\*Revised: July 2024

| MathematicsStandards Based Report Card 2024-25**5th Grade**Scoring Rubric:3: Meets expectations 2: Approaching expectations 1: Beginning to learn expectations Blank Box: Not assessed IE: Insufficient evidence  |
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| **Math Priority Standards**  | Quarter 1 | Quarter 2 | Quarter 3 | Quarter 4 |
| **Finds volume of rectangular prisms**5.GM.B.4 Understand the concept of volume and recognize that volume is measured in cubic units. a) Describe a cube with edge length 1 unit as a “unit cube” and is said to have “one cubic unit” of volume and can be used to measure volume. b)Understand that the volume of a right rectangular prism can be found by stacking multiple layers of the base.  |  |  |  |  |
| **Solves multi-step word problems using the four operations**5.RA.C.5 Solve and justify multi-step problems involving variables, whole numbers, fractions and decimals. |  |  |  |  |
| **Compare and order fractions and decimals**5.NF.A.3 Compare and order fractions and/or decimals to the thousandths place using the symbols >, = or, < and justify the solution |  |  |  |  |
| **Adds and subtracts fractions and mixed numbers**5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution. |  |  |  |  |
|  **Multiplies and divides decimals**5.NBT.A.7 &8 Multiply multi-digit whole numbers and decimals to the hundredths place; divide multi digit whole numbers and decimals to the hundredths place using up to two digit divisors and four-digit dividends, and justify the solution  |  |  |  |  |
|  **Multiplies fractions**5.NF.B.7(a-c) Extend the concept of multiplication to multiply a fraction or a whole number by a fraction. ;relationships between multiplying fractions and finding areas of rectangles with fractional side lengths;calculate and interpret the product of a fraction by a whole number and whole number by a fraction; calculate and interpret the product of two fractions less than one. |  |  |  |  |
| **Divides fractions**5.NF.B.8(a & b) Extend the concepts of division to divide unit fractions and whole numbers by using visual fraction models and equations; calculate and interpret the quotient of a unit fraction by a non-zero whole number; calculate and interpret the quotient of a whole number by a unit fraction. |  |  |  |  |
| **Solve problems involving measurement and conversions.**5.GM.D.9 Solve multi-step problems that require measurement conversions |  |  |  |  |
| **Represent and Analyze Data**5.DS.A.2 Create a line plot to represent a given or generated data set, and analyze the data to answer questions and solve problems, recognizing the outlier and generating the median. |  |  |  |  |
|  **Generates patterns, graphs ordered pairs, and describes the relationship between the corresponding terms**5.RA.A.1 &2 Investigate a relationship between two numeric patterns, generate two numeric patterns given two rules, translate two numeric patterns into two sets of ordered pairs, graph numeric patterns on the Cartesian coordinate plane, identify the relationship between two numeric patterns. Write a rule to describe or explain a given numeric pattern. |  |  |  |  |

| **Priority Standard** | 5.GM.B.4 Understand the concept of volume and recognize that volume is measured in cubic units. a) Describe a cube with edge length 1 unit as a “unit cube” and is said to have “one cubic unit” of volume and can be used to measure volume. b)Understand that the volume of a right rectangular prism can be found by stacking multiple layers of the base. **Report Card: Finds volume of rectangular prisms**  |
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| **Learning Targets** | * I can decompose 3D shapes and find volumes of right rectangular prisms. (MP7)
* I can measure necessary attributes of shapes in order to determine volumes. (MP7)
* I can use the correct labels when describing volume. (MP6)
* I can explain how volume is calculated using physical or visual models. (MP3)
 |
| **Common Misconceptions** | * Overlooking the “hidden” cubes in a visual model
* Adding the dimensions, rather than multiplying
* Multiplying unneeded dimensions
* Misapplication of the formula *V* = *B* x *h*, where *B* = area of the base
* Incorrect units (i.e. linear or square units)
 |
| **Meeting the Standard****3** | **Approaching the Standard****2** | **Beginning to Learn****1** |
| Student can consistently find the volume of a rectangular prism and can explain the relationship of Area as the foundation Base of the figure.  | Student inconsistently applies the relationship of Area as the foundation Base that is layered to find the volume of a rectangular prism. (The relationship may be evident with concrete materials but cannot be applied when presented in the abstract.) | Student needs support to find volume using a model, drawing, or formula. Student may not see the relationship of Area as the foundation of a figure that is then layered in finding volume. |
| **Next Level**  | * Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas *V = l w h* and *V = b h* to find volumes of right rectangular prisms with fractional edge lengths in the context

of solving real-world and mathematical problems. |

| **Priority Standard** | .RA.C.5 Solve and justify multi-step problems involving variables, whole numbers, fractions and decimals.**Report Card: Solves multi-step word problems using the four operations** |
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| **Learning Targets** | * I can use a variety of strategies to solve problems(MP 1,7)
* I can use multiple representations to model real-world and mathematical problems. (MP4)
* I can explain my reasoning. (MP 6)
* I can critique the reasoning of others, identifying errors and alternate approaches to solving problems. (MP 2, 3)
* I can identify and explain patterns and the structure of the problems involving. (MP 8)
* I can communicate his or her reasoning precisely to problems. (MP 6)
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| **Common Misconceptions** | * Student may not recognize the place-value implications of multiplying or dividing by a digit in the tens place.
* Student may not understand how to use regrouping with the standard algorithm.
* Student may incorrectly combine the partial products.
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| **Meeting the Standard****3** | **Approaching the Standard****2** | **Beginning to Learn****1** |
| Student can accurately determine the operations used when evaluating how to solve a multi-step word problem.  | Student can accurately determine the operations used when solving multi-step word problems with some errors in computation. Student struggles to accurately explain their solution.  | Student needs support in solving multi-step word problems. Student is unable to explain their thinking when working toward solutions. |
| **Next Level**  | * Students can identify real world scenarios that involve all four operation of multi-digit numbers including negative numbers and justify their work.
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| **Priority Standard** | 5.NF.A.3 Compare and order fractions and/or decimals to the thousandths place using the symbols >, = or, < and justify the solution**Report Card: Compare and order fractions and decimals** |
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| **Learning Targets** | * I can read decimal numbers through the thousandths place.
* I can write decimal numbers through the thousandths place using base-ten numerals, number names, and expanded form.
* I can compare decimal numbers through the thousandths place, using >, =, and < symbols to record the results.
* I can communicate to justify my work to others. (MP3)
* I can explain errors and alternative approaches to others’ work. (MP3)
 |
| **Common Misconceptions** | * Student may confuse the tenths and hundredths place.
* When reading a decimal number, student may name each place rather than just the last place (i.e. 0.98: *“nine tenths and eight hundredths”* rather than *“ninety-eight hundredths”*).
* When reading a decimal number, student may use the word “*point*” rather than “*and*” to introduce the decimal places.
* Student may assume that a numeral with more digits (past the decimal point) is greater than a numeral with only one digit past the decimal point (i.e., 5.06 > 5.1).
* Student may think that a 0 at the end of a decimal number changes the value of the decimal. (i.e. 3.2 < 3.20)
 |
| **Meeting the Standard****3** | **Approaching the Standard****2** | **Beginning to Learn****1** |
| Student can consistently read, write, and compare decimals. Student can accurately identify decimals in all three forms (standard, expanded, word). | Student may struggle to identify and accurately name decimals in various forms. Student struggles to compare decimals. | Student needs support in reading decimal names or comparing decimal values. |
| **Next Level**  | * Students can read numbers beyond the thousandths place or larger than a million.
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| **Priority Standard** | 5.NF.B.6 Solve problems involving addition and subtraction of fractions and mixed numbers with unlike denominators, and justify the solution.**Report Card: Adds and subtracts fractions and mixed numbers** |
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| **Learning Targets** | * I can use manipulatives and models to add fractions with unlike denominators. (MP2 and MP5)
* I can use manipulatives and models to subtract fractions with unlike denominators. (MP2 and MP5)
* I can use manipulatives and models to add mixed numbers with unlike denominators. (MP2 and MP5)
* I can use manipulatives and models to subtract mixed numbers with unlike denominators. (MP2 and MP5)
* I can find a common denominator in order to add and subtract unlike fractions. (MP7/MP8)
* I can find a common denominator in order to add and subtract mixed numbers. (MP7/8)
 |
| **Common Misconceptions** | * Adding/subtracting the denominator (rather than keeping the denominator)
* May not multiply the numerator by the factor used to create the common denominator
* Choosing a denominator that is not common to both fractions
* With mixed numbers, multiplying the whole number by the factor used to create common denominators
* Subtracting a lesser number from a greater number, disregarding which value is the minuend and which is the subtrahend
* Errors in regrouping to simplify the final answer
 |
| **Meeting the Standard****3** | **Approaching the Standard****2** | **Beginning to Learn****1** |
| Student can independently and consistently use manipulatives and models to add and subtract unlike fractions and mixed numbers. Student can also find a common denominator in order to add and subtract unlike fractions and mixed numbers. | Student inconsistently identifies a common denominator in order to add/subtract fractions and mixed numbers. Student may be able to find like denominators but cannot explain or justify with manipulatives and models. | Student needs support to find common denominators in order to add or subtract fractions and mixed numbers.  |
| **Next Level**  | * Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.
* Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
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| **Priority Standard** | 5.NBT.A.7 &8 Multiply multi-digit whole numbers and decimals to the hundredths place; divide multi digit whole numbers and decimals to the hundredths place using up to two digit divisors and four-digit dividends, and justify the solution **Report Card: Multiplies and divides decimals** |
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| **Learning Targets** | * I can relate the strategy I used to a written method and explain the reasoning I used. (MP2, MP3)
* I can use multiple strategies to multiply decimals to the thousandths. (MP1)
* I can use multiple strategies to divide decimals to the thousandths. (MP1)
* I can justify my solution when applying operations to decimals through the thousandths using precise language and models and equations.(MP3)
* I know the properties of operations.
* I can explain a real life scenario using a mathematical expression, including drawings, objects, actions, pictures, charts, and/or numbers. (MP4)
* I can evaluate the results in the contexts of the situation and reflect on whether the results make sense. (MP4)
 |
| **Common Misconceptions** | * Aligning the decimal point as in addition/subtraction
* Interpreting hundredths as tenths
* Ignoring the decimal point when multiplying, as if the decimals were whole numbers
* Bringing the decimal point straight down when multiplying, as with addition/subtraction
* Misplacing the decimal point within long division
* Reversing the dividend/divisor when setting up long division
* Failing to use estimation to determine whether the solution is reasonable
 |
| **Meeting the Standard****3** | **Approaching the Standard****2** | **Beginning to Learn****1** |
| Student can consistently multiply and divide decimals to the thousandths using models/drawings and strategies. Student can also justify the solution, explain the connection between the mathematical expression and a real-life scenario, and evaluate whether the results make sense.  |  Student may occasionally make computational and/or procedural errors. Student may struggle to explain or justify solutions.  | Student can use one or two operations with decimals but cannot explain or justify solutions or make sense of problems.  |
| **Next Level**  | * Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm
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| **Priority Standard** | 5.NF.B.7(a-c) Extend the concept of multiplication to multiply a fraction or a whole number by a fraction. ;relationships between multiplying fractions and finding areas of rectangles with fractional side lengths;calculate and interpret the product of a fraction by a whole number and whole number by a fraction; calculate and interpret the product of two fractions less than one.**Report Card: Multiplies fractions** |
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| **Learning Targets** | * I can use multiplication strategies to understand multiplication of a fraction.
* I can use visual fraction models (area model, bar model, number line) to show multiplication of a whole number and a fraction. (MP2, MP4, MP5)
* I can use visual fraction models (area model, bar model, number line) to show multiplication of two fractions. (MP2, MP4, MP5)
* I can create story contexts for multiplication of whole numbers and fraction equations. (MP1, MP2)
* I can develop a rule (algorithm) for multiplying fractions. (MP 7 & MP 8)
* I can use the area model to represent fractional products as rectangular areas.
* I can find the area of a rectangle with fractional side lengths by tiling it with unit squares and show that the area is the same as the product of the side lengths. (MP4)
* I can multiply fractional side lengths to find area of a rectangle. (MP2)
* I can explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number
* I can explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number
 |
| **Common Misconceptions** | * Misinterpreting the shaded portions of an area model (i.e. using the relationship between the darker and lighter shaded portions, instead of the shaded portions and the whole)
* Count all of the shaded boxes, instead of boxes with overlapping shading, in an area model
* Adding rather than multiplying
* Multiplying only the numerators of the fractions
* Errors in simplifying the final answer
 |
| **Meeting the Standard****3** | **Approaching the Standard****2** | **Beginning to Learn****1** |
| Student can consistently multiply fractions with fractions and whole numbers using models and strategies, explain real-world situations related to fraction multiplication, and apply the student identified algorithm for fraction multiplication. | Student can explain or model a fraction multiplication situation with consistency but may make computational errors. Student can multiply fractions by whole numbers, but not with fractions. | Student needs support to use strategies or models to demonstrate multiplication of fractions by other fractions and whole numbers. |
| **Next Level**  | * Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
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| **Priority Standard** | 5.NF.B.8(a & b) Extend the concepts of division to divide unit fractions and whole numbers by using visual fraction models and equations; calculate and interpret the quotient of a unit fraction by a non-zero whole number; calculate and interpret the quotient of a whole number by a unit fraction.**Report Card: Divides fractions** |
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| **Learning Targets** | * I can use bar diagrams or other models to make sense of dividing a unit fraction by a whole number. (MP1, MP2, MP6)
* I can use bar diagrams or other models to make sense of dividing a whole number by a unit fraction. (MP1, MP2, MP6)
* I can solve real-world problems by using visual fraction models and equations to represent the problem. (MP1, MP2, MP4, MP6)
* I can explain my reasoning when solving a fraction division problem. (MP 1, MP 2, MP 3)

*Teacher Note: The algorithm for fraction division is not required to be formalized until 6th grade.*  |
| **Common Misconceptions** | * Multiplying rather than dividing
* Confusing the dividend and divisor or what each number in the situation represents
* Misunderstanding the reason why the quotient is a whole number versus a fraction
* Interpreting an addition, subtraction, or multiplication situation as a division situation
 |
| **Meeting the Standard****3** | **Approaching the Standard****2** | **Beginning to Learn****1** |
| Student can consistently use a variety of models or pictures representing fraction division to divide unit fractions by other unit fractions and whole numbers, and can explain the reason for applying fraction division in real-world situations. | Student can use a strategy to divide a unit fraction by a whole number but may not yet be able to divide a whole number by a unit fraction. | The student needs support to divide of unit fractions by whole numbers and other unit fractions. |
| **Next Level**  | * Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem.
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| **Priority Standard** | 5.GM.D.9 Solve multi-step problems that require measurement conversions**Report Card: Solves problems involving measurement and conversions** |
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| **Learning Targets** | * I can convert different-sized measurement units in the metric system. (MP6)
* I can convert different-sized measurement units in the standard system. (MP6)
* I can solve multi-step, real-world problems using unit conversions. (MP1)
 |
| **Common Misconceptions** | * Moving the decimal point to the right when dividing or moving the decimal to the left when multiplying
* Multiplying or dividing by the wrong conversion factor
* Only using tricks to convert rather than understanding unit conversions
 |
| **Meeting the Standard****3** | **Approaching the Standard****2** | **Beginning to Learn****1** |
| Student can consistently explain and convert units in the metric and customary systems, including real-world problem-solving. | Student may be able to convert units in one system of measurement but may not yet be able to convert units in both systems.  | Student needs support to convert units in different measurement systems and demonstrate why the conversion works. |
| **Next Level**  | * Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.
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| **Priority Standard**  | 5.DS.A.2 Create a line plot to represent a given or generated data set, and analyze the data to answer questions and solve problems, recognizing the outlier and generating the median.**Report card: Represent and Analyze Data** |
| --- | --- |
| **Learning Targets** | * I can ask questions about the data collected using mathematical vocabulary (MP6)
* I can analyze the data in a frequency table, line plot, bar graph or picture graphs (mP6 MP8)
* I can interpret what I learned from the data to answer questions. (MP1)
* I can find the mode in a set of data
* I can find the range in a set of dat
* I can identify outliers in the data set
* I can find the median of the data set
 |
| **Common Misconceptions** | * When creating their own graphs or charts, students may struggle to correctly report data in the line plot.
* Understanding why counting outliers is important in finding the median in a data set.
 |
| **Meeting the Standard****3** | **Approaching the Standard****2** | **Beginning to Learn****1** |
| Student is able to independently create, draw conclusions, and accurately solve problems (including outliers and finding the median) with line plot data.  | Student can sometimes create, draw conclusions, and solve problems (including outliers and finding the median) with line plot data.  | Student need support to create, draw conclusions, and solve problems (including outliers and finding the median) with line plot data.  |
| **Next Level**  | * Finding the mean of the data set
* Analyzing data in the first quadrant grid
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| **Priority Standard** | 5.RA.A.1 &2 Investigate a relationship between two numeric patterns, generate two numeric patterns given two rules, translate two numeric patterns into two sets of ordered pairs, graph numeric patterns on the Cartesian coordinate plane, identify the relationship between two numeric patterns. Write a rule to describe or explain a given numeric pattern.**Report Card: Generates patterns, graphs ordered pairs, and describes the relationship between the corresponding terms** |
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| **Learning Targets** | * I can generate two numerical patterns using two given rules. (MP8)
* I can form ordered pairs consisting of corresponding terms from the two given patterns. (MP8)
* I can use a table as a tool to organize ordered pairs and see patterns. (MP5)
* I can graph ordered pairs on a coordinate plane to represent two given rules. (MP4)
* I can describe the relationship between the corresponding terms generated from two given rules. (MP7)
* I can represent the axes as scaled perpendicular number lines that both intersect at 0, the origin.
 |
| **Common Misconceptions** | * Reversing the *x*- and *y*-coordinates when writing or graphing
* Misinterpreting the meaning of the terms in the context of the problem
* Determining the rule for the sequence without checking that it works for all the terms
 |
| **Meeting the Standard****3** | **Approaching the Standard****2** | **Beginning to Learn****1** |
| Given two rules, student can consistently generate two numerical patterns, form and graph ordered pairs, and describe the relationship between the corresponding terms in two sequences.  | Given two rules, student may be able to generate two numerical patterns and form ordered pairs but may graph them inconsistently or may struggle to explain the relationship between corresponding terms in two sequences. | Student may be able to generate two numerical patterns but may not yet be able to graph the resulting ordered pairs. |
| **Next Level**  | * Represent and analyze quantitative relationships between dependent and independent variables.
* Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.
 |