Reporting Category Statements
B.E.S.T. Standards: Mathematics

May 2023

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Introduction

Students who take the Florida Assessment of Student Thinking (FAST) or the Benchmarks for Excellent Student Thinking (B.E.S.T.) end-of-course (EOC) assessments receive detailed score reports that are unique to these computer-adaptive assessments. These reports contain detailed information on each student's performance and, beginning with the 2023–2024 school year, will include narratives regarding strengths and weaknesses, as well as steps parents can take to help students make progress in their learning. The information in this report is intended primarily for students and families and is not intended to replace classroom instruction.

The most detailed narrative is provided at the *reporting category* level. Reporting categories refer to major groupings of content and skills, such as Reading Informational Text or Reading Prose and Poetry in English Language Arts (ELA) and Number Sense and Operations with Whole Numbers or Algebraic Reasoning in Mathematics, among others. For each of the reporting categories, three tiers of text have been created based on the B.E.S.T. Standards and informed by the Achievement Level Descriptors (ALDs) that were written by Florida educators for the B.E.S.T. standards. These tiers include *Below Expectations*, *At/Near Expectations*, and *Above Expectations*. These reports classify student performance into one of the three tiers based on the students' answers to items that measure the benchmarks associated with that reporting category. Individual benchmark codes can be found in the report beneath the name of the reporting category they fit. Each student's report is tailored to provide specific information based upon which of the three tiers that each reporting category score falls into. This document provides the complete set of narratives so that stakeholders can see expectation progressions within a reporting category and across grades.

Each description included in these reports and the accompanying next steps were drafted by small teams of Florida educators and reviewed by larger Florida educator panels facilitated by EdCount, LLC, and consisting of Florida educators, reading specialists from *Just Read, Florida!,* and mathematics specialists from the Bureau of Standards and Instructional Support.

It is important to keep in mind that a student's overall score provides the most valid and reliable evidence of what the student knows and can do with respect to the B.E.S.T. Standards. Due to the relatively small size of each reporting category, neither individual nor combined reporting category performance should be used to infer overall performance.

The following resources are available to support understanding of the FAST test design and the skills outlined in the B.E.S.T. Standards.

B.E.S.T. Standards Achievement Level Descriptions

Understanding FAST Grades 3–10 ELA Reading and Grades 3–8 Mathematics and B.E.S.T. Algebra 1 and Geometry EOC Reports for Families

B.E.S.T. Standards:

- ELA
- Mathematics

FAST ELA Test Design Summary

FAST Mathematics and B.E.S.T. EOC Test Design Summary

Please direct questions and comments about these reports to Assessment@fldoe.org.

Grade 3 Mathematics Reporting Category Statements

Number Sense and Additive Reasoning See Benchmarks for Excellent Student Thinking 3.NSO.1.1, 3.NSO.1.2, 3.NSO.1.3, 3.NSO.1.4, 3.NSO.2.1, 3.AR.1.2, 3.AR.3.1, 3.AR.3.3			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Compose and decompose (build and break apart) four-digit numbers using objects or drawings. • Plot and compare numbers up to 10,000 using symbols (<, >, =) and a number line with labeled intervals of 10s, 100s, or 1000s. • Solve one-step word problems involving addition, subtraction, basic multiplication, and division. • Identify a numerical pattern (e.g., *What is the rule for the number pattern: 5, 10, 15, 20, 25, . . .?*). • Determine whether a whole number from 1 to 100 is even or odd. • Round whole numbers up to 1,000 to the nearest 100.	For example, your learner may be able to: • Read and write numbers up to 10,000 using standard and word form. • Compose and decompose (build and break apart) four-digit numbers based on place value. • Plot whole numbers up to 10,000 on number lines with different intervals (50s, 100s, 1,000s). • Compare numbers up to 10,000 using symbols (<, >, =). • Solve one- and two-step problems involving addition and subtraction and one-step problems involving multiplication and division. • Determine whether a whole number from 1 to 1000 is even or odd. • Identify numerical patterns (e.g., *Bailey collects baseball cards every day. This generates the pattern 4, 8, 12, 16, 20, ... What is the rule for this number pattern?*).	For example, your learner may be able to: • Identify errors in mathematical problems. • Read and write numbers up to 10,000 in multiple ways. • Demonstrate and explain the composition and decomposition (building and breaking apart) of numbers. • Round numbers up to 1,000 to the nearest 10 or 100. • Solve and explain one- and two-step word problems involving the four operations. • Explain whether a whole number from 1 to 1,000 is even or odd. • Identify, create, and extend numerical patterns (e.g., *Bailey collects 6 baseball cards every day. This generates the pattern 6, 12, 18, ... How many baseball cards will Bailey have at the end of the sixth day?*).
Next Steps	For example, have your learner: • Write and read numbers greater than 1,000 when given verbally and in written form. • Use manipulatives, such as base-ten blocks, to build number sense to the hundreds and thousands in multiple ways (e.g., 1,034 would be represented with	For example, have your learner: • Read and write numbers in standard form, word form, and expanded notation up to the ten thousands interchangeably. • Identify which digit is in the thousands, hundreds, tens, and ones place of a given number.	For example, have your learner: • Practice identifying, explaining, and correcting errors in addition and subtraction problems to demonstrate fluency. • Read and write numbers in standard form, word form, and expanded notation up to one million.

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Number Sense and Additive Reasoning See Benchmarks for Excellent Student Thinking 3.NSO.1.1, 3.NSO.1.2, 3.NSO.1.3, 3.NSO.1.4, 3.NSO.2.1, 3.AR.1.2, 3.AR.3.1, 3.AR.3.3			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	one thousand block, three tens rods, and four unit cubes). • Write three-digit numbers on separate index cards (e.g., 368, 402). With the cards, order several from least to greatest, classify numbers as even or odd, and practice addition and subtraction. • Identify the next number in a pattern when given a series of numbers. • Identify the thousands, hundreds, tens, and ones place in given numbers and practice rounding numbers to specific place values (e.g., nearest 10 or 100).	• Decompose numbers in as many ways as possible. Then compare and contrast the representations generated. • Plot, order, and compare numbers up to the ten thousands. • Use manipulatives, such as base-ten blocks, to build number sense to the hundreds and thousands in multiple ways (e.g., 1,034 would be represented with ten hundreds and thirty-four ones). • Solve and explain word problems that involve addition, subtraction, multiplication, and division. • Practice multiplication by flipping over two cards of a card deck at a time.	• Solve and explain real-world problems involving more than one operation.

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Number Sense and Multiplicative Reasoning See Benchmarks for Excellent Student Thinking 3.NSO.2.3, 3.NSO.2.4 (including 3.NSO.2.2), 3.AR.1.1, 3.AR.2.2, 3.AR.2.3 (including 3.AR.2.1), 3.AR.3.2, 3.GR.2.1, 3.GR.2.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Multiply whole numbers by factors of 1, 2, or 5 and related division facts. • Multiply one-digit whole numbers by 10. • Determine the product of one-digit whole numbers by applying the commutative property (e.g., 4 x 3 = 3 x 4). • Determine whether an equation involving multiplication or division with up to three terms is true or false. • Determine whether a whole number from 1 to 100 is a multiple of a given one-digit number when given a visual representation. • Find the area of a rectangle by counting unit squares that cover the figure.	For example, your learner may be able to: • Multiply whole numbers by factors up to and including 10 and related division facts. • Multiply one-digit whole numbers by multiples of 10 (up to 90). • Determine the product of three or more whole numbers within 12 by applying the commutative and/or associative property [e.g., 2 x (4 x 3) = 3 x (4 x 2)]. • Determine whether an equation involving multiplication and division with up to four terms is true or false. • Determine unknown numbers in multiplication and division problems with an unknown number in different positions. • Determine whether a whole number in the range of 1 to 100 is a multiple of a given number. • Find the area of a rectangle in square units by using a visual model (e.g., using unit squares along the perimeter and relating it to an array model).	For example, your learner may be able to: • Multiply whole numbers by factors up to and including 12 and related division facts. • Identify and correct errors in equations. • Multiply a one-digit number and a two-digit number by applying the distributive property [e.g., 5 x (20 + 4) = (5 x 20) + (5 x 4)]. • Determine whether an equation using the four operations is true or false and rewrite false equations as true. • Determine whether a whole number from 1 to 144 is a multiple of a given number up to factors of 12. • Find the area of a rectangle with whole number side lengths.
Next Steps	For example, have your learner: • Group small objects, such as beans, into equal groups and count them. • Practice counting by multiples of any given number up to 12.	For example, have your learner: • Build automaticity with multiplication and division facts up to 12 x 12. • Play math games such as *I'm thinking of two numbers whose product is between 15 and 25. What numbers could I be multiplying?*	For example, have your learner: • Multiply two whole numbers with products from 0 to 144 and identify their related division facts. • Identify and correct errors in incorrect multiplication and division problems.

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Number Sense and Multiplicative Reasoning See Benchmarks for Excellent Student Thinking 3.NSO.2.3, 3.NSO.2.4 (including 3.NSO.2.2), 3.AR.1.1, 3.AR.2.2, 3.AR.2.3 (including 3.AR.2.1), 3.AR.3.2, 3.GR.2.1, 3.GR.2.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	• Practice basic multiplication facts by rolling two dice and multiplying the numbers. • Solve problems that require multiplication by 10s (10, 20, 30 . . .) up to 100. • Determine an unknown number in a multiplication or division equation with a missing number in any position. • Find the area of a rectangle in square units by counting units tiled along the perimeter.	• Have your student solve real-life situations you encounter such as how many days until a holiday that is in 3 weeks or how many balloons you will need if 6 children each get 5 balloons. • Identify and explain errors in multiplication and division problems. • Practice finding the area of small rectangular figures such as cell phones and books with the length and width labeled.	• Determine the common multiples when given two numbers between 1 and 12. • Solve multistep problems in a real-world context using the four operations. • Calculate the area of a rectangle observed in everyday life.

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Fractional Reasoning See Benchmarks for Excellent Student Thinking 3.FR.1.1, 3.FR.1.2, 3.FR.1.3, 3.FR.2.1, 3.FR.2.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Use a model and fractional notation to represent a fraction. Denominators are limited to 2, 3, 4, 5, and 6. • Use a visual model to decompose (break apart) a fraction into unit fractions (e.g., the fraction $\frac{3}{4}$ is the same as $\frac{1}{4}+\frac{1}{4}+\frac{1}{4}$). • Read and write fractions less than one in numeral-word form, word form, and standard form. Denominators are limited to 2, 3, and 4 (e.g., the fraction $\frac{1}{2}$ written in word form is one-half). • Plot fractional numbers with the same numerator or denominator on a number line. • Identify equivalent fractions that represent one whole (e.g., both $\frac{2}{2}$ and $\frac{3}{3}$ equal 1) and one half (e.g., $\frac{1}{2}$ and $\frac{2}{4}$) using a visual model.	For example, your learner may be able to: • Read and write fractions in numeral-word form, word form, and standard form (e.g., the fraction $\frac{3}{4}$ written in word form is three-fourths and numeral-word form is 3 *fourths*). • Plot and compare fractional numbers with the same numerator or denominator. • Identify equivalent fractions (e.g., $\frac{6}{8}$ and $\frac{3}{4}$) using a visual model. Denominators are limited to 2, 3, 4, 5, 6, 8, 10, and 12.	For example, your learner may be able to: • Represent and interpret fractions including when fractions greater than one are separated into unit parts. • Read and write fractions in various forms, including fractions greater than 1 (the fraction $\frac{3}{2}$ written in word form is three-halves and numeral-word form is 3 *halves*). • Order and compare fractions with the same numerator or denominator. • Identify errors in fractional reasoning. • Demonstrate and explain why two fractions can be identified as equivalent or non-equivalent.
Next Steps	For example, have your learner: • Identify household items as part of a set or food items sectioned into equal parts as fractions. Identify the fraction that one part represents and add some or all of the equal parts. • Explain whether the fraction part gets larger or smaller when the denominator is changed.	For example, have your learner: • Use food item sections to represent fractions that have a denominator from 2 to 6 and 8 to 10. • Use measuring cups to demonstrate how many $\frac{1}{3}$ cups are in 1 cup or how many times you refill $\frac{1}{2}$ cup to make 2 cups. • Explain whether a fraction is larger or smaller than another when the	For example, have your learner: • Decompose (break apart) a fraction greater than one into two fractions with one being equal to one. • Solve real-world problems involving the addition of fractions with the same denominator. • Plot, order, and compare fractions with the same numerator or denominator and explain their reasoning.

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Fractional Reasoning See Benchmarks for Excellent Student Thinking 3.FR.1.1, 3.FR.1.2, 3.FR.1.3, 3.FR.2.1, 3.FR.2.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	• Draw equivalent parts (e.g., $\frac{1}{2}$ and $\frac{2}{4}$) of food items such as a sandwich, cake, or pie.	numerators are the same and the denominators are different. • Add unit fractions that equal a fraction greater than one (e.g., $\frac{1}{3}+\frac{1}{3}+\frac{1}{3}+\frac{1}{3}=\frac{4}{3}$). • Order fractions from smallest to largest. • Write an equivalent fraction to a provided fraction. Discuss why the fractions are equivalent.	• Explain how a fraction greater than one may represent one or more wholes and an additional amount. • Generate equivalent fractions.

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Geometric Reasoning, Measurement, and Data Analysis and Probability See Benchmarks for Excellent Student Thinking 3.GR.1.1, 3.GR.1.2, 3.GR.1.3, 3.GR.2.3, 3.GR.2.4, 3.M.1.1, 3.M.1.2, 3.M.2.1, 3.M.2.2, 3.DP.1.2 (including 3.DP.1.1)			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Select and use appropriate tools to measure length, liquid volume, and temperature to the nearest whole unit. • Identify points, lines, line segments, rays, intersecting lines, perpendicular lines, and parallel lines. • Identify parallelograms, rhombi, rectangles, squares, and trapezoids as examples of quadrilaterals. • Draw a single line of symmetry in a two-dimensional figure. • Solve mathematical or real-world problems involving the perimeter or area of rectangles. • Solve real-world problems involving addition and subtraction with whole-number lengths, volumes, weights, and temperatures. • Use a digital clock to tell and write the time to the nearest minute and designate it as a.m. or p.m. • Solve problems involving elapsed time within the same hour. • Match a data set to a visual representation (bar graph or pictograph).	For example, your learner may be able to: • Select and use appropriate tools to measure length, liquid volume, and temperature to the nearest half or quarter unit. • Identify and draw points, lines, line segments, rays, intersecting lines, perpendicular lines, and parallel lines. • Identify and draw parallelograms, rhombi, rectangles, squares, and trapezoids as examples of quadrilaterals. • Draw two or more lines of symmetry in two-dimensional shapes. • Solve mathematical or real-world problems involving the perimeter and area of rectangles including figures composed of two or more rectangles. • Tell and write time to the nearest minute using an analog clock. • Solve problems involving elapsed time. • Represent and interpret data using tables, pictographs, bar graphs, or line plots.	For example, your learner may be able to: • Identify errors in measurement and elapsed time problems. • Classify triangles and quadrilaterals (parallelograms, rhombi, rectangles, squares, and trapezoids) according to their attributes (such as parallel or perpendicular lines, right angles, number and lengths of sides). • Describe, identify, and draw all lines of symmetry in two-dimensional shapes and explain why some shapes may not have any lines of symmetry. • Collect, represent, interpret, and compare data using tables, pictographs, bar graphs, circle graphs, or line plots.
Next Steps	For example, have your learner: • Select the appropriate tool and measure the length (to the nearest half and quarter inch) and liquid volume (to the nearest	For example, have your learner: • Identify errors in length, liquid volume, and temperature measurements when provided with an incorrect measurement.	For example, have your learner: • Identify errors and make corrections in measurement and elapsed time problems. • Classify quadrilaterals and triangles in multiple ways.

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Geometric Reasoning, Measurement, and Data Analysis and Probability See Benchmarks for Excellent Student Thinking 3.GR.1.1, 3.GR.1.2, 3.GR.1.3, 3.GR.2.3, 3.GR.2.4, 3.M.1.1, 3.M.1.2, 3.M.2.1, 3.M.2.2, 3.DP.1.2 (including 3.DP.1.1)			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	half and quarter cup) of items around the house. • Identify objects around the home that have lines; line segments; or perpendicular, parallel, or intersecting lines. • Use everyday objects such as toothpicks, marshmallows, twist ties, or paper to construct basic shapes. • Identify shapes around the home that include parallelograms, rhombi, rectangles, squares, and trapezoids. • Practice using a ruler or measuring tape to find the perimeter and area of small rectangular figures such as cell phones and books. • Tell time on an analog and a digital clock.	• Describe and draw points, lines, line segments, rays, intersecting lines, and perpendicular and parallel lines, and identify each in two-dimensional figures. • Identify shapes seen in the real world such as shapes of traffic signs or objects in the home such as food containers, patterns in quilts, or shapes in furniture. • Locate objects with different lines of symmetry (e.g., shapes, letters, numbers). • Fold a paper in half and draw a shape along the fold; cut out the shape and unfold the paper to create a symmetrical shape. • Use a formula to calculate the area and perimeter of rectangles. • Find elapsed time between events during the day. • Complete a graph (bar graph, pictograph, or circle graph) that has missing data.	• Describe how points, lines, line segments, rays, intersecting lines, and perpendicular and parallel lines are attributes which can be used to define shapes. • Complete a partial figure given a line of symmetry. • Create a survey for friends and family, collect data, and graph (bar graph, pictograph, circle graph, or line plot) the results. Ask your learner to discuss what they learned from the survey results.

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Grade 4 Mathematics Reporting Category Statements

Number Sense and Operations with Whole Numbers See Benchmarks for Excellent Student Thinking 4.NSO.1.1, 4.NSO.1.2, 4.NSO.1.3, 4.NSO.1.4, 4.NSO.1.5, 4.NSO.2.3 (including 4.NSO.2.2 and 4.NSO.2.1), 4.NSO.2.4 (including 4.NSO.2.1), 4.NSO.2.5, 4.AR.1.1, 4.AR.2.1, 4.AR.2.2, 4.AR.3.1, 4.AR.3.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Round numbers from 0 to 10,000 to the nearest 1,000. • Read, write, and plot numbers up to 100,000 on a number line. • Plot and compare decimals up to the tenths using comparison symbols (<, >, =). • Solve problems involving multiplication and division with factors up to twelve. • Multiply multidigit numbers by 10 or 100. • Solve mathematical and real-world problems involving division of numbers up to three digits by one digit without a remainder. • Determine whether an equation of no more than two operands on either side (e.g., 56 ÷ 8 = 3 x 7) is true or false. • Determine whether a number from 0 to 20 is prime, composite, or neither. • Identify and extend a numerical pattern from a given rule.	For example, your learner may be able to: • Express that a digit in one place represents 10 times as much as it represents in the place to the right. • Read and write numbers up to 1,000,000 using standard, expanded, and word forms. • Round whole numbers up to 10,000 to the nearest 10, 100, or 1000. • Plot and compare decimals up to the hundredths using comparison symbols (<, >, =). • Plot and compare numbers up to 1,000,000. • Solve mathematical and real-world problems involving multiplication of two whole numbers up to three-digit numbers by two-digit numbers. • Solve mathematical and real-world problems involving division of numbers up to three digits by one digit with or without a remainder. • Determine whether an equation using any of the four operations using whole numbers is true or false. • Determine whether a whole number from 0 to 144 is prime, composite, or neither.	For example, your learner may be able to: • Explain how the value of a digit changes if the digit moves one place to the left or right. • Read and write numbers to 1,000,000 using standard, expanded, and word forms interchangeably. • Plot, compare, and order two or more decimals up to the hundredths using comparison symbols (<, >, =). • Plot, compare, and order two or more numbers up to 1,000,000. • Solve mathematical and real-world problems involving multiplication and division, including problems in which the remainders must be interpreted within the context. • Determine and explain whether an equation using any of the four operations using whole numbers is true or false. • Determine factor pairs and explain why a number is prime, composite, or neither.

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Number Sense and Operations with Whole Numbers See Benchmarks for Excellent Student Thinking 4.NSO.1.1, 4.NSO.1.2, 4.NSO.1.3, 4.NSO.1.4, 4.NSO.1.5, 4.NSO.2.3 (including 4.NSO.2.2 and 4.NSO.2.1), 4.NSO.2.4 (including 4.NSO.2.1), 4.NSO.2.5, 4.AR.1.1, 4.AR.2.1, 4.AR.2.2, 4.AR.3.1, 4.AR.3.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
		• Generate, describe, and extend a numerical pattern that follows a given rule.	
Next Steps	For example, have your learner: • Write numbers up to 100,000 in expanded and word form. • Use one-dollar bills, dimes, and pennies to make various money amounts; discuss how many ones, tenths, and hundredths are in each group and write the amounts. • Plot numbers up to 100,000 on a number line. • Build automaticity with multiplication and related division facts up to 12 x 12. Use a deck of cards to flip 2 cards over to be multiplied. • Multiply two-digit numbers by two-digit numbers. • Identify numbers up to 144 as prime, composite, or neither using arrays or models.	For example, have your learner: • Practice reading and writing numbers in word, expanded, and standard form up to the millions. • Practice rounding whole numbers from 0 to 10,000 to the nearest ten, hundred, and thousand. • Use one-dollar bills, dimes, and pennies to make various money amounts, compare them, and order the amounts from least to greatest. • Practice multiplication and division facts up to 12 x 12 with automaticity. Use a deck of cards to flip 2 cards over to be multiplied. • Make a list of the factor pairs of whole numbers up to 144. • Divide a whole number up to four digits by a one-digit number and represent remainders as a fractional part of the divisor. • Identify and correct errors in numerical patterns.	For example, have your learner: • Divide a dollar into dimes or dimes into pennies and discuss how many ones, tenths, and hundredths are present, showing equivalent amounts. • Explain how the value of a digit changes when a digit is moved two places to the right or left when given a number. • Identify and correct errors in real-world and mathematical problems using multiplication (3 digits by 2 digits) and division (3 digits by 1 digit).

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Number Sense and Operations with Fractions and Decimals See Benchmarks for Excellent Student Thinking 4.NSO.2.6, 4.FR.1.1, 4.FR.1.2, 4.FR.1.3, 4.FR.1.4, 4.FR.2.1, 4.FR.2.2, 4.FR.2.3, 4.AR.1.2, 4.AR.1.3 (including 4.FR.2.4), 4.M.2.2 (including 4.NSO.2.7)			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Model a fraction less than one with the denominator 10 as an equivalent fraction with the denominator 100. • Represent fractions less than one with denominators of 10 or 100 in decimal notation (e.g., $\frac{2}{10} = 0.2$). • Identify equivalent fractions, including fractions greater than one, using models. • Plot fractions less than one on a number line. • Decompose (break apart) fractions less than one into a sum of two fractions (e.g., $\frac{2}{3} = \frac{1}{3} + \frac{1}{3}$). • Solve problems involving addition and subtraction of fractions less than one with like denominators with or without using models. • Solve problems involving multiplication of a fraction and a whole number with or without using models. • Solve one-step problems involving adding and subtracting money with decimal notation.	For example, your learner may be able to: • Identify the number that is one-tenth more and one-tenth less than a given number (e.g., one-tenth more than 2.31 is 2.41). • Model and write decimal fractions that are equivalent and use that understanding to generate decimals and decimal notation. • Identify equivalent fractions including fractions greater than one. • Compare fractions, mixed numbers, and fractions greater than one using symbols (<, >, =) and reason about their size. • Decompose (break apart) fractions greater than one into a sum of fractions. • Solve problems involving addition and subtraction of fractions with like denominators and multiplication of a fraction by a whole number. • Add a fraction with a denominator of 10 to a fraction with a denominator of 100. • Multiply a fraction by a whole number. • Add and subtract money with decimal notation.	For example, your learner may be able to: • Identify the number that is one-tenth more, one-tenth less, one-hundredth more, and one-hundredth less than a given number (e.g., one-hundredth less than 5.45 is 5.44). • Model and express a fraction, including mixed numbers and fractions greater than one with the denominator 10 as an equivalent fraction with the denominator of 100. • Represent fractions as decimals and decimals as fractions, including fractions greater than one and mixed numbers. • Generate equivalent fractions. • Plot on a number line, order, and compare fractions with different numerators and denominators. • Multiply a fraction by a whole number. • Decompose (break apart) mixed numbers into a sum of fractions in multiple ways. • Solve one- and two-step addition and subtraction problems involving money.
Next Steps	For example, have your learner: • Generate equivalent fractions using household items as parts of a set, food	For example, have your learner: • Plot on a number line, order, and compare fractions with different denominators and numerators.	For example, have your learner: • Identify and correct errors in equivalent fractions.

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Number Sense and Operations with Fractions and Decimals See Benchmarks for Excellent Student Thinking 4.NSO.2.6, 4.FR.1.1, 4.FR.1.2, 4.FR.1.3, 4.FR.1.4, 4.FR.2.1, 4.FR.2.2, 4.FR.2.3, 4.AR.1.2, 4.AR.1.3 (including 4.FR.2.4), 4.M.2.2 (including 4.NSO.2.7)			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	items, baking measurements, and coin denominations. • Use dimes and pennies to model equivalence between amounts expressed in tenths and hundredths. • Add money amounts from advertisements. • Solve real-world problems involving addition and subtraction of fractions with like denominators (e.g., combining cake mixes and adding the ingredients with fractions).	• Compare fractional amounts while cooking (e.g., *If one recipe calls for* $\frac{2}{3}$ *cup of oil and another calls for* $\frac{1}{2}$ *cup, which recipe calls for more oil?*). • Demonstrate and explain the equivalency of two fractions expressed with different denominators. • Add and subtract fractions and mixed numbers with like denominators. • Solve real-world problems involving multiplication of a fraction (e.g., determine the amount of ingredients needed to bake 5 times the number of cookies based on a recipe). • Review an advertisement and subtract items from a starting amount of $20. Practice writing the amounts as fractions and subtracting the fractions.	• Create and solve real-world problems that involve adding and subtracting fractions with like denominators (e.g., *A group of friends ordered a pizza. John ate* $\frac{1}{5}$ *of the pizza and Maya ate* $\frac{2}{5}$ *of the pizza. How much of the pizza did they eat together?*).

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Geometric Reasoning, Measurement, and Data Analysis and Probability See Benchmarks for Excellent Student Thinking 4.GR.1.1, 4.GR.1.2, 4.GR.1.3, 4.GR.2.1, 4.GR.2.2, 4.M.1.1, 4.M.1.2, 4.M.2.1, 4.DP.1.1, 4.DP.1.2, 4.DP.1.3			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Convert within a single system of measurement from larger units to smaller units. • Solve one-step real-world problems involving distance. • Select the appropriate tool to use when measuring different quantities (length, volume, weight, mass, and temperature). • Estimate angles using benchmark angles (45, 90, 180). • Measure angles using a protractor when one ray aligns to 0 degrees. • Solve one-step problems involving an unknown angle measure. • Solve perimeter problems with an unknown side. • Solve perimeter and area problems with the same perimeter and different area or same area and different perimeter using a visual model. • Identify the mode to answer questions about a numerical data set using tables, stem-and-leaf plots, or line plots.	For example, your learner may be able to: • Convert within a single system of measurement from smaller units to larger units. • Solve two-step word problems involving distance and time less than 60 minutes. • Select and use the appropriate tool to measure different quantities (length, volume, weight, mass, and temperature). • Identify angles as acute, right, obtuse, straight, or reflex, and estimate using benchmark angles (30, 45, 60, 90, 180). • Solve two-step problems involving angle measures. • Solve perimeter and area problems, including problems with unknown sides, for rectangles with whole number side lengths. • Solve perimeter and area problems with the same perimeter and different area or same area and different perimeter. • Identify the mode, median, and range to answer questions about a numerical data set involving fractional values using tables, stem-and-leaf plots, or line plots.	For example, your learner may be able to: • Solve two-step word problems involving distance and time using any combination of the four operations. • Identify, classify, and justify angles as acute, right, obtuse, straight, or reflex using two-dimensional figures. • Measure angles using a protractor when neither ray aligns to 0 degrees. • Solve mathematical and real-world problems involving an unknown angle and write an equation to represent the unknown. • Write an equation to solve perimeter and area problems, including problems with unknown sides. • Interpret a numerical data set by collecting, representing, and solving problems involving whole numbers and/or fractional values.
Next Steps	For example, have your learner: • Collect measurements using appropriate tools and convert units from smaller to larger units within a single system of measurement. • Identify and use appropriate tools to measure items around the house such as	For example, have your learner: • Convert within a single system of measurement (kilometers, meters, centimeters, millimeters; kilograms, grams; liters, milliliters; and hours, minutes, seconds).	For example, have your learner: • Create real-world problems to convert within a single system of measurement (yards, feet, inches; kilometers, meters, centimeters, millimeters; pounds, ounces; kilograms, grams; gallons, quarts, pints,

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Geometric Reasoning, Measurement, and Data Analysis and Probability See Benchmarks for Excellent Student Thinking 4.GR.1.1, 4.GR.1.2, 4.GR.1.3, 4.GR.2.1, 4.GR.2.2, 4.M.1.1, 4.M.1.2, 4.M.2.1, 4.DP.1.1, 4.DP.1.2, 4.DP.1.3			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	a measuring tape, scale, ruler, measuring spoons, or measuring cup. • Identify types of angles found in the home or in nature and discuss approximately how many degrees each angle is. For example, the angle formed by a tree and its shadow. • Use a protractor to measure angles in whole-number degrees. • Calculate the area and perimeter of objects in the home. • Read graphs, line plots, and stem-and-leaf plots in the real world. Determine the median, mode, and range of the data set.	• Measure objects with precision using a measuring tape, scale, or ruler when appropriate. • Identify angles in a real-world or mathematical context as acute, right, obtuse, straight, or reflex and justify the reasoning. • Review data presented in print or online and discuss the median, mode, and range of the data and how it contributes to their understanding of the data set.	cups; liters, milliliters; and hours, minutes, seconds). • Classify triangles and quadrilaterals into categories according to their defining characteristics, such as number of parallel sides, sides same length, or the presence of a right angle. • Identify the error in a real-world problem for area and perimeter and solve (e.g., *Stevie has a rectangular garden that is 8 feet long and 15 feet wide. He stated that he needs 120 feet of fencing to put around his garden. Is Stevie correct? Explain*). • Review data presented in print or online and discuss the median, mode, and range of the data and compare the meaning of each value as it relates to the data set.

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Grade 5 Mathematics Reporting Category Statements

Number Sense and Operations with Whole Numbers See Benchmarks for Excellent Student Thinking 5.NSO.1.1, 5.NSO.1.2, 5.NSO.1.3, 5.NSO.1.4, 5.NSO.1.5, 5.NSO.2.1, 5.NSO.2.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Recognize how the value of a digit in a multidigit number changes if the digit moves one place to the left (10 times as much) or right (1/10 as much). • Read and write multidigit numbers to the tenths place in word form, standard form, and expanded notation. • Plot on a number line and compare multidigit numbers with decimals to the hundredths using symbols (<, >, =). • Round multidigit numbers with decimals to the tenths. • Multiply multidigit numbers by two digits. • Divide a multidigit number by a one-digit divisor without remainders. • Compose and decompose numbers with decimals to the hundredths in multiple ways.	For example, your learner may be able to: • Express how the value of a digit in a multidigit number with decimals to the hundredths changes as it moves one or more places to the left or right. • Read and write numbers with decimals to the hundredths in word form, standard form, and expanded notation. • Plot on a number line, order, compare multidigit numbers with decimals to the thousandths using symbols (<, >, =). • Round multidigit numbers with decimals up to the hundredths. • Multiply up to five-digit by two-digit whole numbers. • Divide up to five-digit by one-digit whole numbers and represent remainders as fractions. • Compose and decompose numbers with decimals to the thousandths.	For example, your learner may be able to: • Identify the error and express how a digit in a multidigit number with decimals to the thousandths changes as it moves one or more places to the left or right. • Read and write numbers with decimals to the thousandths in word form, standard form, and expanded notation interchangeably. • Plot on a number line, order and compare multidigit numbers with decimals to the thousandths. • Round multidigit numbers with decimals to the thousandths and generate possible numbers given their rounded value. • Multiply multidigit whole numbers with procedural fluency. • Divide five-digit by two-digit whole numbers and represent remainders as fractions with procedural fluency. • Compose and decompose numbers with decimals to the thousandths in multiple ways.
Next Steps	For example, have your learner: • Write the price of items from a paper or online advertisement in multiple ways (e.g., $276.23 as 27 tens + 6 ones + 23 hundredths) and read the number out loud.	For example, have your learner: • Plot on a number line, order, and compare numbers that include decimals up to the thousandths. • Use a paper or online advertisement to identify prices that would round to a	For example, have your learner: • Identify and correct errors when given a problem involving the comparison, multiplication, or division of multidigit whole numbers. • Solve real-world problems involving multiplication of multidigit whole

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Number Sense and Operations with Whole Numbers See Benchmarks for Excellent Student Thinking 5.NSO.1.1, 5.NSO.1.2, 5.NSO.1.3, 5.NSO.1.4, 5.NSO.1.5, 5.NSO.2.1, 5.NSO.2.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	• Practice rounding multidigit numbers to various place values. • Multiply multidigit whole numbers using a preferred method such as an area model, partial products, etc. • Divide multidigit whole numbers and represent remainders as fractions. • Practice place value concepts (decomposing, comparing, ordering, effects of moving the decimal to the left or right) with decimals to the hundredths using money and other real-world numbers.	given amount (e.g., an amount rounded to tenths—a dime). • Multiply (up to five-digits by two digits) and divide (up to five-digits by one-digit) whole numbers with fluency.	numbers and division of five-digit whole numbers by two-digit whole numbers and explain why the solution is reasonable using estimation. • Generate a new multidigit number which is 10, 100, 1000 times larger or smaller than the starting number.

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Number Sense and Operations with Fractions and Decimals See Benchmarks for Excellent Student Thinking 5.NSO.2.3, 5.NSO.2.5 (including 5.NSO.2.4), 5.FR.1.1, 5.FR.2.1, 5.FR.2.2, 5.FR.2.3, 5.FR.2.4, 5.AR.1.2, 5.AR.1.3, 5.M.2.1			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Multiply and divide multidigit whole numbers by one-tenth. • Given a mathematical or real-world context, add and subtract fractions less than one with unlike denominators using models and various strategies. • Multiply two fractions less than one whole. • Use drawings and models to solve mathematical and real-world problems involving division of a whole number by a unit fraction. • Solve one-step word problems using division of a whole number by a unit fraction. • Represent division of two whole numbers as a fraction.	For example, your learner may be able to: • Multiply and divide multidigit numbers with decimals to the hundredths by one-tenth given a mathematical or real-world context. • Add and subtract fractions, mixed numbers, and fractions greater than one with unlike denominators. • Multiply a fraction, including fractions greater than one, by a fraction less than a whole. • Solve real-world problems involving the addition, subtraction, or multiplication of fractions. • Solve real-world problems involving the division of a whole number by a unit fraction and a unit fraction by a whole number. • Solve two-step word problems using multiplication and division.	For example, your learner may be able to: • Multiply and divide multidigit numbers using estimation, rounding, and place value. • Identify errors in the division of two whole numbers as a fraction given real-world context. • Multiply a fraction by a fraction including mixed numbers and fractions greater than one. • Solve multistep real-world problems involving the addition, subtraction, multiplication, or division of fractions including interpreting the remainder. • Solve for an unknown numerator or denominator given the sum or difference.
Next Steps	For example, have your learner: • Multiply and divide multidigit numbers with decimals in the tenths and hundredths. • Practice calculation with decimals using estimation and rounding. For example, round the prices of items while shopping at the store and estimate the total. • Add and subtract fractions greater than one with unlike denominators.	For example, have your learner: • Add, subtract, multiply, and divide multidigit numbers with decimals to the hundredths. For example, while getting gas, determine how much it would cost for 10 gallons of gas. • Solve multistep real-world problems involving money using decimal notation. For example, use a checkbook register to keep a record of items purchased and	For example, have your learner: • Solve multistep real-world problems involving fractions and decimals. • Identify the errors in problems involving fractions or decimals and make corrections. • Create, solve, and explain fraction word problems involving any of the four operations.

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Number Sense and Operations with Fractions and Decimals See Benchmarks for Excellent Student Thinking 5.NSO.2.3, 5.NSO.2.5 (including 5.NSO.2.4), 5.FR.1.1, 5.FR.2.1, 5.FR.2.2, 5.FR.2.3, 5.FR.2.4, 5.AR.1.2, 5.AR.1.3, 5.M.2.1			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	• Use a recipe to add two dry ingredients with fractional amounts including mixed numbers. • Discuss how multiplying a whole number by a fraction less than one results in a smaller number and how multiplication by a fraction greater than one results in a larger number. • Solve two-step problems involving money using decimal notation with at least one step including multiplication or division (e.g., *Martin has $33.00. He makes $8.50 per hour babysitting. How many hours does he need to babysit to have a total of $135.00?*).	money earned with the balance after each transaction. • Use everyday objects to explore fractions such as describing how much each person will receive if you have four candy bars to share among three people. • Identify errors in fraction problems involving any of the four operations.	

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<table>
<tr><th colspan="4">Algebraic Reasoning
See Benchmarks for Excellent Student Thinking 5.AR.1.1, 5.AR.2.1, 5.AR.2.2, 5.AR.2.3, 5.AR.2.4, 5.AR.3.1, 5.AR.3.2</th></tr>
<tr><th>Indicator</th><th>Below Expectations</th><th>At/Near Expectations</th><th>Above Expectations</th></tr>
<tr>
<td>What These Results Mean</td>
<td>For example, your learner may be able to:
Solve two-step real-world problems involving addition/subtraction or multiplication/division without remainders.
Translate one-step mathematical or real-world descriptions into numerical expressions.
Use order of operations to evaluate two-step expressions.
Determine whether an equation involving any of the four operations with whole numbers is true or false.
Determine an unknown whole number with an unknown result.
Use a two-column table to record outputs when given all inputs and some of the outputs (e.g., complete the table below using the expression $4 + 3x$.).

<table>
<tr><td>Input (x)</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr>
<tr><td>Output</td><td>4</td><td>7</td><td>10</td><td>?</td><td>?</td></tr>
</table>
</td>
<td>For example, your learner may be able to:
Solve two-step real-world problems involving any combination of the four operations, including interpreting the remainder.
Translate two-step real-world or mathematical descriptions into numerical expressions.
Use order of operations to evaluate multistep expressions, including parentheses.
Determine whether an equation with fractions or decimals using any of the four operations is true or false.
Solve a one-step equation with an unknown in any position using any of the four operations.
Identify a rule with one procedural step that describes a given numerical pattern.
Given a rule for a numerical pattern, use a two-column table to record the inputs and outputs (e.g., complete the table below using the expression $6x + 3$).

<table>
<tr><td>Input (x)</td><td>0</td><td>2</td><td>5</td><td>8</td><td>10</td></tr>
<tr><td>Output</td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td></tr>
</table>
</td>
<td>For example, your learner may be able to:
Identify the error and solve multistep real-world problems involving any combination of the four operations, including interpreting the remainder.
Translate multistep mathematical or real-world descriptions into numerical expressions and numerical expressions into mathematical descriptions.
Identify errors and justify corrections to multistep expressions using order of operations.
Determine and explain whether an equation using any of the four operations is true or false.
Determine an equation with an unknown in any position using any of the four operations when given a mathematical or real-world context.
Write an expression that can be a rule for a given pattern (e.g., 2, 5, 8, 11, . . . when n is equal to 1, 2, 3, 4 . . . (Answer: $3n – 1$)].
Use a two-column table to record the inputs and outputs when given a rule for a numerical pattern (e.g., complete the table below using the expression $4t – 3$ when the value of t is: 0, 2, 4, 6, 8).

<table>
<tr><td>Input (t)</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>Output</td><td></td><td></td><td></td><td></td><td></td></tr>
</table>
</td>
</tr>
</table>

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Algebraic Reasoning See Benchmarks for Excellent Student Thinking 5.AR.1.1, 5.AR.2.1, 5.AR.2.2, 5.AR.2.3, 5.AR.2.4, 5.AR.3.1, 5.AR.3.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
Next Steps	For example, have your learner: • Solve two-step real-world problems involving any of the four operations with whole numbers including interpreting remainders. • Apply order of operations to evaluate expressions with multiple operations and parentheses. • Determine whether a multiplication or division equation involving decimals or fractions is true or false. • Practice finding unknown values (e.g., 7 x t = 14). • Given a word problem, write an equation that can be used to solve the equation. (e.g., *Joey works at a sandwich shop. He uses* $\frac{2}{3}$ *pound of turkey for each sandwich. What is an equation Joey can use to find out how much turkey he needs to make 8 sandwiches?*). • Generate a series of terms to represent a pattern when given a rule and starting number.	For example, have your learner: • Solve multistep real-world problems involving any of the four operations with whole numbers. For example, use addition, subtraction, and multiplication while shopping for multiple items or estimate and add a tip at a restaurant. • Determine whether an equation with any of the four operations involving decimals or fractions with multiple operations and parentheses on either side of the equal sign is true or false. • Write an equation that could be used to solve a problem in a real-world context. • Generate a two-step rule and record inputs and outputs a two-column table.	For example, have your learner: • Identify errors in multistep real-world problems using the four operations. • When given a multistep numerical expression with errors, identify the errors and make corrections. • Create a numerical pattern and write the rule for the number pattern.

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Geometric Reasoning, Measurement, and Data Analysis and Probability See Benchmarks for Excellent Student Thinking 5.GR.1.1, 5.GR.1.2, 5.GR.2.1, 5.GR.3.1, 5.GR.3.2, 5.GR.3.3, 5.GR.4.1, 5.GR.4.2, 5.DP.1.1, 5.DP.1.2, 5.M.1.1			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Solve one-step problems that involve converting measurement units to equivalent measurements within a single system of measurement. • Identify a triangle or quadrilateral based on a given attribute, such as contains a right angle or parallel lines. • Describe an attribute (number and shape of faces, number and shape of bases, whether or not there is an apex, curved or straight edges and curved or flat faces) and/or identify three-dimensional figures limited to right pyramids, right prisms, right circular cylinders, right circular cones, and spheres. • Find the perimeter and area of a rectangle with one fractional side length when given a visual model. • Solve mathematical or real-world problems involving the volume of right rectangular prisms with whole number edge lengths not greater than 3 using a visual model. • Identify the origin, axes, and a graphed point in the first quadrant of a coordinate system.	For example, your learner may be able to: • Solve multistep problems that involve converting measurement units to equivalent measurements within a single system of measurement. • Classify and explain why a triangle or quadrilateral would or would not belong to a category based on an attribute. • Identify and classify three-dimensional figures when given attributes, limited to right pyramids, right prisms, right circular cylinders, right circular cones, and spheres. • Find the perimeter and area of a rectangle with fractional or decimal side lengths using models. • Solve mathematical or real-world problems involving the volume of right rectangular prisms with whole number edge lengths not greater than 5 where there may be an unknown edge length using a visual model or a formula. • Graph points in the first quadrant of a coordinate system. • Collect and represent numerical data including fractional and decimal values from tables, line graphs, or line plots. • Interpret numerical data sets to determine the mean, median, mode, or range.	For example, your learner may be able to: • Identify errors in problems that involve converting measurement units to equivalent measurements within the same system. • Classify triangles and quadrilaterals into multiple categories and explain why the shapes would or would not belong to a category based on an attribute. • Identify and classify three-dimensional figures into multiple categories based on their defining attributes. • Find the perimeter and area of a rectangle with missing fractional or decimal side lengths using formulas. • Solve problems involving volume of composite figures. • Write an equation with a variable for the unknown to represent a volume problem with an unknown edge length. • Given a real-world context, graph and interpret ordered pairs in the first quadrant of the coordinate plane. • Collect, represent, and justify numerical data including fractions and decimals in tables, line graphs, or line plots. • When given the mean of a numerical data set, find a missing value that is a part of the data set.

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Geometric Reasoning, Measurement, and Data Analysis and Probability See Benchmarks for Excellent Student Thinking 5.GR.1.1, 5.GR.1.2, 5.GR.2.1, 5.GR.3.1, 5.GR.3.2, 5.GR.3.3, 5.GR.4.1, 5.GR.4.2, 5.DP.1.1, 5.DP.1.2, 5.M.1.1			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
Next Steps	For example, have your learner: • Solve two-step real-world problems converting measurements within a single unit of measure. • Classify different triangles and quadrilaterals based on attributes, such as the number of parallel or perpendicular lines and type of angles. • Identify and classify three-dimensional figures (right pyramids, right prisms, right circular cylinders, right circular cones, and spheres) based on their attributes. This can be done with everyday objects found in the home such as tissue boxes, cans, or furniture. • Identify and label the origin, x-axis, and y-axis of the first quadrant, then graph points and label with the ordered pair. • Collect data from print or online materials and use mean, median, mode, and range to describe the data set.	For example, have your learner: • Solve multistep real-world problems that involve converting measurement units within a single unit of measure. For example, use a measuring tape to measure the length of items in the home in feet, determine how many inches that would be and re-measure using inches to check your conversion. • Classify different two- and three-dimensional shapes (right pyramids, right prisms, right circular cylinders, right circular cones, and spheres) by shared defining attributes (number and shape of faces, number and shape of bases, whether or not there is an apex, curved or straight edges, and curved or flat faces). This can be done with everyday objects found in the home such as items in the pantry or furniture. • Find areas and perimeters of real-world objects with side lengths that include mixed numbers. Use a measuring tape to measure items such as a coffee table or nightstand and determine the area and perimeter. • Solve real-world problems involving the volume of composite figures made up of two or more rectangular prisms. • Convert the measurements of real-world objects using a single system of measurement.	For example, have your learner: • Find the area and perimeter of real-world objects with side lengths that include mixed numbers. Use a measuring tape to measure items such as a coffee table or nightstand and determine the area and perimeter. • Compare figures with different dimensions based on their volume. • Collect data from around the house and calculate mean, median, mode, and range to describe the data set. • Represent a data set in more than one way through a table, line graph, or line plot and justify the best choice of data representation.

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Geometric Reasoning, Measurement, and Data Analysis and Probability See Benchmarks for Excellent Student Thinking 5.GR.1.1, 5.GR.1.2, 5.GR.2.1, 5.GR.3.1, 5.GR.3.2, 5.GR.3.3, 5.GR.4.1, 5.GR.4.2, 5.DP.1.1, 5.DP.1.2, 5.M.1.1			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
		• Collect data from around the house and use mean, median, mode, and range to describe the data set.	

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Grade 6 Mathematics Reporting Category Statements

Number Sense and Operations See Benchmarks for Excellent Student Thinking 6.NSO.1.1, 6.NSO.1.2, 6.NSO.1.3, 6.NSO.1.4, 6.NSO.2.1, 6.NSO.2.2, 6.NSO.2.3, 6.NSO.3.1, 6.NSO.3.2, 6.NSO.3.3, 6.NSO.3.4, 6.NSO.3.5, 6.NSO.4.1, 6.NSO.4.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Use a horizontal number line to identify positive and negative numbers. • Compare absolute values. • Multiply and divide multidigit numbers with decimals to the tenths or hundredths place. • Solve two-step real-world problems involving addition, subtraction, and multiplication. • Find the greatest common factor within 100 or least common multiple with factors to 10 of two whole numbers.	For example, your learner may be able to: • Plot, order, and compare rational numbers on a number line when given in the same form. • Interpret the absolute value of a rational number as the distance from zero on a number line. • Interpret one-step absolute value mathematical problems in a mathematical context. • Solve two-step real-world problems involving addition, subtraction, multiplication, and division with positive rational numbers. • Find the greatest common factor within 1000 or least common multiple with factors to 25. • Evaluate positive rational numbers with natural number exponents to 5.	For example, your learner may be able to: • Plot and order rational numbers on a number line. • Compare rational numbers. • Interpret and explain the absolute value of a rational number in a real-world context. • Solve and explain two-step absolute value mathematical or real-world problems. • Explain the relationship between the greatest common factor and rewriting equivalent fractions. • Solve multistep problems involving integers. • Rewrite the sum of two composite whole numbers having a common factor.
Next Steps	For example, have your learner: • Identify which temperatures are closer to zero when reading a weather report. • Practice fractions and decimals by using money transactions or dividing a pie into fractions. • Practice addition, subtraction, multiplication, and division of positive rational numbers.	For example, have your learner: • Use visual models, such as candy, food, integer chips, or number lines, to add, subtract, multiply, and divide integers. • Change mixed numbers to fractions greater than one and vice versa. • Determine what amount of an ingredient is needed to complete a recipe.	For example, have your learner: • Practice adding, subtracting, multiplying, and dividing by using real-world examples, such as withdrawing and depositing money into the bank. • Find the greatest common factors above 1000 and least common multiples beyond 25. • Discuss how exponents greater than 5 can be utilized in the real world.

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Number Sense and Operations See Benchmarks for Excellent Student Thinking 6.NSO.1.1, 6.NSO.1.2, 6.NSO.1.3, 6.NSO.1.4, 6.NSO.2.1, 6.NSO.2.2, 6.NSO.2.3, 6.NSO.3.1, 6.NSO.3.2, 6.NSO.3.3, 6.NSO.3.4, 6.NSO.3.5, 6.NSO.4.1, 6.NSO.4.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	• Calculate the cost of multiple items when shopping. • Rewrite larger numbers as the product of smaller numbers. • Use flashcards to practice academic vocabulary (rational numbers, integers, absolute value, greatest common factor, and least common multiple).		

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Algebraic Reasoning See Benchmarks for Excellent Student Thinking 6.AR.1.1, 6.AR.1.2, 6.AR.1.3, 6.AR.1.4, 6.AR.2.1, 6.AR.2.2, 6.AR.2.3, 6.AR.2.4, 6.AR.3.1, 6.AR.3.2, 6.AR.3.3, 6.AR.3.4, 6.AR.3.5			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Translate written descriptions into linear algebraic expressions when given a written statement. • Represent an inequality on a number line. • Evaluate algebraic expressions using substitution and order of operations using positive integers. • Solve one-step equations using addition or subtraction with a visual model. • Write part-to-part ratios and identify rates for a ratio of quantities using different units.	For example, your learner may be able to: • Translate between written descriptions and linear algebraic expressions. • Translate a real-world description into an inequality and represent the inequality on a number line. • Apply properties of operations to generate equivalent expressions with positive integer coefficients. • Solve one-step equations with positive and negative integers. • Solve math problems involving ratios, rates, and unit rates. • Write and interpret part-to-part and part-to-whole ratios and show the relative size of two quantities in the same units.	For example, your learner may be able to: • Translate between written descriptions and linear algebraic expressions, including error analysis and justification. • Evaluate algebraic expressions using substitution and order of operations. • Explain how properties of operations generate equivalent algebraic expressions. • Write or solve equations in mathematical and real-world contexts using all operations and variables on both sides of the equal sign. • Write, interpret, and calculate ratios and rates given real-world contexts. • Interpret and explain relationships between ratios. • Explain the relationship between the percent, the part, and the whole.
Next Steps	For example, have your learner: • Use real-world scenarios to write inequality statements. • Practice using order of operations and inverse operations. • Determine whether certain numbers would make situations become true or not. For example, determine how many items can be bought at a store with a certain amount of money. • Use algebra tiles to practice solving one-step equations.	For example, have your learner: • Write expressions and inequalities when given numerical information in real-world contexts. • Practice solving problems involving unit rates by using items found at a store. For example, ask your learner to determine the cost of each apple in a given number of pounds. • Practice part-to-part and part-to-whole ratios by adjusting recipes. For example, increasing or decreasing the number of	For example, have your learner: • Translate between written descriptions and linear algebraic expressions. • Evaluate algebraic expressions using substitution and order of operations. • Write or solve equations using all operations and variables given real-world problems. • Calculate and interpret unit rate for a ratio of quantities with different units.

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Algebraic Reasoning See Benchmarks for Excellent Student Thinking 6.AR.1.1, 6.AR.1.2, 6.AR.1.3, 6.AR.1.4, 6.AR.2.1, 6.AR.2.2, 6.AR.2.3, 6.AR.2.4, 6.AR.3.1, 6.AR.3.2, 6.AR.3.3, 6.AR.3.4, 6.AR.3.5			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	• Calculate how long it will take to travel somewhere if traveling at a consistent speed the entire time.	ingredients needed while keeping the ratios the same.	

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Geometric Reasoning, Data Analysis, and Probability See Benchmarks for Excellent Student Thinking 6.GR.1.1, 6.GR.1.3 (including 6.GR.1.2), 6.GR.2.1, 6.GR.2.2, 6.GR.2.3, 6.GR.2.4, 6.DP.1.1, 6.DP.1.2, 6.DP.1.3, 6.DP.1.4, 6.DP.1.5, 6.DP.1.6			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Plot ordered pairs on a coordinate plane. • Find the surface area of right rectangular prisms and pyramids. • Find the area of quadrilaterals with positive integers. • Use a box plot to find the minimum, median, and maximum, and identify the upper and lower quartiles. • Describe the spread and distribution of a histogram and line plot.	For example, your learner may be able to: • Plot rational number ordered pairs in all four quadrants on a coordinate plane. • Find the horizontal or vertical distance between pairs, limited to the same *y*-coordinate or the same *x*-coordinate in any quadrant. • Use the formula for the area of a triangle, the volume of a right rectangular prism, and the area of composite figures to solve problems. • Recognize a statistical question. • Find the mean, median, mode, and range from a data set. • Use box plots and histograms to describe data and determine key features.	For example, your learner may be able to: • Plot rational number ordered pairs, find horizontal and vertical distances between pairs in any quadrant, and explain the line of reflection. • Solve real-world problems involving the area of quadrilaterals, composite figures, and finding surface area. • Formulate and explain statistical questions and interpret mean, median, mode, and range. • Create and use a box plot, histogram, or line plot in real-world contexts and describe the distribution and spread of the data. • Explain how adding more data to a data set will impact the mean, median, mode, and range.
Next Steps	For example, have your learner: • Practice plotting points and counting spaces to generate fluency with coordinate planes. • Cut and measure different sizes of rectangular prisms, such as boxes, to find the surface area and volume of the shape. • Track the time engaged in a favorite activity for a week and then find the mean, median, mode, and range of the data.	For example, have your learner: • Practice finding the area and perimeter of different objects at home, such as quadrilaterals and triangles. • Formulate statistical questions and collect data and use the data to produce graphs and charts. • Discuss how adding more data to a data set will impact the mean, median, mode, and range.	For example, have your learner: • Use graph paper or coordinate grids to plot ordered pairs and find the perimeter and area of the shapes on the grid. • Create composite shapes and calculate the area of each shape. • Formulate statistical questions to generate a data set and interpret the data.

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Geometric Reasoning, Data Analysis, and Probability See Benchmarks for Excellent Student Thinking 6.GR.1.1, 6.GR.1.3 (including 6.GR.1.2), 6.GR.2.1, 6.GR.2.2, 6.GR.2.3, 6.GR.2.4, 6.DP.1.1, 6.DP.1.2, 6.DP.1.3, 6.DP.1.4, 6.DP.1.5, 6.DP.1.6			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	• Determine statistical questions from different forms of media.		

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Grade 7 Mathematics Reporting Category Statements

Number Sense and Operations and Algebraic Reasoning See Benchmarks for Excellent Student Thinking 7.NSO.1.1, 7.NSO.1.2, 7.NSO.2.1, 7.NSO.2.2, 7.NSO.2.3, 7.AR.1.2 (including 7.AR.1.1), 7.AR.2.1, 7.AR.2.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Identify exponential expressions (e.g., 5 x 5 = 5^2). • Identify equivalent fractions, mixed numbers, and decimals. • Use the four basic operations to solve problems. • Solve equations with minimal steps using the order of operations, whole number exponents, and absolute value. • Solve one-step inequalities and two-step equations with all positive integers or one rational number.	For example, your learner may be able to: • Evaluate exponential expressions (e.g., 5 x 5 = 5^2). • Rewrite different forms of rational numbers to solve problems. • Use the four basic operations to solve problems involving rational numbers. • Use the order of operations with rational numbers in the same form, including negatives, to solve both real-world and mathematical problems. • Write and solve one-step inequalities and two-step equations with rational numbers in the same form.	For example, your learner may be able to: • Generate exponential expressions (e.g., 5^4 x 5^3 = 5^7). • Rewrite different forms of rational numbers to solve problems and justify the form chosen. • Use the four basic operations to solve problems and analyze errors. • Solve real-world problems involving operations and interpret the solution in the context of the problem that is presented. • Write and solve one-step inequalities and two-step equations and interpret the solution in context of the situation presented.
Next Steps	For example, have your learner: • Practice simple operations using exponents, fractions, mixed numbers, and/or decimals, for example by calculating prices or adjusting recipes for different serving sizes. • Share which operation would be used to arrive at solutions in real-world contexts, such as money exchanges, travel costs, or travel time. • Solve problems involving negative numbers using examples such as banking, temperatures, and distance above/below sea level.	For example, have your learner: • Practice operations using exponents, fractions, mixed numbers, and decimals by calculating the price of gas or the cost of groceries. • Convert between decimals and fractions to describe quantities in real-world contexts such as with money and food portions.	For example, have your learner: • Use operations in everyday situations such as income, expenditures, travel, or taxes. • Practice real-world application skills by explaining which operations are used to find solutions in various multistep problems. • Practice writing scenarios that represent one-step inequalities, such as how many items can be purchased with a given amount of money. • Practice writing scenarios that represent two-step equations such as finding the

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Number Sense and Operations and Algebraic Reasoning See Benchmarks for Excellent Student Thinking 7.NSO.1.1, 7.NSO.1.2, 7.NSO.2.1, 7.NSO.2.2, 7.NSO.2.3, 7.AR.1.2 (including 7.AR.1.1), 7.AR.2.1, 7.AR.2.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
			cost of a monthly subscription for several months including a sign-up fee, given the total cost.

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Proportional Reasoning and Relationships See Benchmarks for Excellent Student Thinking 7.AR.3.1, 7.AR.3.3, 7.AR.4.1, 7.AR.4.2, 7.AR.4.3, 7.AR.4.4, 7.AR.4.5 (including 7.AR.3.2)			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Identify ratios. • Solve problems involving a single conversion of units across different measurement systems, given a whole number measurement. • Define a proportional relationship. • Graph proportional relationships from a table.	For example, your learner may be able to: • Apply ratios to real-world problems. • Solve problems involving the conversion of units across different measurement systems (length, area, weight, mass, volume, and money). • Determine a proportional relationship by examining a table or graph. • Graph a proportional relationship from a table or equation. • Find the constant of proportionality from a table or graph.	For example, your learner may be able to: • Solve and interpret multistep real-world problems involving percents. • Solve and interpret problems involving the conversion of units across different measurement systems. • Identify and justify proportional relationships by explaining whether the ratio between the two quantities is proportional. • Graph a proportional relationship from a table, equation, or written description. • Determine and interpret the constant of proportionality from a table, graph, or written description.
Next Steps	For example, have your learner: • Practice calculating sale prices and discounts. • Practice measurement conversion by adjusting recipes or using sales ads. • Use proportions to solve real-world problems involving cost, speed, and distance.	For example, have your learner: • Practice multistep problems by calculating tips and taxes and adding them to the total bill. • Use multiple sales ads to explain whether a deal saves money given the information. • Set up and solve proportions to practice conversions, such as currency conversions.	For example, have your learner: • Practice calculating percentages in the real-world, such as a sale at a store or a tip for a server. • Compare different proportional relationships to determine which is the better value (e.g., price per pound of a 5-pound bag of flour versus price per pound of a 10-pound bag of flour). • Explore proportional relationships with models and maps.

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Geometric Reasoning See Benchmarks for Excellent Student Thinking 7.GR.1.1, 7.GR.1.2, 7.GR.1.3, 7.GR.1.4, 7.GR.1.5, 7.GR.2.1, 7.GR.2.2, 7.GR.2.3			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Identify expressions for finding the area of trapezoids, parallelograms, rhombi, and circles. • Identify expressions that can be used for the circumference of a circle and area of a given circle. • Identify the scale factor in mathematical problems involving dimensions of geometric figures. • Determine the expression used for surface area and/or volume.	For example, your learner may be able to: • Apply formulas to find the circumference of a circle and area of parallelograms, rhombi, and circles. • Solve mathematical problems involving the area of composite figures composed of triangles or rectangles. • Explore the proportional relationship between circumference and diameter of circles. • Find the surface area and volume of a right circular cylinder.	For example, your learner may be able to: • Apply formulas to find the circumference of a circle and area of parallelograms, rhombi, trapezoids, circles, and fractional parts of a circle. • Solve real-world problems involving the area of composite figures and multiple polygons. • Apply the formula for the circumference of a circle and interpret the solution. • Solve and interpret real-world problems involving areas of geometric figures. • Solve problems including scale drawings and scale factors.
Next Steps	For example, have your learner: • Find right triangles and rectangles within other shapes to find the area. • Calculate the area of objects at home. • Explore surface area by using canned food labels and their measurements.	For example, have your learner: • Design structures such as a park, an event center, or a driveway with pavers and calculate the total area of objects that would fit within the space. • Practice finding scale factor by comparing model cars and a real car or measurements on a map. • Draw and measure a cylinder found in your home, calculate the volume, and identify the scale factor used to create the drawing.	For example, have your learner: • Explore the relationship between two- and three-dimensional figures. • Redesign a room and determine the total allowable measurements of objects that would fit within that space. • Identify objects that are cylinders and calculate and compare the volume of each. • Create a drawing of rooms in a home or building using a scale factor.

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Data Analysis and Probability See Benchmarks for Excellent Student Thinking 7.DP.1.1, 7.DP.1.2, 7.DP.1.3, 7.DP.1.4, 7.DP.1.5, 7.DP.2.1, 7.DP.2.2, 7.DP.2.3, 7.DP.2.4			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Identify outliers in a data set. • Calculate mean, median, mode, and range from a data set. • Identify an appropriate circle graph for a data set. • Identify events that are certain or uncertain to occur. • Construct and display data using proportional reasoning. • Determine theoretical probabilities.	For example, your learner may be able to: • Calculate mean, median, mode, range, measure of center, and measures of variability when given two graphical representations of data. • Construct, display, and interpret data in up to four categories in a circle graph. • Choose an appropriate graphical representation for a data set. • Interpret the likelihood of chance events in the same form. • Determine experimental probabilities.	For example, your learner may be able to: • Determine the appropriate measure of center or measure of variation to summarize numerical data. • Make comparisons, interpret results, draw conclusions, and make predictions regarding two numerical or graphical sets of data. • Construct, display, and interpret data in up to six categories in a circle graph. • Choose, create, and justify appropriate graphical representations. • Compare experimental and theoretical probabilities.
Next Steps	For example, have your learner: • Interpret weather reports using terms such as likely or unlikely for chance of precipitation. • Collect data (e.g., family television time or time on devices) and construct representations of the data.	For example, have your learner: • Collect data from dice rolls or flipping a coin and create a representation of the data set. • Use statistics from real-world settings (e.g., money or sports) to interpret what the data means in terms of events being likely or unlikely to occur.	For example, have your learner: • Use statistics from real-world settings (e.g., money or sports) to make predictions. • Interpret weather reports to summarize the variation in temperature throughout the day.

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Grade 8 Mathematics Reporting Category Statements

Number Sense and Operations and Probability See Benchmarks for Excellent Student Thinking 8.NSO.1.1, 8.NSO.1.2, 8.NSO.1.3, 8.NSO.1.4, 8.NSO.1.5, 8.NSO.1.6, 8.NSO.1.7, 8.DP.2.1, 8.DP.2.3 (including 8.DP.2.2)			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Identify numbers as rational or irrational. • Apply one of the Laws of Exponents to identify equivalent numerical expressions with integer exponents. • Determine which number is larger when given two numbers in scientific notation. • Solve multistep mathematical problems with up to three steps involving the order of operations. • Solve real-world problems involving probabilities of single experiments.	For example, your learner may be able to: • Define irrational numbers and locate approximate values of irrational numbers on a number line. • Plot, order, and compare rational and irrational numbers. • Evaluate numerical expressions and identify equivalent expressions using the Laws of Exponents with integer exponents. • Express numbers in scientific notation and approximate very large quantities. • Solve multistep real-world problems with up to five steps involving the order of operations. • Solve real-world problems involving probabilities of single or repeated experiments and make predictions based on theoretical probability.	For example, your learner may be able to: • Explain why an approximate value of a numerical expression on a number line is reasonable. • Generate equivalent numerical expressions when applying the Laws of Exponents. • Express and apply operations with numbers in scientific notation and approximate very large and very small quantities. • Solve multistep real-world problems with up to six steps involving the order of operations and justify each step. • Analyze an error in a repeated experiment. • Analyze the theoretical probability of an event related to a repeated experiment.
Next Steps	For example, have your learner: • Practice placing rational numbers on a number line. • Use scientific notation to discuss topics, such as the distance from planets and stars, the size of microorganisms, and global populations. • Practice determining theoretical probabilities by using different scenarios, such as finding the theoretical probability	For example, have your learner: • Convert rational numbers to the same form and order the numbers on a number line. • Review correct and incorrect multistep numerical expressions that are already solved and write out the steps taken to find the solution.	For example, have your learner: • Create notecards with numbers in scientific notation, randomly choose two cards, and use all four operations with the chosen numbers. • Explore real-world contexts involving radical numbers such as calculating the depreciation of a car's value. • Find probabilities of an event, such as the outcome of a sporting event or a

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Number Sense and Operations and Probability See Benchmarks for Excellent Student Thinking 8.NSO.1.1, 8.NSO.1.2, 8.NSO.1.3, 8.NSO.1.4, 8.NSO.1.5, 8.NSO.1.6, 8.NSO.1.7, 8.DP.2.1, 8.DP.2.3 (including 8.DP.2.2)			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	of selecting a gray shirt and a blue pair of socks from a basket.		change in weather. Determine whether the outcomes could have been predicted from a theoretical probability and analyze the accuracy of the prediction.

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Algebraic Reasoning See Benchmarks for Excellent Student Thinking 8.AR.1.1, 8.AR.1.2, 8.AR.1.3, 8.AR.2.1, 8.AR.2.2, 8.AR.2.3, 8.AR.4.1, 8.AR.4.2, 8.AR.4.3			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Apply the Laws of Exponents when identifying equivalent algebraic expressions using one Law of Exponents. • Apply properties of operations to multiply two linear expressions with integer coefficients. • Solve multistep linear equations with variables on one side. • Recognize that a solution to a system of equations is an ordered pair. • Identify the solution when given a graph of two lines.	For example, your learner may be able to: • Apply the Laws of Exponents to identify equivalent algebraic expressions. • Apply properties of operations to multiply two linear expressions with rational coefficients. • Solve multistep linear equations in one variable that generate one solution. • Determine the ordered pair that satisfies the solution to a system of linear equations. • Rewrite an algebraic expression as the product of a monomial and the sum of two algebraic expressions.	For example, your learner may be able to: • Provide justification for applying the Laws of Exponents to generate equivalent algebraic expressions. • Solve multistep linear equations that generate one solution, no solution, or infinitely many solutions and interpret the solution in context. • Solve two-step linear inequalities and graph solutions of them. • Solve a system of equations from a set of possible solutions. • Determine from a graph whether there is no solution or infinitely many solutions to a system.
Next Steps	For example, have your learner: • Graph lines in slope-intercept form ($y = mx + b$) by charting the constant rate of change over time, such as earnings per hour. • Graph inequalities by determining what numbers would make a statement true and placing it on the number line (e.g., $x > 6$. *What numbers make this true?*).	For example, have your learner: • Make flashcards for the exponent rules. Use the flashcards for fluency and solving problems. • Solve systems of equations where two lines intersect is a solution, no lines intersect is no solution, and if the lines are the same there are infinite solutions. • Practice real-world two-step inequalities, such as determining how many snacks can be bought after purchasing a movie ticket with a limited amount of money to spend.	For example, have your learner: • Find graphs with intersecting lines to interpret the meaning of the intersection in context of the graph, such as line graphs that display changes in population demographics, tv viewership, or online platform preferences over time. • Explore scenarios when a system of equations would be beneficial, such as determining the best cell phone plan.

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Linear Relationships, Data Analysis, and Functions See Benchmarks for Excellent Student Thinking 8.F.1.1, 8.F.1.2 (including 8.AR.3.1), 8.F.1.3, 8.AR.3.2, 8.AR.3.3, 8.AR.3.4, 8.AR.3.5, 8.DP.1.1, 8.DP.1.2, 8.DP.1.3			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Determine from a graph whether a relationship is linear. • Determine the slope and equation from slope-intercept form. • Identify the graph that represents a given linear equation in slope-intercept form. • Identify a scatter plot, the type of association, and outliers when given data.	For example, your learner may be able to: • Determine whether a function is linear from an equation. • Graph linear equations from a table or an equation. • Determine the slope from a written description, table, graph, or equation in slope-intercept form. • Identify the domain and range of the relation as a list of numbers. • Construct a scatter plot or line graph, identify the association, and identify outliers. • Identify the line of best fit on a scatter plot.	For example, your learner may be able to: • Determine whether a relationship is a function from any representation. • Determine dependent and independent variables. • Determine the slope and write equations in slope-intercept form. • Graph linear equations to satisfy a real-world context. • Construct a scatter plot or line graph while describing patterns of association and identifying outliers. • Justify the line of best fit on a scatter plot.
Next Steps	For example, have your learner: • Track data, such as hours per day engaging in a favorite hobby, for one or two weeks, use the data to create a table [Day Number (x) and Amount of Time (y)], graph the results, and determine whether the data represents a linear relationship. • Practice using vocabulary terms related to graphing. • Find data to create scatter plots.	For example, have your learner: • Review scatter plots from online or print sources, determine the association, and identify whether the scatter plot is linear or nonlinear. • Generate output tables by practicing basic functions (addition, subtraction, multiplication, and division). • Track data, such as hours per day engaging in a favorite hobby, for one or two weeks, use the data to create a table [Day Number (x) and Amount of Time (y)], and develop a scatter plot.	For example, have your learner: • Explore the relationship between dependent and independent variables and patterns found in real-world contexts for linear and nonlinear data (e.g., how water affects plant growth or how diet affects weight). • Track data for one or two weeks (e.g., hours per day engaging in a favorite hobby), use the data to create a table [Day Number (x) and Amount of Time (y)], graph the results, and write the equation of the line in slope-intercept form.

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Geometric Reasoning See Benchmarks for Excellent Student Thinking 8.GR.1.1, 8.GR.1.2, 8.GR.1.3, 8.GR.1.4, 8.GR.1.5, 8.GR.1.6, 8.GR.2.1, 8.GR.2.2, 8.GR.2.3, 8.GR.2.4			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Apply the Pythagorean theorem to find the hypotenuse of a right triangle resulting in a whole number. • Use the Pythagorean theorem to find the missing side length of a right triangle and distance between two points on a coordinate plane. • Define angle relationships. • Generate or identify a translation.	For example, your learner may be able to: • Apply the Pythagorean theorem to solve problems involving unknown side lengths in right triangles. • Apply the Pythagorean theorem to find unknown side lengths and distance between two points on a coordinate plane. • Solve angle relationships and their numerical angle measures. • Develop formulas for the interior angles of regular polygons. • Identify transformations.	For example, your learner may be able to: • Apply the Pythagorean theorem to mathematical and real-world problems. • Solve problems involving multiple relationships between angles. • Develop and use formulas for the sum of interior angles of regular polygons. • Identify, analyze, and describe a transformation that represents a relationship.
Next Steps	For example, have your learner: • Practice real-world problems involving the Pythagorean theorem (e.g., television measurements, computer screens, or cell phones). • Create flashcards to practice angle terminology and explore angle measurements around the house. • Explore items that can reflect an image (e.g., looking in a mirror or a camera on a phone).	For example, have your learner: • Use a random number generator to choose three numbers and determine whether the three numbers can form a triangle. • Practice real-world problems involving the Pythagorean theorem (e.g., television measurements, computer screens, or cell phones). • Explore rotation by determining how many degrees an item rotates.	For example, have your learner: • Explore relationships between angles in the real-world (e.g., in sports, clothing design, or construction). • Explore transformations of objects (e.g., in art, landscaping, or interior design).

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Algebra 1 Reporting Category Statements

Expressions, Functions, and Data Analysis See Benchmarks for Excellent Student Thinking 912.NSO.1.1, 912.NSO.1.2, 912.NSO.1.4, 912.AR.1.1, 912.AR.1.2, 912.F.1.1, 912.F.1.2, 912.F.1.3, 912.F.1.6, 912.F.1.8 (including 912.FL.3.4), 912.F.2.1, 912.DP.1.2 (including 912.DP.1.1), 912.DP.1.4, 912.DP.3.1			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Identify equivalent numerical or algebraic expressions involving rational exponents using a single Law of Exponents. • Add or subtract radicals with the same radicand. • Identify parts of an equation or expression in a mathematical context. • Identify and classify function types when given the graph of a function. • Calculate the average rate of change over a specified interval when given a table. • Complete two-way frequency tables. • Compare graphs of linear and nonlinear functions.	For example, your learner may be able to: • Apply one or more of the Laws of Exponents to evaluate numerical expressions, as well as generate equivalent numerical and algebraic expressions involving rational exponents. • Perform one or more of the following operations with radicals: add, subtract, or multiply. • Rearrange formulas that require two or fewer steps to form a new formula. • Identify the graph of a function after a transformation. • Evaluate a function when given specific input/output values in a mathematical context. • Calculate the average rate of change over a specified interval from the function when represented graphically or in an input/output table. • Find joint and marginal frequencies from a two-way frequency table. • Identify and classify function types when given the equation of a function. • Compare equations of linear and nonlinear functions.	For example, your learner may be able to: • Apply more than one of the Laws of Exponents to evaluate numerical expressions and generate equivalent numerical expressions involving rational exponents. • Add, subtract, multiply, and divide numerical radicals using multiple operations. • Identify the function type and compare key features of linear and nonlinear functions when represented in multiple forms. • Interpret why a function type corresponds to its real-world context, as well as describe the effect of transformations on a function. • Evaluate and interpret the output of a function in the context of a real-world situation. • Calculate and interpret the average rate of change in a real-world situation. • Understand that a function growing exponentially will exceed that of a function that grows linearly or quadratically. • Select an appropriate method to represent data when given a data set.

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Expressions, Functions, and Data Analysis See Benchmarks for Excellent Student Thinking 912.NSO.1.1, 912.NSO.1.2, 912.NSO.1.4, 912.AR.1.1, 912.AR.1.2, 912.F.1.1, 912.F.1.2, 912.F.1.3, 912.F.1.6, 912.F.1.8 (including 912.FL.3.4), 912.F.2.1, 912.DP.1.2 (including 912.DP.1.1), 912.DP.1.4, 912.DP.3.1			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
Next Steps	For example, have your learner: • Practice using the Laws of Exponents to generate equivalent expressions. • Identify and classify function types when given an equation or an input/output table. Evaluate functions for a given input value. • Identify and interpret factors, terms, constants, coefficients, and variables in real-world problems. • Explore problems involving joint and marginal frequencies from a two-way frequency table.	For example, have your learner: • Generate fluency using multiple Laws of Exponents and multiple operations with radicals. • Rearrange formulas that involve multiple steps to create a new formula. • Identify and classify function types represented in multiple forms (graphs, equations, tables, and written descriptions). Interpret the output of a function in a real-world context. • Calculate the average rate of change in a real-world context. • Write explanations and justifications when solving problems involving topics such as transformations on a graph; relationships between linear, quadratic, and exponential functions; or data analysis.	For example, have your learner: • Analyze errors in worked examples and make appropriate corrections. • Compare key features of functions represented in multiple forms (graphs, equations, tables, and written descriptions). Interpret key features in a real-world context. • Compare and interpret factors, terms, constants, coefficients, and variables in equivalent expressions and equations in a real-world context. • Use linear and exponential functions to analyze real-world financial situations such as loans, savings accounts, and investments.

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Linear Relationships See Benchmarks for Excellent Student Thinking 912.AR.2.1, 912.AR.2.2, 912.AR.2.3, 912.AR.2.4, 912.AR.2.5, 912.AR.2.6, 912.AR.2.7, 912.AR.2.8, 912.AR.9.1, 912.AR.9.4, 912.AR.9.6, 912.F.1.5, 912.DP.2.4, 912.DP.2.6 (including 912.DP.1.3)			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Solve one-variable multistep linear equations represented in a real-world context and one-variable multistep linear inequalities represented in a mathematical context. • Identify the solution, graph, and key features of mathematical problems that are modeled with linear functions. • Identify from a graph or a set of equations when two lines are parallel or perpendicular. • Compare key features between two graphed linear functions. • Identify the graph that represents the solution set of a two-variable inequality or a system of two-variable inequalities. • Solve systems of two-variable equations when given in a mathematical context.	For example, your learner may be able to: • Identify and solve one variable, multistep linear equations in a real-world context. • Write and solve one variable, multistep linear inequalities and represent their solutions on a number line. • Write a linear, two-variable equation in a mathematical context when given a graph, a written description, or a table of values. • Identify the graph of a linear function and key features such as domain and range when given an equation in slope-intercept or point-slope form. • Write equations of lines parallel and perpendicular to a given line through a given point when represented on a graph. • Compare key features of linear functions when represented graphically or algebraically. • Write, graph, and identify the solution set to a two-variable linear inequality. • Identify and solve systems of two-variable equations and inequalities when given in a mathematical or real-world context.	For example, your learner may be able to: • Write, solve, and interpret solutions of linear equations, linear inequalities, systems of linear equations, and systems of linear inequalities. • Analyze and correct errors in linear equations and inequalities. • Analyze solutions as viable or not viable in systems of equations and inequalities. • Fit a linear function to data and use it to solve real-world problems and make predictions in terms of the context of the data.
Next Steps	For example, have your learner: • Write and solve one-variable multistep linear equations and inequalities from real-world contexts.	For example, have your learner: • Extend knowledge of linear relationships to problems represented in real-world contexts.	For example, have your learner: • Analyze errors in worked examples and make appropriate corrections.

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Linear Relationships See Benchmarks for Excellent Student Thinking 912.AR.2.1, 912.AR.2.2, 912.AR.2.3, 912.AR.2.4, 912.AR.2.5, 912.AR.2.6, 912.AR.2.7, 912.AR.2.8, 912.AR.9.1, 912.AR.9.4, 912.AR.9.6, 912.F.1.5, 912.DP.2.4, 912.DP.2.6 (including 912.DP.1.3)			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	• Write and graph a linear two-variable equation to represent relationships between quantities. • Write and solve systems of two-variable equations and inequalities.	• Interpret solutions and/or constraints to write linear relationships. • Analyze data with linear associations.	• Explore graphs of systems of nonlinear equations and make comparisons to systems of linear equations. • Use learned knowledge and apply it to situations in other fields (arts, science, technology, etc.).

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Nonlinear Relationships See Benchmarks for Excellent Student Thinking 912.AR.1.3, 912.AR.1.4, 912.AR.1.7, 912.AR.3.1, 912.AR.3.4, 912.AR.3.5, 912.AR.3.6, 912.AR.3.7, 912.AR.3.8, 912.AR.4.1, 912.AR.4.3, 912.AR.5.3, 912.AR.5.4, 912.AR.5.6, 912.FL.3.2			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Relate a quadratic function in vertex form to its graph or table and identify the intercepts, domain, range, and vertex. • Identify the solution(s) of a quadratic equation from its graph. • Identify the domain and range of exponential functions given a graph and classify the function as growth or decay. • Add and subtract binomial expressions with integer coefficients. • Factor a common monomial from a polynomial. • Solve simple quadratic equations.	For example, your learner may be able to: • Add, subtract, and multiply expressions with integer coefficients. • Divide a binomial by a monomial. • Factor expressions as a product of linear binomial relationships. • Solve and graph quadratic equations. • Identify a quadratic function when given intercepts of the function. • Determine the domain, range, *y*-intercept, constant rate of change, and interval behavior given the graph of an exponential, quadratic, or absolute-value equation.	For example, your learner may be able to: • Add, subtract, and multiply expressions with rational coefficients. • Divide a polynomial by a monomial. • Factor polynomials. • Solve and write quadratic functions when given key features within mathematical and real-world contexts. • Graph quadratic, exponential, and absolute value functions when given a table, equation, or written description.
Next Steps	For example, have your learner: • Multiply and factor binomial and trinomial expressions. • Divide polynomials by monomials. • Solve quadratic equations by factoring. • Write nonlinear functions from given key features or criteria. • Determine key features of exponential, quadratic, and absolute value functions.	For example, have your learner: • Perform operations with polynomial expressions with rational coefficients. • Factor polynomials. • Write and solve quadratic and absolute value equations using multiple strategies.	For example, have your learner: • Analyze errors in worked examples and make appropriate corrections. • Compare the merits of two investments involving simple and compound interest.

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Geometry Reporting Category Statements

Logic, Relationships, and Theorems See Benchmarks for Excellent Student Thinking 912.GR.1.1, 912.GR.1.2, 912.GR.1.3, 912.GR.1.4, 912.GR.1.5, 912.GR.6.1, 912.GR.6.2, 912.GR.6.3, 912.GR.6.4, 912.LT.4.3, 912.LT.4.10			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Identify a missing statement or reason when completing proofs about triangle congruence and triangle similarity. • Solve problems without variables regarding lines and angles, triangles, parallelograms, trapezoids, angles formed in circles, lengths of chords in circles, and areas of the sectors of circles. • Identify the hypothesis and conclusion of a conditional statement.	For example, your learner may be able to: • Identify up to two missing statements and reasons when completing proofs about lines and angles, triangle congruence, triangle similarity, parallelograms, and trapezoids. • Solve problems with algebraic expressions set in mathematical contexts about lines and angles, triangles, parallelograms, trapezoids, angles formed in circles, lengths of chords in circles, areas of the sectors of circles, and arc lengths. • Identify the inverse and converse of a conditional statement and write a biconditional statement as two conditional statements.	For example, your learner may be able to: • Complete proofs about lines and angles, triangle congruence, triangle similarity, parallelograms, and trapezoids. • Solve real-world problems involving algebraic expressions regarding lines and angles, triangles, parallelograms, trapezoids, angles formed in circles, lengths of chords in circles, areas of the sectors of circles, and arc lengths. • Write the contrapositive of a conditional statement and justify the validity of arguments including using counterexamples.
Next Steps	For example, have your learner: • Complete proofs to show relationships when given all statements and reasons. • Use all triangle congruence or similarity postulates or theorems. • Solve problems using lines, angles, triangles, parallelograms, trapezoids, and circles using algebraic expressions as measurements. • Identify and use counterexamples of a statement in order to disprove an invalid statement.	For example, have your learner: • Practice completing proofs without all steps represented leading to writing a complete proof on their own. • Solve real-world problems involving lines, angles, triangles, parallelograms, trapezoids, and circles. • Judge the validity of arguments including using counterexamples.	For example, have your learner: • Analyze proofs to determine a potential error and be able to justify that error with a correct statement. • Work toward creating equations or expressions that represent relationships involving arcs and related angles, triangles or quadrilaterals inscribed in a circle, and arc lengths and area of sectors of a circle.

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Congruence, Similarity, and Constructions See Benchmarks for Excellent Student Thinking 912.GR.1.6, 912.GR.2.1, 912.GR.2.2, 912.GR.2.3 (including 912.GR.2.6 and 912.GR.2.8), 912.GR.2.5, 912.GR.4.3, 912.GR.5.1, 912.GR.5.2, 912.GR.5.3			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
What These Results Mean	For example, your learner may be able to: • Solve congruence and similarity problems that include one algebraic expression set in a mathematical context. • Determine the dilation scale factor given the area of corresponding faces or the surface area of a solid. • Identify, describe, and represent translations and reflections over axes algebraically. • Identify the result of a given geometric construction.	For example, your learner may be able to: • Solve congruence and similarity problems that include algebraic expressions set in a mathematical context. • Determine the effect of a dilation on the area of two-dimensional and the surface area of three-dimensional figures. • Identify and describe missing steps of a given geometric construction. • Draw transformed figures on a coordinate plane when given up to three transformations (translations, reflections, and rotations).	For example, your learner may be able to: • Solve congruence and similarity problems that include algebraic expressions set in a real-world context. • Determine the effect of a dilation on the volume of three-dimensional figures. • Perform and describe a sequence of transformations (translations, reflections, rotations, and dilations). • Complete geometric constructions. • Analyze errors in worked examples and make appropriate corrections.
Next Steps	For example, have your learner: • Solve multistep congruence and similarity problems that include algebraic expressions. • Identify and perform all types of transformations. • Describe transformations with an algebraic rule. • Perform geometric constructions.	For example, have your learner: • Solve real-world congruence and similarity problems. • Determine how dilations affect the volume of three-dimensional figures. • Identify and perform a sequence of transformations including when a figure is reflected over a line other than the axes.	For example, have your learner: • Apply mathematical understandings to real-world scenarios and analyze which approaches are best for solving problems. • Apply learned knowledge and skills to situations in other fields (arts, science, technology, etc.).

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Measurement and Coordinate Geometry See Benchmarks for Excellent Student Thinking 912.GR.3.2, 912.GR.3.3 (including 912.GR.3.1), 912.GR.3.4, 912.GR.4.1, 912.GR.4.2, 912.GR.4.4, 912.GR.4.5, 912.GR.4.6, 912.GR.7.2, 912.GR.7.3, 912.T.1.2 (including MA.912.T.1.1)			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**

What These Results Mean	For example, your learner may be able to:
	• Use coordinate geometry to:
	  • Classify triangles and right quadrilaterals in mathematical contexts.
	  • Solve mathematical problems involving lines, triangles, and midpoints of segments and slope.
	  • Find the perimeter of a polygon with no more than two sides that are not horizontal and vertical.
	• Identify two-dimensional cross sections of right cylinders and right rectangular prisms.
	• Identify the equation or graph of a circle given the center and radius.
	• Solve mathematical problems involving volume of right cylinders, right pyramids, and right prisms and surface area of right pyramids and right prisms.
	• Use trigonometric ratios and the Pythagorean theorem to determine the missing side of a right triangle.
		For example, your learner may be able to:
		• Use coordinate geometry to:
		  • Classify triangles and quadrilaterals in mathematical contexts.
		  • Calculate the area or perimeter of polygons in both mathematical and real-world contexts.
		• Identify two-dimensional cross sections of right cylinders and right prisms.
		• Solve mathematical and real-world problems involving the area of quadrilaterals or triangles including population density.
		• Solve mathematical and real-world problems about volume and surface area of right cylinders, right pyramids, and right cones.
		• Create an equation and graph a circle when completing the square is not required.
		• Use trigonometric ratios to solve for missing angles and/or sides of a right triangle.
			For example, your learner may be able to:
			• Use coordinate geometry to:
			  • Solve problems involving triangles and quadrilaterals in a real-world context.
			  • Calculate the area of composite polygons in both mathematical and real-world contexts.
			• Identify cross sections of three-dimensional figures including when the cross section is not parallel or perpendicular to the base of the figure.
			• Solve mathematical and real-world problems involving the area of two-dimensional figures including population density.
			• Solve mathematical and real-world problems about volume and surface area of three-dimensional figures including composite figures. Graph and solve real-world problems using equations of circles.
			• Use trigonometric ratios and the Pythagorean theorem to solve for missing angles and/or sides of a right triangle in a real-world context.

Next Steps	For example, have your learner: • Use coordinate geometry to calculate the area and perimeter of polygons.	For example, have your learner: • Use coordinate geometry to calculate the area and perimeter of composite figures.	For example, have your learner: • Extend knowledge of trigonometry functions to solve missing sides of non-right triangles.

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Measurement and Coordinate Geometry See Benchmarks for Excellent Student Thinking 912.GR.3.2, 912.GR.3.3 (including 912.GR.3.1), 912.GR.3.4, 912.GR.4.1, 912.GR.4.2, 912.GR.4.4, 912.GR.4.5, 912.GR.4.6, 912.GR.7.2, 912.GR.7.3, 912.T.1.2 (including MA.912.T.1.1)			
Indicator	**Below Expectations**	**At/Near Expectations**	**Above Expectations**
	• Create equations of circles using key features such as radius and center. • Solve problems involving area, surface area, and volume that are set in both mathematical and real-world contexts. • Use trigonometric ratios to solve for missing angles of a right triangle.	• Solve real-world problems involving the volume and surface area of three-dimensional figures including composite figures. • Create equations of circles using key features such as radius, diameter, and center. • Solve real-world problems involving trigonometric ratios and the Pythagorean theorem.	• Apply learned knowledge and skills to situations in other fields (arts, science, technology, etc.).

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