6TH GRADE MATH LEARNING PROGRESSIONS

How are these progressions organized?
By Strand - colors as designated below.

Click here for the B1G-M (B.E.S.T. Instructional Guide for Mathematics) document available on Turnkey

Number Sense and Operations

Algebraic Reasoning

Geometric Reasoning

Data Analysis & Probability

These categories are directly outlined in the following documents from the Florida Department of Education:

Test Item Specifications
Test Design Summary and Blueprint

(click links above to view these documents)

Number Sense and Operations

MA.6.NSO.1.1 Extend previous understanding of numbers to define rational numbers. Plot, order and compare rational numbers.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Analysis Level (Matching and Classifying)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Knowledge Utilization

- I CAN solve real-world problems by selecting and justifying the best strategy to plot, order, and compare rational numbers in various contexts.
- I CAN investigate patterns in rational numbers to develop and test a rule about their relationships on a number line.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Analysis

- I CAN extend my previous understanding of numbers to define rational numbers, and plot, order and compare rational numbers.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what integers are and identify examples of integers.
- I CAN recognize positive and negative numbers on a number line.
- I CAN identify the location of zero on a number line.
- I CAN recall what fractions and decimals are.
- I CAN execute the procedure to convert between fractions and decimals.
- I CAN identify equivalent fractions and decimals.
- I CAN recall the meaning of inequality symbols (<, >, =).

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Number Sense and Operations

MA.6.NSO.1.2 Given a mathematical or real-world context, represent quantities that have opposite direction using rational numbers. Compare them on a number line and explain the meaning of zero within its context.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating and Symbolizing); Secondary Taxonomy Level: Analysis Level (Analysis - Matching)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Knowledge Utilization

- I CAN solve real-world problems by determining the best way to represent opposite quantities and justify why zero is the appropriate reference point in various contexts.
- I CAN investigate different real-world scenarios to develop and test hypotheses about how opposite directions are represented with rational numbers.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Analysis

- I CAN given a mathematical or real-world context, represent quantities that have opposite direction using rational numbers, compare them on a number line and explain the meaning of zero within its context.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what rational numbers are and provide examples.
- I CAN identify positive and negative rational numbers.
- I CAN recognize zero as the dividing point between positive and negative numbers.
- I CAN execute the procedure to plot rational numbers on a number line.
- I CAN identify examples of opposite quantities in real-world contexts (hot/cold, above/below, gain/loss).
- I CAN recall that zero represents a neutral or starting point.
- I CAN list real-world contexts where opposite directions exist.

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Number Sense and Operations

MA.6.NSO.1.3 Given a mathematical or real-world context, interpret the absolute value of a number as the distance from zero on a number line. Find the absolute value of rational numbers.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Retrieval Level (Executing a Procedure)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN compare and contrast absolute values of different rational numbers to determine which quantities have greater distance from zero and explain the significance in real-world contexts.
- I CAN analyze errors in absolute value problems and identify misunderstandings about distance versus direction.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN given a mathematical or real-world context, interpret the absolute value of a number as the distance from zero on a number line and find the absolute value of rational numbers.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what rational numbers are and provide examples.
- I CAN recognize positive and negative rational numbers on a number line.
- I CAN identify the location of zero on a number line.
- I CAN recall that distance is always a positive value.
- I CAN execute the procedure to plot rational numbers on a number line.
- I CAN calculate the distance between two points on a number line.
- I CAN recognize the absolute value symbol (| |).

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Number Sense and Operations

MA.6.NSO.1.4 Solve mathematical and real-world problems involving absolute value, including the comparison of absolute value.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Knowledge Utilization Level (Problem Solving); Secondary Taxonomy Level: Analysis Level (Matching)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Knowledge Utilization

- I CAN design and test multiple strategies to solve complex real-world problems involving absolute value and determine which approach is most efficient for different contexts.
- I CAN investigate real-world scenarios to formulate and prove when comparing absolute values is more useful than comparing the actual values themselves.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Knowledge Utilization and Analysis

- I CAN solve mathematical and real-world problems involving absolute value, including the comparison of absolute value.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval and Comprehension

- I CAN recall what absolute value represents (distance from zero).
- I CAN execute the procedure to find the absolute value of rational numbers.
- I CAN recognize the absolute value symbol (| |) and what it means.
- I CAN interpret absolute value as distance from zero on a number line.
- I CAN execute the procedure to compare two or more numbers using inequality symbols.
- I CAN identify real-world contexts where absolute value is relevant (temperature changes, elevation, account balances).
- I CAN recall basic problem-solving steps.

Resource created via MagicSchool

Number Sense and Operations

MA.6.NSO.2.1 Multiply and divide positive multi-digit numbers with decimals to the thousandths, including using a standard algorithm with procedural fluency.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Retrieval Level (Executing a Procedure)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Comprehension

- I CAN explain how and why the standard algorithm works for multiplying and dividing decimals to the thousandths, and describe the relationship between decimal place value and the algorithm steps.
- I CAN diagram and illustrate the steps of the standard algorithm to show how decimal placement affects the final answer.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Retrieval

- I CAN multiply and divide positive multi-digit numbers with decimals to the thousandths, including using a standard algorithm with procedural fluency.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall the place value names through thousandths (tenths, hundredths, thousandths).
- I CAN execute the procedure to multiply whole numbers using the standard algorithm.
- I CAN execute the procedure to divide whole numbers using the standard algorithm.
- I CAN identify the decimal point and its position in a number.
- I CAN recall multiplication facts fluently.
- I CAN execute the procedure to round decimals to a given place value.
- I CAN recognize equivalent decimal forms (0.5 = 0.50 = 0.500).
- I CAN execute the procedure to add zeros as placeholders when needed.

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Number Sense and Operations

MA.6.NSO.2.2 Extend previous understanding of multiplication and division to compute products and quotients of positive fractions by positive fractions, including mixed numbers, with procedural fluency.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Retrieval Level (Executing a Procedure)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN analyze errors in fraction multiplication and division problems and identify what misconceptions led to incorrect answers.
- I CAN compare and contrast different methods for multiplying and dividing fractions (including visual models, algorithms, and simplifying strategies) to determine which is most efficient for different types of problems.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN extend my previous understanding of multiplication and division to compute products and quotients of positive fractions by positive fractions, including mixed numbers, with procedural fluency.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what a fraction represents (part of a whole).
- I CAN identify the numerator and denominator in a fraction.
- I CAN execute the procedure to multiply whole numbers.
- I CAN execute the procedure to divide whole numbers.
- I CAN execute the procedure to convert mixed numbers to improper fractions.
- I CAN execute the procedure to convert improper fractions to mixed numbers.
- I CAN execute the procedure to simplify fractions to lowest terms.
- I CAN recall that dividing by a fraction means multiplying by its reciprocal.
- I CAN identify the reciprocal of a fraction.

Resource created via MagicSchool

Number Sense and Operations

MA.6.NSO.2.3 Solve multi-step real-world problems involving any of the four operations with positive multi-digit decimals or positive fractions, including mixed numbers.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Knowledge Utilization Level (Problem Solving); Secondary Taxonomy Level: Retrieval Level (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Knowledge Utilization

- I CAN design my own multi-step real-world problems involving decimals and fractions, then determine the best strategy to solve them and justify why my approach is most efficient.
- I CAN investigate different problem-solving approaches to test which methods work best for specific types of multi-step problems involving decimals and fractions.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Knowledge Utilization and Retrieval

- I CAN solve multi-step real-world problems involving any of the four operations with positive multi-digit decimals or positive fractions, including mixed numbers.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval and Comprehension

- I CAN execute the procedure to add positive decimals and fractions.
- I CAN execute the procedure to subtract positive decimals and fractions.
- I CAN execute the procedure to multiply positive decimals and fractions.
- I CAN execute the procedure to divide positive decimals and fractions.
- I CAN recall the order of operations (PEMDAS/GEMDAS).
- I CAN identify key words in word problems that indicate which operations to use.
- I CAN recognize when to convert between fractions, decimals, and mixed numbers.
- I CAN interpret what a real-world problem is asking me to find.

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Number Sense and Operations

MA.6.NSO.3.1 Given a mathematical or real-world context, find the greatest common factor and least common multiple of two whole numbers.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Retrieval Level (Executing a Procedure); Secondary Taxonomy Level: Comprehension Level (Integrating and Applying Understanding)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Comprehension

- I CAN explain the relationship between greatest common factor and least common multiple and describe how they are used differently in real-world contexts.
- I CAN compare and contrast multiple methods (listing, prime factorization, division) for finding GCF and LCM to determine which strategy is most efficient for different numbers.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Retrieval and Comprehension

- I CAN given a mathematical or real-world context, find the greatest common factor and least common multiple of two whole numbers.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what a factor is and identify factors of a whole number.
- I CAN recall what a multiple is and list multiples of a whole number.
- I CAN execute the procedure to find all factors of a number.
- I CAN identify common factors between two numbers.
- I CAN identify common multiples between two numbers.
- I CAN recall what prime numbers and composite numbers are.
- I CAN execute the procedure for prime factorization.
- I CAN recognize the terms "greatest" and "least" in mathematical contexts.

Resource created via MagicSchool

Number Sense and Operations

MA.6.NSO.3.2 Rewrite the sum of two composite whole numbers having a common factor, as a common factor multiplied by the sum of two whole numbers.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Symbolizing and Representing in Different Form); Secondary Taxonomy Level: Retrieval Level (Executing Procedures to Find Factors)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN analyze different ways to rewrite the same sum and determine which common factor produces the most simplified form, explaining my reasoning.
- I CAN examine expressions to identify errors when rewriting sums using the distributive property and correct the mistakes.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN rewrite the sum of two composite whole numbers having a common factor, as a common factor multiplied by the sum of two whole numbers.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what composite numbers are and provide examples.
- I CAN execute the procedure to find all factors of a whole number.
- I CAN identify common factors between two numbers.
- I CAN identify the greatest common factor (GCF) of two numbers.
- I CAN recall the distributive property of multiplication over addition.
- I CAN execute the procedure to divide whole numbers.
- I CAN recognize equivalent expressions (different forms of the same value).
- I CAN identify the sum of two numbers.

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Number Sense and Operations

MA.6.NSO.3.3 Evaluate positive rational numbers and integers with natural number exponents.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Retrieval Level (Executing a Procedure to Compute Values)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Comprehension

- I CAN explain the pattern of how exponents affect the value of different bases and describe the relationship between the base, exponent, and final value.
- I CAN represent exponential expressions using expanded form and illustrate why repeated multiplication produces the evaluated result.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Retrieval

- I CAN evaluate positive rational numbers and integers with natural number exponents.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what an exponent represents (repeated multiplication).
- I CAN identify the base and exponent in an exponential expression.
- I CAN recall what natural numbers are (1, 2, 3, 4...).
- I CAN execute the procedure to multiply whole numbers.
- I CAN execute the procedure to multiply fractions.
- I CAN execute the procedure to multiply decimals.
- I CAN recall that any number to the first power equals itself.
- I CAN write repeated multiplication in exponential form.
- I CAN execute the order of operations with exponents.

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Number Sense and Operations

MA.6.NSO.3.4 Express composite whole numbers as a product of prime factors with natural number exponents.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Symbolizing and Representing); Secondary Taxonomy Level: Retrieval Level (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN compare and contrast different methods of prime factorization (factor trees, division method, listing) to determine which strategy is most efficient for different composite numbers.
- I CAN analyze a given prime factorization to identify errors and explain what misconceptions about prime numbers or exponents led to the mistakes.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN express composite whole numbers as a product of prime factors with natural number exponents.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what prime numbers are and identify examples.
- I CAN recall what composite numbers are and identify examples.
- I CAN execute the procedure for prime factorization.
- I CAN identify all factors of a whole number.
- I CAN recall what an exponent represents (repeated multiplication).
- I CAN recognize when the same prime factor appears multiple times.
- I CAN execute the procedure to write repeated multiplication using exponents.
- I CAN recall multiplication facts fluently.

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Number Sense and Operations

MA.6.NSO.3.5 Rewrite positive rational numbers in different but equivalent forms including fractions, terminating decimals and percentages.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Symbolizing and Representing in Different Forms); Secondary Taxonomy Level: Retrieval Level (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN compare different representations of rational numbers (fractions, decimals, percentages) to determine which form is most appropriate for specific real-world contexts and justify my reasoning.
- I CAN analyze errors in conversions between fractions, decimals, and percentages to identify what misconceptions led to incorrect equivalent forms.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN rewrite positive rational numbers in different but equivalent forms including fractions, terminating decimals and percentages.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what rational numbers are and provide examples.
- I CAN identify equivalent forms of the same value.
- I CAN execute the procedure to convert fractions to decimals by dividing.
- I CAN execute the procedure to convert decimals to fractions.
- I CAN execute the procedure to convert fractions to percentages.
- I CAN execute the procedure to convert percentages to fractions.
- I CAN execute the procedure to convert decimals to percentages.
- I CAN execute the procedure to convert percentages to decimals.
- I CAN recall that percent means "per hundred" or "out of 100."
- I CAN recognize terminating decimals.

Resource created via MagicSchool

Number Sense and Operations

MA.6.NSO.4.1 Apply and extend previous understandings of operations with whole numbers to add and subtract integers with procedural fluency.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Retrieval Level (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN compare and contrast addition and subtraction of integers to whole number operations, explaining how the rules are similar and different.
- I CAN analyze errors in integer addition and subtraction problems to identify misconceptions about positive and negative numbers and explain the correct reasoning.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN apply and extend my previous understandings of operations with whole numbers to add and subtract integers with procedural fluency.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what integers are and provide examples.
- I CAN identify positive and negative integers.
- I CAN recognize zero as neither positive nor negative.
- I CAN execute the procedure to add whole numbers.
- I CAN execute the procedure to subtract whole numbers.
- I CAN identify the absolute value of integers.
- I CAN recognize that adding a negative is the same as subtracting.
- I CAN recognize that subtracting a negative is the same as adding.
- I CAN use a number line to represent integer operations.

Resource created via MagicSchool

Number Sense and Operations

MA.6.NSO.4.2 Apply and extend previous understandings of operations with whole numbers to multiply and divide integers with procedural fluency.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Retrieval Level (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN compare and contrast multiplication and division of integers to whole number operations, explaining the patterns and rules for determining the sign of the answer.
- I CAN analyze errors in integer multiplication and division problems to identify misconceptions about sign rules and explain the correct reasoning.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN apply and extend my previous understandings of operations with whole numbers to multiply and divide integers with procedural fluency.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what integers are and provide examples.
- I CAN identify positive and negative integers.
- I CAN execute the procedure to multiply whole numbers.
- I CAN execute the procedure to divide whole numbers.
- I CAN recall that multiplying two positive integers results in a positive product.
- I CAN recall that multiplying two negative integers results in a positive product.
- I CAN recall that multiplying a positive and negative integer results in a negative product.
- I CAN recall the sign rules for division of integers.
- I CAN execute the procedure to add and subtract integers.

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.1.1 Given a mathematical or real-world context, translate written descriptions into algebraic expressions and translate algebraic expressions into written descriptions.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Symbolizing and Representing in Different Forms)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN compare multiple algebraic expressions to determine which one accurately represents a given written description and explain why other expressions are incorrect.
- I CAN analyze errors in translations between written descriptions and algebraic expressions to identify what misconceptions led to incorrect representations.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension

- I CAN given a mathematical or real-world context, translate written descriptions into algebraic expressions and translate algebraic expressions into written descriptions.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what a variable is and identify variables in expressions.
- I CAN recognize the symbols for mathematical operations (+, -, ×, ÷).
- I CAN identify key words that indicate addition (sum, total, more than, increased by).
- I CAN identify key words that indicate subtraction (difference, less than, decreased by, minus).
- I CAN identify key words that indicate multiplication (product, times, of, multiplied by).
- I CAN identify key words that indicate division (quotient, divided by, per, ratio).
- I CAN recall the order of operations.
- I CAN execute the procedure to evaluate numerical expressions.

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.1.2 Translate a real-world written description into an algebraic inequality in the form of $x > a$, $x < a$, $x \geq a$ or $x \leq a$. Represent the inequality on a number line.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Symbolizing); Secondary Taxonomy Level: Retrieval (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN critique and correct errors in translating real-world situations into algebraic inequalities and their number line representations.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension

- I CAN translate a real-world written description into an algebraic inequality in the form of $x > a$, $x < a$, $x \geq a$ or $x \leq a$ and represent the inequality on a number line.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN execute the procedure for representing an inequality on a number line using open and closed circles with arrows.
- I CAN recall the meaning of inequality symbols (>, <, ≥, ≤) and identify which symbol matches specific comparison words.
- I CAN recognize key comparison words in real-world descriptions (at least, no more than, greater than, less than, minimum, maximum).
- I CAN identify the variable and constant in a simple algebraic inequality.
- I CAN recall what a variable represents in a real-world context.

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.1.3 Evaluate algebraic expressions using substitution and order of operations.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Retrieval Level (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Comprehension

- I CAN explain why order of operations is necessary when evaluating algebraic expressions and describe what happens when steps are performed incorrectly.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Retrieval

- I CAN evaluate algebraic expressions using substitution and order of operations.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN execute the order of operations (PEMDAS/GEMDAS) to simplify numerical expressions.
- I CAN substitute a given value for a variable in an algebraic expression.
- I CAN recall the correct order of operations (Parentheses/Grouping symbols, Exponents, Multiplication and Division from left to right, Addition and Subtraction from left to right).
- I CAN recognize and identify variables, coefficients, and constants in algebraic expressions.
- I CAN perform basic operations (addition, subtraction, multiplication, division) with whole numbers, decimals, and fractions.

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.1.4 Apply the properties of operations to generate equivalent algebraic expressions with integer coefficients.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Retrieval Level (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Comprehension

- I CAN explain why two algebraic expressions are equivalent by describing which properties of operations were applied and how they maintain equality.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Retrieval

- I CAN apply the properties of operations to generate equivalent algebraic expressions with integer coefficients.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN execute procedures to combine like terms in algebraic expressions.
- I CAN apply the distributive property to expand or factor algebraic expressions.
- I CAN recall the properties of operations (commutative, associative, distributive, identity, inverse).
- I CAN recognize like terms in an algebraic expression.
- I CAN identify the coefficients and variables in algebraic terms.
- I CAN perform operations (addition, subtraction, multiplication, division) with integers.

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.2.1 Given an equation or inequality and a specified set of integer values, determine which values make the equation or inequality true or false.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Retrieval Level (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Comprehension

- I CAN explain why certain integer values make an equation or inequality true or false by describing the mathematical reasoning behind each evaluation.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Retrieval

- I CAN determine which values from a specified set of integers make an equation or inequality true or false.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN execute the procedure of substituting a given value into an equation or inequality.
- I CAN evaluate whether a mathematical statement is true or false.
- I CAN recall the meaning of the equals sign and inequality symbols (>, <, ≥, ≤).
- I CAN recognize equations and inequalities.
- I CAN perform operations with integers to simplify expressions.
- I CAN identify the variable in an equation or inequality.

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.2.2 Write and solve one-step equations in one variable within a mathematical or real-world context using addition and subtraction, where all terms and solutions are integers.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Symbolizing); Secondary Taxonomy Level: Retrieval Level (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN analyze a real-world problem to determine whether it requires writing and solving an equation, and justify my reasoning about the solution's validity in context.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN write and solve one-step equations in one variable within a mathematical or real-world context using addition and subtraction, where all terms and solutions are integers.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN execute the procedure to solve one-step equations using inverse operations (addition and subtraction).
- I CAN recall that addition and subtraction are inverse operations.
- I CAN recognize key words in real-world contexts that indicate addition or subtraction operations.
- I CAN identify the variable, constant, and operation in a one-step equation.
- I CAN perform addition and subtraction with integers.
- I CAN recall what it means to solve an equation (finding the value of the variable that makes the equation true).

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.2.3 Write and solve one-step equations in one variable within a mathematical or real-world context using multiplication and division, where all terms and solutions are integers.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Symbolizing); Secondary Taxonomy Level: Retrieval Level (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN analyze a real-world problem to determine whether it requires writing and solving an equation, and justify my reasoning about the solution's validity in context.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN write and solve one-step equations in one variable within a mathematical or real-world context using multiplication and division, where all terms and solutions are integers.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN execute the procedure to solve one-step equations using inverse operations (multiplication and division).
- I CAN recall that multiplication and division are inverse operations.
- I CAN recognize key words in real-world contexts that indicate multiplication or division operations.
- I CAN identify the variable, coefficient, and constant in a one-step equation.
- I CAN perform multiplication and division with integers.
- I CAN recall what it means to solve an equation (finding the value of the variable that makes the equation true).

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.2.4 Determine the unknown decimal or fraction in an equation involving any of the four operations, relating three numbers, with the unknown in any position.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Retrieval Level (Executing Procedures)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Comprehension

- I CAN explain the relationship between the three numbers in an equation and describe how the position of the unknown affects the strategy for solving.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Retrieval

- I CAN determine the unknown decimal or fraction in an equation involving any of the four operations, relating three numbers, with the unknown in any position.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN execute procedures to solve equations using inverse operations for all four operations.
- I CAN recall the inverse operation for addition, subtraction, multiplication, and division.
- I CAN perform operations (addition, subtraction, multiplication, division) with decimals.
- I CAN perform operations (addition, subtraction, multiplication, division) with fractions.
- I CAN recognize which operation is being used in an equation.
- I CAN identify the unknown (variable) in any position within an equation (beginning, middle, or end).

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.3.1 Given a real-world context, write and interpret ratios to show the relative sizes of two quantities using appropriate notation: a b , a to b, or a: b where $b \neq 0$.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Symbolizing and Integrating); Secondary Taxonomy Level: Retrieval Level (Recalling)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN compare and contrast different ratios from a real-world context to determine which relationship is more efficient or favorable, and justify my reasoning.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN write and interpret ratios to show the relative sizes of two quantities using appropriate notation: a/b, a to b, or a: b where $b \neq 0$ within a real-world context.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall the three different notations for writing ratios (a/b, a to b, a: b).
- I CAN recognize when two quantities are being compared in a real-world context.
- I CAN identify the two quantities being compared in a ratio relationship.
- I CAN recall that a ratio shows the relative sizes or relationship between two quantities.
- I CAN recognize the order matters in a ratio (which quantity comes first and second).
- I CAN recall that the denominator (b) in a ratio cannot be zero.

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.3.2 Given a real-world context, determine a rate for a ratio of quantities with different units. Calculate and interpret the corresponding unit rate.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Retrieval Level (Executing)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN compare and contrast different unit rates from multiple real-world scenarios to determine which represents the best value or most efficient rate.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN determine a rate for a ratio of quantities with different units given a real-world context, calculate the corresponding unit rate, and interpret what the unit rate means in that context.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN identify quantities with different units in a real-world context.
- I CAN recall that a rate is a ratio that compares two quantities with different units.
- I CAN recognize the difference between a rate and a unit rate.
- I CAN execute division to calculate a unit rate from a given rate.
- I CAN label a unit rate with the correct units.

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.3.3 Extend previous understanding of fractions and numerical patterns to generate or complete a two- or three-column table to display equivalent part-to-part ratios and part-to-part-to-whole ratios.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Retrieval Level (Executing)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN analyze equivalent ratios in a table to identify errors or inconsistencies and explain why certain values do not maintain the proportional relationship.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN extend my understanding of fractions and numerical patterns to generate or complete a two- or three-column table to display equivalent part-to-part ratios and part-to-part-to-whole ratios.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall what a part-to-part ratio represents.
- I CAN recall what a part-to-part-to-whole ratio represents.
- I CAN recognize equivalent fractions.
- I CAN identify numerical patterns in sequences.
- I CAN execute multiplication or division to find equivalent ratios.
- I CAN organize ratio data into a two- or three-column table.

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.3.4 Apply ratio relationships to solve mathematical and real-world problems involving percentages using the relationship between two quantities.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Knowledge Utilization Level (Problem Solving)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Knowledge Utilization

- I CAN investigate and construct an argument about which percentage-based pricing strategy (discount, tax, tip, markup) provides the best value in a multi-step real-world scenario.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Knowledge Utilization

- I CAN apply ratio relationships to solve mathematical and real-world problems involving percentages using the relationship between two quantities.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall that a percentage is a ratio comparing a number to 100.
- I CAN recognize the relationship between ratios, fractions, decimals, and percentages.
- I CAN identify the part, whole, and percent in a given problem.
- I CAN execute calculations to find a percentage of a quantity.
- I CAN execute calculations to find what percent one number is of another.
- I CAN execute calculations to find the whole when given a part and a percentage.

Resource created via MagicSchool

Algebraic Reasoning

MA.6.AR.3.5 Solve mathematical and real-world problems involving ratios, rates and unit rates, including comparisons, mixtures, ratios of lengths and conversions within the same measurement system.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Knowledge Utilization Level (Problem Solving)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Knowledge Utilization

- I CAN evaluate multiple ratio and rate scenarios involving comparisons, mixtures, or conversions to decide which option best meets specific criteria and justify my decision.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Knowledge Utilization

- I CAN solve mathematical and real-world problems involving ratios, rates and unit rates, including comparisons, mixtures, ratios of lengths and conversions within the same measurement system.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall the difference between a ratio, rate, and unit rate.
- I CAN identify equivalent ratios.
- I CAN execute calculations to find unit rates.
- I CAN recognize conversion factors within the same measurement system.
- I CAN execute conversions within the same measurement system using ratios.
- I CAN calculate ratios of lengths.
- I CAN identify the quantities being compared in a mixture problem.

Resource created via MagicSchool

Geometric Reasoning

MA.6.GR.1.1 Extend previous understanding of the coordinate plane to plot rational number ordered pairs in all four quadrants and on both axes. Identify the x- or y-axis as the line of reflection when two ordered pairs have an opposite x- or y- coordinate.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Retrieval Level (Executing)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN analyze the coordinates of multiple points to determine patterns of reflections across the x-axis, y-axis, or both, and generalize rules for how coordinates change under these reflections.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN extend my understanding of the coordinate plane to plot rational number ordered pairs in all four quadrants and on both axes, and identify the x- or y-axis as the line of reflection when two ordered pairs have an opposite x- or y-coordinate.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall the structure of the coordinate plane including quadrants and axes.
- I CAN recognize rational numbers in decimal and fraction form.
- I CAN identify the x-coordinate and y-coordinate in an ordered pair.
- I CAN execute the procedure to plot positive ordered pairs in Quadrant I.
- I CAN execute the procedure to plot rational number ordered pairs in all four quadrants.
- I CAN recognize when two numbers are opposites.
- I CAN identify the x-axis and y-axis as lines on the coordinate plane.

Resource created via MagicSchool

Geometric Reasoning

MA.6.GR.1.2 Find distances between ordered pairs, limited to the same x-coordinate or the same y-coordinate, represented on the coordinate plane.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Retrieval Level (Executing)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Comprehension

- I CAN explain the relationship between the distance formula for horizontal and vertical lines and absolute value, and interpret what the distance represents in a real-world context.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Retrieval

- I CAN find distances between ordered pairs, limited to the same x-coordinate or the same y-coordinate, represented on the coordinate plane.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall that ordered pairs with the same x-coordinate form a vertical line.
- I CAN recall that ordered pairs with the same y-coordinate form a horizontal line.
- I CAN identify the x-coordinate and y-coordinate in an ordered pair.
- I CAN plot ordered pairs on the coordinate plane.
- I CAN recognize that distance is always expressed as a positive value.
- I CAN execute subtraction to find the difference between two coordinates.
- I CAN execute the procedure to find absolute value.

Resource created via MagicSchool

Geometric Reasoning

MA.6.GR.1.3 Solve mathematical and real-world problems by plotting points on a coordinate plane, including finding the perimeter or area of a rectangle.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Knowledge Utilization Level (Problem Solving)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Knowledge Utilization

- I CAN determine the optimal placement and dimensions of a rectangle on the coordinate plane given specific constraints (such as maximum area or minimum perimeter) and justify my decision.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Knowledge Utilization

- I CAN solve mathematical and real-world problems by plotting points on a coordinate plane, including finding the perimeter or area of a rectangle.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN plot ordered pairs on the coordinate plane.
- I CAN recall the formula for perimeter of a rectangle.
- I CAN recall the formula for area of a rectangle.
- I CAN execute the procedure to find distances between points with the same x-coordinate or y-coordinate.
- I CAN identify the vertices of a rectangle on the coordinate plane.
- I CAN execute calculations to find the length and width of a rectangle using coordinates.
- I CAN execute calculations to find perimeter and area.

Resource created via MagicSchool

Geometric Reasoning

MA.6.GR.2.1 Derive a formula for the area of a right triangle using a rectangle. Apply a formula to find the area of a triangle.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Retrieval Level (Executing)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN generalize the relationship between rectangles and triangles to explain why the area formula works for all triangles, not just right triangles, and justify my reasoning.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN derive a formula for the area of a right triangle using a rectangle and apply a formula to find the area of a triangle.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall the formula for the area of a rectangle.
- I CAN identify the base and height of a triangle.
- I CAN recognize a right triangle.
- I CAN recognize the relationship between a rectangle and a right triangle (a right triangle is half of a rectangle).
- I CAN execute multiplication to find the area of a rectangle.
- I CAN execute division to find half of a quantity.
- I CAN apply the formula to calculate the area of a triangle.

Resource created via MagicSchool

Geometric Reasoning

MA.6.GR.2.2 Solve mathematical and real-world problems involving the area of quadrilaterals and composite figures by decomposing them into triangles or rectangles.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Knowledge Utilization Level (Problem Solving)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Knowledge Utilization

- I CAN evaluate multiple decomposition strategies for finding the area of a complex composite figure and determine which method is most efficient, justifying my choice.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Knowledge Utilization

- I CAN solve mathematical and real-world problems involving the area of quadrilaterals and composite figures by decomposing them into triangles or rectangles.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall the formula for the area of a rectangle.
- I CAN recall the formula for the area of a triangle.
- I CAN identify different types of quadrilaterals.
- I CAN recognize when a figure is composed of multiple shapes.
- I CAN execute the procedure to decompose a quadrilateral into triangles or rectangles.
- I CAN execute the procedure to decompose a composite figure into triangles or rectangles.
- I CAN identify the base and height measurements needed for each decomposed shape.
- I CAN execute addition to find total area by combining areas of individual shapes.

Resource created via MagicSchool

Geometric Reasoning

MA.6.GR.2.3 Solve mathematical and real-world problems involving the volume of right rectangular prisms with positive rational number edge lengths using a visual model and a formula.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Knowledge Utilization Level (Problem Solving)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Knowledge Utilization

- I CAN determine the optimal dimensions of a right rectangular prism given constraints such as maximum volume with limited surface area or materials, and justify my decision using calculations.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Knowledge Utilization

- I CAN solve mathematical and real-world problems involving the volume of right rectangular prisms with positive rational number edge lengths using a visual model and a formula.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall that volume measures the amount of space inside a three-dimensional figure.
- I CAN identify a right rectangular prism.
- I CAN recognize positive rational numbers in fraction and decimal form.
- I CAN identify the length, width, and height of a right rectangular prism.
- I CAN recall the formula for volume of a right rectangular prism ($V = l \times w \times h$ or $V = Bh$).
- I CAN execute multiplication with positive rational numbers to calculate volume.
- I CAN create or interpret a visual model of a right rectangular prism.

Resource created via MagicSchool

Geometric Reasoning

MA.6.GR.2.4 Given a mathematical or real-world context, find the surface area of right rectangular prisms and right rectangular pyramids using the figure's net.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Retrieval Level (Executing)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN compare and contrast the surface areas of different right rectangular prisms or pyramids with varying dimensions to determine which design minimizes or maximizes surface area for a specific purpose.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN given a mathematical or real-world context, find the surface area of right rectangular prisms and right rectangular pyramids using the figure's net.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall that surface area is the total area of all surfaces of a three-dimensional figure.
- I CAN identify a right rectangular prism.
- I CAN identify a right rectangular pyramid.
- I CAN recognize a net as a two-dimensional representation of a three-dimensional figure.
- I CAN identify the individual faces of a right rectangular prism or pyramid in a net.
- I CAN recall and apply the formula for area of a rectangle.
- I CAN recall and apply the formula for area of a triangle.
- I CAN execute addition to find the total surface area by combining the areas of all faces.

Resource created via MagicSchool

Data Analysis and Probability

MA.6.DP.1.1 Recognize and formulate a statistical question that would generate numerical data.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Retrieval Level (Recognizing)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN critique statistical questions to determine their effectiveness and revise poorly written questions to improve clarity and ensure they will generate useful numerical data with variability.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN recognize and formulate a statistical question that would generate numerical data.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall that numerical data consists of numbers.
- I CAN recognize the difference between a question and a statement.
- I CAN identify whether data is numerical or categorical.
- I CAN recall that a statistical question anticipates variability in the answers.
- I CAN recognize that a statistical question asks about a group or population, not a single individual or event.
- I CAN distinguish between a statistical question and a non-statistical question.

Resource created via MagicSchool

Data Analysis and Probability

MA.6.DP.1.2 Given a numerical data set within a real-world context, find and interpret mean, median, mode and range.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating); Secondary Taxonomy Level: Retrieval Level (Executing)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN analyze a numerical data set to determine which measure of center (mean, median, or mode) best represents the data in a given real-world context and justify my reasoning based on the data's characteristics.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension and Retrieval

- I CAN given a numerical data set within a real-world context, find and interpret mean, median, mode and range.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall that mean is the average of a data set.
- I CAN recall that median is the middle value when data is ordered.
- I CAN recall that mode is the value that occurs most frequently.
- I CAN recall that range is the difference between the maximum and minimum values.
- I CAN execute the procedure to order numerical data from least to greatest.
- I CAN execute addition and division to calculate the mean.
- I CAN execute the procedure to find the median of a data set.
- I CAN identify the mode in a data set.
- I CAN execute subtraction to calculate the range.

Resource created via MagicSchool

Data Analysis and Probability

MA.6.DP.1.3 Given a box plot within a real-world context, determine the minimum, the lower quartile, the median, the upper quartile and the maximum. Use this summary of the data to describe the spread and distribution of the data.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN compare and contrast two or more box plots from real-world contexts to analyze differences in spread and distribution, and draw conclusions about what these differences reveal about the data sets.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension

- I CAN given a box plot within a real-world context, determine the minimum, the lower quartile, the median, the upper quartile and the maximum, and use this summary of the data to describe the spread and distribution of the data.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recognize a box plot as a visual representation of data.
- I CAN identify the five components of a box plot: minimum, lower quartile, median, upper quartile, and maximum.
- I CAN recall that the median divides the data in half.
- I CAN recall that quartiles divide the data into four equal parts.
- I CAN recall that spread refers to how far apart the data values are.
- I CAN recall that distribution refers to how the data is arranged or clustered.
- I CAN read values from a box plot using the number line scale.

Resource created via MagicSchool

Data Analysis and Probability

MA.6.DP.1.4 Given a histogram or line plot within a real-world context, qualitatively describe and interpret the spread and distribution of the data, including any symmetry, skewness, gaps, clusters, outliers and the range.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Comprehension Level (Integrating)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Analysis

- I CAN analyze the spread and distribution characteristics of a histogram or line plot to make inferences about the real-world context and predict potential causes for patterns such as gaps, clusters, or outliers.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Comprehension

- I CAN given a histogram or line plot within a real-world context, qualitatively describe and interpret the spread and distribution of the data, including any symmetry, skewness, gaps, clusters, outliers and the range.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recognize a histogram as a visual representation of data.
- I CAN recognize a line plot as a visual representation of data.
- I CAN recall that symmetry means the data is balanced on both sides of the center.
- I CAN recall that skewness means the data is not evenly distributed.
- I CAN recall that a gap is a space where no data values occur.
- I CAN recall that a cluster is a group of data values close together.
- I CAN recall that an outlier is a data value that is much different from the others.
- I CAN recall that range is the difference between the maximum and minimum values.
- I CAN identify the range by reading values from a histogram or line plot.

Resource created via MagicSchool

Data Analysis and Probability

MA.6.DP.1.5 Create box plots and histograms to represent sets of numerical data within real-world contexts.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Retrieval Level (Executing)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Comprehension

- I CAN explain which data display (box plot or histogram) is most appropriate for representing a given set of numerical data based on the characteristics of the data and the purpose of the display.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Retrieval

- I CAN create box plots and histograms to represent sets of numerical data within real-world contexts.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recognize a box plot as a visual representation of data.
- I CAN recognize a histogram as a visual representation of data.
- I CAN order numerical data from least to greatest.
- I CAN identify the five-number summary (minimum, lower quartile, median, upper quartile, maximum).
- I CAN execute the procedure to find quartiles in a data set.
- I CAN determine appropriate intervals for grouping data in a histogram.
- I CAN count frequencies within intervals.
- I CAN label axes and scales appropriately on a graph.
- I CAN execute the procedure to draw a box plot using the five-number summary.
- I CAN execute the procedure to draw bars on a histogram to represent frequency data.

Resource created via MagicSchool

Data Analysis and Probability

MA.6.DP.1.6 Given a real-world scenario, determine and describe how changes in data values impact measures of center and variation.

MARZANO TAXONOMY LEVEL: Primary Taxonomy Level: Analysis Level (Matching)

LEARNING PROGRESSION:

ENRICHMENT: Identified Taxonomy Level: Knowledge Utilization

- I CAN generate and test hypotheses about how specific changes to data values (such as adding an outlier or removing the maximum value) will impact measures of center and variation, and explain the results.

STANDARD DECONSTRUCTED: Identified Taxonomy Level: Analysis

- I CAN given a real-world scenario, determine and describe how changes in data values impact measures of center and variation.

FOUNDATIONAL SKILLS: Identified Taxonomy Level: Retrieval

- I CAN recall that measures of center include mean, median, and mode.
- I CAN recall that measures of variation include range and interquartile range.
- I CAN execute the procedure to calculate mean, median, and mode.
- I CAN execute the procedure to calculate range.
- I CAN identify which data values have changed in a scenario.
- I CAN recalculate measures of center after data values change.
- I CAN recalculate measures of variation after data values change.

Resource created via MagicSchool