FastBridge Learning

aMath™ Score Interpretation Guide

To assist teachers with understanding their students' *aMath* scores, this interpretation guide organizes score information by score ranges, skill categories, and skill descriptions with accompanying instructional recommendations. In the online reports and in this Guide, all score ranges include skill information for one or more of the following categories:

- *Counting & Cardinality*: Know the number names and the counting sequence
- *Operations & Algebraic Thinking*: Understand the principles of, and facts for, addition, subtraction, multiplication, and division
- *Number & Operations in Base Ten*: Work with numbers in relation to their base ten values to solve problems
- *Number & Operations—Fractions*: Work with fractions and mixed numbers to solve problems
- *Measurement & Data*: Classify, describe, measure, and analyze different types of data
- *Geometry*: Identifying, describing, analyzing, comparing, and measuring different shapes
- *Ratios & Proportional Relationships*: Understand ratio concepts and use ratio reasoning to solve problems
- *The Number System*: Under and use rational and non-rational numbers
- *Expressions & Equations*: Solve real-life and mathematical problems using linear and non-linear equations with numerical and algebraic expressions.
- *Functions*: Use a variety of functions to model relationships between and among quantities
- *Statistics & Probability*: Use statistical data to interpret categorical and quantitative data, make inferences and justify conclusions, and apply probability rules to make decisions

The *aMath* scores are listed according to bands of about 50 points each starting at 145 and ending at 275. Each score band lists the skill categories included, descriptions of the skills, and instructional recommendations to teach each skill.

Scores	Skill Category	Skill Description	Instructional Recommendations
145-200	Counting and Cardinality (CC)	Count forward from a given number within a known sequence	Have students practice oral counting from up from selected smaller numbers to larger numbers, with activities such as a number line board game, 1-minute timings or distributed practice.
		Count objects to 20	Teach students to count out loud while pointing to individual items in a set using game-based interventions and/or manipulatives to provide opportunities to practice.
		Count to 100 by 1s and 10s	Have students practice oral counting to 100 on a daily basis with strategies such as a number line board game, 1-minute timings, or counting with objects.
		Find smaller and larger numerals to 10	Teach students the quantities that match each numeral and have them sort numerals in relation to the quantities they represent using representations such as a number line and provide guided and independent practice.
		Understand one "larger" or "more"	Using manipulatives, teach students how to add one item at a time to a group of items and then count the new total using representations such as a number line and with guided and independent practice.
		Understand the relationship between numbers and quantities	Have students match numerals with the quantities they represent using concrete manipulatives and representational drawings and guided practice.
		Write numbers 0 to 100	Teach students numeral formation for zero and numerals 1 through 9 and teach them how the same numerals are combined to represent larger amounts using abstract-concrete strategies to allow students to practice linking spoken numbers to written numerals.
	Geometry (G)	Analyze and compare two- and three-dimensional shapes	Have students sort objects of various geometric shapes into groups based on the definitions of the shapes.
		Describe objects in the environment using shapes and relative position	Have students sort classroom objects into categories by geometric shapes and their position.
		Name basic shapes	Teach students the names for specific geometric shapes (e.g., square, circle, triangle).
		Partition circles and rectangles into equal shares	Using everyday objects as examples (e.g., pizza, sandwich) show and have students practice splitting items into equal amounts of 2, 3, 4 and other numbers.
	Measurement and Data (MD)	Classify objects by measurable features	Have student's short objects by their shape and size.
		Compare objects	Have students sort objects by shape and size.
		Describe measurable attributes	Teach students how to measure everyday objects.
		Measure and compare objects	Have students measure objects and sort them into groups based on the measurements.

Scores	Skill Category	Skill Description	Instructional Recommendations
145-200	Number and Operations: Fractions (NF)	Understand that fractions are part of the whole and express quantities as fractions	Teach students the part to whole relationship and how specific smaller values combine to be equivalent to a larger value using manipulatives and visual representations and opportunities for students to practice.
	Number and Operations in Base Ten (NBT)	Compose and decompose from 11 to 19	Have students add and take away objects from sets with quantities from 11 to 19 using representations such as ten frames to reinforce conceptual understanding.
		Read and write numerals to 120	Teach students numeral formation for zero and numerals 1 through 9 and team them how the same numerals are combined to represent larger amounts including values over 100 using incremental rehearsal or activities such as number bingo or number line board games to identify numerals.
		Skip count 5, 10, 100 within 1000	Teach students how to count out loud by 5s, 10s, and 100s up through 1000 and provide opportunities to practice.
		Understand place value for hundreds, tens, and ones	Teach students how each numeral in a number represents its value in relation to a base 10 number system using representations such as objects, drawings or base ten blocks.
	Operations and Algebraic Thinking (OA)	Fluent addition within 10; Use strategies for addition to 20	Teach students and have them practice addition facts with sums up through 10 and how to regroup extra ones by tens for sums up to 20 using representations, incremental rehearsal, and guided practice. Use timed practice to reinforce fluency of fact retrieval.
		Fluently add and subtract within 5	Teach students addition and subtraction facts to sums to and differences from 5 using guided practice, timed practice, incremental rehearsal, and use of representations.
		Solve addition and subtraction word problems	Teach students the words that mean adding to (e.g., plus, more, above) and taking from (e.g., minus, less, remove). Teach students conceptual understanding of word problems and allow students to use representations.
		Solve addition word problems with three whole numbers	Using words that represent combining quantities (e.g., plus, more, above), teach students underlying schema of word problems.

Scores	Skill Category	Skill Description	Instructional Recommendations
200-250	Counting and Cardinality (CC)	Count forward from a given number within a known sequence	Have students practice oral counting up from selected smaller numbers to larger numbers through activities such as a number line board game, 1-minute timings or distributed practice.
		Count objects to 20	Teach students to count out loud while pointing to individual items in a set using game-based interventions and/or manipulatives to provide opportunities to practice.
		Find smaller and larger numerals to 10	Teach students the quantities that match each numeral and have them sort numerals in relation to the quantities they represent using representations such as a number line with guided and independent practice.
		Understand one "larger" or "more"	Using manipulatives, teach students how to add one item at a time to a group of items and then count the new total using representations such as a number line with guided and independent practice.
		Understand the relationship between numbers and quantities	Have students match numerals with the quantities they represent using concrete manipulatives and representational drawings during guided practice.
		Write numbers 0 to 100	Teach students numeral formation for zero and numerals 1 through 9 and team them how the same numerals are combined to represent larger amounts using abstract-concrete strategies to allow students to practice linking spoken numbers to written numerals.
	Expressions and Equations	Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients	Provide daily practice with linear expressions.
		Identify and convert between equivalent representation of positive rational numbers	Provide daily practice with positive rational numbers.
		Multiply and divide with decimals and numbers expressed in scientific notation	Provide daily practice multiplying and dividing decimals and numbers expressed in scientific notation
		Solve problems using the associative, distributive, and commutative properties, and properties of operations	Teach students the associative, distributive, and commutative properties, and properties of operations and provide daily practice using these properties.
		Solve real-world and mathematical problems by writing equations in the form of x + p = q and pox = q	Provide daily practice with equations using variables.
		Understand solving an equation as a process of answering a question	Teach students how to convert word problems into equations and solve them mathematically.
		Use square and cube root symbols, and evaluate algebraic expressions including square and cube roots	Provide daily practice with expressions that include square and cube roots.
		Use variables in equations, tables, and graphs to represent quantities that change in relationship to one another	Provide daily practice with equations, tables, and graphs using variables.
		Use variables to represent numbers and write expressions	Show students how letters can be used as symbols to represent unknown quantities in math equations.

Scores	Skill Category	Skill Description	Instructional Recommendations
200-250	Expressions and Equations (EE)	Use variables, equations, and inequalities to represent and solve for quantities and relationships	Provide daily practice using variables, equations, and inequalities to represent and solve for quantities and relationships
		Write and solve inequalities of the form x > c or x < c	Provide daily practice solving inequalities.
		Write, identify parts of, and evaluate expressions including operations with numbers and variables	Have students write, identify parts of, and evaluate expressions including operations with numbers and variables
	Functions (F)	Represent and compare properties of linear functions algebraically, graphically, numerically, and verbally	Provide daily practice with linear function and have students practice in multiple formats.
		Use linear equations to represent proportional and nonproportional relationships and absolute value	Provide daily practice with linear equations that include proportional and non-proportional relationships, including absolute value.
	Geometry (G)	Analyze and compare two- and three-dimensional shapes	Have students sort objects of various geometric shapes into groups based on the definitions of the shapes.
		Classify two-dimensional figures based on characteristics of lines and angles	Using knowledge of lines and angles, have students sort figures by their definitions.
		Classify two-dimensional figures in a hierarchy based on properties	Using knowledge of lines and angles, have students sort figures by their definitions.
		Compose simple shapes to form larger shapes	Using manipulatives of geometric shapes, have students create larger shapes from smaller ones.
		Compose two- and three-dimensional shapes	Using a variety of construction materials, have students define then create two and three-dimensional shapes.
		Describe objects in the environment using shapes and relative position	Have students sorts classroom objects into categories by geometric shapes and their position.
		Describe shapes by attribute and category	After students have learned the definitions of selected geometric shapes, have them write phrases and sentences that describe a variety of objects of different shapes.
		Draw points, lines, rays, and angles	Teach students the definitions of points, lines, rays, and angles and have them practice drawing them in relation to number-based and word problems.
		Draw polygons in the coordinate plane, find side lengths, and estimate perimeter and area using correct units	Provide daily practice drawing polygons in the coordinate plane, finding side lengths, and estimating perimeter and area using correct units.
		Establish facts about angles of triangles, parallel lines cut by transversals, and the angle-angle criterion for similarity	Teach students the rules for angles of triangles, parallel lines cut by transversals, and the angle-angle criterion for similarity
		Find the area of polygons by composing and decomposing into other shapes, and using formulas	Provide daily practice finding the area of polygons using a variety of methods.
		Find the surface area and volume of prisms involving fractions using unit cubes and formulas	Provide daily practice finding the surface area and volume of prisms involving fractions using unit cubes and formulas.
		Graph, describe, and verify translations, reflections, and rotations on a coordinate grid	Provide daily practice graphing, describing, and verifying translations, reflections, and rotations on a coordinate grid.

Scores	Skill Category	Skill Description	Instructional Recommendations
200-250	Geometry (G)	Identify shapes as two-dimensional or three-dimensional	Teach students the rules for two- and three-dimensional shapes and provide opportunities for students to identify and sort various shapes.
		Name basic shapes	Teach students the names for specific geometric shapes (e.g., square, circle, triangle) using real world objects in the classroom with opportunities to practice.
		Partition a rectangle into rows and columns of same-size and count to find total	Teach students how to use a split-half method to divide a rectangle into equivalent rows and columns.
		Partition a rectangle into rows and columns and express area as fraction of whole	Teach students how to use a split-half method to divide a rectangle into equivalent rows and columns.
		Partition shapes	Teach students how to split various shapes into other shapes using manipulatives.
		Recognize a line of symmetry for a two-dimensional figure	Provide daily practice recognizing a line of symmetry for a two-dimensional figure and using manipulatives.
		Recognize and draw important attributes of shapes	Have students draw the lines onto pictures of various geometric shapes.
		Recognize and draw shapes with specified attributes	After students have learned the definitions of selected geometric shapes, have them draw shapes from phrases and sentences that describe them.
		Represent real world problems by graphing points in the first quadrant of the coordinate plane	Teach students the definitions and rules for a coordinate plane and have them practice graphing points from everyday situations in the first quadrant.
		Solve problems involving surface area and volume of two- and three-dimensional shapes	Provide daily practice solving problems involving surface area and volume of two- and three-dimensional shapes.
		Understand axes and coordinates	Teach students the definitions and rules for a coordinate plane and provide opportunities to practice.
		Use proportions and ratios to solve problems involving scale drawings of geometric figures	Provide practice using proportions and ratios to solve problems involving scale drawings of geometric figures.
	Measurement and Data (MD)	Apply area and perimeter formulas for rectangles in real world problems	Have students calculate the area and perimeter of rectangular objects in the classroom.
		Compare and convert units within systems	Using knowledge of U.S. and metric systems of measurement, have students use equivalency formulas to convert measures into different units.
		Compare objects	Have students sort objects by shape and size.
		Describe measurable attributes	Teach students how to measure everyday objects.
		Draw a scaled picture or bar graph	After teaching students how to draw a bar graph and scaled picture, have them apply these skills to draw depictions of the same data with each method.
		Draw and interpret graphs	After teaching students how to make and interpret different types of graphs, provide daily practice drawing and interpreting various data sets.

Scores	Skill Category	Skill Description	Instructional Recommendations
200-250	Measurement and Data (MD)	Express the length of an object as a whole number of length units	Teach students common units of measurement in U.S. and metric systems (e.g., inches, centimeters) and then measure and write the measurement of selected objects.
		Find rectangle area using tiling and multiplication	After teaching students how to use known measures of subunits of a larger area can be used to calculate a larger area, have them practice with multiple examples.
		Find right rectangular prism volume using unit cubes and multiplication	Provide practice finding right rectangular prism volume using unit cubes and multiplication.
		Generate measurement data for length	Have students measure and record the length of a variety of objects.
		Generate measurement data for length with halves and fourths of an inch	Have students measure and record the length in halves and fourths of an inch of a variety of objects.
		Know relative sizes of measurement units within one system of units	Teach students the incremental measurement values used in the U.S. and metric systems.
		Make a line plot to display a data set in fractions of a unit	Provide practice using a line plot to display a data set in fractions of a unit
		Make a line plot to display a data set of measurements in fractions of a unit	Provide practice using a line plot to display a data set of measurements in fractions of a unit
		Measure and compare objects	Have students measure objects and sort them into groups based on the measurements.
		Measure and estimate area	Teach students multiple methods for estimating and measuring area and provide opportunities to practice.
		Measure and estimate perimeters	Teach students multiple methods for estimating and measuring perimeter and provide opportunities to practice.
		Measure angles in relation to circles	Teach students measure angles in relation to circles and provide opportunities to practice.
		Measure angles in whole number degrees using a protractor	Teach students how to use a protractor to measure angles and provide regular opportunities to practice.
		Measure the length of an object	Teach students how to measure the length of everyday objects with different units of measurement.
		Measure to determine how much longer one object is than another	Have students measure and compare the lengths of different objects.
		Measure volume in a "unit cube"	Teach students the meaning of volume and how to calculate the volume of one cube.
		Measure volumes by counting unit cubes	Provide opportunities for students to calculate volumes of different objects using unit cubes.
		Measure with standard units	Provide regular practice measuring objects with U.S. and metric systems of measurement.

Scores	Skill Category	Skill Description	Instructional Recommendations
200-250	Measurement and Data (MD)	Organize, represent, and interpret data	Have students count sets of similar items and draw a bar graph of the quantities.
		Recognize angle measures as additive	Teach students how to use a protractor to measure angles and show them how multiple angles added together create larger angles up to 360 degrees.
		Represent whole numbers as lengths from 0 on a number line diagram	Using common units of measurement (e.g., inches, centimeters) teach students how measurement tools of these units are a form of number line.
		Solve word problems with measurement	Teach students words often included in math problems related to measurement and provide opportunities to practice solving word problems with measurement.
		Solve word problems with money	Teach students words often included in math problems related to money and provide opportunities to practice solving word problems with money.
		Solve word problems with time	Teach students words often included in math problems related to time and provide opportunities to practice solving word problems with time.
		Solve word problems with volume	Teach students words often included in math problems related to volume and provide opportunities to practice solving word problems with volume.
		Tell and write time from analog and digital clocks to the nearest five minutes	Have students practice saying and writing the correct time from digital and analog clocks every day.
		Tell time (analog, digital)	Teach students the 12-hour and 24-hour time systems using digital and analog clocks; have students practice saying the time during the school day.
		Understand that the area of a plane figure can be measured with unit squares	Using graph paper, teach students how to measure the plane values of different flat objects.
		Use addition and subtraction within 100 to solve word problems	After teaching students the words that mean adding to (e.g., plus, more, above) and taking from (e.g., minus, less, remove), provide daily practice solving word problems using addition and subtraction to 100.
	Number and Operations: Fractions (NF)	Add and subtract fractions referring to the same whole in word problems	After teaching students the words that refer to fractions provide daily practice solving word problems with fractions referring to the same whole using representations to improve conceptual understanding.
		Add and subtract fractions with like and then unlike denominators	Teach students the steps for adding and subtracting fractions with like and unlike denominators and provide daily practice.
		Compare fractions and understand fraction equivalence	Teach students the definitions of numerator and denominator and how identify smaller, larger, and equivalent fractions using representations and opportunities for practice.
		Divide with fractions and interpret fraction division	Teach students the steps for dividing fractions and provide daily practice.
		Explain why a fraction a/b is equivalent to a fraction (n x a)/ (n x b)	Provide daily practice comparing fractions to identify like and unlike values.

Scores	Skill Category	Skill Description	Instructional Recommendations
200-250	Number and Operations: Fractions (NF)	Express a fraction with a denominator 10 as an equivalent fraction with denominator 100	Teach students how place value rules apply to fractions and provide opportunities to practice converting fractions using base 10 values.
		Interpret a fraction as division of a numerator by the denominator	Teach students how fractions are similar to division problems and have them practice showing the fraction and division formats for the same expressions.
		Interpret multiplication as scaling	Provide practice interpreting multiplication as scaling and using applied examples.
		Multiply fractions and interpret fraction products	Teach students the steps for multiplying fractions and provide daily practice.
		Multiply fractions and whole numbers	Teach students the steps for multiplying fractions and whole numbers and provide daily practice.
		Represent fractions on a number line	Teach students how fractions can be organized into a linear order on a number line.
		Solve word problems with fractions using multiplication	After teaching students the words that refer to fractions provide daily practice solving word problems with fractions using multiplication using representations and with opportunities for practice.
		Understand a fraction a/b as a sum of fractions 1/b, which are parts of a whole	Teach students how fractions are parts of a whole and can be expressed in different ways using representations such as fraction strips or pie diagrams to enhance conceptual understand and with opportunities for practice.
		Understand fractions with different numerators and different denominators	Teach students how to understand the quantities represented by fractions with different numerators and different denominators using representations and with both guided and independent practice.
		Understand that fractions are part of the whole and express quantities as fractions	Teach students the part to whole relationship and how specific smaller values combine to be equivalent to a larger value using manipulatives and visual representations and with opportunities for students to practice.
		Use >, =, and < with decimals	After teaching decimal notation and place value, have students compare decimals of different values using >, =, <.
		Use decimal notation with fractions	Teach students how any fraction can be converted to a decimal and provide daily opportunities to practice.
	Number and Operations in Base Ten (NBT)	Add and subtract within 100	Have students practice adding and subtracting one and two-digit numbers that sum to no more than 100 using regrouping as needed and with opportunities for practice. Use representations and reinforce understanding of base ten.
		Add and subtract within 1000 using concrete models or drawings	Have students use representations to practice adding and subtracting one and two-digit numbers that sum to no more than 1000 using regrouping as needed.
		Add and subtract within 1000 using strategies and algorithms	Have students practice adding and subtracting one and two-digit numbers that sum to no more than 1000 using regrouping as needed. Provide

Scores	Skill Category	Skill Description	Instructional Recommendations
200-250	Number and Operations in Base Ten (NBT)		opportunities for practice using representations and reinforce understanding of base ten.
		Add up to four two-digit numbers	Teach students how the order of adding numbers in sets does not matter and demonstrate how to group numbers using easier combinations in order to add four two-digit numbers and provide opportunities for practice. Use representations and reinforce understanding of base ten.
		Add within 100	Have students practice adding one and two-digit numbers that sum to no more than 100 using regrouping as needed. Use representations and reinforce understanding of base-ten.
		Add, subtract, multiply, and divide decimals to hundredths	Teach students how to add, subtract, multiply and divide decimals to the hundredths place and provide daily opportunities to practice.
		Compare two three-digit numbers using >, =, and <	After students have mastered all numbers up to 1000, have them practice identifying greater, equal and lesser numbers up to 1000 on a regular basis.
		Compare with symbols >, =, and <	Teach students the meaning of the >, =, and < symbols and have them practice identifying greater, equal and lesser numbers on a regular basis.
		Compose and decompose from 11 to 19	Have students add and take away objects from sets with quantities from 11 to 19. Use representations such as ten frames to reinforce conceptual understanding.
		Explain why addition and subtraction strategies work	Require students to explain orally and in writing how they applied addition and subtraction strategies while solving problems.
		Fluently add and subtract multi-digit whole numbers	Teach students addition and subtraction facts and have them use these facts, with regrouping as needed to solve any multi-digit whole number addition or subtraction problem. Use timed practice to improve fluency.
		Illustrate calculations with equations, rectangular arrays, and area models.	Provide practice with illustrating calculations with equations, rectangular arrays, and area models
		Mentally add or subtract 10 or 100 to a given number	Using oral practice, have students add or subtract 10 and/or 100 from given numbers on a daily basis.
		Mentally find 10 more or 10 less than a given two-digit number	Teach students how to skip count by 10s and then have them practice identifying 10 less or more than given two-digit numbers.
		Multiply one-digit whole numbers by multiples of 10	Teach students how place value rules can be used to multiply one-digit whole numbers.
		Read and write multi-digit whole numbers	Teach students how zero and the numerals 1 through 9 are combined to represent larger amounts including all whole numbers. Teach and reinforce place value concepts. Provide opportunities to practice.
		Read and write numbers to 1000	Teach students how zero and the numerals 1 through 9 are combined to represent larger amounts including numbers through 1000. Use

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200-250	Number and Operations in Base Ten (NBT)		incremental rehearsal and guided practice. Teach and reinforce place value concepts.
		Read and write numerals to 120	Teach students numeral formation for zero and numerals 1 through 9 and team them how the same numerals are combined to represent larger amounts including values over 100. Use incremental rehearsal or activities such as number bingo or number line board games to identify numerals.
		Read, write, and compare decimals to thousandths	Teach students the decimal number system and provide opportunities to read, write, and compare decimals to thousandths.
		Recognize the relationship between digits in a multi-digit whole number	Teach students how each numeral in a multi-digit whole number represents its value in relation to a base 10 number system.
		Round multidigit numbers	Teach students the rules for rounding numbers up or down and provide opportunities to practice.
		Solve division problems with four-digit dividends and two-digit divisors	Provide guided and independent daily practice solving division problems with four-digit dividends and two-digit divisors without remainders. Use representations to teach students underlying concepts.
		Solve division problems with remainders with four-digit dividends and one-digit divisors	Provide guided and independent daily practice solving division problems with four-digit dividends and two-digit divisors with remainders. Use representations to teach students underlying concepts.
		Subtract multiples of 10	Teach students how subtracting 10 from any number requires changing the numeral in the 10s column to one less than the original numeral.
		Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones;	Teach students how each numeral in a number represents its value in relation to a base 10 number system. Use language based on place value and teacher students using representations.
		Understand place value for tens and ones including special number cases	Use representations and guided practice to teach students how to group sets of items into bundles of 10 each and to write the numerals that represent the quantities.
		Understand place value for tens and ones	Use representations and guided practice to teach students how to group sets of items into bundles of 10 each and to write the numerals that represent the quantities.
		Understand the effect of multiplying or dividing by 10 on the decimal point and zeros	Teach students how multiplication and division by 10 increases or decreases the value of a number in a base 10 system.
		Understand the relationship among the place values of two or more digits in a whole number	Teach students how each numeral in a number represents its value in relation to a base 10 number system using drawings or objects such as base-ten blocks to teach skills.
		Use place value to round multi-digit whole numbers	Teach students the rules for rounding numbers up or down and provide opportunities to practice.
	Number and Operations in Base Ten (NBT)	Use place value understanding to round decimals to any place	Teach students the rules for rounding decimals up or down and provide opportunities to practice.

Scores	Skill Category	Skill Description	Instructional Recommendations
200-250	Operations and Algebraic Thinking (OA)	Add and subtract with objects and pictures	Using manipulative and pictures of sets of items, have students identify the correct number of added or subtracted items using guided and independent practice.
		Apply operations and properties to add and subtract	Teach students the rules for the order of operations in equations (e.g., PEMDAS) and provide daily opportunities to practice using these skills.
		Apply properties to multiplication and division	Provide daily practice applying properties to multiplication and division.
		Decompose numbers less than or equal to 10 into pairs	Have students identify the number of items taken from a set of 10 or less items and then write the numeral using representations such as concrete manipulatives or ten frame drawings to build understanding.
		Determine the unknown number in a three-number addition or subtraction equation	Using direct instruction, teach students the steps to identify the correct missing number based on the operation signs and provide opportunities for students to practice fact families and build fluency of fact retrieval.
		Determine the unknown number in a three-number multiplication or division equation	Using direct instruction, teach students the steps to identify the correct missing number based on the operation signs and provide opportunities for students to practice fact families.
		Find all factor pairs for a whole number in the range 1-100	Teach students the meaning and steps for factoring whole numbers (e.g., factor tree) and provide daily guided and independent practice.
		Fluent addition within 10; Use strategies for addition to 20	Teach students and have them practice addition facts with sums up through 10 and how to regroup extra ones by tens for sums up to 20 using representations, incremental rehearsal, and guided practice. Use timed practice to reinforce fluency of fact retrieval.
		Fluently add and subtract within 20	Teach students addition and subtraction facts that create sums to and differences from 20 wiith a focus on conceptual understanding of addition and subtraction using representations. Use incremental rehearsal, guided practices, and timed practice to reinforce skills and build fluency.
		Fluently add and subtract within 5	Teach students addition and subtraction facts that create sums to and differences from 5 using guided practice, timed practice, incremental rehearsal, and use of representations.
		Fluently multiply and divide to 100	Teach students multiplication and division facts for all numbers through 10 to create products to and quotients from 100 with a focus on conceptual understanding of multiplication and division through representations and with timed practice to build fluency.
		For any number 1 to 9, find the number that makes 10 when added to the given number	Teach students how to sort a set of 10 objects or drawings into different groups of values that combine to make 10 using representations such as ten frames along with guided and independent practice.
		Generate a number or shape pattern that follows a given rule	Provide daily practice generating a number or shape pattern that follows a given rule. Point out patterns in everyday life.

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200-250	Operations and Algebraic Thinking (OA)	Identify arithmetic patterns	Teach students how to identify predictable patterns in number sequences using concrete examples and representations to reinforce skills.
		Interpret and compare multiplication equations	Provide practice interpreting a multiplication equation as a comparison
		Interpret complex expressions	Provide practice interpreting complex expressions.
		Interpret products as sets	Provide practice interpreting Interpret products as sets using manipulatives and representations.
		Interpret quotients as shares	Provide practice interpreting quotients as shares using manipulatives and representations.
		Multiply or divide to solve word problems involving multiplicative comparison	Teach students the words that refer to multiplication and division and provide opportunities to solve word problems involving multiplicative comparisons. Provide guided practice and independent practice opportunities.
		Read and write numbers to 1000	Teach students how zero and the numerals 1 through 9 are combined to represent larger amounts including numbers through 1000. Use representational-abstract strategies to help students relate spoken numbers to written numerals. Use incremental rehearsal or number bingo strategies to provide practice opportunities for reading written numerals.
		Relate counting to addition and subtraction	Teach students how to count up and down to identify answers to additional and subtraction problems using explicit instruction and guided practice to teach and reinforce skills.
		Solve addition and subtraction word problems	Teach students the words that mean adding to (e.g., plus, more, above) and taking from (e.g., minus, less, remove). Teach students conceptual understanding of word problems and allow students to use representations.
		Solve addition word problems with three whole numbers	Using words that represent combining quantities (e.g., plus, more, above), teach students underlying schema of word problems.
		Solve three- or more step word problems	Provide daily practice solving three- or more step word problems. Use schema-based instruction and guided practice.
		Solve two-step word problems	Provide daily practice solving two-step word problems. Use schema-based instruction and guided practice.
		Solve word problems to 20	Using oral and written language have students identify the missing value in addition and subtraction problems. Reinforce skills with manipulatives and/or representations, guided practice, and/or timed practice.
		Understand division as an unknown factor problem	Teach students how division problems use factoring as a step to finding the correct answer. Provide practice using fact families to build fluency.
		Understand parenthesizes, brackets, braces	Teach students the purpose of parenthesizes, brackets, braces in mathematical expressions.

Scores	Skill Category	Skill Description	Instructional Recommendations
200-250	Operations and Algebraic Thinking (OA)	Understand subtraction as an unknown addend problem	Teach students the relationship between addition and subtraction and how to convert addition problems to subtraction and vice versa utilizing manipulatives and/or schema-based instruction to teach and practice skills.
		Understand the meaning of the equal sign	Teach students the meaning and purpose of the = sign in math problems.
		Use addition and subtraction within 100 to solve one- and two-step word problems	Using schema-based instruction with a focus on an understanding of place value, provide practice solving one- and two-step word problems using addition and subtraction to 100.
		Use addition to count 5 x 5 arrays	Teach students how skip counting by 5s can be used to identify the total number of items in an array with 5 items in each group or set.
		Use multiplication and division within 100 to solve word problems	Teach students the words that refer to multiplication and division and provide opportunities to solve word problems with these operations using manipulatives and/or representations to teach and practice word problem solving.
	Ratios and Proportional Relationships (RP)	Apply percents to solve problems; Identify ratios and use ratios to compare quantities and solve problems	Provide opportunities for students to apply percents to solve problems and identify ratios and use ratios to compare quantities and solve problems using schema-based instruction to teach the skill and underlying concepts.
		Compute unit rates associated with ratios of fractions	Provide opportunities for students to compute unit rates associated with ratios of fractions
		Make tables of equivalent ratios; solve unit rate problems; use fractions, decimals, and percents interchangeably	Provide opportunities for students to make tables of equivalent ratios; solve unit rate problems; use fractions, decimals, and percents interchangeably
		Recognize, represent, and solve proportional relationships in multiple ways and contexts	Provide opportunities for students to recognize, represent, and solve proportional relationships in multiple ways and contexts.
		Use proportional reasoning to solve problems involving ratios in various contexts, including interest	Provide opportunities for students to use proportional reasoning to solve problems involving ratios in various contexts, including interest
	Statistics and Probability (SP)	Approximate the probability of a chance event by collecting and predicting approximate relative frequency	Provide opportunities for students to approximate the probability of a chance event by collecting and predicting approximate relative frequency using manipulatives such as die or spinners to teach and reinforce skills.
		Describe the attribute measured in a data set, measures of center and variability, and the overall data pattern	Provide opportunities for students to describe the attribute measured in a data set, measures of center and variability, and the overall data pattern.
		Develop a probability model and compare probabilities to observed frequencies, explaining sources of discrepancy	Provide opportunities for students to develop a probability model and compare probabilities to observed frequencies, explaining sources of discrepancy.
		Display numerical data in a number line, dot plot, histogram, or box plot	Provide opportunities for students to display numerical data based on real world examples in a number line, dot plot, histogram, or box plot.
		Find probabilities of compound events using several methods; express probabilities using multiple forms	Provide opportunities for students to find probabilities of compound events using several methods; express probabilities using multiple forms.

Scores	Skill Category	Skill Description	Instructional Recommendations
200-250	The Number System (NS)	Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities	Provide opportunities for students to informally assess the degree of visual overlap of two numerical data distributions with similar variabilities.
		Recognize a statistical question as one that anticipates variability in the data and accounts for it	Teach students the core principals of statistics, including the expectations of error and variability in all data.
		Understand that statistics can be used to gain information about a population by examining a sample	Teach the definitions of sample and population as they refer to statistical analysis.
		Use a linear model to solve problems with bivariate data, interpret the slope and intercept, and make predictions	Provide opportunities for students to use a linear model to solve problems with bivariate data, interpret the slope and intercept, and make predictions.
		Use data from a random sample to draw inferences about a population with an unknown characteristic of interest	Provide opportunities for students to use data from a random sample to draw inferences about a population with an unknown characteristic of interest.
		Use measures of center and variability for random sample data to draw inferences about two populations	Provide opportunities for students to use measures of center and variability for random sample data to draw inferences about two populations.
		Apply and extend previous understandings to add and subtract positive and negative rational numbers	Provide opportunities for students to practice applying and extending previous understandings to add and subtract positive and negative rational numbers.
		Compare positive rational numbers represented in various forms, including absolute value	Provide opportunities for students to compare positive rational numbers represented in various forms, including absolute value.
		Compute and interpret quotients of fractions	Provide opportunities for students to compute and interpret quotients of fractions.
		Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm	Provide opportunities for students to add, subtract, multiply, and divide multi-digit decimals using the standard algorithm.
		Recognize opposite signs of numbers as indicating opposite locations on a number line or in the coordinate plane	Provide regular opportunities for students to identify opposite numbers and locations on a coordinate plane.
		Understand that positive and negative numbers describe quantities having opposite directions or values	Teach students the definitions and concepts of positive and negative numbers.
		Use arithmetic with decimals, fractions, mixed numbers, rational numbers, and exponents	Provide opportunities for students to use arithmetic with decimals, fractions, mixed numbers, rational numbers, and exponents.
		Use common factors, common multiples, and factoring to do arithmetic with fractions	Teach students how to use factoring as a strategy to solve fraction problems and provide daily opportunities to practice utilizing manipulatives to teach students the underlying concepts.
		Use the meanings of fractions to multiply and divide rational numbers, and interpret results	Provide opportunities for students to use the meanings of fractions to multiply and divide rational numbers and interpret results.

Scores	Skill Category	Skill Description	Instructional Recommendations
250-275	Expressions and Equations (EE)	Apply properties of operations to add, subtract, factor, and expand linear expressions with rational coefficients	Provide daily practice with linear expressions.
		Derive the equations y = mx and y = mx + b	Teach students the equation for slope, what it measures, and how it can be used to solve certain types of equations.
		Multiply and divide with decimals and numbers expressed in scientific notation	Provide daily practice multiplying and dividing decimals and numbers expressed in scientific notation
		Solve problems using the associative, distributive, and commutative properties, and properties of operations	Teach students the associative, distributive, and commutative properties, and properties of operations and provide daily practice using them.
		Solve real-world and mathematical problems by writing equations in the form of x + p = q and pox = q	Provide daily practice with equations using variables.
		Understand solving an equation as a process of answering a question	Teach students how to convert word problems into equations and solve them mathematically.
		Use square and cube root symbols, and evaluate algebraic expressions including square and cube roots	Provide daily practice with expressions that include square and cube roots.
		Use variables in equations, tables, and graphs to represent quantities that change in relationship to one another	Provide daily practice with equations, tables, and graphs using variables.
		Write and solve inequalities of the form x > c or x < c	Provide daily practice solving inequalities.
		Write, identify parts of, and evaluate expressions including operations with numbers and variables	Have students write, identify parts of, and evaluate expressions including operations with numbers and variables
	Functions (F)	Represent and compare properties of linear functions algebraically, graphically, numerically, and verbally	Provide daily practice with linear functions.
		Use linear equations to represent proportional and nonproportional relationships and absolute value	Provide daily practice with linear equations that include proportional and non-proportional relationships, including absolute value.
	Geometry (G)	Draw points, lines, rays, and angles	Teach students the definitions of points, lines, rays, and angles and have them practice drawing them in relation to number-based and word problems.
		Draw polygons in the coordinate plane, find side lengths, and estimate perimeter and area using correct units	Provide daily practice drawing polygons in the coordinate plane, finding side lengths, and estimating perimeter and area using correct units.
		Establish facts about angles of triangles, parallel lines cut by transversals, and the angle-angle criterion for similarity	Teach students the rules for angles of triangles, parallel lines cut by transversals, and the angle-angle criterion for similarity
		Find the area of polygons by composing and decomposing into other shapes, and using formulas	Provide daily practice finding the area of polygons using a variety of methods.
		Find the surface area and volume of prisms involving fractions using unit cubes and formulas	Provide daily practice finding the surface area and volume of prisms involving fractions using unit cubes and formulas.
		Graph, describe, and verify translations, reflections, and rotations on a coordinate grid	Provide daily practice graphing, describing, and verifying translations, reflections, and rotations on a coordinate grid.

Scores	Skill Category	Skill Description	Instructional Recommendations
250-275	Geometry (G)	Know and use formulas for the volume of cones, cylinders, and spheres	Teach the formulas for volume of cones, cylinders and spheres and have students use them to calculate the volume of objects with these shapes.
		Recognize a line of symmetry for a two-dimensional figure	Provide practice recognizing a line of symmetry for a two-dimensional figure
		Represent real world problems by graphing points in the first quadrant of the coordinate plane	Teach students the definitions and rules for a coordinate plane and have them practice graphing points from everyday situations in the first quadrant.
		Solve problems involving surface area and volume of two- and three-dimensional shapes	Provide daily practice solving problems involving surface area and volume of two- and three-dimensional shapes.
		Understand axes and coordinates	Teach students the definitions and rules for a coordinate plane.
		Use proportions and ratios to solve problems involving scale drawings of geometric figures	Provide practice using proportions and ratios to solve problems involving scale drawings of geometric figures.
	Measurement and Data (MD)	Compare and convert units within systems	Using knowledge of U.S. and metric systems of measurement, have students use equivalency formulas to convert measures into different units.
		Describe measurable attributes	Teach students how to measure everyday objects.
		Generate measurement data for length with halves and fourths of an inch	Have students measure and record the length in halves and fourths of an inch of a variety of objects.
		Measure angles in whole number degrees using a protractor	Teach students how to use a protractor to measure angles and provide regular opportunities to practice.
	Number and Operations (NF)	Multiply fractions and interpret fraction products	Teach students the steps for multiplying fractions and provide daily practice.
		Solve word problems with fractions using multiplication	After teaching students the words that refer to fractions provide daily practice solving word problems with fractions using multiplication.
	Number and Operations in Base Ten (NBT)	Read, write, and compare decimals to thousandths	Teach students the decimal number system and provide opportunities to read, write, and compare decimals to thousandths.
		Understand the effect of multiplying or dividing by 10 on the decimal point and zeros	Teach students how multiplication and division by 10 adds or removes zeros and adjusts the location of a decimal point in a base 10 system.
		Understand the relationship among the place values of two or more digits in a whole number	Teach students how each numeral in a number represents its value in relation to a base 10 number system.
	Operations and Algebraic Thinking (OA)	Generate two numerical patterns using two given rules	Provide practice generating two numerical patterns using two given rules.
		Solve two-step word problems	Teach students how to and provide daily practice solving two-step word problems.
		Understand division as an unknown factor problem	Teach students how division problems use factoring as a step to finding the correct answer.
		Understand subtraction as an unknown addend problem	Teach students the relationship between addition and subtraction and how to convert addition problems to subtraction and vice versa.

Scores	Skill Category	Skill Description	Instructional Recommendations
250-275	Ratios and Proportional Relationships (RP)	Compute unit rates associated with ratios of fractions	Provide opportunities for students to compute unit rates associated with ratios of fractions
		Make tables of equivalent ratios; solve unit rate problems; use fractions, decimals, and percents interchangeably	Provide opportunities for students to make tables of equivalent ratios; solve unit rate problems; use fractions, decimals, and percents interchangeably
		Recognize, represent, and solve proportional relationships in multiple ways and contexts	Provide opportunities for students to recognize, represent, and solve proportional relationships in multiple ways and contexts.
		Use proportional reasoning to solve problems involving ratios in various contexts, including interest	Provide opportunities for students to use proportional reasoning to solve problems involving ratios in various contexts, including interest
	Statistics and Probability (SP)	Approximate the probability of a chance event by collecting and predicting approximate relative frequency	Provide opportunities for students to approximate the probability of a chance event by collecting and predicting approximate relative frequency.
		Develop a probability model and compare probabilities to observed frequencies, explaining sources of discrepancy	Provide opportunities for students to develop a probability model and compare probabilities to observed frequencies, explaining sources of discrepancy.
		Display numerical data in a number line, dot plot, histogram, or box plot	Provide opportunities for students to display numerical data in a number line, dot plot, histogram, or box plot.
		Find probabilities of compound events using several methods; express probabilities using multiple forms	Provide opportunities for students to find probabilities of compound events using several methods; express probabilities using multiple forms.
		Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities	Provide opportunities for students to informally assess the degree of visual overlap of two numerical data distributions with similar variabilities.
		Recognize that measures of center and variation summarize all values with a single number	Teach students the definitions and applications of mean, median and mode and provide opportunities to identify them in data sets.
		Understand that statistics can be used to gain information about a population by examining a sample	Teach the definitions of sample and population as they refer to statistical analysis.
		Use data from a random sample to draw inferences about a population with an unknown characteristic of interest	Provide opportunities for students to use data from a random sample to draw inferences about a population with an unknown characteristic of interest.
		Use measures of center and variability for random sample data to draw inferences about two populations	Provide opportunities for students to use measures of center and variability for random sample data to draw inferences about two populations.
	The Number System (NS)	Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm	Provide opportunities for students to add, subtract, multiply, and divide multi-digit decimals using the standard algorithm.
		Recognize opposite signs of numbers as indicating opposite locations on a number line or in the coordinate plane	Provide regular opportunities for students to identify opposite numbers and locations on a coordinate plane.
		Understand that positive and negative numbers describe quantities having opposite directions or values	Teach students the definitions of positive and negative numbers.