Ganado Unified School District #20
(MATH/ 5TH GRADE)

PACING Guide SY 2022-2023

Resources	AZ College and Career Readiness Standard	Essential Question (HESS Matrix)	Learning Goal	Vocabulary (Content/Academic)
First Quarter				
Unit 1 Planner Math Is…. **1-1:** Math is Mine **1-2:** Math is Exploring **1-3:** Math Is In My World **1-4:** Math is Explaining and Sharing **1-5** Math is Finding Patterns **1-6** Math is Ours **Unit 2 Planner Volume** **2-1:** Understand Volume **2-2:** Use Unit Cubes to Determine Volume **2-3:** Use Formulas to Determine Volume **2-4:** Determine Volume of Composite Figures **2-5:** Solve Problems Involving Volume	<u>**5.MD.C. Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.**</u> **5.MD.C.3.** Recognize volume as an attribute of solid figures and understand concepts of volume measurement. **5.MD.C.3.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. **5.MD.C.3.b.** A solid figure which ca be packed without gaps or overlaps using *n* unit cubes is said to have a volume of *n* cubic units. 5.MD.C.4. Measure volumes by counting unit cubes, using cubic cm, cubic in, cubic ft, and improvised units. **5.MD.C.5.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.	What does it mean to do math? What do you notice about Dakota's classroom? What math do you see in the classroom? What math do you see outside the window? Do you know what it means to find the volume of rectangular prism? What do you already know about finding volume of rectangular prisms? What do you think you will be doing in the unit? How can I extend my knowledge of place value to decimals? What do you already know about decimals? What can decimals be used for?	Students will be able to discuss the role of math in there and other people's lives. Students will be able to discuss approaches for making sense of a problem and determining strategies for solving it. Students will be able to look for connections among quantities. Students will be able to consider different ways to use mathematics to represent a real-world situation. Students will be able to refine their skills in constructing arguments to support their thinking. Students will be able to respond to the ideas and arguments of others. Students will be able to consider strategies for uncovering patterns and for using patterns to solve problems. Students will be able to consider efficient strategies derived from repeated reasoning. Students will be able to discuss classroom norms of interaction for a productive learning environment. Students will be able to understand volume is a measurable attribute of 3-dimensional figures. Students will be able to understand that a rectangular prism can be packed using unit cubes with no gaps or overlaps to establish volume. Students will be able to determine the volume of a rectangular prism by counting unit cubes.	hobby interview strategy analyze grid visualize model fractional critique justify defend efficient generalizations norms responsibility rectangular prism unit cube establish volume cubic unit debate suggest volume base (of a solid) assert formula evaluate composite solid complex figure speculate

Unit 3 Planner
Place Value & Number Relationships
3-1: Generalize Place Value
3-2: Extend Place Value to Decimals
3-3: Read & Write Decimals
3-4: Compare Decimals
3-5: Use Place Value to Round Decimals

Unit 4 Planner
Add & Subtract Decimals
4-1: Estimate Sums & Differences of Decimals
4-2: Represent Addition of Decimals
4-3: Represent Addition of Tenths & Hundredths
4-4: Use Partial Sums to Add Decimals

5.MD.C.5.b. Apply the formulas V = l x w h and V = b x 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.
5.MD.C.5.c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.

5.NBT.A. Understand the place value system.

5.NBT.A.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.A.3.a. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form.
5.NBT.A.3.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.A.4. Use place value understanding to round decimals to any place.

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

5.NBT.B.7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

What do you already know about place value?

What do you think you will be doing in the unit?

When do you think you might need to add and subtract with decimals?

What do you think you will be learning in the Unit?

Students will be able to determine the volume of a rectangular prism by multiplying the number of unit cubes in one layer by the number of layers.
Students will be able to determine the volume of rectangular prisms using formulas.
Students will be able to determine the volume of composite solid figures,
Students will be able to apply the volume formulas to solve real-world problems involving rectangular prisms.
Students will be able to relate the value of a digit in a multi-digit whole number in one place value position to that of the same digit in the place to its right.
Students will be able to relate the value of a digit in a multi-digit whole number in one place value position to that of the same digit in the place to its left.
Students will be able to read and write decimals to the thousandths place in standard form, expanded form, and word form.
Students will be able to compare two decimals to the thousandths place using place value and record the comparison using appropriate symbols.
Students will be able to round decimals to any place value position.
Students will be able to identify situations that call for rounding decimals and determine the place to which to round.
Students will be able to estimate sums and differences of decimals using same strategies used to estimate sums and differences of whole numbers.
Students will be able to use decimal grids to represent addition of decimals with the same number of decimal places.
Students will be able to use addition strategies they know, such as partial sums, to add decimals.
Students will be able to use decimal grids to represent subtraction of decimals with the same number of decimals places.

equation
relevant
valid
unknown
variable
digit
place value
place value chart
cite
relationship
decimal
decimal point
tenth
hundredth
thousandth
contradiction
infer
expanded form
standard form
word form
expand
quality
greater than (>)
less than (<)
address
negate
round
estimate
prove
variation
reasonable
decimal grid
hundredths
tenths
benefit
drawback
evaluate
explain
partial sums
procedure

Unit 4 Planner **Add & Subtract Decimals** **4-5:** Represent Subtraction of Decimals **4-6:** Represent Subtraction of Tenths and Hundredths **4-7:** Strategies to Subtract Decimals **4-8:** Explain Strategies to Add and Subtract Decimals **Unit 5 Planner** **Multiply Multi-Digit Whole Numbers** **5-1:** Understand Powers and Exponents **5-2:** Patterns when Multiplying a Whole Number by Powers of 10 **5-3:** Estimate Products of Multi-Digit Factors **5-4:** Use Area Models to Multiply Multi-Digit Factors **5-5:** Use Partial Products to Multiply Multi-Digit Factors **5-6:** Relate Partial Products to an Algorithm **5-7:** Multiply Multi-Digit Factors Fluently **Unit 6 Planner** **Multiply Decimals** **6-1:** Patterns When Multiplying Decimals by Powers of 10. **6-2:** Estimate Products of Decimals	**5.NBT.B. Perform operations with multi-digit whole numbers and with decimals to hundredths.** **5.NBT.B.6.** Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisor, 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.B.7.** Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. **5.NBT.A. Understand the place value system.** **5.NBT.A.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 whole-number exponents to denote powers of 10. **5.NBT.B. Perform operations with multi-digit whole numbers and with decimals to hundredths.** **5.NBT.B.5.** Fluently multiply multi-digit whole numbers using the standard algorithm.	How can I multiply multi-digit numbers? What does multi-digit mean? What are whole numbers? What do you think you will be doing in the unit? What strategies can I use to multiply decimals? What strategies did you use to multiply whole numbers? How do you think multiplying decimals will be different? How can I divide multi-digit numbers? What do you already know about division? What do you know about representing division? How does knowing multiplication facts help you divide?	Students will be able to use decimal grids to represent subtraction of decimals with the same number of decimal places. Students will be able to use decimal grids to represent subtract of decimals with different numbers of decimal places. Students will be able to use subtraction strategies they know, such as partial differences, to subtract decimals. Students will be able to explain their choice of strategy to solve. Students will be able to write a power of 10 as a multiplication expression with factors of 10. Students will be able to write power of 10 using a base of 10 and exponents. Students will be able to use patterns to determine products when multiplying whole numbers by powers of 10. Students will be able to explain patterns in the products when multiplying whole numbers by powers of 10. Students will be able to estimate products of multi-digit factors using the same strategies used to estimate products of lesser factors. Students will be able to use estimated products to make predictions about a calculated solution. Students will be able to use estimated product to assess the reasonableness of a calculated solution. Students will be able to use an area model to determine partial products and add partial products to calculate the product. Students will be able to determine partial products by decomposing the factors and add partial products to calculate the product. Students will be able to use algorithm to multiply multi-digit factors by a one-digit factor. Students will be able to understand and explain a multiplication algorithm. Students will be able to use an algorithm to multiply two multi-digit factors. Students will be able to use patterns to multiply a decimal by a power of 10.	Decimal grid Assert Prove Justify Accurate Evaluate Partial differences analyze Decomposition Partial sums Procedure Base Exponent Exponential form Power of 10 Factor Estimate Round Area model Decompose Partial products Algorithm Regroup Suggest Debate Relevant Note Transition Range Cite Speculate Partition Complement Complex Negate Digit Expand Dividend Divisor Quotient Remainder

6-3: Represent Multiplication Involving Decimals
6-4: Use an Area Model to Multiply Decimals
6-5: Generalizations about Multiplying Decimals
6-6: Explain Strategies to Multiply Decimals

Unit 7 Planner
Divide Whole Numbers
7-1: Division Patterns with Multi-Digit Numbers
7-2: Estimate Quotients
7-3: Relate Multiplication and Division of Multi-Digit Numbers
7-4: Represent Division of 2-Digit Divisors
7-5: Use Partial Quotients to Divide
7-6: Divide Multi-Digit Whole Numbers
7-7: Solve Problems Involving Division

Students will be able to explain patterns when multiplying a decimal by a power of 10.
Students will be able to estimate products of decimals.
Students will be able to use estimated products to make predictions about a calculated solution.
Students will be able to use estimated products to assess the reasonableness of a calculated solution.
Students will be able to use decimal grids to represent and solve multiplication equations involving decimals.
Students will be able to use an area model to determine partial products and add partial products to calculate the product of two decimals.
Students will be able to use patterns based on place value concepts and properties of operations to determine the placement of the digits in a product.
Students will be able to explain their reasoning for using different strategies to solve.
Students will be able to explain different strategies to multiply decimals.
Students will be able to use place-value patterns and basic facts to divide a whole number by a multiple of 10.
Students will be able to estimate quotients of multi-digit numbers using the same strategies used to estimate quotients of lesser numbers.
Students will be able to use estimated quotients of lesser numbers.
Students will be able to use estimated quotients to make predictions about a calculated solution.
Students will be able to use estimated quotients to assess the reasonableness of a calculated solution.
Students will be able to use the relationship between multiplication and division to determine the quotient of multi-digit numbers.
Students will be able to use an area model to determine partial quotients and add partial quotients to calculate the quotient.
Students will be able to record partial quotients using an algorithm.
Students will be able to solve division problems using partial quotients, which sometimes include remainders.

Address
Advantage
Reflect
Condition
Drawback

			Students will be able to solve word problems involving division. Students will be able to interpret the remainder, when necessary, to solve problems.	

<table>
<tr><td colspan="5" align="center">Third Quarter</td></tr>
</table>

<u>**Unit 8 Planner**</u> <u>**Divide Decimals**</u> **8-1:** Division Patterns with Decimals & Powers of 10. **8-2:** Estimate Quotients of Decimals **8-3:** Represent Division of Decimals by a Whole Number **8-4:** Divide Decimals by Whole Numbers **8-5:** Divide Whole Numbers by Decimals **8-6:** Divide Decimals by Decimals **Unit 9 Planner** **Add & Subtract Fractions** **9-1:** Estimate Sums & Differences of Fractions **9-2:** Represent Addition of Fractions with Unlike Denominators **9-3:** Add Fractions with Unlike Denominators **9-4:** Represent Subtraction of Fractions with Unlike Denominators **9-5:** Subtract Fractions with Unlike Denominators **9-6:** Add Mixed Numbers with Unlike Denominators **9-7:** Subtract Mixed Numbers with Unlike Denominators	<u>**5.NBT.A. Understand the place value system.**</u> **5.NBT.A.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 whole-number exponents to denote powers of 10. <u>**5.NBT.B. Perform operations with multi-digit whole numbers and with decimals to hundredths.**</u> **5.NBT.B.7.** Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawing and strategies based on place value, properties of operations, and, or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. <u>**Number and Operations – Fractions (NF)**</u> <u>**5.NF.A. Use equivalent fractions as a strategy to add and subtract fractions.**</u> **5.NF.A.1.** Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or different of fractions with like denominators. **5.NF.A.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.	What strategies can I use to divide decimals? What does you already know about decimals? What do you already know about place value? When do you think you might need to divide with decimals? What do you think you will be learning in this unit? How do I add and subtract fractions? What do you already know about adding fractions? What do you already know about subtracting fractions? How can I multiply fractions? What do you know about multiplying numbers?	Students will be able to use place-value patterns to determine the quotient of a decimal divided by a power of 10. Students will be able to use the relationship between place-value positions to explain patterns when dividing decimals by powers of 10. Students will be able to estimate quotients of decimals using the same strategies used to estimate quotients of whole numbers. Students will be able to use estimated quotients to make predictions about a calculated solution. Students will be able to use estimated quotients to assess the reasonableness of a calculated solution. Students will be able to represent division of decimals with equal sharing or equal grouping. Students will be able to use place-value understanding and equivalent representations to divide a decimal by a whole number. Students will be able to use decimal grids to represent and solve a division equation. Students will be able to multiply by a power of 10 to write an equivalent expression with a whole-number divisor to solve a division equation. Students will be able to multiply the dividend and the divisor by a power of 10 to write and equivalent equation continuing whole numbers to solve a division equation. Students will be able to use benchmark numbers to estimate sums and difference of fractions. Students will be able to explain how to use an estimate to predict or check the reasonableness of a calculated sum or difference of fractions. Students will be able to use and explain how to use a representation to add fractions with unlike denominators. Students will be able to add and explain how to add fractions with unlike denominators.	Power of 10 Dividend Divisor Estimate Quotient Decimal Place value Partial quotients Benchmark number Denominator Equivalent fractions Fraction tiles Like denominator Numerator Multiple Mixed number Eliminate Suggest Correspond Accurate Condition Establish Valid Reflect Debate Reflect Fraction model

9-8: Add & Subtract Mixed Numbers with Regrouping
9-9: Solve Problems Involving Fractions & Mixed Numbers

Unit 10 Planner
Multiplying Fractions
10-1: Represent Multiplication of a Whole Number by a Fraction
10-2: Multiply a Whole Number by a Fraction
10-3: Represent Multiplication of a Fraction by a Fraction
10-4: Multiply a Fraction by a Fraction
10-5: Determine the Area of Rectangles with Fractional Side Lengths
10-6: Represent Multiplication of Mixed Numbers
10-7: Multiply Mixed Numbers
10-8: Multiplication as Scaling
10-9: Solve Problems Involving Fractions

Unit 11 Planner
Divide Fractions
11-1: Relate Fractions to Division
11-2: Solve Problems Involving Division
11-3: Represent Division of Whole Number by Unit Fractions
11-4: Divide Whole Numbers by Unit Fractions

5.NF.B.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.

5.NF.B.4.a. Interpret the product a/b x q as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations a x q divide by b. For example, use a visual fraction model to show 2/3 x 4= 8/3, and create a story context for this equation. Do the same with 2/3 x 4/5= 8/15. (In general, a/b x c/d = ac/bd)

5.NF.B.4.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.B.5. Interpret multiplication as scaling (resizing), by:

5.NF.B.5.a. Comparing 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.

5.NF.B.5.b. Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number; 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 = nxa/nxb to the effect of multiplying a/b by 1.

5.NF.B. Apply and extend previous understandings of multiplication and division.

5.NF.B.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.
5.NF.B.6. Solve real world problems involving multiplication of fractions and mixed numbers,

How is multiplication related to addition?

What do you know about adding fractions?

How can I divide fractions?

What does it mean to divide?

What do you know about fractions?

Students will be able to subtract and explain how to subtract fractions with unlike denominators.
Students will be able to add and explain how to add mixed numbers with unlike denominators.
Students will be able to subtract and explain how to subtract mixed numbers with unlike denominators.
Students will be able to add and subtract mixed numbers with regrouping.
Students will be able to solve word problems involving fractions.
Students will be able to use a representation to multiply a whole number by a fraction.
Students will be able to multiply a whole number by a fraction.
Students will be able to use a representation to multiply a fraction by a fraction.
Students will be able to multiply a fraction by a fraction by multiplying the numerators and multiplying the denominators.
Students will be able to find the area of a rectangle with fractional side lengths by tiling.
Students find the area of a rectangle with fractional side lengths by multiplying the side lengths,
Students will be able to use an area model to represent multiplication of mixed numbers.
Students will be able to find partial products using an area model.
Students will be able to use partial products to multiply mixed numbers.
Students will be able to write mixed numbers as fractions to find the product.
Students will be able to explain how the size of the factors impacts the size of the product without performing the multiplication.
Students will be able to solve word problems involving fractions.
Students will be able to represent the quotient to a division equation as a fraction or mixed number.
Students will be able to determine whether a quotient should be written with a remainder or as a mixed number.
Students will be able to use representations to divide whole numbers by unit fractions.

Multiplication
Partition
Area
Square unit
Area model
Scaling
Equation
Unknown
Variable
Citation
Complex
Speculate
Expand
Inter
Prove
Remainder
Unit fraction
Arguably

e.g., by using visual fraction models or equations to represent the problem.

5.NF.B.7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.

5.NF.B.7.b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for 4 divided 1/5, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 4 divided by 1/5=20 because 20x1/5 = 4.

Students will be able to use the meaning of multiplication as equal groups to divide whole numbers by unit fractions.

Fourth Quarter

Unit 11 Planner Divide Fractions **11-5:** Represent Division of Unit Fractions by Non-Zero Whole Numbers **11-6:** Divide Unit Fractions by Non-Zero Whole Numbers **11-7:** Solve Problems Involving Fractions **Unit 12 Planner Measurement & Data** **12-1:** Convert Customary Units **12-2:** Convert Metric Units **12-3:** Solve Multi-Step Problems Involving Measurement Units **12-4:** Represent Measurement Data on a Line Plot **12-5:** Solve Problems Involving Measurement Data on Line Plots	**5.NF.B.7. Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions.** **5.NF.B.7.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 divided by 4, and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that 1/3 divided by 4 = ½ because 1/12 x 4 = 1/3 **5.NF.B.7.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 ½ lb of chocolate equally? How many 1/3 cup servings are in 2 cups of raisins? **5.MD.A. Convert like measurement units within a given measurement system.**	How can I divide fractions? What does it mean to divide? What do you know about fractions? How can I convert measurement unit and represent measurement data? What types of measurements have you made before? What units have you used to measure? What kinds of data have you used?	Students will be able to use representations to divide unit fractions by non-zero whole numbers. Students will be able to extend their understanding that dividing by a whole is the same as multiplying by a unit fraction to divide unit fractions by whole numbers. Students will be able to solve word problems involving division of fractions using strategies such as using fraction models. Students will be able to use the relationship between customary units of measurement to convert measurements. Students will be able to use the relationship between units of time to convert measurements. Students will be able to use the relationship between metric units of measurement to convert to measurements. Students will be able to solve multi-step problems by identifying and answering a hidden question and using that answer to solve the initial problem. Students will be able to create a line plot to display a data set involving measurement. Students will be able to interpret line plots. Students will be able to solve problems using data in a line plot and performing operations on the data. Students will be able to identify and describe features of a coordinate grid.	Divisor Fraction model Unit fraction Analyze Suggest Dividend Division Accurate Evaluate Equation Unknown Variable Establish Relevant Capacity Convert Customary system Length Weight Accurate Infer Mass Metric system Emphasize Note Procedure Data

Unit 13 Planner Geometry	Standards	Essential Questions	Learning Targets	Vocabulary

Unit 13 Planner Geometry
13-1: Understand the Coordinate Plane
13-2: Plot Ordered Pairs on Coordinate Plane
13-3: Represent Problems on a Coordinate Plane
13-4: Classify Triangles by Properties
13-5: Properties of Quadrilaterals
13-6: Classify Quadrilaterals by Properties

Unit 14 Planner Algebraic Thinking
14-1: Write Numerical Expressions
14-2: Interpret Numerical Expressions
14-3: Evaluate Numerical Expressions
14-4: Numerical Patterns
14-5: Relate Numerical Patterns
14-6: Graphs of Numerical Patterns

5.MD.A.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05m), and use these conversions in solving multi-step, real world problems.

5.MD.B. Represent and interpret data.
5.MD.B.2. Make a line plot to display a data set of measurements in fractions of a unit (1/2, ¼, 1/8). Use operations on fractions for this grade to solve problems involving information presented in line plots.

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

5.G.A.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 place 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 axis and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).

5.G.A.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.B. Classify two-dimensional figures into categories based on their properties.

5.G.B.3. Understand that attributes belonging to a category of two-dimensional figures also

---

What graphs have you used to represent data?

How can I use the coordinate plane and identify and classify 2-dimnensional figures?

What have you graphed before?

What do you already know about 2-dimensional figures?

How can I begin to think about algebra?

What do you know about variables and expression?

What do you know about graphing on the coordinate plane?

Students will be able to use a coordinate plane to determine the ordered pair associated with a point.
Students will be able to plot ordered pairs on a coordinate plane.
Students will be able to plot points that represent real-world situations.
Students will be able to interpret coordinate values of points in the context of the situation.
Students will be able to classify triangles into categories and subcategories based on their properties.
Students will be able to organize the categories and subcategories into a hierarchy.
Students will be able to name quadrilaterals based on their properties.
Students will be able to organize the categories and subcategories into a hierarchy.
Students will be able to write numerical expressions to represent calculations that are described using written statements.
Students will be able to interpret numerical expressions without evaluating the expression.
Students will be able to use the order of operations to evaluate numerical expressions.
Students will be able to generate two numerical patterns that follow two given rules.
Students will be able to identify relationships between corresponding terms in the generated number patterns.
Students will be able to use a table to arrange corresponding terms of two numerical patterns.
Students will be able to plot ordered pairs consisting of the corresponding terms from two numerical patterns.

Line plot
Outlier
Reflect
Coordinate plane
Ordered pair
Origin
x-axis
y-coordinate
y-axis
x-coordinate
category
equilateral triangle
hierarchy
isosceles triangle
property
scalene triangle
subcategory
attribute
parallelogram
property
quadrilateral
rectangle
rhombus
square
trapezoid
establish quality
Venn diagram
Expression
Grouping symbol
Numerical expression
Parentheses
Order of operations
Contradiction
Corresponding term numerical pattern rule (of a pattern)
Transition

belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.

5.G.B.4. Classify two-dimensional figures in a hierarchy based on properties.

5.OA.A. Write and interpret numerical expressions.

5.OA.A.1. Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols.

5.OA.A.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 X (8 + 7). Recognize that 3 X (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.

5.OA.B. Analyze patterns and relationships.

5.OA.B.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.