction, or multiplication and division; relate the strategy to a written method and explain the reasoning used. a. Add and subtract decimals, including decimals with whole numbers (whole numbers through the hundreds place and decimals through the hundredths place). b. Multiply whole numbers by decimals (whole numbers through the hundreds place and decimals through the hundredths place). c. Divide whole numbers by decimals and decimals by whole numbers (whole numbers through the tens place and decimals less than one through the hundredths place, using numbers whose division can be readily modeled). For example, 0.75 divided by 5, 18 divided by 0.6, or 0.9 divided by 3. 5.NBT.7

Complexity a

a2 Multiply and divide up to a 3-digit whole number by a 2-digit number with a digit in the tenths place value, with physical and/or visual representations, with or without word problem. For example, 312 x 1.2. 5.NBT.7A2

a1 Add and subtract decimals to hundredths with physical and/or visual representations with word problems. AND 5.NBT.7A1

Complexity b

b1 Add and subtract decimals to hundredths using physical and/or visual representations with and without word problems 5.NBT.7B1

b2 Multiply or divide up to a 3-digit whole number by a decimal to the tenths place with physical and/or visual representations, with or without word problem. For example, 312 x 0.3. 5.NBT.7B2

Complexity c

c1 Add and subtract decimals to tenths using physical and/or visual representations with word problems related to money 5.NBT.7C1

c2 Multiply a decimal to the tenths place by a single digit whole number with physical and/or visual representations, with or without word problem. 5.NBT.7C2

Learning Progression

- Content works in conjunction with 5.NBT.3 and 5.NBT.4. 5.NBT.7.LP.A
- Explore place values using place value models. (Base-10 blocks, Cuisenaire rods, pennies, nickels, dimes, quarters, etc.) 5.NBT.7.LP.B
- Know the names and values of pennies, nickels, dimes, and quarters. 5.NBT.7.LP.C

- Know the symbols for dollars ($), cents (¢), and decimal point (.). 5.NBT.7.LP.D
- Match a collection of pennies, nickels, dimes, or quarters to the visual model of the decimal. 5.NBT.7.LP.E
- Record the value of a collection of pennies, nickels, or dimes using dollar or cent notation. 5.NBT.7.LP.F
- Represent a value of a collection of coins on a place value chart. 5.NBT.7.LP.G
- Recognize the value of a decimal to hundredths using a place value chart. 5.NBT.7.LP.H
- Use language of tenths and hundredths in real-world contexts. 5.NBT.7.LP.I
- Add and subtract collections of coins (pennies, nickels, dimes, quarters). 5.NBT.7.LP.J
- Write the number sentence for the addition or subtraction of two collections of coins. 5.NBT.7.LP.K
- Engagement Statements (demonstration of engaged in the topic) 5.NBT.7.LP.L
- Interact with linear models or place value models. (Base10 blocks, Cuisenaire rods, pennies, dimes, etc.) 5.NBT.7.LP.M

Numbers and Operations – Fractions

Use equivalent fractions as a strategy to add and subtract fractions (fractions need not be simplified.).

1 Add and subtract fractions with unlike denominators (including mixed numbers and fractions greater than 1) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, use visual models and properties of operations to show 2/3 + 5/4 = 8/12 + 15/12 = 23/12. 5.NF.1

Complexity a

a Add and subtract fractions with fraction models or other physical and/or visual representations. For example, 2/4 + 2/8 = 6/8, Limit denominators to multiple pairs of 3 and 6, 2 and 4, 4 and 8, 5 and 10, or 10 and 100, may include mixed numbers. 5.NF.1A

Complexity b

b Add and subtract fractions with same denominator fraction models or other physical and/or visual representations (limit denominators to 2, 3, 4, 5, 6, 8, and 10). 5.NF.1B

Complexity c

c Add and subtract fractions with the same denominator using fraction models or other physical and/or visual representations (limit denominators to 2, 3, 4, and 10). 5.NF.1C

Learning Progression

- Content works in conjunction with 5.NF.2. 5.NF.1.LP.A
- Identify the same sized whole partitioned into 2, 3, 4, and 10 equal shares. 5.NF.1.LP.B
- Describe the whole as two halves, three thirds, four fourths, or ten tenths. 5.NF.1.LP.C
- Recognize the value of a whole fractional shaded part. 5.NF.1.LP.D
- Identify 1/10, ¼, 1/3, and ½ when given a fraction model. 5.NF.1.LP.E
- Partition rectangles into two, three, four, or ten equal shares. 5.NF.1.LP.F
- Write a number sentence representing a whole partitioned into two, three, or four equal shares (4/4 = ¼ + ¼ + ¼ + ¼). 5.NF.1.LP.G
- Describe the shares using the words halves, thirds, fourths and quarters, or tenths and use the phrases half of, third of, fourth of and quarter of or tenth of. 5.NF.1.LP.H
- Describe the whole as two halves, three thirds, four fourths or ten tenths in real-world contexts. 5.NF.1.LP.I
- Understand a fraction 1/b is the smallest fractional part of a whole. 5.NF.1.LP.J
- Count by unit fractions up to a whole. (1/10, ¼, 1/3, and ½) 5.NF.1.LP.K
- Use fraction models to combine equal sized shares with like denominators. 5.NF.1.LP.L

- Understand you can combine equal sized shares of fractional parts of the same whole like you can combine whole numbers. 5.NF.1.LP.M
- Match fractions with their fraction model or other physical/ visual models (limit to denominators of 2, 3, 4, and 10). 5.NF.1.LP.N
- Engagement Statements (demonstration of engaged in the topic) 5.NF.1.LP.O
- Interact with area (rectangles) and length (number lines) fraction models. 5.NF.1.LP.P

2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2. 5.NF.2

Complexity a

a Solve addition and subtraction fraction word problems with fraction models or other physical and/or visual representations. Limit denominators to multiple pairs of 3 and 6, 2 and 4, 4 and 8, 5 and 10, or 10 and 100, may include mixed numbers. 5.NF.2A

Complexity b

b Solve addition and subtraction word problems involving fractions with like denominators with fraction models or other physical and/or visual representations. Limit denominators to 2, 3, 4, 5, 6, 8 and 10. 5.NF.2B

Complexity c

c Solve addition and subtraction word problems involving fractions with like denominators with fraction models or other physical and/or visual representations. Limit denominators to 2, 3, 4, and 10. 5.NF.2C

Learning Progression

- Content works in conjunction with 5.NF.1. 5.NF.2.LP.A
- Identify the same sized whole partitioned into 2, 3, 4, and 10 equal shares. 5.NF.2.LP.B
- Describe the whole as two halves, three thirds, four fourths, or ten tenths. 5.NF.2.LP.C
- Recognize the value of a whole fractional shaded part. 5.NF.2.LP.D
- Identify 1/10, ¼, 1/3, and ½ when given a fraction model. 5.NF.2.LP.E
- Partition rectangles into two, three, four, or ten equal shares. 5.NF.2.LP.F
- Write a number sentence representing a whole partitioned into two, three, or four equal shares (4/4 = ¼ + ¼ + ¼ + ¼). 5.NF.2.LP.G
- Describe the shares using the words halves, thirds, fourths and quarters, or tenths and use the phrases half of, third of, fourth of and quarter of or tenth of. 5.NF.2.LP.H

- Describe the whole as two halves, three thirds, four fourths or ten tenths in real-world contexts. 5.NF.2.LP.I
- Understand a fraction 1/b is the smallest fractional part of a whole. 5.NF.2.LP.J
- Count by unit fractions up to a whole. (1/10, ¼, 1/3, and ½) 5.NF.2.LP.K
- Use fraction models to combine equal sized shares with like denominators. 5.NF.2.LP.L
- Understand you can combine equal sized shares of fractional parts of the same whole like you can combine whole numbers. 5.NF.2.LP.M
- Match fractions with their fraction model or other physical/ visual models (limit to denominators of 2, 3, 4, and 10). 5.NF.2.LP.N
- Engagement Statements (demonstration of engaged in the topic) 5.NF.2.LP.O
- Interact with area (rectangles) and length (number lines) fraction models. 5.NF.2.LP.P

Apply and extend previous understandings of multiplication and division to multiply and divide fractions (fractions need not be simplified)

3 Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret 3/4 as the result of dividing 3 by 4, noting that 3/4 multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people, each person has a share of size 3/4. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie? 5.NF.3

Complexity a

a Given fraction models or other physical/visual representations with or without a familiar context and limited to whole numbers up to 50, identify the number sentence when represented as a fraction. For example, 48 pounds of nuts are shared by 6 children and 48/6. Solve the number sentence from above. For example, 48 pounds of nuts shared by 6 children equals 8 (pounds of nuts for each child). 5.NF.3A

Complexity b

b Given fraction models or other physical/visual representations with or without a familiar context and limited to whole numbers up to 20 with no remainders, identify the number sentence when represented as a fraction. For example, 4 children share 3 candy bars matches (3 candy bars divided by 4) ¾, or 12 pounds of nuts shared by 6 children equals 12/6. 5.NF.3B

Complexity c

c Match a fraction to its division problem shown with a fraction model or other physical or visual representation (limit fractions to denominators of 2, 3, 4, and 10). 5.NF.3C

Learning Progression

- Understand content from 5.NF.1 prior to beginning instruction on 5.NF.3. 5.NF.3.LP.A
- Recognize the symbols for division (÷) and equals (=). 5.NF.3.LP.B
- A fraction represents division (3 ÷ 4 = 34). 5.NF.3.LP.C
- Understand that 34 can be read as 3 divided by 4. 5.NF.3.LP.D
- Engagement Statements (demonstration of engaged in the topic) 5.NF.3.LP.E
- Interact with area (rectangles) and length (number lines) fraction models. 5.NF.3.LP.F

4 Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction. a. Interpret the product (a/b) × q as a part of a partition of q into b equal parts, equivalently, as the result of a sequence of operations a × q ÷ b. For example, use a visual fraction model to show (2/3) × 4 = 8/3, and create a story context for this equation. Do the same with (2/3) × (4/5) = 8/15. (In general, (a/b) ×

(c/d) = ac/bd.) b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. 5.NF.4

Complexity a

a Solve real-world problems involving multiplying a fraction by a whole number up to 10 using visual fraction models. For example, 3 friends each ate 2/8 of a pizza. How much pizza did they eat? (Limit to fractions with denominators of 2, 3, 4, 6, and 8; may involve mixed numbers.) 5.NF.4A

Complexity b

b Solve realworld problems involving multiplying a fraction by a whole number up to 10 using visual fraction models. For example, 3 friends each ate 2/8 of a pizza. How much pizza did they eat? (Limit to fractions with denominators of 2, 3, 4, 6, and 8; no mixed numbers.) 5.NF.4B

Complexity c

c Identify equivalent number sentences for fractions expressed as sums of unit fractions and products of a 1-digit whole number multiplied by the same unit fraction. For example, ¾ = ¼ + ¼ + ¼ matches 3 × ¼. (Limit to fractions with denominators of 2, 3, 4, 5, 6, 8 and 10; physical or visual fraction models may be used.) 5.NF.4C

Learning Progression

- Understand content from 5.NF.3 prior to beginning instruction on 5.NF.4. 5.NF.4.LP.A
- Identify the same sized whole partitioned into 2, 3, 4, 5, 6, 8, and 10 equal shares. 5.NF.4.LP.B
- Describe the whole as two halves, three thirds, four fourths, etc. 5.NF.4.LP.C
- Recognize the value of a whole fractional shaded part 5.NF.4.LP.D
- Identify ½ , 1/3 , ¼ , etc. when given a fraction model. 5.NF.4.LP.E
- Partition rectangles into 2, 3, 4, 5, 6, 8, or 10 equal shares. 5.NF.4.LP.F
- Write a number sentence representing a whole partitioned into 2, 3, 4, 5, 6, 8, or 10 equal shares (4/4 = ¼ + ¼ + ¼ + ¼). 5.NF.4.LP.G
- Describe the shares using the words halves, thirds, or fourths and quarters, etc. use the phrases half of, third of, or fourth of and quarter of, etc. 5.NF.4.LP.H
- Describe the whole as two halves, three thirds, four fourths, etc. in real-world contexts. 5.NF.4.LP.I
- Understand a fraction 1/b is the smallest fractional part of a whole. 5.NF.4.LP.J
- Count by unit fractions up to a whole. (½ , 1/3 , ¼ , etc.) 5.NF.4.LP.K

- Use fraction models to combine equal sized shares with like denominators. 5.NF.4.LP.L
- Understand you can combine equal sized shares of fractional parts of the same whole like you can combine whole numbers. 5.NF.4.LP.M
- Draw or create a picture that represents 5.NF.4.LP.N
- Engagement Statements (demonstration of engaged in the topic) 5.NF.4.LP.O
- Interact with area (rectangles) and length (number lines) fraction models. 5.NF.4.LP.P

5 Interpret multiplication as scaling (resizing). a. Compare the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. b. Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence a/b = (n×a)/(n×b) to the effect of multiplying a/b by 1. 5.NF.5

Complexity a

a Match a multiplication problem involving a fraction multiplied by a whole number to its represented picture to show knowledge that product will be smaller than whole number in problem with visual and/or physical representations (limit to fractions with denominators of 2, 3, 4, 6, and 8; may involve mixed numbers.) Compare the product to the factors using <, >, = symbols. 5.NF.5A

Complexity b

b Match a multiplication problem involving a fraction multiplied by a whole number to its represented picture to show knowledge that product will be smaller than whole number in problem with visual and/or physical representations (limit to fractions with denominators of 2, 3, 4, 6, and 8; no mixed numbers). Compare the product to the factors using <, >, = symbols. 5.NF.5B

Complexity c

c Match a multiplication problem using ½ multiplied by a whole number to its represented picture to show knowledge that product will be smaller than whole number in problem with visual and/or physical representations. For example, 3 x ½ = 1 ½. Compare the product to the factors. 5.NF.5C

Learning Progression

- Understand content from 5.NF.3-4 prior to beginning instruction on 5.NF.5. 5.NF.5.LP.A
- Identify the same sized whole partitioned into 2 equal shares. 5.NF.5.LP.B
- Describe the whole as two halves. 5.NF.5.LP.C
- Recognize the value of a whole fractional shaded part. 5.NF.5.LP.D

- Partition rectangles into 2 equal shares. 5.NF.5.LP.E
- Identify ½ or 2/2 when given a fraction model. 5.NF.5.LP.F
- Count by unit fractions of ½ up to a whole and onto more than one whole. 5.NF.5.LP.G
- Write a number sentence representing more than one whole partitioned into 2 equal shares (4/2 = ½ + ½ + ½ + ½). 5.NF.5.LP.H
- Describe the shares using the words halves use the phrase half of. 5.NF.5.LP.I
- Describe the whole as two halves, three halves, four halves, etc. in real-world contexts. 5.NF.5.LP.J
- Understand a unit fraction 1/b is the smallest fractional part of a whole. 5.NF.5.LP.K
- Use fraction models to combine equal sized shares with like denominators. 5.NF.5.LP.L
- Understand you can combine equal sized shares of fractional parts of the same whole like you can combine whole numbers. 5.NF.5.LP.M
- Engagement Statements (demonstration of engaged in the topic) 5.NF.5.LP.N
- Interact with area (rectangles) and length (number lines) fraction models. 5.NF.5.LP.O

6 Solve real-world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem. 5.NF.6

Complexity a

a Using physical models or visual representations of fractions with denominators of 2, 3, 4, 5, 6, 8 and 10, solve real-world problems involving multiplication of fractions and mixed numbers. 5.NF.6A

Complexity b

b Using physical models or visual representations of fractions with denominators of 2, 3, 4, 5, 6, 8 and 10, solve real-world problems involving multiplication of fractions and whole numbers. 5.NF.6B

Complexity c

c Match the real-world word problem to the number sentence that involves multiplying a fraction by a whole number with physical and/or visual representation. 5.NF.6C

Learning Progression

- Understand content from 5.NF.3-5 prior to beginning instruction on 5.NF.5. 5.NF.6.LP.A
- Identify the same sized whole partitioned into 2 equal shares. 5.NF.6.LP.B
- Describe the whole as two halves. 5.NF.6.LP.C
- Recognize the value of a whole fractional shaded part. 5.NF.6.LP.D

- Partition rectangles into 2 equal shares. 5.NF.6.LP.E
- Identify ½ or 2/2 when given a fraction model. 5.NF.6.LP.F
- Count by unit fractions of ½ up to a whole and onto more than one whole. 5.NF.6.LP.G
- Write a number sentence representing more than one whole partitioned into 2 equal shares (4/2 = ½ + ½ + ½ + ½). 5.NF.6.LP.H
- Describe the shares using the words halves use the phrase half of. 5.NF.6.LP.I
- Describe the whole as two halves, three halves, four halves, etc. in real-world contexts. 5.NF.6.LP.J
- Understand a unit fraction 1/b is the smallest fractional part of a whole. 5.NF.6.LP.K
- Use fraction models to combine equal sized shares with like denominators. 5.NF.6.LP.L
- Understand you can combine equal sized shares of fractional parts of the same whole like you can combine whole numbers. 5.NF.6.LP.M
- Know the symbols for multiplication (×) and equals (=). 5.NF.6.LP.N
- Relate multiplication to repeated addition by writing an equivalent number sentence. 5.NF.6.LP.O
- Represent a number with a set of physical objects or a drawing. 5.NF.6.LP.P
- Engagement Statements (demonstration of engaged in the topic) 5.NF.6.LP.Q
- Interact with area (rectangles) and length (number lines) fraction models. 5.NF.6.LP.R

7 Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. In general, students able to multiply fractions can develop strategies to divide fractions, by reasoning about the relationship between multiplication and division, but division of a fraction by a fraction is not a requirement at this grade. a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for (1/3) ÷ 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that (1/3) ÷ 4 = (1/12) because (1/12) × 4 = (1/3). b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 ÷ (1/5), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 ÷ (1/5) = 20 because 20 × (1/5) = 4. c. Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share 1/2 a pound of chocolate equally? How many 1/3 cup servings are in 2 cups of raisins? 5.NF.7

Complexity a

a Solve realworld problems involving division of a fraction by a whole number using visual and/or physical representations (limit to denominators of 2, 3, 4, 5, 6, 8, and 10). 5.NF.7A

Complexity b

b Given a realworld context and its equation involving division of a fraction by a whole number, find the missing factor (limit numbers to 5 or less). 5.NF.7B

Complexity c

c Match the real-world word problem and its number sentence involving division of a fraction by a whole number to the physical and/or visual representation. 5.NF.7C

Learning Progression

- Understand content from 5.NF.3-6 prior to beginning instruction on 5.NF.5. 5.NF.7.LP.A
- Identify the same sized whole partitioned into 2 equal shares. 5.NF.7.LP.B
- Describe the whole as two halves. 5.NF.7.LP.C
- Recognize the value of a whole fractional shaded part. 5.NF.7.LP.D
- Partition rectangles into 2 equal shares. 5.NF.7.LP.E
- Identify ½ or 2/2 when given a fraction model. 5.NF.7.LP.F
- Count by unit fractions of ½ up to a whole and onto more than one whole. 5.NF.7.LP.G
- Write a number sentence representing more than one whole partitioned into 2 equal shares (4/2 = ½ + ½ + ½ + ½). 5.NF.7.LP.H
- Describe the shares using the words halves use the phrase half of. 5.NF.7.LP.I
- Describe the whole as two halves, three halves, four halves, etc. in real-world contexts. 5.NF.7.LP.J
- Understand a unit fraction 1/b is the smallest fractional part of a whole. 5.NF.7.LP.K
- Use fraction models to combine equal sized shares with like denominators. 5.NF.7.LP.L
- Understand you can combine equal sized shares of fractional parts of the same whole like you can combine whole numbers. 5.NF.7.LP.M
- Know the symbols for division (÷) and equals (=). 5.NF.7.LP.N
- Relate multiplication to division by writing an equivalent number sentence. 5.NF.7.LP.O
- Represent a number with a set of physical objects or a drawing. 5.NF.7.LP.P
- Engagement Statements (demonstration of engaged in the topic) 5.NF.7.LP.Q
- Interact with area (rectangles) and length (number lines) fraction models. 5.NF.7.LP.R

Measurement and Data

Convert like measurement units within a given measurement system.

1 Know relative sizes of these U.S. customary measurement units: pounds, ounces, miles, yards, feet, inches, gallons, quarts, pints, cups, fluid ounces, hours, minutes, and seconds. Convert between pounds and ounces; miles and feet; yards, feet, and inches; gallons, quarts, pints, cups, and fluid ounces; hours, minutes, and seconds in solving multi-step, real-world problems. 5.MD.1

Complexity a

a Convert, within 1-step conversion, basic units of measure for cups to pints, quarts to gallons, and inches to feet, with visual and/or physical representations to solve real-world problems. 5.MD.1A

Complexity b

b Convert basic units of measure: hours to minutes, gallons to quarts, and yards to feet using physical and/or visual representations. 5.MD.1B

Complexity c

c Match physical or visual representations of measurement tools and units (time – clock, liquid – teaspoons, cups, or gallons, ruler – feet or yards). 5.MD.1C

Learning Progression

- Note for instruction, measurement in units of time (hours and minutes) do not appear in the standards after grade 5. 5.MD.1.LP.A
- Engagement Statements (demonstration of engaged in the topic) 5.MD.1.LP.B
- Interact with measurement tools for time, length, and liquid volume. 5.MD.1.LP.C

Represent and interpret data.

2 Display and interpret data in graphs (picture graphs, bar graphs, and line plots) to solve problems using numbers and operations for this grade, e.g., including U.S. customary units in fractions 1/2, 1/4, 1/8, or decimals. 5.MD.2

Complexity a

a Create a line plot, bar graph, or pictograph from a given or collected data set with measurements in fractions or decimals (fourths, halves, or tenths). 5.MD.2A

Complexity b

b Create a scaled graph – picture, bar, or line graph –from given or collected data sets, and interpret the graph, including solving 1- step “how many more” and “how many less” problems. 5.MD.2B

Complexity c

c Answer questions that interpret data represented in a picture, bar, or line graph by solving one-step “how many more” and “how many less” problems. 5.MD.2C

Learning Progression

- Classify objects into categories. 5.MD.2.LP.A
- Count the number of objects in each category. 5.MD.2.LP.B
- Create a line graph, bar graph, or picture graph with a scale of 1 by stacking physical objects. 5.MD.2.LP.C
- Engagement Statements (demonstration of engaged in the topic) 5.MD.2.LP.D
- Interact with a line graph, bar graph, or picture graph. 5.MD.2.LP.E

Geometric measurement: Understand concepts of volume and relate volume to multiplication and to addition.

3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units. 5.MD.3

Complexity a

a Identify and measure the length, width, and height of a cube or rectangular prism to show understanding of the concept of volume (with physical or visual representations). 5.MD.3A

Complexity b

b Use a tool to fill a cube and/or rectangular prism to show understanding of volume. 5.MD.3B

Complexity c

c Match solid figure to its 2-dimensional shape counterpart with visual and/ or physical representations. 5.MD.3C

Learning Progression

- Content works in conjunction with 5.MD.4-5. 5.MD.3.LP.A
- Identify and describe shapes (squares, rectangles, cubes, rectangular prisms). 5.MD.3.LP.B
- Identify shapes as two-dimensional (lying in a plane, “flat”) or three dimensional (“solid”). 5.MD.3.LP.C
- Engagement Statements (demonstration of engaged in the topic) 5.MD.3.LP.D
- Interact with linear models or physical objects (blocks). 5.MD.3.LP.E

4 Measure volume by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. 5.MD.4

Complexity a

a Measure the volume of cubes and/or rectangular prisms by counting unit cubes. 5.MD.4A

Complexity b

b Count and write the volume of a cube by counting physical unit cubes. 5.MD.4B

Complexity c

c When given a model, student will build a cube or rectangular prism from unit cubes to show understanding of volume. 5.MD.4C

Learning Progression

- Content works in conjunction with 5.MD.3 and 5.MD.5. 5.MD.4.LP.A

- Identify and describe shapes (squares, rectangles, cubes, rectangular prisms). 5.MD.4.LP.B
- Identify shapes as two-dimensional (lying in a plane, “flat”) or three dimensional (“solid”). 5.MD.4.LP.C
- Recognize a cube and a rectangular prism. 5.MD.4.LP.D
- Recognize a unit cube. 5.MD.4.LP.E
- Engagement Statements (demonstration of engaged in the topic) 5.MD.4.LP.F
- Interact with linear models or physical objects (blocks). 5.MD.4.LP.G

5 Relate volume to the operations of multiplication and addition and solve realworld and mathematical problems involving volume. a. Find the volume of a right rectangular prism with whole number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent threefold whole number products as volumes, e.g., to represent the Associative Property of Multiplication. b. Apply the formulas $V = \ell \times w \times h$ and $V = B \times h$ for rectangular prisms to find volumes of right rectangular prisms with whole number edge lengths in the context of solving real-world and mathematical problems. c. Recognize volume as additive. Find volumes of solid figures composed of two nonoverlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real-world problems. 5.MD.5

Complexity a

a Find the volume when given a physical representation of a cube and/or rectangular prism in a real-world word problem. 5.MD.5A

Complexity b

b Label and measure the length, width, and height of a cube and/or rectangular prism in a real-world word problem with physical representations. 5.MD.5B

Complexity c

c Label the length, width, and height of a rectangular prism from a real-world word problem with physical representations. 5.MD.5C

Learning Progression

- Content works in conjunction with 5.MD.3-4. 5.MD.5.LP.A
- Identify and describe shapes (squares, rectangles, cubes, rectangular prisms). 5.MD.5.LP.B
- Identify shapes as two-dimensional (lying in a plane, “flat”) or three dimensional (“solid”). 5.MD.5.LP.C
- Recognize a cube and a rectangular prism. 5.MD.5.LP.D
- Recognize a unit cube. 5.MD.5.LP.E
- Engagement Statements (demonstration of engaged in the topic) 5.MD.5.LP.F
- Interact with linear models or physical objects (blocks). 5.MD.5.LP.G

Geometry

Graph points on the coordinate plane to solve real-world and mathematical problems.

1 Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond, e.g., x-axis and x-coordinate, y-axis and y-coordinate. When given a whole number ordered pair, student will plot the ordered pair using knowledge of the x-axis and y-axis. 5.G.1

Complexity a

a When given a whole number ordered pair, student will plot the ordered pair using knowledge of the x-axis and y-axis. 5.G.1A

Complexity b

b Write the ordered pair for a plotted point in quadrant I of a coordinate plane. 5.G.1B

Complexity c

c Label the x-axis and the y-axis on quadrant I on a coordinate plane. Match a plotted point in quadrant I with its ordered pair. 5.G.1C

Learning Progression

- Identify points on a horizontal number line (scale limited to whole numbers 1-10). 5.G.1.LP.A
- Identify points on a vertical number line (scale limited to whole numbers 1-10). 5.G.1.LP.B
- Understand a coordinate grid is formed by a vertical and horizontal number line. 5.G.1.LP.C
- Recognize the horizontal number line as the x-axis. 5.G.1.LP.D
- Recognize the vertical number line as the y-axis. 5.G.1.LP.E
- Recognize the intersection of the x-axis and y-axis as the origin. 5.G.1.LP.F
- Location of the origin is at point 0,0 on the coordinate place. 5.G.1.LP.G
- Engagement Statements (demonstration of engaged in the topic) 5.G.1.LP.H
- Interact with coordinate grid. 5.G.1.LP.I

2 Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. 5.G.2

Complexity a

a Graph a point on a map and/or coordinate grid and use the information to solve real-world word problems. 5.G.2A

Complexity b

b Use the information on a graph to solve realworld word problems. 5.G.2B

Complexity c

c Identify a point on a map and/or coordinate grid. 5.G.2C

Learning Progression

- Identify points on a horizontal number line (scale limited to whole numbers 1-10). 5.G.2.LP.A
- Identify points on a vertical number line (scale limited to whole numbers 1-10). 5.G.2.LP.B
- Understand a coordinate grid is formed by a vertical and horizontal number line. 5.G.2.LP.C
- Recognize the horizontal number line as the x-axis. 5.G.2.LP.D
- Recognize the vertical number line as the y-axis. 5.G.2.LP.E
- Recognize the intersection of the x-axis and y-axis as the origin. 5.G.2.LP.F
- Location of the origin is at point 0,0 on the coordinate place. 5.G.2.LP.G
- Engagement Statements (demonstration of engaged in the topic) 5.G.2.LP.H
- Interact with coordinate grid. 5.G.2.LP.I

Classify two-dimensional figures into categories based on their properties.

3 Identify and describe commonalities and differences between types of triangles based on angle measures (equiangular, right, acute, and obtuse triangles) and side lengths (isosceles, equilateral, and scalene triangles). 5.G.3

Complexity a

a Identify triangles (right, scalene, and isosceles) and the size of their angles. 5.G.3A

Complexity b

b Sort triangles by angle measures or side lengths when given physical or visual representations. 5.G.3B

Complexity c

c Sort triangles by the presence or absence of right angles (physical and/or visual representations given). 5.G.3C

Learning Progression

- Identify three-sided closed figures as triangles. 5.G.3.LP.A
- Recognize triangles regardless of their orientations or overall size. 5.G.3.LP.B
- Identify the angles of a triangle. 5.G.3.LP.C
- Recognize 90° angles as right angles. 5.G.3.LP.D
- Engagement Statements (demonstration of engaged in the topic) 5.G.3.LP.E
- Interact with triangles. 5.G.3.LP.F

4 Identify and describe commonalities and differences between types of quadrilaterals based on angle measures, side lengths, and the presence or absence of parallel and perpendicular lines, e.g., squares, rectangles, parallelograms, trapezoids, and rhombuses. 5.G.4

Complexity a

a Identify quadrilaterals with perpendicular or parallel sides, right angles, or side lengths. 5.G.4A

Complexity b

b Sort quadrilaterals by given criteria (perpendicular sides, equal side lengths) using physical and/or visual representations. 5.G.4B

Complexity c

c Given polygons with three to eight sides, identify the quadrilaterals. 5.G.4C

Learning Progression

- Identify four-sided closed figures as quadrilaterals. 5.G.4.LP.A
- Recognize quadrilaterals regardless of their orientations or overall size. 5.G.4.LP.B
- Engagement Statements (demonstration of engaged in the topic) 5.G.4.LP.C

- Interact with quadrilaterals. 5.G.4.LP.D