4

Mathematics 2–5

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Subject: Mathematics
Goal Strand: Number Sense
RIT Score Range: Below 161

Skills and Concepts to Develop Below 161	Skills and Concepts to Introduce 161 - 170
Read, Write, and Represent Numbers	**Read, Write, and Represent Numbers**
• Counts numbers 0-20*	• Counts 1 to 10 objects • Counts numbers 0-20* • Identifies missing numbers in a series through 100 • Counts ordinal numbers (1st to 10th) • Writes whole numbers in standard and expanded form through the tens
Order and Compare Numbers and Number Line	**Order and Compare Numbers and Number Line**
	• Orders whole numbers less than 10*
Classifications of Numbers	**Classifications of Numbers**
Number Operations - Addition, Subtraction	**Number Operations - Addition, Subtraction**
• Uses models to construct whole number addition facts with addends through 10* • Uses models to calculate whole number sums through 99* • Adds two 1-digit numbers with sums to 10 in horizontal format	• Uses a number line to construct addition facts with sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 99* • Uses models to calculate whole number sums through 999* • Adds two 1-digit numbers with sums to 10 in horizontal format • Adds two 1-digit numbers with sums to 10 in vertical format • Adds two 1-digit numbers with sums between 10 and 19 in horizontal format • Adds two 1-digit numbers with sums between 10 and 19 in vertical format* • Adds multiple 1-digit numbers • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 1-digit to multiple-digit number with no regrouping* • Adds 2-digit numbers with no regrouping • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Solves real-world whole number addition problems

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	with sums to 20 (result unknown) • Uses models to construct subtraction facts with differences through 10 (whole numbers)* • Uses models to calculate differences through 100 (whole numbers)* • Subtracts two 1-digit numbers horizontally • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Subtracts two 1-digit numbers vertically • Uses strategies for subtraction facts (e.g., counting back, one less, two less)* • Subtracts a 2-digit number from a 2-digit number, with no regrouping • Identifies the missing operation symbol - 1-step number sentence • Adds money vertically with no regrouping*
Number Operations - Multiplication, Division	**Number Operations - Multiplication, Division**
	• Analyzes another student's explanation to understand simple problems* • Uses a structured model to solve problems using a variety of strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Follows a model of problem solving that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12
Properties	**Properties**
Estimation	**Estimation**
	• Uses manipulatives to model and justify solutions*
Ratios, Proportions, and Percents	**Ratios, Proportions, and Percents**
New Vocabulary: none	*New Vocabulary:* add, double, numeral, sum
New Signs and Symbols: + addition, = is equal to, □ variable	*New Signs and Symbols:* ÷ division, $ dollar sign, > greater than, < less than, × multiplication, – subtraction

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Subject: Mathematics
Goal Strand: Number Sense
RIT Score Range: 161 - 170

Skills and Concepts to Enhance Below 161	Skills and Concepts to Develop 161 - 170	Skills and Concepts to Introduce 171 - 180
Read, Write, and Represent Numbers	**Read, Write, and Represent Numbers**	**Read, Write, and Represent Numbers**
• Counts numbers 0-20*	• Counts 1 to 10 objects • Counts numbers 0-20* • Identifies missing numbers in a series through 100 • Counts ordinal numbers (1st to 10th) • Writes whole numbers in standard and expanded form through the tens	• Identifies the numerical and written name for whole numbers 21 to 100 (e.g., 62 is sixty-two, and vice versa)* • Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for ordinal numbers 1st to 20th (e.g., 1st is first, and vice versa)* • Counts numbers 0-100 • Counts numbers 0-1000* • Identifies missing numbers in a series through 100 • Counts by 2's to 100 • Counts and writes by 5's* • Counts backwards from a given number (given number greater than 10)* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Writes equivalent forms of whole number expressions (e.g., 15 + 5 = 10 + 10) • Counts objects that are grouped into tens and ones • Identifies the place value and value of each digit in whole numbers through the tens place* • Represents 1/2 with a diagram or model • Identifies equivalent fractions using visual representations*
Order and Compare Numbers and Number Line	**Order and Compare Numbers and Number Line**	**Order and Compare Numbers and Number Line**
	• Orders whole numbers less than 10*	• Compares whole numbers through100* • Compares whole numbers through 999 • Orders sets of objects 0-10* • Orders sets of objects 0-20*
Classifications of Numbers	**Classifications of Numbers**	**Classifications of Numbers**
		• Identifies a whole number that comes between 2 given numbers (20 to 100)*

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Number Operations - Addition, Subtraction	Number Operations - Addition, Subtraction	Number Operations - Addition, Subtraction
• Uses models to construct whole number addition facts with addends through 10* • Uses models to calculate whole number sums through 99* • Adds two 1-digit numbers with sums to 10 in horizontal format	• Uses a number line to construct addition facts with sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 99* • Uses models to calculate whole number sums through 999* • Adds two 1-digit numbers with sums to 10 in horizontal format • Adds two 1-digit numbers with sums to 10 in vertical format • Adds two 1-digit numbers with sums between 10 and 19 in horizontal format • Adds two 1-digit numbers with sums between 10 and 19 in vertical format* • Adds multiple 1-digit numbers • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 1-digit to multiple-digit number with no regrouping* • Adds 2-digit numbers with no regrouping • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Solves real-world whole number addition problems with sums to 20 (result unknown) • Uses models to construct subtraction facts with differences through 10 (whole numbers)* • Uses models to calculate differences through 100 (whole numbers)* • Subtracts two 1-digit numbers horizontally • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Subtracts two 1-digit numbers vertically • Uses strategies for subtraction facts (e.g., counting back, one less, two less)* • Subtracts a 2-digit number from a 2-digit number, with no regrouping • Identifies the missing operation symbol - 1-step number sentence • Adds money vertically with no regrouping*	• Uses a number line to construct addition facts with sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 999* • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Adds two or three 2-digit number with regrouping • Adds 1-, 2-, and/or 3-digit numbers with sums under 100* • Adds 3-digit numbers with no regrouping • Adds 3-digit numbers, with regrouping, with sums under 1000 • Adds multiple-digit numbers, with no regrouping, with sums over 1000* • Solves real-world whole number addition problems with sums to 20 (result unknown) • Solves real-world whole number addition problems with sums to 20 (start unknown)* • Solves real-world whole number addition problems with sums to 20 (change unknown)* • Solves real-world whole number addition problems with sums to 100 (result unknown)* • Solves real-world whole number addition problems with sums to 1000 • Uses models to calculate differences through 100 (whole numbers)* • Uses models to calculate differences through 1000 (whole numbers)* • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Uses strategies for subtraction facts (e.g., counting back, one less, two less)* • Subtracts a 1-digit number from a 2-digit number with no regrouping, vertically • Subtracts a 1-digit number from a multiple-digit number* • Subtracts a 2-digit number from a 2-digit number, with no regrouping • Subtracts 2- and/or 3-digit numbers with no regrouping

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		• Solves real-world whole number problems involving subtraction with numbers under 20 • Adds 1-digit numbers with sums to 18 (with parentheses) • Identifies the missing operation symbol - 1-step number sentence • Adds money vertically with no regrouping* • Identifies the value of a collection of coins to $1.00 (with pictures of coins) • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money)
Number Operations - Multiplication, Division	**Number Operations - Multiplication, Division**	**Number Operations - Multiplication, Division**
	• Analyzes another student's explanation to understand simple problems* • Uses a structured model to solve problems using a variety of strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Follows a model of problem solving that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12	• Analyzes another student's explanation to understand simple problems* • Determines the operation needed from a simple problem* • Writes a number sentence for a simple problem solving situation* • Uses a structured model to solve problems using a variety of strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Follows a model of problem solving that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12 • Multiplies basic facts to 10 x 10 vertically
Properties	**Properties**	**Properties**
		• Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding that vertical and horizontal representations are equivalent
Estimation	**Estimation**	**Estimation**
	• Uses manipulatives to model and justify solutions*	• Uses manipulatives to model and justify solutions*
Ratios, Proportions, and Percents	**Ratios, Proportions, and Percents**	**Ratios, Proportions, and Percents**
New Vocabulary: none	*New Vocabulary:* add, double, numeral, sum	*New Vocabulary:* before, between, count, counting order, eighth, eleventh, fact family, fifth, greater, greater than, hundred, multiply, ninth, penny, seventh, subtract, tenth, thousand

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New Signs and Symbols: + addition, = is equal to, □ variable	*New Signs and Symbols:* ÷ division, $ dollar sign, > greater than, < less than, × multiplication, – subtraction	*New Signs and Symbols:* ( ) order of operations, ¢ cent sign, lb pound

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Subject: Mathematics
Goal Strand: Number Sense
RIT Score Range: 171 - 180

Skills and Concepts to Enhance 161 - 170	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
Read, Write, and Represent Numbers	**Read, Write, and Represent Numbers**	**Read, Write, and Represent Numbers**
• Counts 1 to 10 objects • Counts numbers 0-20* • Identifies missing numbers in a series through 100 • Counts ordinal numbers (1st to 10th) • Writes whole numbers in standard and expanded form through the tens	• Identifies the numerical and written name for whole numbers 21 to 100 (e.g., 62 is sixty-two, and vice versa)* • Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for ordinal numbers 1st to 20th (e.g., 1st is first, and vice versa)* • Counts numbers 0-100 • Counts numbers 0-1000* • Identifies missing numbers in a series through 100 • Counts by 2's to 100 • Counts and writes by 5's* • Counts backwards from a given number (given number greater than 10)* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Writes equivalent forms of whole number expressions (e.g., 15 + 5 = 10 + 10) • Counts objects that are grouped into tens and ones • Identifies the place value and value of each digit in whole numbers through the tens place* • Represents 1/2 with a diagram or model • Identifies equivalent fractions using visual representations*	• Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for whole numbers to 1000 to 9999 (e.g., 3456 is three thousand, four hundred fifty-six, and vice versa) • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Counts numbers 0-1000* • Counts and writes by 3's* • Counts and writes by 4's* • Counts and writes by 6's, 7's, 8's, or 9's* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Counts objects that are grouped into tens and ones • Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in whole numbers through the tens place* • Identifies the place value and value of each digit in whole numbers through the hundreds place • Identifies the place value and value of each digit in whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Represents 1/4 with a diagram or model* • Represents 3/4 with a diagram or model*

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		• Identifies equal parts by using models • Identifies 1/2 from a region or set • Identifies 1/4 from a region or set • Identifies 2/3 or 3/3 from a region or set* • Identifies tenths from a region or set* • Identifies eighths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Applies base ten place value concepts to solve problems using decimals* • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction)
Order and Compare Numbers and Number Line	**Order and Compare Numbers and Number Line**	**Order and Compare Numbers and Number Line**
• Orders whole numbers less than 10*	• Compares whole numbers through100* • Compares whole numbers through 999 • Orders sets of objects 0-10* • Orders sets of objects 0-20*	• Compares whole numbers through 999 • Compares whole numbers through 9999 • Orders sets of objects 0-20* • Orders whole numbers less than 100 • Orders whole numbers less than 1000* • Compares and orders decimals to the hundredths place (same number of digits after decimal)
Classifications of Numbers	**Classifications of Numbers**	**Classifications of Numbers**
	• Identifies a whole number that comes between 2 given numbers (20 to 100)*	• Identifies the number that is "1 more than" a given number* • Identifies the number that is "1 less than" a given number • Determines whether a set of objects has an odd or even number of elements • Distinguishes between odd and even numbers
Number Operations - Addition, Subtraction	**Number Operations - Addition, Subtraction**	**Number Operations - Addition, Subtraction**
• Uses a number line to construct addition facts with sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 99* • Uses models to calculate whole number sums through 999* • Adds two 1-digit numbers with sums to 10 in horizontal format • Adds two 1-digit numbers with sums to 10 in vertical format • Adds two 1-digit numbers with sums between 10 and 19 in horizontal format • Adds two 1-digit numbers with sums between 10 and	• Uses a number line to construct addition facts with sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 999* • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Adds two or three 2-digit number with regrouping • Adds 1-, 2-, and/or 3-digit numbers with sums under 100* • Adds 3-digit numbers with no regrouping	• Solves problems using ordinal numbers* • Adds 1-digit to multiple-digit number with regrouping* • Adds two or three 2-digit number with regrouping • Adds 2-digit to 3-digit number with regrouping • Adds 3-digit numbers, with regrouping, with sums under 1000 • Performs mental computation with 2, 3, or 4 addends • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Solves real-world whole number addition problems

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19 in vertical format* • Adds multiple 1-digit numbers • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 1-digit to multiple-digit number with no regrouping* • Adds 2-digit numbers with no regrouping • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Solves real-world whole number addition problems with sums to 20 (result unknown) • Uses models to construct subtraction facts with differences through 10 (whole numbers)* • Uses models to calculate differences through 100 (whole numbers)* • Subtracts two 1-digit numbers horizontally • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Subtracts two 1-digit numbers vertically • Uses strategies for subtraction facts (e.g., counting back, one less, two less)* • Subtracts a 2-digit number from a 2-digit number, with no regrouping • Identifies the missing operation symbol - 1-step number sentence • Adds money vertically with no regrouping*	• Adds 3-digit numbers, with regrouping, with sums under 1000 • Adds multiple-digit numbers, with no regrouping, with sums over 1000* • Solves real-world whole number addition problems with sums to 20 (result unknown) • Solves real-world whole number addition problems with sums to 20 (start unknown)* • Solves real-world whole number addition problems with sums to 20 (change unknown)* • Solves real-world whole number addition problems with sums to 100 (result unknown)* • Solves real-world whole number addition problems with sums to 1000 • Uses models to calculate differences through 100 (whole numbers)* • Uses models to calculate differences through 1000 (whole numbers)* • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Uses strategies for subtraction facts (e.g., counting back, one less, two less)* • Subtracts a 1-digit number from a 2-digit number with no regrouping, vertically • Subtracts a 1-digit number from a multiple-digit number* • Subtracts a 2-digit number from a 2-digit number, with no regrouping • Subtracts 2- and/or 3-digit numbers with no regrouping • Solves real-world whole number problems involving subtraction with numbers under 20 • Adds 1-digit numbers with sums to 18 (with parentheses) • Identifies the missing operation symbol - 1-step number sentence • Adds money vertically with no regrouping* • Identifies the value of a collection of coins to $1.00 (with pictures of coins) • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money)	with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 20 (start unknown)* • Solves real-world whole number addition problems with sums to 100 (result unknown)* • Solves real-world whole number addition problems with sums to 1000 • Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)* • Uses models to calculate differences through 1000 (whole numbers)* • Instantly recalls basic subtraction facts with minuend less than 10* • Subtracts a 1-digit number from a multiple-digit number* • Subtracts 1-digit number from a 2-digit number with regrouping* • Subtracts a 2-digit number from a 2-digit number, with regrouping • Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on) • Subtracts 2- and/or 3-digit numbers with no regrouping • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers under 1000 • Subtracts multiple-digit numbers with no regrouping* • Solves real-world whole number problems involving subtraction with numbers under 20 • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves real-world whole number problems involving subtraction with numbers under 1000 • Solves real-world whole number problems involving addition and subtraction • Identifies the missing operation symbol - 2-step number sentence* • Adds decimals to the hundredths place (same number of digits) • Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping

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		• Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Combines a collection of coins and identifies the correct notation • Subtracts decimals to the hundredths place (same number of digits) without regrouping • Makes change to $1.00 by "counting on" or subtracting • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on addition or subtraction real-world problems involving money up to $5.00
Number Operations - Multiplication, Division	**Number Operations - Multiplication, Division**	**Number Operations - Multiplication, Division**
• Analyzes another student's explanation to understand simple problems* • Uses a structured model to solve problems using a variety of strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Follows a model of problem solving that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12	• Analyzes another student's explanation to understand simple problems* • Determines the operation needed from a simple problem* • Writes a number sentence for a simple problem solving situation* • Uses a structured model to solve problems using a variety of strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Follows a model of problem solving that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12 • Multiplies basic facts to 10 x 10 vertically	• Analyzes another student's explanation to understand simple problems* • Draws pictures to represent whole number problems* • Uses manipulatives to represent whole number problems* • Determines the operation needed from a simple problem* • Writes a number sentence for a simple problem solving situation* • Uses a structured model to solve problems using a variety of strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Follows a model of problem solving that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Multiplies basic facts to 10 x 10 vertically • Multiplies a 2-digit number by a 1-digit number with regrouping • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Uses sharing for division • Models multiplication and division algorithms using arrays (whole numbers) • Instantly recalls division facts with dividend and

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		divisors less than 10 • Solves word problems with whole number division facts with dividend and divisors less that 11 involving money
Properties	**Properties**	**Properties**
	• Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding that vertical and horizontal representations are equivalent	• Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding of the zero property of multiplication • Demonstrates an understanding of the inverse relationship between multiplication and division
Estimation	**Estimation**	**Estimation**
• Uses manipulatives to model and justify solutions*	• Uses manipulatives to model and justify solutions*	• Uses manipulatives to model and justify solutions* • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100 (whole numbers only)
Ratios, Proportions, and Percents	**Ratios, Proportions, and Percents**	**Ratios, Proportions, and Percents**
New Vocabulary: add, double, numeral, sum	*New Vocabulary:* before, between, count, counting order, eighth, eleventh, fact family, fifth, greater, greater than, hundred, multiply, ninth, penny, seventh, subtract, tenth, thousand	*New Vocabulary:* closest, coins, digit, dozen, even number, factor, fourth, fourths, fraction, hundred thousand, hundreds, million, nearest, number statement, odd number, one, round, row, symmetrical, ten, ten thousand, thirds, thousandth, unifix cubes, unit, value
New Signs and Symbols: ÷ division, $ dollar sign, > greater than, < less than, × multiplication, – subtraction	*New Signs and Symbols:* ( ) order of operations, ¢ cent sign, lb pound	*New Signs and Symbols:* { } set notation, long division symbol

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Subject: Mathematics
Goal Strand: Number Sense
RIT Score Range: 181 - 190

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
Read, Write, and Represent Numbers	**Read, Write, and Represent Numbers**	**Read, Write, and Represent Numbers**
• Identifies the numerical and written name for whole numbers 21 to 100 (e.g., 62 is sixty-two, and vice versa)* • Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for ordinal numbers 1st to 20th (e.g., 1st is first, and vice versa)* • Counts numbers 0-100 • Counts numbers 0-1000* • Identifies missing numbers in a series through 100 • Counts by 2's to 100 • Counts and writes by 5's* • Counts backwards from a given number (given number greater than 10)* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Writes equivalent forms of whole number expressions (e.g., 15 + 5 = 10 + 10) • Counts objects that are grouped into tens and ones • Identifies the place value and value of each digit in whole numbers through the tens place* • Represents 1/2 with a diagram or model • Identifies equivalent fractions using visual representations*	• Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for whole numbers to 1000 to 9999 (e.g., 3456 is three thousand, four hundred fifty-six, and vice versa) • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Counts numbers 0-1000* • Counts and writes by 3's* • Counts and writes by 4's* • Counts and writes by 6's, 7's, 8's, or 9's* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Counts objects that are grouped into tens and ones • Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in whole numbers through the tens place* • Identifies the place value and value of each digit in whole numbers through the hundreds place • Identifies the place value and value of each digit in whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Represents 1/4 with a diagram or model* • Represents 3/4 with a diagram or model*	• Identifies whole numbers 100 - 999 using base-10 blocks* • Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Identifies the numeral and written name for whole numbers over 100,000 • Identifies the numeral and written name for ordinal numbers 21st to100th (e.g., 21st is twenty-first, and vice versa)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Writes whole numbers in standard and expanded form through the hundreds • Writes whole numbers in standard and expanded form through the thousands • Represents 1/3 with a diagram or model • Identifies one-half from a region or set* • Identifies 1/4 from a region or set • Identifies 1/3 from a region or set • Identifies 2/3 or 3/3 from a region or set*

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	• Identifies equal parts by using models • Identifies 1/2 from a region or set • Identifies 1/4 from a region or set • Identifies 2/3 or 3/3 from a region or set* • Identifies tenths from a region or set* • Identifies eighths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Applies base ten place value concepts to solve problems using decimals* • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction)	• Identifies tenths from a region or set* • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Matches numeric and visual representation of equivalent fractions • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction)
Order and Compare Numbers and Number Line	**Order and Compare Numbers and Number Line**	**Order and Compare Numbers and Number Line**
• Compares whole numbers through100* • Compares whole numbers through 999 • Orders sets of objects 0-10* • Orders sets of objects 0-20*	• Compares whole numbers through 999 • Compares whole numbers through 9999 • Orders sets of objects 0-20* • Orders whole numbers less than 100 • Orders whole numbers less than 1000* • Compares and orders decimals to the hundredths place (same number of digits after decimal)	• Compares sets of objects and identifies which is equal to, more than, or less than the other (1 to 10 objects)* • Compares whole numbers through 999,999 • Compares whole numbers to 100, using the symbols for 'less than', 'equal to', or 'greater than' (<, =, >) • Compares whole numbers through the thousands using the symbols <, >, or = • Orders whole numbers less than 1000* • Orders whole numbers less than 10,000 • Identifies a decimal on a number line to the tenths place* • Compares and orders money in decimal form • Compares and orders decimals to the thousandths place (same number of digits after decimal)*
Classifications of Numbers	**Classifications of Numbers**	**Classifications of Numbers**
• Identifies a whole number that comes between 2 given numbers (20 to 100)*	• Identifies the number that is "1 more than" a given number* • Identifies the number that is "1 less than" a given number • Determines whether a set of objects has an odd or even number of elements • Distinguishes between odd and even numbers	• Distinguishes between odd and even numbers
Number Operations - Addition, Subtraction	**Number Operations - Addition, Subtraction**	**Number Operations - Addition, Subtraction**
• Uses a number line to construct addition facts with sums through 20 (whole numbers)* • Uses models to calculate whole number sums through 999* • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making	• Solves problems using ordinal numbers* • Adds 1-digit to multiple-digit number with regrouping* • Adds two or three 2-digit number with regrouping • Adds 2-digit to 3-digit number with regrouping • Adds 3-digit numbers, with regrouping, with sums	• Solves problems using ordinal numbers* • Adds 2-digit to 3-digit number with regrouping • Uses number sense strategies to determine the correct answer for an addition computation* • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000

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tens) • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000* • Adds two or three 2-digit number with regrouping • Adds 1-, 2-, and/or 3-digit numbers with sums under 100* • Adds 3-digit numbers with no regrouping • Adds 3-digit numbers, with regrouping, with sums under 1000 • Adds multiple-digit numbers, with no regrouping, with sums over 1000* • Solves real-world whole number addition problems with sums to 20 (result unknown) • Solves real-world whole number addition problems with sums to 20 (start unknown)* • Solves real-world whole number addition problems with sums to 20 (change unknown)* • Solves real-world whole number addition problems with sums to 100 (result unknown)* • Solves real-world whole number addition problems with sums to 1000 • Uses models to calculate differences through 100 (whole numbers)* • Uses models to calculate differences through 1000 (whole numbers)* • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Uses strategies for subtraction facts (e.g., counting back, one less, two less)* • Subtracts a 1-digit number from a 2-digit number with no regrouping, vertically • Subtracts a 1-digit number from a multiple-digit number* • Subtracts a 2-digit number from a 2-digit number, with no regrouping • Subtracts 2- and/or 3-digit numbers with no regrouping • Solves real-world whole number problems involving subtraction with numbers under 20 • Adds 1-digit numbers with sums to 18 (with parentheses) • Identifies the missing operation symbol - 1-step number sentence • Adds money vertically with no regrouping*	under 1000 • Performs mental computation with 2, 3, or 4 addends • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 20 (start unknown)* • Solves real-world whole number addition problems with sums to 100 (result unknown)* • Solves real-world whole number addition problems with sums to 1000 • Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)* • Uses models to calculate differences through 1000 (whole numbers)* • Instantly recalls basic subtraction facts with minuend less than 10* • Subtracts a 1-digit number from a multiple-digit number* • Subtracts 1-digit number from a 2-digit number with regrouping* • Subtracts a 2-digit number from a 2-digit number, with regrouping • Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on) • Subtracts 2- and/or 3-digit numbers with no regrouping • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers under 1000 • Subtracts multiple-digit numbers with no regrouping* • Solves real-world whole number problems involving subtraction with numbers under 20 • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves real-world whole number problems involving subtraction with numbers under 1000 • Solves real-world whole number problems involving addition and subtraction	• Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 100 (start unknown)* • Solves whole number addition word problems with sums over 1000 • Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)* • Adds and subtracts whole numbers using place value • Subtracts 1-digit number from a 2-digit number with regrouping* • Subtracts a 2-digit number from a 2-digit number, with regrouping • Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on) • Subtracts a 2-digit number from a 3-digit number with a single regrouping • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers under 1000 • Performs mental subtraction with numbers 1000 and over • Subtracts multiple-digit numbers with no regrouping* • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves real-world whole number problems involving subtraction with numbers under 1000 • Solves whole number subtraction word problems with numbers over 1000 • Solves problems using the inverse relationship between addition and subtraction* • Identifies the missing operation symbol - 2-step number sentence* • Uses models to add and subtract fractions and connect the actions to algorithms* • Subtracts fractions with like denominators without reducing • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators

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• Identifies the value of a collection of coins to $1.00 (with pictures of coins) • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money)	• Identifies the missing operation symbol - 2-step number sentence* • Adds decimals to the hundredths place (same number of digits) • Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Combines a collection of coins and identifies the correct notation • Subtracts decimals to the hundredths place (same number of digits) without regrouping • Makes change to $1.00 by "counting on" or subtracting • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on addition or subtraction real-world problems involving money up to $5.00	• Adds decimals to the hundredths place (same number of digits) • Adds decimals to the hundredths place in vertical format (not same number of digits)* • Adds decimals to the thousandths place vertically with and without regrouping • Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (without picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Finds equivalent combinations of dollars and cents with the same value* • Subtracts decimals to the hundredths place (same number of digits) without regrouping • Subtracts decimals to the hundredths place (same number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Makes change to $1.00 by "counting on" or subtracting • Solves real-world problems involving decimals (not money) using addition and subtraction • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)
Number Operations - Multiplication, Division	**Number Operations - Multiplication, Division**	**Number Operations - Multiplication, Division**
• Analyzes another student's explanation to understand simple problems* • Determines the operation needed from a simple problem* • Writes a number sentence for a simple problem solving situation* • Uses a structured model to solve problems using a variety of strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)*	• Analyzes another student's explanation to understand simple problems* • Draws pictures to represent whole number problems* • Uses manipulatives to represent whole number problems* • Determines the operation needed from a simple problem* • Writes a number sentence for a simple problem solving situation* • Uses a structured model to solve problems using a variety of strategies (e.g., draws a picture, looks for	• Analyzes another student's explanation to understand more difficult problems* • Restates the problem in own words* • Selects the information necessary to solve a simple problem and determines whether any further information is needed • Draws pictures to represent whole number problems* • Determines the operation needed from a simple problem* • Determines the operation needed to solve a real-world problem

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• Follows a model of problem solving that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12 • Multiplies basic facts to 10 x 10 vertically	patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Follows a model of problem solving that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Multiplies basic facts to 10 x 10 vertically • Multiplies a 2-digit number by a 1-digit number with regrouping • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Uses sharing for division • Models multiplication and division algorithms using arrays (whole numbers) • Instantly recalls division facts with dividend and divisors less than 10 • Solves word problems with whole number division facts with dividend and divisors less that 11 involving money	• Translates from a diagram to an expression or equation* • Uses a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Uses a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Multiplies a 2- or 3-digit number by a 1-digit number with no regrouping • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 3-digit number by a 2-digit number with no regrouping • Performs mental computation with multiplication • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Uses repeated subtraction for division* • Instantly recalls division facts with dividend and divisors less than 10 • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 2-digit number by a 1-digit number with no remainder • Uses strategies to determine 1 missing digit (multiplication/division only) • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)*
Properties	**Properties**	**Properties**
• Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding that vertical and	• Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding of the zero property of	• Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the zero property of

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horizontal representations are equivalent	multiplication • Demonstrates an understanding of the inverse relationship between multiplication and division	multiplication • Demonstrates an understanding of the multiplicative property of 1 (identity)
Estimation	**Estimation**	**Estimation**
• Uses manipulatives to model and justify solutions*	• Uses manipulatives to model and justify solutions* • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100 (whole numbers only)	• Verifies reasonableness of results of simple problems* • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with addition and subtraction (whole numbers only)* • Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)* • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only) • Uses rounding to estimate answers to 1-step problems involving answers less than $1 (whole numbers only, e.g., 10 cents + 10 cents)* • Uses rounding to estimate answers to 1-step problems involving answers less than $20 (decimals only, e.g., $1.20 + $2.75)
Ratios, Proportions, and Percents	**Ratios, Proportions, and Percents**	**Ratios, Proportions, and Percents**
		• Writes the missing number in a proportion using basic facts • Solves problems involving basic percent concepts (e.g., 10%, 50%, 100%)
New Vocabulary: before, between, count, counting order, eighth, eleventh, fact family, fifth, greater, greater than, hundred, multiply, ninth, penny, seventh, subtract, tenth, thousand	*New Vocabulary:* closest, coins, digit, dozen, even number, factor, fourth, fourths, fraction, hundred thousand, hundreds, million, nearest, number statement, odd number, one, round, row, symmetrical, ten, ten thousand, thirds, thousandth, unifix cubes, unit, value	*New Vocabulary:* billion, capacity, deposit, hundred million, hundredths, longer, operation, quintillion, regroup, rename, standard numeral, symbol, thousands, trillion, zero
New Signs and Symbols: ( ) order of operations, ¢ cent sign, lb pound	*New Signs and Symbols:* { } set notation, long division symbol	*New Signs and Symbols:* a.m., ≈ approximately equal to, °F Degrees Fahrenheit, ft feet, ≥ greater than or equal to, ≤ less than or equal to, oz ounce, % percent, R remainder, : used with time

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Subject: Mathematics
Goal Strand: Number Sense
RIT Score Range: 191 - 200

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
Read, Write, and Represent Numbers	**Read, Write, and Represent Numbers**	**Read, Write, and Represent Numbers**
• Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)* • Identifies the numeral and written name for whole numbers to 1000 to 9999 (e.g., 3456 is three thousand, four hundred fifty-six, and vice versa) • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Counts numbers 0-1000* • Counts and writes by 3's* • Counts and writes by 4's* • Counts and writes by 6's, 7's, 8's, or 9's* • Counts ordinal numbers (first to tenth) • Identifies the ordinal number that comes before, between, or after a given ordinal number (first to tenth)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Counts objects that are grouped into tens and ones • Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in whole numbers through the tens place* • Identifies the place value and value of each digit in whole numbers through the hundreds place • Identifies the place value and value of each digit in whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Represents 1/4 with a diagram or model* • Represents 3/4 with a diagram or model*	• Identifies whole numbers 100 - 999 using base-10 blocks* • Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Identifies the numeral and written name for whole numbers over 100,000 • Identifies the numeral and written name for ordinal numbers 21st to100th (e.g., 21st is twenty-first, and vice versa)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Writes whole numbers in standard and expanded form through the hundreds • Writes whole numbers in standard and expanded form through the thousands • Represents 1/3 with a diagram or model • Identifies one-half from a region or set* • Identifies 1/4 from a region or set • Identifies 1/3 from a region or set • Identifies 2/3 or 3/3 from a region or set*	• Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers over 100,000 • Writes equivalent forms of whole numbers using place value (e.g., 54 = 4 tens and 14 ones) • Identifies the place value and value of each digit in whole numbers through the billions • Writes whole numbers in standard and expanded form through the hundred thousands • Applies base ten place value concepts with whole numbers to solve problems • Writes whole numbers using place value terms and vice versa • Identifies halves of a region using nonadjacent parts • Converts a basic fractional numeral to lowest terms (e.g., halves, thirds, quarters)* • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • Identifies the place value and value of each digit to the tenths* • Writes a terminating decimal as a fraction or mixed number • Writes a number "squared" in factored form*

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• Identifies equal parts by using models • Identifies 1/2 from a region or set • Identifies 1/4 from a region or set • Identifies 2/3 or 3/3 from a region or set* • Identifies tenths from a region or set* • Identifies eighths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Applies base ten place value concepts to solve problems using decimals* • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction)	• Identifies tenths from a region or set* • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Matches numeric and visual representation of equivalent fractions • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction)	
Order and Compare Numbers and Number Line	**Order and Compare Numbers and Number Line**	**Order and Compare Numbers and Number Line**
• Compares whole numbers through 999 • Compares whole numbers through 9999 • Orders sets of objects 0-20* • Orders whole numbers less than 100 • Orders whole numbers less than 1000* • Compares and orders decimals to the hundredths place (same number of digits after decimal)	• Compares sets of objects and identifies which is equal to, more than, or less than the other (1 to 10 objects)* • Compares whole numbers through 999,999 • Compares whole numbers to 100, using the symbols for 'less than', 'equal to', or 'greater than' (<, =, >) • Compares whole numbers through the thousands using the symbols <, >, or = • Orders whole numbers less than 1000* • Orders whole numbers less than 10,000 • Identifies a decimal on a number line to the tenths place* • Compares and orders money in decimal form • Compares and orders decimals to the thousandths place (same number of digits after decimal)*	• Compares whole numbers through 999,999 • Compares whole numbers through the billions using the symbols <, >, or =* • Orders whole numbers less than 10,000 • Orders whole numbers a million or greater • Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10)
Classifications of Numbers	**Classifications of Numbers**	**Classifications of Numbers**
• Identifies the number that is "1 more than" a given number* • Identifies the number that is "1 less than" a given number • Determines whether a set of objects has an odd or even number of elements • Distinguishes between odd and even numbers	• Distinguishes between odd and even numbers	• Identifies a whole number that comes before and/or after a given number (over 100)* • Determines multiples of a whole number* • Determines common multiples of whole numbers*
Number Operations - Addition, Subtraction	**Number Operations - Addition, Subtraction**	**Number Operations - Addition, Subtraction**
• Solves problems using ordinal numbers* • Adds 1-digit to multiple-digit number with regrouping* • Adds two or three 2-digit number with regrouping • Adds 2-digit to 3-digit number with regrouping • Adds 3-digit numbers, with regrouping, with sums	• Solves problems using ordinal numbers* • Adds 2-digit to 3-digit number with regrouping • Uses number sense strategies to determine the correct answer for an addition computation* • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000	• Solves problems using ordinal numbers* • Uses number sense strategies to solve problems (addition/subtraction only) • Instantly recalls basic addition facts with sums to 18 in a table* • Uses reasoning strategies to solve magic squares and

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under 1000 • Performs mental computation with 2, 3, or 4 addends • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 20 (start unknown)* • Solves real-world whole number addition problems with sums to 100 (result unknown)* • Solves real-world whole number addition problems with sums to 1000 • Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)* • Uses models to calculate differences through 1000 (whole numbers)* • Instantly recalls basic subtraction facts with minuend less than 10* • Subtracts a 1-digit number from a multiple-digit number* • Subtracts 1-digit number from a 2-digit number with regrouping* • Subtracts a 2-digit number from a 2-digit number, with regrouping • Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on) • Subtracts 2- and/or 3-digit numbers with no regrouping • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers under 1000 • Subtracts multiple-digit numbers with no regrouping* • Solves real-world whole number problems involving subtraction with numbers under 20 • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves real-world whole number problems involving subtraction with numbers under 1000 • Solves real-world whole number problems involving addition and subtraction	• Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 100 (start unknown)* • Solves whole number addition word problems with sums over 1000 • Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)* • Adds and subtracts whole numbers using place value • Subtracts 1-digit number from a 2-digit number with regrouping* • Subtracts a 2-digit number from a 2-digit number, with regrouping • Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on) • Subtracts a 2-digit number from a 3-digit number with a single regrouping • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers under 1000 • Performs mental subtraction with numbers 1000 and over • Subtracts multiple-digit numbers with no regrouping* • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves real-world whole number problems involving subtraction with numbers under 1000 • Solves whole number subtraction word problems with numbers over 1000 • Solves problems using the inverse relationship between addition and subtraction* • Identifies the missing operation symbol - 2-step number sentence* • Uses models to add and subtract fractions and connect the actions to algorithms* • Subtracts fractions with like denominators without reducing • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators	related puzzles (addition, whole numbers only) • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Performs mental computation with more than 4 addends • Solves real-world whole number addition problems with sums to 100 (start unknown)* • Adds and subtracts whole numbers using place value • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers 1000 and over • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis) • Solves whole number subtraction word problems with numbers over 1000 • Identifies the missing symbol to compare 2 expressions (e.g., < or >) • Identifies the missing operation symbol - 2-step number sentence* • Adds fractions with like denominators without reducing • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)* • Adds whole numbers and fractions • Uses models to add and subtract fractions and connect the actions to algorithms* • Subtracts fractions with like denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions* • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Adds decimals to the hundredths place in vertical format (not same number of digits)* • Adds decimals to the thousandths place horizontally with and without regrouping • Finds equivalent combinations of dollars and cents

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• Identifies the missing operation symbol - 2-step number sentence* • Adds decimals to the hundredths place (same number of digits) • Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (with picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Combines a collection of coins and identifies the correct notation • Subtracts decimals to the hundredths place (same number of digits) without regrouping • Makes change to $1.00 by "counting on" or subtracting • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on addition or subtraction real-world problems involving money up to $5.00	• Adds decimals to the hundredths place (same number of digits) • Adds decimals to the hundredths place in vertical format (not same number of digits)* • Adds decimals to the thousandths place vertically with and without regrouping • Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (without picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Finds equivalent combinations of dollars and cents with the same value* • Subtracts decimals to the hundredths place (same number of digits) without regrouping • Subtracts decimals to the hundredths place (same number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Makes change to $1.00 by "counting on" or subtracting • Solves real-world problems involving decimals (not money) using addition and subtraction • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)	with the same value* • Subtracts decimals to the hundredths place (same number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Subtracts decimals through the hundred-thousandths place, vertically* • Computes the value of multiple bills and coins (addition/subtraction only)* • Computes addition and subtraction on multiple-step real-world problems involving money
Number Operations - Multiplication, Division	**Number Operations - Multiplication, Division**	**Number Operations - Multiplication, Division**
• Analyzes another student's explanation to understand simple problems* • Draws pictures to represent whole number problems* • Uses manipulatives to represent whole number problems* • Determines the operation needed from a simple problem* • Writes a number sentence for a simple problem solving situation* • Uses a structured model to solve problems using a variety of strategies (e.g., draws a picture, looks for	• Analyzes another student's explanation to understand more difficult problems* • Restates the problem in own words* • Selects the information necessary to solve a simple problem and determines whether any further information is needed • Draws pictures to represent whole number problems* • Determines the operation needed from a simple problem* • Determines the operation needed to solve a real-world problem	• Analyzes another student's explanation to understand more difficult problems* • Restates the problem in own words* • Selects the information necessary to solve a simple problem and determines whether any further information is needed • Draws pictures to represent whole number problems* • Uses manipulatives to represent problems* • Writes a number sentence for a simple problem solving situation (analysis) • Determines the operation needed to solve a real-world

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patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Follows a model of problem solving that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Multiplies basic facts to 10 x 10 vertically • Multiplies a 2-digit number by a 1-digit number with regrouping • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Uses sharing for division • Models multiplication and division algorithms using arrays (whole numbers) • Instantly recalls division facts with dividend and divisors less than 10 • Solves word problems with whole number division facts with dividend and divisors less that 11 involving money	• Translates from a diagram to an expression or equation* • Uses a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Uses a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Multiplies a 2- or 3-digit number by a 1-digit number with no regrouping • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 3-digit number by a 2-digit number with no regrouping • Performs mental computation with multiplication • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Uses repeated subtraction for division* • Instantly recalls division facts with dividend and divisors less than 10 • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 2-digit number by a 1-digit number with no remainder • Uses strategies to determine 1 missing digit (multiplication/division only) • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)*	problem • Translates a number sentence to a real-world situation* • Uses a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Uses manipulatives and models to demonstrate thinking processes* • Solves real-world problems using reasoning strategies • Uses a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Uses a number line to model multiplication (whole numbers)* • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies multiple 1-digit numbers • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 2-digit number by a 2-digit number with regrouping • Multiplies a 3-digit number by a 2-digit number with regrouping • Performs mental computation with multiplication • Multiplies a 2- or 3-digit number by multiples of 10 or 100 • Multiplies a 3-digit number by a 3-digit number • Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 1-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 1-digit number with no

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		remainder • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division • Divides a 3-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 2-digit number with a remainder • Divides a 3-digit number by a multiple of 10 • Divides a 4-digit number by a 2-digit number • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)* • Solves whole number word problems with division over 10 x 10
Properties	**Properties**	**Properties**
• Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding of the zero property of multiplication • Demonstrates an understanding of the inverse relationship between multiplication and division	• Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the zero property of multiplication • Demonstrates an understanding of the multiplicative property of 1 (identity)	• Demonstrates an understanding of the associative property of addition* • Demonstrates an understanding of the commutative property of addition • Demonstrates an understanding of the zero property of addition (identity) • Demonstrates an understanding of symmetric property applied to basic addition and subtraction facts (e.g., 10 = 2 + 8 is the same as 2 + 8 = 10 or 7 = 10 - 3 is the same as 10 - 3 = 7)* • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of symmetric property applied to multiplication (e.g., 8 x 4 = 32 is the same as 32 = 8 x 4)* • Recognizes multiplication and division fact families*
Estimation	**Estimation**	**Estimation**
• Uses manipulatives to model and justify solutions* • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100	• Verifies reasonableness of results of simple problems* • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with	• Verifies reasonableness of results of simple problems* • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the

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(whole numbers only)	addition and subtraction (whole numbers only)* • Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)* • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only) • Uses rounding to estimate answers to 1-step problems involving answers less than $1 (whole numbers only, e.g., 10 cents + 10 cents)* • Uses rounding to estimate answers to 1-step problems involving answers less than $20 (decimals only, e.g., $1.20 + $2.75)	nearest thousand • Rounds whole numbers to the nearest hundred thousand • Explains the rules for rounding* • Rounds decimals to the nearest whole number* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only)* • Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)* • Uses front end estimation for multiplication and division computations (whole numbers only)* • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only) • Uses rounding to estimate answers to simple multiplication and division problems (whole numbers only) • Uses rounding to estimate answers to 1-step problems involving answers $20 or greater (using decimals)* • Uses rounding to estimate answers to 2-step problems involving money (whole numbers only)* • Uses rounding to estimate answers to 2-step problems involving money (using decimals)
Ratios, Proportions, and Percents	**Ratios, Proportions, and Percents**	**Ratios, Proportions, and Percents**
	• Writes the missing number in a proportion using basic facts • Solves problems involving basic percent concepts (e.g., 10%, 50%, 100%)	• Writes the missing number in a proportion using basic facts
New Vocabulary: closest, coins, digit, dozen, even number, factor, fourth, fourths, fraction, hundred thousand, hundreds, million, nearest, number statement, odd number, one, round, row, symmetrical, ten, ten thousand, thirds, thousandth, unifix cubes, unit, value	*New Vocabulary:* billion, capacity, deposit, hundred million, hundredths, longer, operation, quintillion, regroup, rename, standard numeral, symbol, thousands, trillion, zero	*New Vocabulary:* annual, biggest, column, common multiple, compatible numbers, expanded numeral, hundred thousands, hundredth, inverse operation, kilowatt, magic square, mathematical statement, mixed number, multiple, place value, remainder, ten thousands, twice
New Signs and Symbols: { } set notation, long division symbol	*New Signs and Symbols:* a.m., ≈ approximately equal to, °F Degrees Fahrenheit, ft feet, ≥ greater than or equal to, ≤ less than or equal to, oz ounce, % percent, R remainder, : used with time	*New Signs and Symbols:* ? a variable, □ missing operation, − negative number, ∅ null or empty set

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Subject: Mathematics
Goal Strand: Number Sense
RIT Score Range: 201 - 210

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
Read, Write, and Represent Numbers	**Read, Write, and Represent Numbers**	**Read, Write, and Represent Numbers**
• Identifies whole numbers 100 - 999 using base-10 blocks* • Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Identifies the numeral and written name for whole numbers over 100,000 • Identifies the numeral and written name for ordinal numbers 21st to100th (e.g., 21st is twenty-first, and vice versa)* • Counts and converts to dozens with models* • Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7)* • Writes equivalent forms of whole numbers using multiplication (e.g., 12 = 4 x 3 = 2 x 6 = 2 x 2 x 3)* • Converts to dozens without models • Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Identifies the place value and value of each digit in whole numbers through the thousands • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Writes whole numbers in standard and expanded form through the hundreds • Writes whole numbers in standard and expanded form through the thousands • Represents 1/3 with a diagram or model • Identifies one-half from a region or set* • Identifies 1/4 from a region or set • Identifies 1/3 from a region or set • Identifies 2/3 or 3/3 from a region or set*	• Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers over 100,000 • Writes equivalent forms of whole numbers using place value (e.g., 54 = 4 tens and 14 ones) • Identifies the place value and value of each digit in whole numbers through the billions • Writes whole numbers in standard and expanded form through the hundred thousands • Applies base ten place value concepts with whole numbers to solve problems • Writes whole numbers using place value terms and vice versa • Identifies halves of a region using nonadjacent parts • Converts a basic fractional numeral to lowest terms (e.g., halves, thirds, quarters)* • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • Identifies the place value and value of each digit to the tenths* • Writes a terminating decimal as a fraction or mixed number • Writes a number "squared" in factored form*	• Identifies whole numbers 100 - 999 using 2-D and 3-D models* • Identifies whole numbers over 999 using 2- and 3-D models* • Writes whole numbers in standard and expanded form through the hundred thousands • Writes improper fractions and mixed numbers from a visual representation* • Identifies a fractions in lowest terms from a region or set • Identifies eighths, reduced to lowest terms, from a region or set • Expresses "1" in many different ways (e.g., 3/3, 4/4)* • Expresses improper fractions as whole numbers (e.g., 4/2=2)* • Determines simple equivalent fractions using multiples • Converts fractions to lowest terms • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers)* • Represents a decimal to the hundredths place (e.g., three hundredths = 0.03) • Writes a decimal for a shaded region to the tenths place* • Identifies the place value and value of each digit to the tenths* • Applies base ten place value concepts to solve problems using decimals (analysis)* • Expresses a simple fraction as a decimal • Writes a simple mixed fraction as a decimal and vice versa • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10

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• Identifies tenths from a region or set* • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Matches numeric and visual representation of equivalent fractions • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction)		• Writes a basic percent as a fraction and vice versa (e.g., 10%, 25%, 50%, 100%)* • Expresses a percent as a fraction with 100 as the denominator and vice versa • Writes a basic percent as a decimal and vice versa* • Expresses a percent as a decimal and vice versa • Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2) • Uses powers to represent 10, 100, 1000, 10,000, and 100,000
Order and Compare Numbers and Number Line	**Order and Compare Numbers and Number Line**	**Order and Compare Numbers and Number Line**
• Compares sets of objects and identifies which is equal to, more than, or less than the other (1 to 10 objects)* • Compares whole numbers through 999,999 • Compares whole numbers to 100, using the symbols for 'less than', 'equal to', or 'greater than' (<, =, >) • Compares whole numbers through the thousands using the symbols <, >, or = • Orders whole numbers less than 1000* • Orders whole numbers less than 10,000 • Identifies a decimal on a number line to the tenths place* • Compares and orders money in decimal form • Compares and orders decimals to the thousandths place (same number of digits after decimal)*	• Compares whole numbers through 999,999 • Compares whole numbers through the billions using the symbols <, >, or =* • Orders whole numbers less than 10,000 • Orders whole numbers a million or greater • Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10)	• Compares fractions on a number line • Compares fractions greater than or less than a given fraction using visual representations • Compares fractions and mixed numbers • Compares fractions and mixed numbers using symbols
Classifications of Numbers	**Classifications of Numbers**	**Classifications of Numbers**
• Distinguishes between odd and even numbers	• Identifies a whole number that comes before and/or after a given number (over 100)* • Determines multiples of a whole number* • Determines common multiples of whole numbers*	• Recognizes characteristics of odd and even numbers • Determines factors of whole numbers • Completes a factor tree for a number (prime factorization)* • Determines multiples of a whole number* • Determines common multiples of whole numbers*
Number Operations - Addition, Subtraction	**Number Operations - Addition, Subtraction**	**Number Operations - Addition, Subtraction**
• Solves problems using ordinal numbers* • Adds 2-digit to 3-digit number with regrouping • Uses number sense strategies to determine the correct answer for an addition computation* • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Solves real-world whole number addition problems	• Solves problems using ordinal numbers* • Uses number sense strategies to solve problems (addition/subtraction only) • Instantly recalls basic addition facts with sums to 18 in a table* • Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000	• Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Adds fractions with like denominators without reducing • Adds fractions with like denominators with reducing or converting to a mixed fraction

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with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 100 (start unknown)* • Solves whole number addition word problems with sums over 1000 • Uses a number line to construct subtraction facts with subtrahends and minuends through 20 (whole numbers)* • Adds and subtracts whole numbers using place value • Subtracts 1-digit number from a 2-digit number with regrouping* • Subtracts a 2-digit number from a 2-digit number, with regrouping • Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on) • Subtracts a 2-digit number from a 3-digit number with a single regrouping • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers under 1000 • Performs mental subtraction with numbers 1000 and over • Subtracts multiple-digit numbers with no regrouping* • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves real-world whole number problems involving subtraction with numbers under 1000 • Solves whole number subtraction word problems with numbers over 1000 • Solves problems using the inverse relationship between addition and subtraction* • Identifies the missing operation symbol - 2-step number sentence* • Uses models to add and subtract fractions and connect the actions to algorithms* • Subtracts fractions with like denominators without reducing • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Adds decimals to the hundredths place (same number of digits) • Adds decimals to the hundredths place in vertical format (not same number of digits)*	• Performs mental computation with more than 4 addends • Solves real-world whole number addition problems with sums to 100 (start unknown)* • Adds and subtracts whole numbers using place value • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers 1000 and over • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis) • Solves whole number subtraction word problems with numbers over 1000 • Identifies the missing symbol to compare 2 expressions (e.g., < or >) • Identifies the missing operation symbol - 2-step number sentence* • Adds fractions with like denominators without reducing • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)* • Adds whole numbers and fractions • Uses models to add and subtract fractions and connect the actions to algorithms* • Subtracts fractions with like denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions* • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Adds decimals to the hundredths place in vertical format (not same number of digits)* • Adds decimals to the thousandths place horizontally with and without regrouping • Finds equivalent combinations of dollars and cents with the same value* • Subtracts decimals to the hundredths place (same number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically,	• Adds fractions with unlike denominators without reducing • Adds mixed fractions with like denominators • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)* • Subtracts simple fractions with unlike denominators without reducing (e.g., halves, quarters, thirds, eighths)* • Subtracts fractions with unlike denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts mixed fractions with unlike denominators with no regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Adds decimals to the hundredths place in horizontal format (not same number of digits) • Adds decimals to the thousandths place horizontally with and without regrouping • Adds decimals through the hundred-thousandths place • Subtracts decimals to the thousandths place, vertically, with the zero missing in the ones place* • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Computes the value of multiple bills and coins (addition/subtraction only)* • Analyzes and computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)* • Computes addition and subtraction on multiple-step real-world problems involving money

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• Adds decimals to the thousandths place vertically with and without regrouping • Identifies the value of a collection of coins to $1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to $10.00 by "counting on" (without picture of money) • Identifies the value of a collection of coins and bills to $100.00 by "counting on"* • Finds equivalent combinations of coins with the same value* • Finds equivalent combinations of dollars and cents with the same value* • Subtracts decimals to the hundredths place (same number of digits) without regrouping • Subtracts decimals to the hundredths place (same number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Makes change to $1.00 by "counting on" or subtracting • Solves real-world problems involving decimals (not money) using addition and subtraction • Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)	with and without regrouping • Subtracts decimals through the hundred-thousandths place, vertically* • Computes the value of multiple bills and coins (addition/subtraction only)* • Computes addition and subtraction on multiple-step real-world problems involving money	
Number Operations - Multiplication, Division	**Number Operations - Multiplication, Division**	**Number Operations - Multiplication, Division**
• Analyzes another student's explanation to understand more difficult problems* • Restates the problem in own words* • Selects the information necessary to solve a simple problem and determines whether any further information is needed • Draws pictures to represent whole number problems* • Determines the operation needed from a simple problem* • Determines the operation needed to solve a real-world problem • Translates from a diagram to an expression or equation* • Uses a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized	• Analyzes another student's explanation to understand more difficult problems* • Restates the problem in own words* • Selects the information necessary to solve a simple problem and determines whether any further information is needed • Draws pictures to represent whole number problems* • Uses manipulatives to represent problems* • Writes a number sentence for a simple problem solving situation (analysis) • Determines the operation needed to solve a real-world problem • Translates a number sentence to a real-world situation* • Uses a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized	• Analyzes another student's explanation to understand complex problems* • Restates the problem from various perspectives* • Determines the required information for solving a difficult problem and whether any further information is needed* • Determines the additional information required to solve problems* • Uses pictures to represent problems* • Uses diagrams to represent problems • Determines the operation needed from a complex problem* • Applies a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process

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list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Uses a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Multiplies a 2- or 3-digit number by a 1-digit number with no regrouping • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 3-digit number by a 2-digit number with no regrouping • Performs mental computation with multiplication • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Uses repeated subtraction for division* • Instantly recalls division facts with dividend and divisors less than 10 • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 2-digit number by a 1-digit number with no remainder • Uses strategies to determine 1 missing digit (multiplication/division only) • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)*	list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Uses manipulatives and models to demonstrate thinking processes* • Solves real-world problems using reasoning strategies • Uses a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Uses a number line to model multiplication (whole numbers)* • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies multiple 1-digit numbers • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 2-digit number by a 2-digit number with regrouping • Multiplies a 3-digit number by a 2-digit number with regrouping • Performs mental computation with multiplication • Multiplies a 2- or 3-digit number by multiples of 10 or 100 • Multiplies a 3-digit number by a 3-digit number • Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 1-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 1-digit number with no remainder • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division	of elimination, uses trial and error, works backwards, uses models)* • Uses manipulatives and models to demonstrate thinking processes* • Solves real-world problems using reasoning strategies • Applies a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Uses number sense strategies to solve problems (multiplication/division)* • Evaluates number sense strategies used to solve problems* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 2-digit number with regrouping • Multiplies a 3-digit number by a 2-digit number with regrouping • Performs mental computation with multiplication • Multiplies a 3-digit number by a 3-digit number • Multiplies a 4- or more digit number by multiples of 100 or 1000 • Multiplies multiple-digit numbers • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division • Divides a 4-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 3-digit number by a 2-digit number • Divides a 4-digit number by a 2-digit number • Solves problems using the inverse relationship between multiplication and division • Divides a whole number by a whole number and expresses the remainder as a decimal* • Divides multiple-digit numbers • Uses strategies to determine 2 or more missing digits (multiplication/division only)* • Solves whole number word problems with division

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	• Divides a 3-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 2-digit number with a remainder • Divides a 3-digit number by a multiple of 10 • Divides a 4-digit number by a 2-digit number • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)* • Solves whole number word problems with division over 10 x 10	over 10 x 10 • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor)
Properties	**Properties**	**Properties**
• Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the zero property of multiplication • Demonstrates an understanding of the multiplicative property of 1 (identity)	• Demonstrates an understanding of the associative property of addition* • Demonstrates an understanding of the commutative property of addition • Demonstrates an understanding of the zero property of addition (identity) • Demonstrates an understanding of symmetric property applied to basic addition and subtraction facts (e.g., 10 = 2 + 8 is the same as 2 + 8 = 10 or 7 = 10 - 3 is the same as 10 - 3 = 7)* • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of symmetric property applied to multiplication (e.g., 8 x 4 = 32 is the same as 32 = 8 x 4)* • Recognizes multiplication and division fact families*	• Demonstrates an understanding of the inverse relationship between addition and subtraction • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the associative property of multiplication • Demonstrates an understanding of the distributive property of multiplication by decomposing a term* • Recognizes multiplication and division fact families*
Estimation	**Estimation**	**Estimation**
• Verifies reasonableness of results of simple problems* • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with addition and subtraction (whole numbers only)* • Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)* • Uses rounding to estimate answers to addition and	• Verifies reasonableness of results of simple problems* • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand • Rounds whole numbers to the nearest hundred thousand • Explains the rules for rounding*	• Verifies reasonableness of results of more difficult problems* • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten thousand • Rounds decimals to the nearest whole number* • Rounds decimals to the nearest tenth

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subtraction problems (whole numbers only) • Uses rounding to estimate answers to 1-step problems involving answers less than $1 (whole numbers only, e.g., 10 cents + 10 cents)* • Uses rounding to estimate answers to 1-step problems involving answers less than $20 (decimals only, e.g., $1.20 + $2.75)	• Rounds decimals to the nearest whole number* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only)* • Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)* • Uses front end estimation for multiplication and division computations (whole numbers only)* • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only) • Uses rounding to estimate answers to simple multiplication and division problems (whole numbers only) • Uses rounding to estimate answers to 1-step problems involving answers $20 or greater (using decimals)* • Uses rounding to estimate answers to 2-step problems involving money (whole numbers only)* • Uses rounding to estimate answers to 2-step problems involving money (using decimals)	• Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)* • Uses rounding to estimate answers to difficult multiplication and division problems (whole numbers only) • Uses rounding to estimate answers to 1-step problems involving answers $20 or greater (using decimals)* • Uses rounding to estimate answers to 2-step problems involving money (using decimals) • Uses referent numbers to estimate answers when adding and subtracting fractions and mixed numbers* • Predicts the relative size of the answer when adding whole numbers* • Predicts the relative size of the answer when subtracting whole numbers* • Predicts the relative size of the answer when computing with 10's, 100's, 1000's • Predicts the relative size of the answer when multiplying whole numbers
Ratios, Proportions, and Percents	**Ratios, Proportions, and Percents**	**Ratios, Proportions, and Percents**
• Writes the missing number in a proportion using basic facts • Solves problems involving basic percent concepts (e.g., 10%, 50%, 100%)	• Writes the missing number in a proportion using basic facts	• Uses concrete and pictorial models to represent proportions* • Recognizes and writes proportions* • Identifies the percent represented in a 2-D region* • Solves problems involving equivalent fractions* • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%)
New Vocabulary: billion, capacity, deposit, hundred million, hundredths, longer, operation, quintillion, regroup, rename, standard numeral, symbol, thousands, trillion, zero	*New Vocabulary:* annual, biggest, column, common multiple, compatible numbers, expanded numeral, hundred thousands, hundredth, inverse operation, kilowatt, magic square, mathematical statement, mixed number, multiple, place value, remainder, ten thousands, twice	*New Vocabulary:* coin, decimal, decimal form, decimal point, factor tree, negative, positive, proof, region, smaller, south, standard form
New Signs and Symbols: a.m., ≈ approximately equal to, °F Degrees Fahrenheit, ft feet, ≥ greater than or equal to, ≤ less than or equal to, oz ounce, % percent, R remainder,	*New Signs and Symbols:* ? a variable, □ missing operation, − negative number, ∅ null or empty set	*New Signs and Symbols:* $ dollar sign, in. inch, mph miles per hour, ≠ not equal to

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Subject: Mathematics
Goal Strand: Number Sense
RIT Score Range: 211 - 220

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
Read, Write, and Represent Numbers	**Read, Write, and Represent Numbers**	**Read, Write, and Represent Numbers**
• Identifies whole numbers over 999 using base-10 blocks* • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the numeral and written name for whole numbers over 100,000 • Writes equivalent forms of whole numbers using place value (e.g., 54 = 4 tens and 14 ones) • Identifies the place value and value of each digit in whole numbers through the billions • Writes whole numbers in standard and expanded form through the hundred thousands • Applies base ten place value concepts with whole numbers to solve problems • Writes whole numbers using place value terms and vice versa • Identifies halves of a region using nonadjacent parts • Converts a basic fractional numeral to lowest terms (e.g., halves, thirds, quarters)* • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • Identifies the place value and value of each digit to the tenths* • Writes a terminating decimal as a fraction or mixed number • Writes a number "squared" in factored form*	• Identifies whole numbers 100 - 999 using 2-D and 3-D models* • Identifies whole numbers over 999 using 2- and 3-D models* • Writes whole numbers in standard and expanded form through the hundred thousands • Writes improper fractions and mixed numbers from a visual representation* • Identifies a fractions in lowest terms from a region or set • Identifies eighths, reduced to lowest terms, from a region or set • Expresses "1" in many different ways (e.g., 3/3, 4/4)* • Expresses improper fractions as whole numbers (e.g., 4/2=2)* • Determines simple equivalent fractions using multiples • Converts fractions to lowest terms • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers)* • Represents a decimal to the hundredths place (e.g., three hundredths = 0.03) • Writes a decimal for a shaded region to the tenths place* • Identifies the place value and value of each digit to the tenths* • Applies base ten place value concepts to solve problems using decimals (analysis)* • Expresses a simple fraction as a decimal • Writes a simple mixed fraction as a decimal and vice versa • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10	• Writes equivalent forms of whole numbers using place value (numbers 100 or greater) (e.g., 253 = 2 hundreds, 5 tens, and 3 ones) • Writes whole numbers in standard and exponential form • Identifies a fractions in lowest terms from a region or set • Determines simple equivalent fractions using multiples • Determines equivalent fractions using multiples • Uses alternative algorithms to explain the meaning of "fraction"* • Represents a decimal to thousandths place (e.g., three thousandths = 0.003) • Represents a decimal to the hundred thousandths place - (e.g., three hundred thousandths = 0. 00003)* • Writes a decimal for a shaded region to the hundredths place • Identifies the place value and value of each digit to the hundredths and thousandths • Identifies the place value and value of each digit in numbers through the ten thousandths and beyond • Writes a simple mixed fraction as a decimal and vice versa • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 • Writes a ratio as a decimal and vice versa* • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa* • Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction)* • Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2) • Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000) • Uses powers to represent 10, 100, 1000, 10,000, and

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	• Writes a basic percent as a fraction and vice versa (e.g., 10%, 25%, 50%, 100%)* • Expresses a percent as a fraction with 100 as the denominator and vice versa • Writes a basic percent as a decimal and vice versa* • Expresses a percent as a decimal and vice versa • Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2) • Uses powers to represent 10, 100, 1000, 10,000, and 100,000	100,000
Order and Compare Numbers and Number Line	**Order and Compare Numbers and Number Line**	**Order and Compare Numbers and Number Line**
• Compares whole numbers through 999,999 • Compares whole numbers through the billions using the symbols <, >, or =* • Orders whole numbers less than 10,000 • Orders whole numbers a million or greater • Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10)	• Compares fractions on a number line • Compares fractions greater than or less than a given fraction using visual representations • Compares fractions and mixed numbers • Compares fractions and mixed numbers using symbols	• Determines the relative magnitude of whole numbers* • Orders whole numbers a million or greater using < or > symbols* • Compares fractions (e.g., comparing numerators and denominators) • Orders fractions on a number line* • Compares and orders decimals to the hundredths place (not same number of digits after decimal)* • Compares and orders decimals to the thousandths place (not same number of digits after decimal) • Compares and orders decimals past the thousandths place* • Orders fractions and decimals to the hundred thousandths
Classifications of Numbers	**Classifications of Numbers**	**Classifications of Numbers**
• Identifies a whole number that comes before and/or after a given number (over 100)* • Determines multiples of a whole number* • Determines common multiples of whole numbers*	• Recognizes characteristics of odd and even numbers • Determines factors of whole numbers • Completes a factor tree for a number (prime factorization)* • Determines multiples of a whole number* • Determines common multiples of whole numbers*	• Recognizes characteristics of odd and even numbers • Determines factors of whole numbers • Completes a factor tree for a number (prime factorization)* • Uses multiple number theory concepts to solve problems (e.g., factors, digits, odd/even, divisibility) • Determines common denominators of fractions • Uses factor and multiple concepts to solve simple problems
Number Operations - Addition, Subtraction	**Number Operations - Addition, Subtraction**	**Number Operations - Addition, Subtraction**
• Solves problems using ordinal numbers* • Uses number sense strategies to solve problems (addition/subtraction only) • Instantly recalls basic addition facts with sums to 18 in a table* • Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only)	• Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Adds fractions with like denominators without	• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds fractions with unlike denominators with

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• Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Performs mental computation with more than 4 addends • Solves real-world whole number addition problems with sums to 100 (start unknown)* • Adds and subtracts whole numbers using place value • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers 1000 and over • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis) • Solves whole number subtraction word problems with numbers over 1000 • Identifies the missing symbol to compare 2 expressions (e.g., < or >) • Identifies the missing operation symbol - 2-step number sentence* • Adds fractions with like denominators without reducing • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)* • Adds whole numbers and fractions • Uses models to add and subtract fractions and connect the actions to algorithms* • Subtracts fractions with like denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions* • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Adds decimals to the hundredths place in vertical format (not same number of digits)* • Adds decimals to the thousandths place horizontally with and without regrouping • Finds equivalent combinations of dollars and cents with the same value*	reducing • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds mixed fractions with like denominators • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)* • Subtracts simple fractions with unlike denominators without reducing (e.g., halves, quarters, thirds, eighths)* • Subtracts fractions with unlike denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts mixed fractions with unlike denominators with no regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Adds decimals to the hundredths place in horizontal format (not same number of digits) • Adds decimals to the thousandths place horizontally with and without regrouping • Adds decimals through the hundred-thousandths place • Subtracts decimals to the thousandths place, vertically, with the zero missing in the ones place* • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Computes the value of multiple bills and coins (addition/subtraction only)* • Analyzes and computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)* • Computes addition and subtraction on multiple-step real-world problems involving money	reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper fractions is necessary • Subtracts fractions with like denominators with reducing • Subtracts fractions with unlike denominators without reducing • Subtracts fractions with unlike denominators with reducing* • Subtracts mixed fractions with unlike denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Adds decimals to the hundredths place in horizontal format (not same number of digits) • Adds decimals through the hundred-thousandths place • Subtracts decimals to the hundredths place (not same number of digits) • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Subtracts decimals through the hundred-thousandths place, horizontally • Subtracts a decimal from a whole number, horizontally

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• Subtracts decimals to the hundredths place (same number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Subtracts decimals through the hundred-thousandths place, vertically* • Computes the value of multiple bills and coins (addition/subtraction only)* • Computes addition and subtraction on multiple-step real-world problems involving money		
Number Operations - Multiplication, Division	**Number Operations - Multiplication, Division**	**Number Operations - Multiplication, Division**
• Analyzes another student's explanation to understand more difficult problems* • Restates the problem in own words* • Selects the information necessary to solve a simple problem and determines whether any further information is needed • Draws pictures to represent whole number problems* • Uses manipulatives to represent problems* • Writes a number sentence for a simple problem solving situation (analysis) • Determines the operation needed to solve a real-world problem • Translates a number sentence to a real-world situation* • Uses a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Uses manipulatives and models to demonstrate thinking processes* • Solves real-world problems using reasoning strategies • Uses a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Uses a number line to model multiplication (whole numbers)* • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 1-digit number with regrouping	• Analyzes another student's explanation to understand complex problems* • Restates the problem from various perspectives* • Determines the required information for solving a difficult problem and whether any further information is needed* • Determines the additional information required to solve problems* • Uses pictures to represent problems* • Uses diagrams to represent problems • Determines the operation needed from a complex problem* • Applies a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Uses manipulatives and models to demonstrate thinking processes* • Solves real-world problems using reasoning strategies • Applies a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Uses number sense strategies to solve problems (multiplication/division)* • Evaluates number sense strategies used to solve problems* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 2-digit number with regrouping • Multiplies a 3-digit number by a 2-digit number with	• Analyzes another student's explanation to understand complex problems* • Restates the problem from various perspectives* • Identifies the question from a problem solving situation • Determines the required information for solving a difficult problem and whether any further information is needed* • Determines the additional information required to solve problems* • Uses pictures to represent problems* • Applies a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Organizes information from a paragraph to solve a problem* • Applies what was learned to a new and/or more complex problem* • Solves real-world problems using reasoning strategies • Applies a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Uses number sense strategies to judge the reasonableness of given answers (multiplication/division only) • Uses multiplication strategies to explain computation (e.g., doubles, 9-patterns, decomposing, partial products)* • Multiplies multiple-digit numbers • Models algorithms using place value concepts

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• Multiplies a 3- or 4-digit number by a 1-digit number • Multiplies multiple 1-digit numbers • Multiplies a 2-digit number by a 2-digit number with no regrouping* • Multiplies a 2-digit number by a 2-digit number with regrouping • Multiplies a 3-digit number by a 2-digit number with regrouping • Performs mental computation with multiplication • Multiplies a 2- or 3-digit number by multiples of 10 or 100 • Multiplies a 3-digit number by a 3-digit number • Solves word problems involving whole number multiplication with numbers greater than 10 x 10 • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Instantly recalls division facts with dividend and divisors less than 13 • Divides a 1-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 1-digit number with no remainder • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division • Divides a 3-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 2-digit number by a 2-digit number with a remainder • Divides a 3-digit number by a multiple of 10 • Divides a 4-digit number by a 2-digit number • Solves word problems with whole number division facts with dividend and divisors less than 11 • Solves simple word problems involving whole number division with remainder (e.g., 1-step, 1-digit divisor)* • Solves whole number word problems with division over 10 x 10	regrouping • Performs mental computation with multiplication • Multiplies a 3-digit number by a 3-digit number • Multiplies a 4- or more digit number by multiples of 100 or 1000 • Multiplies multiple-digit numbers • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division • Divides a 4-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 3-digit number by a 2-digit number • Divides a 4-digit number by a 2-digit number • Solves problems using the inverse relationship between multiplication and division • Divides a whole number by a whole number and expresses the remainder as a decimal* • Divides multiple-digit numbers • Uses strategies to determine 2 or more missing digits (multiplication/division only)* • Solves whole number word problems with division over 10 x 10 • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor)	(multiplication and division with whole numbers)* • Divides a 4-digit number by a 2-digit number • Divides multiple-digit numbers • Divides numbers by powers of 10* • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) • Uses division for multiple-step real-world problems (whole numbers)*
Properties	**Properties**	**Properties**
• Demonstrates an understanding of the associative	• Demonstrates an understanding of the inverse	• Demonstrates an understanding of the commutative

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property of addition* • Demonstrates an understanding of the commutative property of addition • Demonstrates an understanding of the zero property of addition (identity) • Demonstrates an understanding of symmetric property applied to basic addition and subtraction facts (e.g., 10 = 2 + 8 is the same as 2 + 8 = 10 or 7 = 10 - 3 is the same as 10 - 3 = 7)* • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of symmetric property applied to multiplication (e.g., 8 x 4 = 32 is the same as 32 = 8 x 4)* • Recognizes multiplication and division fact families*	relationship between addition and subtraction • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the associative property of multiplication • Demonstrates an understanding of the distributive property of multiplication by decomposing a term* • Recognizes multiplication and division fact families*	property of multiplication with complex problems (e.g., parenthesis, 3 factors) • Demonstrates an understanding of multiple properties
Estimation	**Estimation**	**Estimation**
• Verifies reasonableness of results of simple problems* • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand • Rounds whole numbers to the nearest hundred thousand • Explains the rules for rounding* • Rounds decimals to the nearest whole number* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only)* • Uses front end digits to estimate answers in addition and subtraction computations (whole numbers only)* • Uses front end estimation for multiplication and division computations (whole numbers only)* • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only) • Uses rounding to estimate answers to simple multiplication and division problems (whole numbers only) • Uses rounding to estimate answers to 1-step problems involving answers $20 or greater (using decimals)* • Uses rounding to estimate answers to 2-step problems involving money (whole numbers only)* • Uses rounding to estimate answers to 2-step problems	• Verifies reasonableness of results of more difficult problems* • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten thousand • Rounds decimals to the nearest whole number* • Rounds decimals to the nearest tenth • Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)* • Uses rounding to estimate answers to difficult multiplication and division problems (whole numbers only) • Uses rounding to estimate answers to 1-step problems involving answers $20 or greater (using decimals)* • Uses rounding to estimate answers to 2-step problems involving money (using decimals) • Uses referent numbers to estimate answers when adding and subtracting fractions and mixed numbers*	• Verifies reasonableness of results of more difficult problems* • Rounds whole numbers to the nearest million* • Rounds wholes numbers to the nearest billion* • Rounds decimals to the nearest hundredth • Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving fractions and mixed numbers* • Uses estimation to solve problems involving fractions and mixed numbers • Predicts the relative size of the answer when adding whole numbers* • Predicts the relative size of the answer when subtracting whole numbers* • Predicts the relative size of the answer when dividing whole numbers

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involving money (using decimals)	• Predicts the relative size of the answer when adding whole numbers* • Predicts the relative size of the answer when subtracting whole numbers* • Predicts the relative size of the answer when computing with 10's, 100's, 1000's • Predicts the relative size of the answer when multiplying whole numbers	
Ratios, Proportions, and Percents	**Ratios, Proportions, and Percents**	**Ratios, Proportions, and Percents**
• Writes the missing number in a proportion using basic facts	• Uses concrete and pictorial models to represent proportions* • Recognizes and writes proportions* • Identifies the percent represented in a 2-D region* • Solves problems involving equivalent fractions* • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%)	• Uses concrete and pictorial models to represent ratios* • Writes the missing number in a proportion with numbers other than basic facts (e.g., 5/13=?/117) • Identifies the percent represented in a given model* • Solves problems involving ratios • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%) • Calculates a percent of a number (e.g., 6% of 30) • Calculates a number from a percent (e.g., 4 is 9% of what) • Adds and subtracts percent • Solves problems involving percents • Solves problems involving tax and tips • Solves problems involving simple interest rates with the formula • Solves problems comparing percents, fractions, and decimals*
New Vocabulary: annual, biggest, column, common multiple, compatible numbers, expanded numeral, hundred thousands, hundredth, inverse operation, kilowatt, magic square, mathematical statement, mixed number, multiple, place value, remainder, ten thousands, twice	*New Vocabulary:* coin, decimal, decimal form, decimal point, factor tree, negative, positive, proof, region, smaller, south, standard form	*New Vocabulary:* borrow, common denominator, compute, expanded notation, exponent, heaviest, least common denominator, lightest, lowest common denominator, odd, tax, ten million, ten thousandth, tenths, thousandths
New Signs and Symbols: ? a variable, □ missing operation, − negative number, ∅ null or empty set	*New Signs and Symbols:* $ dollar sign, in. inch, mph miles per hour, ≠ not equal to	*New Signs and Symbols:* I interest, m meter/metre, • multiplication symbol (dot), # number, : ratio, × multiplication, = is equal to, > greater than

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Subject: Mathematics
Goal Strand: Number Sense
RIT Score Range: 221 - 230

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
Read, Write, and Represent Numbers	**Read, Write, and Represent Numbers**	**Read, Write, and Represent Numbers**
• Identifies whole numbers 100 - 999 using 2-D and 3-D models* • Identifies whole numbers over 999 using 2- and 3-D models* • Writes whole numbers in standard and expanded form through the hundred thousands • Writes improper fractions and mixed numbers from a visual representation* • Identifies a fractions in lowest terms from a region or set • Identifies eighths, reduced to lowest terms, from a region or set • Expresses "1" in many different ways (e.g., 3/3, 4/4)* • Expresses improper fractions as whole numbers (e.g., 4/2=2)* • Determines simple equivalent fractions using multiples • Converts fractions to lowest terms • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers)* • Represents a decimal to the hundredths place (e.g., three hundredths = 0.03) • Writes a decimal for a shaded region to the tenths place* • Identifies the place value and value of each digit to the tenths* • Applies base ten place value concepts to solve problems using decimals (analysis)* • Expresses a simple fraction as a decimal • Writes a simple mixed fraction as a decimal and vice versa • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10	• Writes equivalent forms of whole numbers using place value (numbers 100 or greater) (e.g., 253 = 2 hundreds, 5 tens, and 3 ones) • Writes whole numbers in standard and exponential form • Identifies a fractions in lowest terms from a region or set • Determines simple equivalent fractions using multiples • Determines equivalent fractions using multiples • Uses alternative algorithms to explain the meaning of "fraction"* • Represents a decimal to thousandths place (e.g., three thousandths = 0.003) • Represents a decimal to the hundred thousandths place - (e.g., three hundred thousandths = 0. 00003)* • Writes a decimal for a shaded region to the hundredths place • Identifies the place value and value of each digit to the hundredths and thousandths • Identifies the place value and value of each digit in numbers through the ten thousandths and beyond • Writes a simple mixed fraction as a decimal and vice versa • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 • Writes a ratio as a decimal and vice versa* • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa* • Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction)* • Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2) • Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000) • Uses powers to represent 10, 100, 1000, 10,000, and	• Writes whole numbers in standard and exponential form • Writes a ratio as a decimal and vice versa* • Writes a fraction as a decimal and vice versa • Writes a fraction as a mixed decimal and vice versa* • Expresses a decimal as a whole number (e.g., 1.3 thousand = ?)* • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa* • Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000) • Uses correct terminology for powers*

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• Writes a basic percent as a fraction and vice versa (e.g., 10%, 25%, 50%, 100%)* • Expresses a percent as a fraction with 100 as the denominator and vice versa • Writes a basic percent as a decimal and vice versa* • Expresses a percent as a decimal and vice versa • Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2) • Uses powers to represent 10, 100, 1000, 10,000, and 100,000	100,000	
Order and Compare Numbers and Number Line	**Order and Compare Numbers and Number Line**	**Order and Compare Numbers and Number Line**
• Compares fractions on a number line • Compares fractions greater than or less than a given fraction using visual representations • Compares fractions and mixed numbers • Compares fractions and mixed numbers using symbols	• Determines the relative magnitude of whole numbers* • Orders whole numbers a million or greater using < or > symbols* • Compares fractions (e.g., comparing numerators and denominators) • Orders fractions on a number line* • Compares and orders decimals to the hundredths place (not same number of digits after decimal)* • Compares and orders decimals to the thousandths place (not same number of digits after decimal) • Compares and orders decimals past the thousandths place* • Orders fractions and decimals to the hundred thousandths	• Compares fractions (e.g., comparing numerators and denominators) • Compares and orders decimal and fractional coordinates on a number line* • Estimates relative magnitude of fractions, decimals, and percents* • Orders fractions, decimals, and percents
Classifications of Numbers	**Classifications of Numbers**	**Classifications of Numbers**
• Recognizes characteristics of odd and even numbers • Determines factors of whole numbers • Completes a factor tree for a number (prime factorization)* • Determines multiples of a whole number* • Determines common multiples of whole numbers*	• Recognizes characteristics of odd and even numbers • Determines factors of whole numbers • Completes a factor tree for a number (prime factorization)* • Uses multiple number theory concepts to solve problems (e.g., factors, digits, odd/even, divisibility) • Determines common denominators of fractions • Uses factor and multiple concepts to solve simple problems	• Determines the prime factorization of a number
Number Operations - Addition, Subtraction	**Number Operations - Addition, Subtraction**	**Number Operations - Addition, Subtraction**
• Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Adds fractions with like denominators without	• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds fractions with unlike denominators with	• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper

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reducing • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds mixed fractions with like denominators • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)* • Subtracts simple fractions with unlike denominators without reducing (e.g., halves, quarters, thirds, eighths)* • Subtracts fractions with unlike denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts mixed fractions with unlike denominators with no regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Adds decimals to the hundredths place in horizontal format (not same number of digits) • Adds decimals to the thousandths place horizontally with and without regrouping • Adds decimals through the hundred-thousandths place • Subtracts decimals to the thousandths place, vertically, with the zero missing in the ones place* • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Computes the value of multiple bills and coins (addition/subtraction only)* • Analyzes and computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)* • Computes addition and subtraction on multiple-step real-world problems involving money	reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper fractions is necessary • Subtracts fractions with like denominators with reducing • Subtracts fractions with unlike denominators without reducing • Subtracts fractions with unlike denominators with reducing* • Subtracts mixed fractions with unlike denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Adds decimals to the hundredths place in horizontal format (not same number of digits) • Adds decimals through the hundred-thousandths place • Subtracts decimals to the hundredths place (not same number of digits) • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Subtracts decimals through the hundred-thousandths place, horizontally • Subtracts a decimal from a whole number, horizontally	fractions is necessary • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary • Subtracts a decimal from a whole number, horizontally
Number Operations - Multiplication, Division	**Number Operations - Multiplication, Division**	**Number Operations - Multiplication, Division**
• Analyzes another student's explanation to understand complex problems* • Restates the problem from various perspectives* • Determines the required information for solving a difficult problem and whether any further information is needed* • Determines the additional information required to	• Analyzes another student's explanation to understand complex problems* • Restates the problem from various perspectives* • Identifies the question from a problem solving situation • Determines the required information for solving a difficult problem and whether any further information	• Uses pictures to represent problems* • Organizes information from a paragraph to solve a problem* • Analyzes complex problems to separate into simpler parts* • Models algorithms using place value concepts (multiplication and division with whole numbers)*

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solve problems* • Uses pictures to represent problems* • Uses diagrams to represent problems • Determines the operation needed from a complex problem* • Applies a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Uses manipulatives and models to demonstrate thinking processes* • Solves real-world problems using reasoning strategies • Applies a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Uses number sense strategies to solve problems (multiplication/division)* • Evaluates number sense strategies used to solve problems* • Instantly recalls basic multiplication and division facts in a table • Multiplies a 2-digit number by a 2-digit number with regrouping • Multiplies a 3-digit number by a 2-digit number with regrouping • Performs mental computation with multiplication • Multiplies a 3-digit number by a 3-digit number • Multiplies a 4- or more digit number by multiples of 100 or 1000 • Multiplies multiple-digit numbers • Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)* • Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder • Performs mental computation with division • Divides a 4-digit number by a 1-digit number with no remainder • Divides a 4-digit number by a 1-digit number with a remainder* • Divides a 3-digit number by a 2-digit number • Divides a 4-digit number by a 2-digit number	is needed* • Determines the additional information required to solve problems* • Uses pictures to represent problems* • Applies a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Organizes information from a paragraph to solve a problem* • Applies what was learned to a new and/or more complex problem* • Solves real-world problems using reasoning strategies • Applies a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for reasonableness* • Uses number sense strategies to judge the reasonableness of given answers (multiplication/division only) • Uses multiplication strategies to explain computation (e.g., doubles, 9-patterns, decomposing, partial products)* • Multiplies multiple-digit numbers • Models algorithms using place value concepts (multiplication and division with whole numbers)* • Divides a 4-digit number by a 2-digit number • Divides multiple-digit numbers • Divides numbers by powers of 10* • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) • Uses division for multiple-step real-world problems (whole numbers)*	• Divides multiple-digit numbers • Uses appropriate algorithms to represent multiplication or division with whole numbers*

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• Solves problems using the inverse relationship between multiplication and division • Divides a whole number by a whole number and expresses the remainder as a decimal* • Divides multiple-digit numbers • Uses strategies to determine 2 or more missing digits (multiplication/division only)* • Solves whole number word problems with division over 10 x 10 • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor)		
Properties	**Properties**	**Properties**
• Demonstrates an understanding of the inverse relationship between addition and subtraction • Demonstrates an understanding of the commutative property of multiplication with simple problems* • Demonstrates an understanding of the associative property of multiplication • Demonstrates an understanding of the distributive property of multiplication by decomposing a term* • Recognizes multiplication and division fact families*	• Demonstrates an understanding of the commutative property of multiplication with complex problems (e.g., parenthesis, 3 factors) • Demonstrates an understanding of multiple properties	
Estimation	**Estimation**	**Estimation**
• Verifies reasonableness of results of more difficult problems* • Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred • Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand • Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten thousand • Rounds decimals to the nearest whole number* • Rounds decimals to the nearest tenth • Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)* • Uses rounding to estimate answers to difficult multiplication and division problems (whole numbers	• Verifies reasonableness of results of more difficult problems* • Rounds whole numbers to the nearest million* • Rounds wholes numbers to the nearest billion* • Rounds decimals to the nearest hundredth • Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving fractions and mixed numbers* • Uses estimation to solve problems involving fractions and mixed numbers • Predicts the relative size of the answer when adding whole numbers* • Predicts the relative size of the answer when	• Verifies reasonableness of results of complex problems* • Rounds decimals to the nearest hundredth • Rounds decimals to nearest thousandth* • Rounds decimals to nearest ten-thousandth* • Uses estimation to solve problems involving decimals • Determines the most accurate answer (fractions only)* • Predicts the relative size of the answer when dividing a smaller whole number by a larger whole number

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only) • Uses rounding to estimate answers to 1-step problems involving answers $20 or greater (using decimals)* • Uses rounding to estimate answers to 2-step problems involving money (using decimals) • Uses referent numbers to estimate answers when adding and subtracting fractions and mixed numbers* • Predicts the relative size of the answer when adding whole numbers* • Predicts the relative size of the answer when subtracting whole numbers* • Predicts the relative size of the answer when computing with 10's, 100's, 1000's • Predicts the relative size of the answer when multiplying whole numbers	subtracting whole numbers* • Predicts the relative size of the answer when dividing whole numbers	
Ratios, Proportions, and Percents	**Ratios, Proportions, and Percents**	**Ratios, Proportions, and Percents**
• Uses concrete and pictorial models to represent proportions* • Recognizes and writes proportions* • Identifies the percent represented in a 2-D region* • Solves problems involving equivalent fractions* • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%)	• Uses concrete and pictorial models to represent ratios* • Writes the missing number in a proportion with numbers other than basic facts (e.g., 5/13=?/117) • Identifies the percent represented in a given model* • Solves problems involving ratios • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%) • Calculates a percent of a number (e.g., 6% of 30) • Calculates a number from a percent (e.g., 4 is 9% of what) • Adds and subtracts percent • Solves problems involving percents • Solves problems involving tax and tips • Solves problems involving simple interest rates with the formula • Solves problems comparing percents, fractions, and decimals*	• Identifies the ratio from a given real-world situation* • Estimates percent using 2-D regions* • Compares and orders percent* • Solves problems involving equivalent fractions (analysis)* • Solves problems involving ratios • Solves multiple-step problems involving proportions • Calculates a percent of a number (e.g., 6% of 30) • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Solves problems involving percents • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving percent increase and decrease* • Solves problems involving tax and tips • Calculates commission/deductions and total pay
New Vocabulary: coin, decimal, decimal form, decimal point, factor tree, negative, positive, proof, region, smaller, south, standard form	*New Vocabulary:* borrow, common denominator, compute, expanded notation, exponent, heaviest, least common denominator, lightest, lowest common denominator, odd, tax, ten million, ten thousandth, tenths, thousandths	*New Vocabulary:* commission, cubed, discount, equality, prime factor, prime factorization, representative sample, square region, tenth power
New Signs and Symbols: $ dollar sign, in. inch, mph miles per hour, ≠ not equal to	*New Signs and Symbols:* I interest, m meter/metre, • multiplication symbol (dot), # number, : ratio, × multiplication, = is equal to, > greater than	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Number Sense
RIT Score Range: 231 - 240

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
Read, Write, and Represent Numbers	**Read, Write, and Represent Numbers**	**Read, Write, and Represent Numbers**
• Writes equivalent forms of whole numbers using place value (numbers 100 or greater) (e.g., 253 = 2 hundreds, 5 tens, and 3 ones) • Writes whole numbers in standard and exponential form • Identifies a fractions in lowest terms from a region or set • Determines simple equivalent fractions using multiples • Determines equivalent fractions using multiples • Uses alternative algorithms to explain the meaning of "fraction"* • Represents a decimal to thousandths place (e.g., three thousandths = 0.003) • Represents a decimal to the hundred thousandths place - (e.g., three hundred thousandths = 0. 00003)* • Writes a decimal for a shaded region to the hundredths place • Identifies the place value and value of each digit to the hundredths and thousandths • Identifies the place value and value of each digit in numbers through the ten thousandths and beyond • Writes a simple mixed fraction as a decimal and vice versa • Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10 • Writes a ratio as a decimal and vice versa* • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa* • Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction)* • Writes a power as a product of multiplied numbers and vice versa (e.g., 2^4 = 2 x 2 x 2 x 2) • Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000) • Uses powers to represent 10, 100, 1000, 10,000, and	• Writes whole numbers in standard and exponential form • Writes a ratio as a decimal and vice versa* • Writes a fraction as a decimal and vice versa • Writes a fraction as a mixed decimal and vice versa* • Expresses a decimal as a whole number (e.g., 1.3 thousand = ?)* • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa* • Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000) • Uses correct terminology for powers*	• Expresses the equivalent form of a fraction, decimal, and/or percent (complex fraction)*

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100,000		
Order and Compare Numbers and Number Line	**Order and Compare Numbers and Number Line**	**Order and Compare Numbers and Number Line**
• Determines the relative magnitude of whole numbers* • Orders whole numbers a million or greater using < or > symbols* • Compares fractions (e.g., comparing numerators and denominators) • Orders fractions on a number line* • Compares and orders decimals to the hundredths place (not same number of digits after decimal)* • Compares and orders decimals to the thousandths place (not same number of digits after decimal) • Compares and orders decimals past the thousandths place* • Orders fractions and decimals to the hundred thousandths	• Compares fractions (e.g., comparing numerators and denominators) • Compares and orders decimal and fractional coordinates on a number line* • Estimates relative magnitude of fractions, decimals, and percents* • Orders fractions, decimals, and percents	
Classifications of Numbers	**Classifications of Numbers**	**Classifications of Numbers**
• Recognizes characteristics of odd and even numbers • Determines factors of whole numbers • Completes a factor tree for a number (prime factorization)* • Uses multiple number theory concepts to solve problems (e.g., factors, digits, odd/even, divisibility) • Determines common denominators of fractions • Uses factor and multiple concepts to solve simple problems	• Determines the prime factorization of a number	• Determines the prime factorization of a number using powers
Number Operations - Addition, Subtraction	**Number Operations - Addition, Subtraction**	**Number Operations - Addition, Subtraction**
• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper fractions is necessary • Subtracts fractions with like denominators with reducing • Subtracts fractions with unlike denominators without reducing	• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper fractions is necessary • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary • Subtracts a decimal from a whole number, horizontally	

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• Subtracts fractions with unlike denominators with reducing* • Subtracts mixed fractions with unlike denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary • Adds decimals to the hundredths place in horizontal format (not same number of digits) • Adds decimals through the hundred-thousandths place • Subtracts decimals to the hundredths place (not same number of digits) • Subtracts decimals to the thousandths place, horizontally, with and without regrouping • Subtracts decimals through the hundred-thousandths place, horizontally • Subtracts a decimal from a whole number, horizontally		
Number Operations - Multiplication, Division	**Number Operations - Multiplication, Division**	**Number Operations - Multiplication, Division**
• Analyzes another student's explanation to understand complex problems* • Restates the problem from various perspectives* • Identifies the question from a problem solving situation • Determines the required information for solving a difficult problem and whether any further information is needed* • Determines the additional information required to solve problems* • Uses pictures to represent problems* • Applies a variety of problem solving strategies (e.g., draws a picture, looks for patterns, makes a table or organized list, makes a problem simpler, uses process of elimination, uses trial and error, works backwards, uses models)* • Organizes information from a paragraph to solve a problem* • Applies what was learned to a new and/or more complex problem* • Solves real-world problems using reasoning strategies • Applies a problem solving model that incorporates understanding the problem, making a plan, carrying out the plan, and evaluating the solution for	• Uses pictures to represent problems* • Organizes information from a paragraph to solve a problem* • Analyzes complex problems to separate into simpler parts* • Models algorithms using place value concepts (multiplication and division with whole numbers)* • Divides multiple-digit numbers • Uses appropriate algorithms to represent multiplication or division with whole numbers*	• Uses reasoning strategies to solve problems*

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reasonableness* • Uses number sense strategies to judge the reasonableness of given answers (multiplication/division only) • Uses multiplication strategies to explain computation (e.g., doubles, 9-patterns, decomposing, partial products)* • Multiplies multiple-digit numbers • Models algorithms using place value concepts (multiplication and division with whole numbers)* • Divides a 4-digit number by a 2-digit number • Divides multiple-digit numbers • Divides numbers by powers of 10* • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) • Uses division for multiple-step real-world problems (whole numbers)*		
Properties	**Properties**	**Properties**
• Demonstrates an understanding of the commutative property of multiplication with complex problems (e.g., parenthesis, 3 factors) • Demonstrates an understanding of multiple properties		
Estimation	**Estimation**	**Estimation**
• Verifies reasonableness of results of more difficult problems* • Rounds whole numbers to the nearest million* • Rounds wholes numbers to the nearest billion* • Rounds decimals to the nearest hundredth • Uses rounding to estimate answers to real-world problems involving multiplication and division of numbers less than 100 (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater using multiplication and division (whole numbers only)* • Uses rounding to estimate answers to real-world problems involving fractions and mixed numbers* • Uses estimation to solve problems involving fractions and mixed numbers • Predicts the relative size of the answer when adding whole numbers*	• Verifies reasonableness of results of complex problems* • Rounds decimals to the nearest hundredth • Rounds decimals to nearest thousandth* • Rounds decimals to nearest ten-thousandth* • Uses estimation to solve problems involving decimals • Determines the most accurate answer (fractions only)* • Predicts the relative size of the answer when dividing a smaller whole number by a larger whole number	• Verifies reasonableness of results of complex problems* • Uses estimation to solve problems involving decimals

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• Predicts the relative size of the answer when subtracting whole numbers* • Predicts the relative size of the answer when dividing whole numbers		
Ratios, Proportions, and Percents	**Ratios, Proportions, and Percents**	**Ratios, Proportions, and Percents**
• Uses concrete and pictorial models to represent ratios* • Writes the missing number in a proportion with numbers other than basic facts (e.g., 5/13=?/117) • Identifies the percent represented in a given model* • Solves problems involving ratios • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%) • Calculates a percent of a number (e.g., 6% of 30) • Calculates a number from a percent (e.g., 4 is 9% of what) • Adds and subtracts percent • Solves problems involving percents • Solves problems involving tax and tips • Solves problems involving simple interest rates with the formula • Solves problems comparing percents, fractions, and decimals*	• Identifies the ratio from a given real-world situation* • Estimates percent using 2-D regions* • Compares and orders percent* • Solves problems involving equivalent fractions (analysis)* • Solves problems involving ratios • Solves multiple-step problems involving proportions • Calculates a percent of a number (e.g., 6% of 30) • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Solves problems involving percents • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving percent increase and decrease* • Solves problems involving tax and tips • Calculates commission/deductions and total pay	• Identifies the ratio from a given real-world situation* • Solves multiple-step problems involving proportions • Solves problems involving a fractional increase* • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Calculates a percent of a rational number (e.g., 6% of 0.78) • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)* • Calculates commission/deductions and total pay • Solves problems involving simple interest rates without the formula
New Vocabulary: borrow, common denominator, compute, expanded notation, exponent, heaviest, least common denominator, lightest, lowest common denominator, odd, tax, ten million, ten thousandth, tenths, thousandths	*New Vocabulary:* commission, cubed, discount, equality, prime factor, prime factorization, representative sample, square region, tenth power	*New Vocabulary:* none
New Signs and Symbols: I interest, m meter/metre, • multiplication symbol (dot), # number, : ratio, × multiplication, = is equal to, > greater than	*New Signs and Symbols:* none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Number Sense
RIT Score Range: 241 - 250

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop 241 - 250	Skills and Concepts to Introduce Above 250
Read, Write, and Represent Numbers	**Read, Write, and Represent Numbers**	**Read, Write, and Represent Numbers**
• Writes whole numbers in standard and exponential form • Writes a ratio as a decimal and vice versa* • Writes a fraction as a decimal and vice versa • Writes a fraction as a mixed decimal and vice versa* • Expresses a decimal as a whole number (e.g., 1.3 thousand = ?)* • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa* • Uses powers of 10 to represent numbers (e.g., 8 x 10^3 = 8000) • Uses correct terminology for powers*	• Expresses the equivalent form of a fraction, decimal, and/or percent (complex fraction)*	• Expresses a percent over 100 or under 1 as a fraction in lowest terms and vice versa*
Order and Compare Numbers and Number Line	**Order and Compare Numbers and Number Line**	**Order and Compare Numbers and Number Line**
• Compares fractions (e.g., comparing numerators and denominators) • Compares and orders decimal and fractional coordinates on a number line* • Estimates relative magnitude of fractions, decimals, and percents* • Orders fractions, decimals, and percents		
Classifications of Numbers	**Classifications of Numbers**	**Classifications of Numbers**
• Determines the prime factorization of a number	• Determines the prime factorization of a number using powers	
Number Operations - Addition, Subtraction	**Number Operations - Addition, Subtraction**	**Number Operations - Addition, Subtraction**
• Models algorithms using place value concepts (addition and subtraction with whole numbers)* • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds whole numbers, fractions, and mixed fractions without reducing • Adds mixed fractions where converting from improper fractions is necessary • Subtracts whole numbers, fractions, and mixed fractions with regrouping • Solves real-world problems involving addition and		

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subtraction of fractions where converting both denominators is necessary • Subtracts a decimal from a whole number, horizontally		
Number Operations - Multiplication, Division	**Number Operations - Multiplication, Division**	**Number Operations - Multiplication, Division**
• Uses pictures to represent problems* • Organizes information from a paragraph to solve a problem* • Analyzes complex problems to separate into simpler parts* • Models algorithms using place value concepts (multiplication and division with whole numbers)* • Divides multiple-digit numbers • Uses appropriate algorithms to represent multiplication or division with whole numbers*	• Uses reasoning strategies to solve problems*	• Uses reasoning strategies to solve problems*
Properties	**Properties**	**Properties**
Estimation	**Estimation**	**Estimation**
• Verifies reasonableness of results of complex problems* • Rounds decimals to the nearest hundredth • Rounds decimals to nearest thousandth* • Rounds decimals to nearest ten-thousandth* • Uses estimation to solve problems involving decimals • Determines the most accurate answer (fractions only)* • Predicts the relative size of the answer when dividing a smaller whole number by a larger whole number	• Verifies reasonableness of results of complex problems* • Uses estimation to solve problems involving decimals	• Verifies reasonableness of results of complex problems*
Ratios, Proportions, and Percents	**Ratios, Proportions, and Percents**	**Ratios, Proportions, and Percents**
• Identifies the ratio from a given real-world situation* • Estimates percent using 2-D regions* • Compares and orders percent* • Solves problems involving equivalent fractions (analysis)* • Solves problems involving ratios • Solves multiple-step problems involving proportions • Calculates a percent of a number (e.g., 6% of 30) • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Solves problems involving percents • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving percent increase and decrease*	• Identifies the ratio from a given real-world situation* • Solves multiple-step problems involving proportions • Solves problems involving a fractional increase* • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Calculates a percent of a rational number (e.g., 6% of 0.78) • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)* • Calculates commission/deductions and total pay • Solves problems involving simple interest rates without the formula	• Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)*

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• Solves problems involving tax and tips • Calculates commission/deductions and total pay		
New Vocabulary: commission, cubed, discount, equality, prime factor, prime factorization, representative sample, square region, tenth power	*New Vocabulary:* none	*New Vocabulary:* none
New Signs and Symbols: none	*New Signs and Symbols:* none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Number Sense
RIT Score Range: Above 250

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop Above 250
Read, Write, and Represent Numbers	**Read, Write, and Represent Numbers**
• Expresses the equivalent form of a fraction, decimal, and/or percent (complex fraction)*	• Expresses a percent over 100 or under 1 as a fraction in lowest terms and vice versa*
Order and Compare Numbers and Number Line	**Order and Compare Numbers and Number Line**
Classifications of Numbers	**Classifications of Numbers**
• Determines the prime factorization of a number using powers	
Number Operations - Addition, Subtraction	**Number Operations - Addition, Subtraction**
Number Operations - Multiplication, Division	**Number Operations - Multiplication, Division**
• Uses reasoning strategies to solve problems*	• Uses reasoning strategies to solve problems*
Properties	**Properties**
Estimation	**Estimation**
• Verifies reasonableness of results of complex problems* • Uses estimation to solve problems involving decimals	• Verifies reasonableness of results of complex problems*
Ratios, Proportions, and Percents	**Ratios, Proportions, and Percents**
• Identifies the ratio from a given real-world situation* • Solves multiple-step problems involving proportions • Solves problems involving a fractional increase* • Calculates the percent one number is of another (e.g., 20 is what % of 90) • Calculates a percent of a rational number (e.g., 6% of 0.78) • Solves problems involving percents (analysis) • Solves problems involving simple percent discounts (e.g., finding sale price) • Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)* • Calculates commission/deductions and total pay • Solves problems involving simple interest rates without the formula	• Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)*
New Vocabulary: none	*New Vocabulary:* none

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New Signs and Symbols: none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: Below 161

Skills and Concepts to Develop Below 161	Skills and Concepts to Introduce 161 - 170
Elapsed Time, Measurement Tools, and Estimation	**Elapsed Time, Measurement Tools, and Estimation**
• Compares objects (wider, narrower)* • Compares objects (taller, shorter)* • Identifies time of day (e.g., morning, afternoon)*	• Compares objects (shorter, longer) • Estimates and measures length of an object to the nearest inch using a picture of a ruler* • Measures length with customary measures to the inch mark* • Measures length with metric measures to the centimeter mark • Orders periods of time (days of the week)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Reads a calendar - no computation required
Area, Perimeter, and Circumference	**Area, Perimeter, and Circumference**
Volume and Surface Area	**Volume and Surface Area**
Conversions, Indirect Measurements, Scale Drawings	**Conversions, Indirect Measurements, Scale Drawings**
New Vocabulary: tallest	*New Vocabulary:* centimeter, longest, shortest, tall, time
New Signs and Symbols: : used with time	*New Signs and Symbols:* cm centimeter/centimetre, ft feet, • point

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 161 - 170

Skills and Concepts to Enhance Below 161	Skills and Concepts to Develop 161 - 170	Skills and Concepts to Introduce 171 - 180
Elapsed Time, Measurement Tools, and Estimation	**Elapsed Time, Measurement Tools, and Estimation**	**Elapsed Time, Measurement Tools, and Estimation**
• Compares objects (wider, narrower)* • Compares objects (taller, shorter)* • Identifies time of day (e.g., morning, afternoon)*	• Compares objects (shorter, longer) • Estimates and measures length of an object to the nearest inch using a picture of a ruler* • Measures length with customary measures to the inch mark* • Measures length with metric measures to the centimeter mark • Orders periods of time (days of the week)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Reads a calendar - no computation required	• Estimates and measures length of an object to the nearest centimeter using a picture of a ruler* • Measures length with customary measures to the inch mark* • Knows the approximate weight of familiar objects • Orders periods of time (months of the year, seasons)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Tells time to the nearest 5 minutes • Reads Fahrenheit thermometers to the nearest degree* • Uses cent sign and dollar sign when appropriate* • Connects money with place value
Area, Perimeter, and Circumference	**Area, Perimeter, and Circumference**	**Area, Perimeter, and Circumference**
		• Determines the area of irregular shapes by counting square units*
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
Conversions, Indirect Measurements, Scale Drawings	**Conversions, Indirect Measurements, Scale Drawings**	**Conversions, Indirect Measurements, Scale Drawings**
		• Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour)
New Vocabulary: tallest	*New Vocabulary:* centimeter, longest, shortest, tall, time	*New Vocabulary:* dollar sign, gram, line segment, metric, morning, penny, quart, quarter, second
New Signs and Symbols: : used with time	*New Signs and Symbols:* cm centimeter/centimetre, ft feet, • point	*New Signs and Symbols:* a.m., ¢ cent sign, °F Degrees Fahrenheit, $ dollar sign, g gram, = is equal to, p.m.

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 171 - 180

Skills and Concepts to Enhance 161 - 170	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
Elapsed Time, Measurement Tools, and Estimation	**Elapsed Time, Measurement Tools, and Estimation**	**Elapsed Time, Measurement Tools, and Estimation**
• Compares objects (shorter, longer) • Estimates and measures length of an object to the nearest inch using a picture of a ruler* • Measures length with customary measures to the inch mark* • Measures length with metric measures to the centimeter mark • Orders periods of time (days of the week)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Reads a calendar - no computation required	• Estimates and measures length of an object to the nearest centimeter using a picture of a ruler* • Measures length with customary measures to the inch mark* • Knows the approximate weight of familiar objects • Orders periods of time (months of the year, seasons)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Tells time to the nearest 5 minutes • Reads Fahrenheit thermometers to the nearest degree* • Uses cent sign and dollar sign when appropriate* • Connects money with place value	• Identifies the appropriate instrument used to measure length* • Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of an inch • Knows the approximate length of familiar objects* • Measures length with non-standard units • Measures length with customary measures to the half-inch mark • Selects and uses the appropriate type and size of unit in customary system (weight)* • Determines more capacity or less capacity • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Identifies the correct time, given the words, and vice versa • Selects and uses the appropriate type and size of unit in customary system (time)* • Determines elapsed clock time • Determines elapsed time under 1 hour or to the hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 5 minutes • Interprets a calendar - some computation required • Reads Fahrenheit thermometers to the nearest degree* • Compares squares (larger, smaller)
Area, Perimeter, and Circumference	**Area, Perimeter, and Circumference**	**Area, Perimeter, and Circumference**
	• Determines the area of irregular shapes by counting square units*	• Determines the perimeter of a figure where all sides are labeled • Determines the area of irregular shapes by counting square units*
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**

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Conversions, Indirect Measurements, Scale Drawings	Conversions, Indirect Measurements, Scale Drawings	Conversions, Indirect Measurements, Scale Drawings
	• Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour)	• Computes simple conversions among units of time (days, weeks)*
New Vocabulary: centimeter, longest, shortest, tall, time	*New Vocabulary:* dollar sign, gram, line segment, metric, morning, penny, quart, quarter, second	*New Vocabulary:* clock, cup, distance, estimation, foot, fourth, gallon, half past, how much time, kilometer, liter, measurement, millimeter, noon, o'clock, pint, quarter past, quarter to, rod, tablespoon, teaspoon, ton, unit, what time, yard
New Signs and Symbols: cm centimeter/centimetre, ft feet, • point	*New Signs and Symbols:* a.m., ¢ cent sign, °F Degrees Fahrenheit, $ dollar sign, g gram, = is equal to, p.m.	*New Signs and Symbols:* : used with time, c cup, gal gallon, in. inch, m meter/metre, pt pint, qt quart, tsp teaspoon

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 181 - 190

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
Elapsed Time, Measurement Tools, and Estimation	**Elapsed Time, Measurement Tools, and Estimation**	**Elapsed Time, Measurement Tools, and Estimation**
• Estimates and measures length of an object to the nearest centimeter using a picture of a ruler* • Measures length with customary measures to the inch mark* • Knows the approximate weight of familiar objects • Orders periods of time (months of the year, seasons)* • Tells time to the nearest hour* • Tells time to the nearest half hour • Tells time to the nearest 5 minutes • Reads Fahrenheit thermometers to the nearest degree* • Uses cent sign and dollar sign when appropriate* • Connects money with place value	• Identifies the appropriate instrument used to measure length* • Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of an inch • Knows the approximate length of familiar objects* • Measures length with non-standard units • Measures length with customary measures to the half-inch mark • Selects and uses the appropriate type and size of unit in customary system (weight)* • Determines more capacity or less capacity • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Identifies the correct time, given the words, and vice versa • Selects and uses the appropriate type and size of unit in customary system (time)* • Determines elapsed clock time • Determines elapsed time under 1 hour or to the hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 5 minutes • Interprets a calendar - some computation required • Reads Fahrenheit thermometers to the nearest degree* • Compares squares (larger, smaller)	• Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of a foot • Knows the approximate size of a mile* • Measures length with non-standard units • Selects and uses the appropriate type and size of unit in customary system (weight)* • Knows the approximate size of an ounce* • Uses balance scale to measure weight of an unknown object* • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Knows the approximate size of a pint* • Identifies the correct time, given the words, and vice versa • Orders years* • Selects and uses the appropriate type and size of unit in customary system (time)* • Determines elapsed clock time • Tells time to the nearest quarter hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 1 minute • Solves simple problems involving elapsed time, with the conversion of hours • Reads Celsius thermometers to the nearest degree • Solves problems involving measurement of temperature • Estimates the area of rectangles using square units
Area, Perimeter, and Circumference	**Area, Perimeter, and Circumference**	**Area, Perimeter, and Circumference**
• Determines the area of irregular shapes by counting square units*	• Determines the perimeter of a figure where all sides are labeled • Determines the area of irregular shapes by counting	• Determines the perimeter of a figure where all sides are labeled • Determines the perimeter of a figure where some sides

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	square units*	are labeled • Solves simple problems involving the perimeter of squares, rectangles, or triangles
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
Conversions, Indirect Measurements, Scale Drawings	**Conversions, Indirect Measurements, Scale Drawings**	**Conversions, Indirect Measurements, Scale Drawings**
• Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour)	• Computes simple conversions among units of time (days, weeks)*	• Converts between cups and pints* • Converts between cups, pints, and quarts* • Computes simple conversions among units of time (minutes, hours) • Computes simple conversions among units of time (hours, days)* • Explores maps and relates them to measurements of real distances, using the scale*
New Vocabulary: dollar sign, gram, line segment, metric, morning, penny, quart, quarter, second	*New Vocabulary:* clock, cup, distance, estimation, foot, fourth, gallon, half past, how much time, kilometer, liter, measurement, millimeter, noon, o'clock, pint, quarter past, quarter to, rod, tablespoon, teaspoon, ton, unit, what time, yard	*New Vocabulary:* approximate, decade, latest, rise, scale, square inch
New Signs and Symbols: a.m., ¢ cent sign, °F Degrees Fahrenheit, $ dollar sign, g gram, = is equal to, p.m.	*New Signs and Symbols:* : used with time, c cup, gal gallon, in. inch, m meter/metre, pt pint, qt quart, tsp teaspoon	*New Signs and Symbols:* °C Degrees Celsius, " inches, kg kilogram, yd yard

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 191 - 200

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
Elapsed Time, Measurement Tools, and Estimation	**Elapsed Time, Measurement Tools, and Estimation**	**Elapsed Time, Measurement Tools, and Estimation**
• Identifies the appropriate instrument used to measure length* • Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of an inch • Knows the approximate length of familiar objects* • Measures length with non-standard units • Measures length with customary measures to the half-inch mark • Selects and uses the appropriate type and size of unit in customary system (weight)* • Determines more capacity or less capacity • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Identifies the correct time, given the words, and vice versa • Selects and uses the appropriate type and size of unit in customary system (time)* • Determines elapsed clock time • Determines elapsed time under 1 hour or to the hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 5 minutes • Interprets a calendar - some computation required • Reads Fahrenheit thermometers to the nearest degree* • Compares squares (larger, smaller)	• Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of a foot • Knows the approximate size of a mile* • Measures length with non-standard units • Selects and uses the appropriate type and size of unit in customary system (weight)* • Knows the approximate size of an ounce* • Uses balance scale to measure weight of an unknown object* • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Knows the approximate size of a pint* • Identifies the correct time, given the words, and vice versa • Orders years* • Selects and uses the appropriate type and size of unit in customary system (time)* • Determines elapsed clock time • Tells time to the nearest quarter hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 1 minute • Solves simple problems involving elapsed time, with the conversion of hours • Reads Celsius thermometers to the nearest degree • Solves problems involving measurement of temperature • Estimates the area of rectangles using square units	• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a yard • Knows the approximate size of a centimeter • Measures length to the nearest centimeter* • Selects and uses balances for measuring weight or mass* • Knows the approximate size of a pound • Knows the approximate size of a gram • Applies dimensional analysis to simple real-world problems (time)* • Solves problems using a calendar* • Solves simple problems involving elapsed time, with the conversion of hours • Knows common referents (boiling or freezing point, room temperature)* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Estimates the area of rectangles using square units
Area, Perimeter, and Circumference	**Area, Perimeter, and Circumference**	**Area, Perimeter, and Circumference**
• Determines the perimeter of a figure where all sides are labeled • Determines the area of irregular shapes by counting	• Determines the perimeter of a figure where all sides are labeled • Determines the perimeter of a figure where some sides	• Determines the perimeter of a figure where some sides are labeled • Describes the change in area of a triangle when 1

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square units*	are labeled • Solves simple problems involving the perimeter of squares, rectangles, or triangles	dimension of an object is altered (metric units)* • Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)* • Identifies situations where it is appropriate to calculate area
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
		• Estimates and finds volume of a figure using cubic units
Conversions, Indirect Measurements, Scale Drawings	**Conversions, Indirect Measurements, Scale Drawings**	**Conversions, Indirect Measurements, Scale Drawings**
• Computes simple conversions among units of time (days, weeks)*	• Converts between cups and pints* • Converts between cups, pints, and quarts* • Computes simple conversions among units of time (minutes, hours) • Computes simple conversions among units of time (hours, days)* • Explores maps and relates them to measurements of real distances, using the scale*	• Converts between inches and feet • Converts between milligrams and grams* • Converts between cups and pints* • Converts between cups, pints, and quarts* • Computes simple conversions among units of time (hours, days)* • Computes more difficult conversions among units of time • Solves problems involving measurement of time • Uses basic indirect methods to estimate measurements (grids for area of irregular figures)*
New Vocabulary: clock, cup, distance, estimation, foot, fourth, gallon, half past, how much time, kilometer, liter, measurement, millimeter, noon, o'clock, pint, quarter past, quarter to, rod, tablespoon, teaspoon, ton, unit, what time, yard	*New Vocabulary:* approximate, decade, latest, rise, scale, square inch	*New Vocabulary:* circumference, cubic unit, decameter, decimeter, larger, milligram, milliliter, square centimeter
New Signs and Symbols: : used with time, c cup, gal gallon, in. inch, m meter/metre, pt pint, qt quart, tsp teaspoon	*New Signs and Symbols:* °C Degrees Celsius, " inches, kg kilogram, yd yard	*New Signs and Symbols:* ∠ angle, ° degrees, ' feet, m measure of angle, min minute, mm millimeter/millimetre, right angle marker, □ variable

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 201 - 210

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
Elapsed Time, Measurement Tools, and Estimation	**Elapsed Time, Measurement Tools, and Estimation**	**Elapsed Time, Measurement Tools, and Estimation**
• Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Knows the approximate size of a foot • Knows the approximate size of a mile* • Measures length with non-standard units • Selects and uses the appropriate type and size of unit in customary system (weight)* • Knows the approximate size of an ounce* • Uses balance scale to measure weight of an unknown object* • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Knows the approximate size of a pint* • Identifies the correct time, given the words, and vice versa • Orders years* • Selects and uses the appropriate type and size of unit in customary system (time)* • Determines elapsed clock time • Tells time to the nearest quarter hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 1 minute • Solves simple problems involving elapsed time, with the conversion of hours • Reads Celsius thermometers to the nearest degree • Solves problems involving measurement of temperature • Estimates the area of rectangles using square units	• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a yard • Knows the approximate size of a centimeter • Measures length to the nearest centimeter* • Selects and uses balances for measuring weight or mass* • Knows the approximate size of a pound • Knows the approximate size of a gram • Applies dimensional analysis to simple real-world problems (time)* • Solves problems using a calendar* • Solves simple problems involving elapsed time, with the conversion of hours • Knows common referents (boiling or freezing point, room temperature)* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Estimates the area of rectangles using square units	• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a millimeter* • Knows the approximate size of a kilometer* • Measures length to the nearest half inch* • Measures length to the nearest quarter of an inch • Measures length to the nearest eighth of an inch • Apply dimensional analysis to simple real-world problems (length)* • Selects and uses the appropriate type and size of unit in metric system (mass)* • Solves simple problems involving measurement of weight* • Apply dimensional analysis to simple real-world problems (weight/mass)* • Knows the approximate size of an ounce* • Knows the approximate size of a gallon* • Apply dimensional analysis to simple real-world problems (capacity)* • Solves simple problems involving capacity* • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with the conversion of hours • Reads Celsius thermometers to 0.1 degrees* • Selects and uses protractors for measuring angles* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents
Area, Perimeter, and Circumference	**Area, Perimeter, and Circumference**	**Area, Perimeter, and Circumference**
• Determines the perimeter of a figure where all sides are labeled • Determines the perimeter of a figure where some sides	• Determines the perimeter of a figure where some sides are labeled • Describes the change in area of a triangle when 1	• Determines the perimeter of a figure using non-standard units* • Solves problems involving the perimeter of squares,

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are labeled • Solves simple problems involving the perimeter of squares, rectangles, or triangles	dimension of an object is altered (metric units)* • Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)* • Identifies situations where it is appropriate to calculate area	rectangles, or triangles • Finds the perimeter of a polygon using a formula • Determines the process for calculating perimeter • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)*
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
	• Estimates and finds volume of a figure using cubic units	• Estimates and finds volume of a figure using cubic units
Conversions, Indirect Measurements, Scale Drawings	**Conversions, Indirect Measurements, Scale Drawings**	**Conversions, Indirect Measurements, Scale Drawings**
• Converts between cups and pints* • Converts between cups, pints, and quarts* • Computes simple conversions among units of time (minutes, hours) • Computes simple conversions among units of time (hours, days)* • Explores maps and relates them to measurements of real distances, using the scale*	• Converts between inches and feet • Converts between milligrams and grams* • Converts between cups and pints* • Converts between cups, pints, and quarts* • Computes simple conversions among units of time (hours, days)* • Computes more difficult conversions among units of time • Solves problems involving measurement of time • Uses basic indirect methods to estimate measurements (grids for area of irregular figures)*	• Converts between inches and feet • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Converts between cups, pints, quarts, and gallons • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Determines an appropriate scale for representing a distance on a map*
New Vocabulary: approximate, decade, latest, rise, scale, square inch	*New Vocabulary:* circumference, cubic unit, decameter, decimeter, larger, milligram, milliliter, square centimeter	*New Vocabulary:* century, how long, micrometer, protractor
New Signs and Symbols: °C Degrees Celsius, " inches, kg kilogram, yd yard	*New Signs and Symbols:* ∠ angle, ° degrees, ' feet, m measure of angle, min minute, mm millimeter/millimetre, right angle marker, □ variable	*New Signs and Symbols:* + addition, ÷ division, fl oz fluid ounce, hr hour, lb pound, l length, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, × multiplication, oz ounce, P perimeter, sec second, s side, – subtraction, w width

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 211 - 220

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
Elapsed Time, Measurement Tools, and Estimation	**Elapsed Time, Measurement Tools, and Estimation**	**Elapsed Time, Measurement Tools, and Estimation**
• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a yard • Knows the approximate size of a centimeter • Measures length to the nearest centimeter* • Selects and uses balances for measuring weight or mass* • Knows the approximate size of a pound • Knows the approximate size of a gram • Applies dimensional analysis to simple real-world problems (time)* • Solves problems using a calendar* • Solves simple problems involving elapsed time, with the conversion of hours • Knows common referents (boiling or freezing point, room temperature)* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Estimates the area of rectangles using square units	• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a millimeter* • Knows the approximate size of a kilometer* • Measures length to the nearest half inch* • Measures length to the nearest quarter of an inch • Measures length to the nearest eighth of an inch • Apply dimensional analysis to simple real-world problems (length)* • Selects and uses the appropriate type and size of unit in metric system (mass)* • Solves simple problems involving measurement of weight* • Apply dimensional analysis to simple real-world problems (weight/mass)* • Knows the approximate size of an ounce* • Knows the approximate size of a gallon* • Apply dimensional analysis to simple real-world problems (capacity)* • Solves simple problems involving capacity* • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with the conversion of hours • Reads Celsius thermometers to 0.1 degrees* • Selects and uses protractors for measuring angles* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents	• Uses the appropriate unit of measure for length* • Knows the approximate size of a meter • Measures length to the nearest millimeter • Apply dimensional analysis to simple real-world problems (length)* • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with the conversion of hours
Area, Perimeter, and Circumference	**Area, Perimeter, and Circumference**	**Area, Perimeter, and Circumference**
• Determines the perimeter of a figure where some sides are labeled • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)*	• Determines the perimeter of a figure using non-standard units* • Solves problems involving the perimeter of squares, rectangles, or triangles	• Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter using the formula with a variable* • Solves problems involving the perimeter of irregular or

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• Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)* • Identifies situations where it is appropriate to calculate area	• Finds the perimeter of a polygon using a formula • Determines the process for calculating perimeter • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)*	complex shapes • Solves problems involving perimeter and converts to larger or smaller units • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Uses models to develop the relationship between the total number of square units contained in a rectangle and the length and width of the figure* • Solves simple problems involving the area of a square or rectangle • Calculates area and perimeter of a rectangle (customary units) • Uses the appropriate unit of measure for area*
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
• Estimates and finds volume of a figure using cubic units	• Estimates and finds volume of a figure using cubic units	• Calculates the volume of rectangular solids • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*
Conversions, Indirect Measurements, Scale Drawings	**Conversions, Indirect Measurements, Scale Drawings**	**Conversions, Indirect Measurements, Scale Drawings**
• Converts between inches and feet • Converts between milligrams and grams* • Converts between cups and pints* • Converts between cups, pints, and quarts* • Computes simple conversions among units of time (hours, days)* • Computes more difficult conversions among units of time • Solves problems involving measurement of time • Uses basic indirect methods to estimate measurements (grids for area of irregular figures)*	• Converts between inches and feet • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Converts between cups, pints, quarts, and gallons • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Determines an appropriate scale for representing a distance on a map*	• Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Converts between ounces and pounds • Converts between ounces, pounds, and tons* • Computes basic operations with units of weight/mass* • Converts between cups, pints, quarts, and gallons • Converts within the metric system • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Computes 2-step conversions between units of time • Uses similarity to solve problems using scale drawings
New Vocabulary: circumference, cubic unit, decameter, decimeter, larger, milligram, milliliter, square centimeter	*New Vocabulary:* century, how long, micrometer, protractor	*New Vocabulary:* cord, cubic inch, cubic meter, cubic millimeter, cubic yard, equilateral, long, rectangular shape
New Signs and Symbols: ∠ angle, ° degrees, ' feet,	*New Signs and Symbols:* + addition, ÷ division, fl oz fluid	*New Signs and Symbols:* dm decimeter/decimetre,

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m measure of angle, min minute, mm millimeter/millimetre, right angle marker, □ variable	ounce, hr hour, lb pound, l length, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, × multiplication, oz ounce, P perimeter, sec second, s side, – subtraction, w width	h height, km kilometer/kilometre, ↔ line symbol, mL milliliter/millilitre, : ratio, segment overbar, × multiplicaton, = is equal to, V volume

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 221 - 230

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
Elapsed Time, Measurement Tools, and Estimation	**Elapsed Time, Measurement Tools, and Estimation**	**Elapsed Time, Measurement Tools, and Estimation**
• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Knows the approximate size of a millimeter* • Knows the approximate size of a kilometer* • Measures length to the nearest half inch* • Measures length to the nearest quarter of an inch • Measures length to the nearest eighth of an inch • Apply dimensional analysis to simple real-world problems (length)* • Selects and uses the appropriate type and size of unit in metric system (mass)* • Solves simple problems involving measurement of weight* • Apply dimensional analysis to simple real-world problems (weight/mass)* • Knows the approximate size of an ounce* • Knows the approximate size of a gallon* • Apply dimensional analysis to simple real-world problems (capacity)* • Solves simple problems involving capacity* • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with the conversion of hours • Reads Celsius thermometers to 0.1 degrees* • Selects and uses protractors for measuring angles* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents	• Uses the appropriate unit of measure for length* • Knows the approximate size of a meter • Measures length to the nearest millimeter • Apply dimensional analysis to simple real-world problems (length)* • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with the conversion of hours	• Measures length to the nearest millimeter • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Compares area of numerous triangles*
Area, Perimeter, and Circumference	**Area, Perimeter, and Circumference**	**Area, Perimeter, and Circumference**
• Determines the perimeter of a figure using non-standard units* • Solves problems involving the perimeter of squares, rectangles, or triangles	• Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter using the formula with a variable* • Solves problems involving the perimeter of irregular or	• Solves problems involving the perimeter of irregular or complex shapes • Solves perimeter problems comparing width and length

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• Finds the perimeter of a polygon using a formula • Determines the process for calculating perimeter • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Determines the area of irregular shapes with partial square units • Solves simple problems comparing area and perimeter (customary units)*	complex shapes • Solves problems involving perimeter and converts to larger or smaller units • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Uses models to develop the relationship between the total number of square units contained in a rectangle and the length and width of the figure* • Solves simple problems involving the area of a square or rectangle • Calculates area and perimeter of a rectangle (customary units) • Uses the appropriate unit of measure for area*	• Describes the change in perimeter when dimensions of an object are altered* • Identifies the formula for perimeter with a variable • Determines the area of a triangle drawn on a grid* • Determines the area of a triangle, given the formula • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Determines area, length, or width, given the formula with variables* • Describes the change in area of a rectangle when dimensions of an object are altered* • Solves simple problems involving the area of a square or rectangle • Identifies the formula for area of circle*
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
• Estimates and finds volume of a figure using cubic units	• Calculates the volume of rectangular solids • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*	• Calculates the volume of rectangular solids • Calculates the length, width, or height of a rectangular prism, given the area (customary units)* • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*
Conversions, Indirect Measurements, Scale Drawings	**Conversions, Indirect Measurements, Scale Drawings**	**Conversions, Indirect Measurements, Scale Drawings**
• Converts between inches and feet • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Converts between cups, pints, quarts, and gallons • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Determines an appropriate scale for representing a distance on a map*	• Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Converts between ounces and pounds • Converts between ounces, pounds, and tons* • Computes basic operations with units of weight/mass* • Converts between cups, pints, quarts, and gallons • Converts within the metric system • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Computes 2-step conversions between units of time • Uses similarity to solve problems using scale drawings	• Converts between feet, yards, and miles* • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Converts between grams and kilograms* • Computes basic operations with units of capacity • Converts within the metric system • Uses basic indirect methods to estimate measurements* • Uses similarity to solve problems using scale drawings • Explores maps and relates them to measurements of real distances, using proportional reasoning • Determines an appropriate scale for representing an object in a scale drawing*
New Vocabulary: century, how long, micrometer,	*New Vocabulary:* cord, cubic inch, cubic meter, cubic	*New Vocabulary:* minus, tripled

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protractor	millimeter, cubic yard, equilateral, long, rectangular shape	
New Signs and Symbols: + addition, ÷ division, fl oz fluid ounce, hr hour, lb pound, l length, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, × multiplication, oz ounce, P perimeter, sec second, s side, – subtraction, w width	*New Signs and Symbols:* dm decimeter/decimetre, h height, km kilometer/kilometre, ↔ line symbol, mL milliliter/millilitre, : ratio, segment overbar, × multiplication, = is equal to, V volume	*New Signs and Symbols:* ( ) order of operations, A area, C circumference, > greater than, ≥ greater than or equal to, < less than, ≤ less than or equal to, π pi, r radius, t time

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 231 - 240

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
Elapsed Time, Measurement Tools, and Estimation	**Elapsed Time, Measurement Tools, and Estimation**	**Elapsed Time, Measurement Tools, and Estimation**
• Uses the appropriate unit of measure for length* • Knows the approximate size of a meter • Measures length to the nearest millimeter • Apply dimensional analysis to simple real-world problems (length)* • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with the conversion of hours	• Measures length to the nearest millimeter • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Compares area of numerous triangles*	• Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves problems involving capacity in the metric system and converts to larger or smaller units* • Solves problems involving measurement of angles*
Area, Perimeter, and Circumference	**Area, Perimeter, and Circumference**	**Area, Perimeter, and Circumference**
• Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter using the formula with a variable* • Solves problems involving the perimeter of irregular or complex shapes • Solves problems involving perimeter and converts to larger or smaller units • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Uses models to develop the relationship between the total number of square units contained in a rectangle and the length and width of the figure* • Solves simple problems involving the area of a square or rectangle • Calculates area and perimeter of a rectangle (customary units) • Uses the appropriate unit of measure for area*	• Solves problems involving the perimeter of irregular or complex shapes • Solves perimeter problems comparing width and length • Describes the change in perimeter when dimensions of an object are altered* • Identifies the formula for perimeter with a variable • Determines the area of a triangle drawn on a grid* • Determines the area of a triangle, given the formula • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Determines area, length, or width, given the formula with variables* • Describes the change in area of a rectangle when dimensions of an object are altered* • Solves simple problems involving the area of a square or rectangle • Identifies the formula for area of circle*	• Solves problems involving the perimeter of squares, rectangles, or triangles (analysis) • Determines the perimeter of a figure when plotting ordered pairs* • Solves perimeter problems comparing width and length • Determines the area of a triangle without the formula • Solves problems involving area of a rectangle and converts to larger or smaller units (customary) • Describes the change in area of a rectangle when dimensions of an object are altered* • Determines the area of irregular shapes (customary units)* • Calculates the area of irregular shapes (metric units)*

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Volume and Surface Area	Volume and Surface Area	Volume and Surface Area
• Calculates the volume of rectangular solids • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*	• Calculates the volume of rectangular solids • Calculates the length, width, or height of a rectangular prism, given the area (customary units)* • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*	• Calculates the length of one side of a cube, given the volume (customary units)* • Determines the effects of changing dimensions on volume (no units)
Conversions, Indirect Measurements, Scale Drawings	**Conversions, Indirect Measurements, Scale Drawings**	**Conversions, Indirect Measurements, Scale Drawings**
• Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Converts between ounces and pounds • Converts between ounces, pounds, and tons* • Computes basic operations with units of weight/mass* • Converts between cups, pints, quarts, and gallons • Converts within the metric system • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Computes 2-step conversions between units of time • Uses similarity to solve problems using scale drawings	• Converts between feet, yards, and miles* • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Converts between grams and kilograms* • Computes basic operations with units of capacity • Converts within the metric system • Uses basic indirect methods to estimate measurements* • Uses similarity to solve problems using scale drawings • Explores maps and relates them to measurements of real distances, using proportional reasoning • Determines an appropriate scale for representing an object in a scale drawing*	
New Vocabulary: cord, cubic inch, cubic meter, cubic millimeter, cubic yard, equilateral, long, rectangular shape	*New Vocabulary:* minus, tripled	*New Vocabulary:* linear foot, quadrupled, rectangular area, square yard
New Signs and Symbols: dm decimeter/decimetre, h height, km kilometer/kilometre, ↔ line symbol, mL milliliter/millilitre, : ratio, segment overbar, × multiplication, = is equal to, V volume	*New Signs and Symbols:* ( ) order of operations, A area, C circumference, > greater than, ≥ greater than or equal to, < less than, ≤ less than or equal to, π pi, r radius, t time	*New Signs and Symbols:* b base, cubic centimeter/centimetre, L liter/litre, square centimeter/centimetre, Δ triangle

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 241 - 250

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop 241 - 250	Skills and Concepts to Introduce Above 250
Elapsed Time, Measurement Tools, and Estimation	**Elapsed Time, Measurement Tools, and Estimation**	**Elapsed Time, Measurement Tools, and Estimation**
• Measures length to the nearest millimeter • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Compares area of numerous triangles*	• Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves problems involving capacity in the metric system and converts to larger or smaller units* • Solves problems involving measurement of angles*	
Area, Perimeter, and Circumference	**Area, Perimeter, and Circumference**	**Area, Perimeter, and Circumference**
• Solves problems involving the perimeter of irregular or complex shapes • Solves perimeter problems comparing width and length • Describes the change in perimeter when dimensions of an object are altered* • Identifies the formula for perimeter with a variable • Determines the area of a triangle drawn on a grid* • Determines the area of a triangle, given the formula • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Determines area, length, or width, given the formula with variables* • Describes the change in area of a rectangle when dimensions of an object are altered* • Solves simple problems involving the area of a square or rectangle • Identifies the formula for area of circle*	• Solves problems involving the perimeter of squares, rectangles, or triangles (analysis) • Determines the perimeter of a figure when plotting ordered pairs* • Solves perimeter problems comparing width and length • Determines the area of a triangle without the formula • Solves problems involving area of a rectangle and converts to larger or smaller units (customary) • Describes the change in area of a rectangle when dimensions of an object are altered* • Determines the area of irregular shapes (customary units)* • Calculates the area of irregular shapes (metric units)*	• Determines the area of a figure when plotting ordered pairs without a grid* • Determines the length of the side of a square, given the area* • Solves problems comparing area to perimeter (analysis)
Volume and Surface Area	**Volume and Surface Area**	**Volume and Surface Area**
• Calculates the volume of rectangular solids • Calculates the length, width, or height of a rectangular prism, given the area (customary units)*	• Calculates the length of one side of a cube, given the volume (customary units)* • Determines the effects of changing dimensions on	• Calculates the length of one side of a cube, given the volume (customary units)*

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• Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*	volume (no units)	
Conversions, Indirect Measurements, Scale Drawings	**Conversions, Indirect Measurements, Scale Drawings**	**Conversions, Indirect Measurements, Scale Drawings**
• Converts between feet, yards, and miles* • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Converts between grams and kilograms* • Computes basic operations with units of capacity • Converts within the metric system • Uses basic indirect methods to estimate measurements* • Uses similarity to solve problems using scale drawings • Explores maps and relates them to measurements of real distances, using proportional reasoning • Determines an appropriate scale for representing an object in a scale drawing*		
New Vocabulary: minus, tripled	*New Vocabulary:* linear foot, quadrupled, rectangular area, square yard	*New Vocabulary:* none
New Signs and Symbols: ( ) order of operations, A area, C circumference, > greater than, ≥ greater than or equal to, < less than, ≤ less than or equal to, π pi, r radius, t time	*New Signs and Symbols:* b base, cubic centimeter/centimetre, L liter/litre, square centimeter/centimetre, Δ triangle	*New Signs and Symbols:* ( ) ordered pair, − negative number

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: Above 250

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop Above 250
Elapsed Time, Measurement Tools, and Estimation	**Elapsed Time, Measurement Tools, and Estimation**
• Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves problems involving capacity in the metric system and converts to larger or smaller units* • Solves problems involving measurement of angles*	
Area, Perimeter, and Circumference	**Area, Perimeter, and Circumference**
• Solves problems involving the perimeter of squares, rectangles, or triangles (analysis) • Determines the perimeter of a figure when plotting ordered pairs* • Solves perimeter problems comparing width and length • Determines the area of a triangle without the formula • Solves problems involving area of a rectangle and converts to larger or smaller units (customary) • Describes the change in area of a rectangle when dimensions of an object are altered* • Determines the area of irregular shapes (customary units)* • Calculates the area of irregular shapes (metric units)*	• Determines the area of a figure when plotting ordered pairs without a grid* • Determines the length of the side of a square, given the area* • Solves problems comparing area to perimeter (analysis)
Volume and Surface Area	**Volume and Surface Area**
• Calculates the length of one side of a cube, given the volume (customary units)* • Determines the effects of changing dimensions on volume (no units)	• Calculates the length of one side of a cube, given the volume (customary units)*
Conversions, Indirect Measurements, Scale Drawings	**Conversions, Indirect Measurements, Scale Drawings**
New Vocabulary: linear foot, quadrupled, rectangular area, square yard	*New Vocabulary:* none
New Signs and Symbols: b base, cubic centimeter/centimetre, L liter/litre, square centimeter/centimetre, Δ triangle	*New Signs and Symbols:* ( ) ordered pair, − negative number

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: Below 161

Skills and Concepts to Develop Below 161	Skills and Concepts to Introduce 161 - 170
Patterns	**Patterns**
• Applies the rule to determine which number does not belong - growing pattern: arithmetic*	• Extends repeating patterns - geometric shapes • Completes a growing arithmetic pattern by naming missing members • Applies the rule to determine which number does not belong - growing pattern: arithmetic*
Write, Simplify, Evaluate Algebraic Expressions	**Write, Simplify, Evaluate Algebraic Expressions**
Describing Change and Representations	**Describing Change and Representations**
Write and Solve Equations and Inequalities	**Write and Solve Equations and Inequalities**
	• Solves basic-facts open sentences - addition and subtraction
New Vocabulary: none	*New Vocabulary:* addend
New Signs and Symbols: none	*New Signs and Symbols:* + addition, = is equal to, – subtraction, □ variable

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 161 - 170

Skills and Concepts to Enhance Below 161	Skills and Concepts to Develop 161 - 170	Skills and Concepts to Introduce 171 - 180
Patterns	**Patterns**	**Patterns**
• Applies the rule to determine which number does not belong - growing pattern: arithmetic*	• Extends repeating patterns - geometric shapes • Completes a growing arithmetic pattern by naming missing members • Applies the rule to determine which number does not belong - growing pattern: arithmetic*	• Extends repeating patterns - geometric shapes • Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern by naming missing members
Write, Simplify, Evaluate Algebraic Expressions	**Write, Simplify, Evaluate Algebraic Expressions**	**Write, Simplify, Evaluate Algebraic Expressions**
Describing Change and Representations	**Describing Change and Representations**	**Describing Change and Representations**
Write and Solve Equations and Inequalities	**Write and Solve Equations and Inequalities**	**Write and Solve Equations and Inequalities**
	• Solves basic-facts open sentences - addition and subtraction	• Uses words, pictures, numbers, and technology to explain the solution to problems* • Solves basic-facts open sentences - addition and subtraction • Solves linear equations with basic facts - 1-step addition using a letter for the variable*
New Vocabulary: none	*New Vocabulary:* addend	*New Vocabulary:* rate, whole number
New Signs and Symbols: none	*New Signs and Symbols:* + addition, = is equal to, – subtraction, □ variable	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 171 - 180

Skills and Concepts to Enhance 161 - 170	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
Patterns	**Patterns**	**Patterns**
• Extends repeating patterns - geometric shapes • Completes a growing arithmetic pattern by naming missing members • Applies the rule to determine which number does not belong - growing pattern: arithmetic*	• Extends repeating patterns - geometric shapes • Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern by naming missing members	• Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern using models by identifying the missing members* • Extends a decreasing arithmetic patterns* • Applies the rule to determine which set of letters is not like the other sets - other patterns*
Write, Simplify, Evaluate Algebraic Expressions	**Write, Simplify, Evaluate Algebraic Expressions**	**Write, Simplify, Evaluate Algebraic Expressions**
Describing Change and Representations	**Describing Change and Representations**	**Describing Change and Representations**
		• Completes arithmetic growth patterns in number tables by identifying the missing elements
Write and Solve Equations and Inequalities	**Write and Solve Equations and Inequalities**	**Write and Solve Equations and Inequalities**
• Solves basic-facts open sentences - addition and subtraction	• Uses words, pictures, numbers, and technology to explain the solution to problems* • Solves basic-facts open sentences - addition and subtraction • Solves linear equations with basic facts - 1-step addition using a letter for the variable*	• Relates everyday language to mathematical language and symbols, and progresses toward the use of appropriate terminology (e.g., "add more" becomes "plus")* • Uses words, pictures, numbers, and technology to explain the solution to problems* • Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances)* • Solves linear equations with basic facts - 1-step addition using a letter for the variable* • Solves 1-step open sentences with missing addends (numbers 100 and under)
New Vocabulary: addend	*New Vocabulary:* rate, whole number	*New Vocabulary:* product, subtrahend
New Signs and Symbols: + addition, = is equal to, – subtraction, □ variable	*New Signs and Symbols:* none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 181 - 190

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
Patterns	**Patterns**	**Patterns**
• Extends repeating patterns - geometric shapes • Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern by naming missing members	• Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern using models by identifying the missing members* • Extends a decreasing arithmetic patterns* • Applies the rule to determine which set of letters is not like the other sets - other patterns*	• Extends a growing arithmetic pattern, defined by objects or diagrams* • Completes a growing arithmetic pattern using models by identifying the missing members* • Extends a decreasing arithmetic patterns* • Extends patterns formed by letters*
Write, Simplify, Evaluate Algebraic Expressions	**Write, Simplify, Evaluate Algebraic Expressions**	**Write, Simplify, Evaluate Algebraic Expressions**
Describing Change and Representations	**Describing Change and Representations**	**Describing Change and Representations**
	• Completes arithmetic growth patterns in number tables by identifying the missing elements	• Looks for a simple linear pattern in a table to solve a problem
Write and Solve Equations and Inequalities	**Write and Solve Equations and Inequalities**	**Write and Solve Equations and Inequalities**
• Uses words, pictures, numbers, and technology to explain the solution to problems* • Solves basic-facts open sentences - addition and subtraction • Solves linear equations with basic facts - 1-step addition using a letter for the variable*	• Relates everyday language to mathematical language and symbols, and progresses toward the use of appropriate terminology (e.g., "add more" becomes "plus")* • Uses words, pictures, numbers, and technology to explain the solution to problems* • Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances)* • Solves linear equations with basic facts - 1-step addition using a letter for the variable* • Solves 1-step open sentences with missing addends (numbers 100 and under)	• Translates a 1-step problem to a symbolic expression or equation • Relates everyday language to mathematical language and symbols, and progresses toward the use of appropriate terminology (e.g., "add more" becomes "plus")* • Relates everyday language to mathematical language and symbols and progresses toward the use of appropriate terminology (e.g., "repeated addition" becomes "multiplication," "fair share" becomes "divide," "balance the equation" becomes "solve the equation")** • Uses algebraic reasoning to solve problems involving equality relationships* • Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances)* • Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers 100 and under) • Solves 1-step open sentences with missing addends

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		(numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under)* • Solves 2-step open sentences with missing addends*
New Vocabulary: rate, whole number	*New Vocabulary:* product, subtrahend	*New Vocabulary:* none
New Signs and Symbols: none	*New Signs and Symbols:* none	*New Signs and Symbols:* ¢ cent sign, ÷ division, $ dollar sign, > greater than, < less than, × multiplication

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 191 - 200

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
Patterns	**Patterns**	**Patterns**
• Extends a growing arithmetic pattern, defined by numbers • Completes a growing arithmetic pattern using models by identifying the missing members* • Extends a decreasing arithmetic patterns* • Applies the rule to determine which set of letters is not like the other sets - other patterns*	• Extends a growing arithmetic pattern, defined by objects or diagrams* • Completes a growing arithmetic pattern using models by identifying the missing members* • Extends a decreasing arithmetic patterns* • Extends patterns formed by letters*	• Extends a growing arithmetic pattern, defined by objects or diagrams* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)* • Extends a pattern formed by rotating a geometric figure
Write, Simplify, Evaluate Algebraic Expressions	**Write, Simplify, Evaluate Algebraic Expressions**	**Write, Simplify, Evaluate Algebraic Expressions**
Describing Change and Representations	**Describing Change and Representations**	**Describing Change and Representations**
• Completes arithmetic growth patterns in number tables by identifying the missing elements	• Looks for a simple linear pattern in a table to solve a problem	• Looks for a linear pattern to solve a problem • Looks for a repeating pattern to solve a problem* • Use patterns and their generalizations to make and justify inferences and predictions* • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations*
Write and Solve Equations and Inequalities	**Write and Solve Equations and Inequalities**	**Write and Solve Equations and Inequalities**
• Relates everyday language to mathematical language and symbols, and progresses toward the use of appropriate terminology (e.g., "add more" becomes "plus")* • Uses words, pictures, numbers, and technology to explain the solution to problems* • Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances)* • Solves linear equations with basic facts - 1-step addition using a letter for the variable* • Solves 1-step open sentences with missing addends (numbers 100 and under)	• Translates a 1-step problem to a symbolic expression or equation • Relates everyday language to mathematical language and symbols, and progresses toward the use of appropriate terminology (e.g., "add more" becomes "plus")* • Relates everyday language to mathematical language and symbols and progresses toward the use of appropriate terminology (e.g., "repeated addition" becomes "multiplication," "fair share" becomes "divide," "balance the equation" becomes "solve the equation")** • Uses algebraic reasoning to solve problems involving equality relationships* • Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using	• Translates a 1-step problem to a symbolic expression or equation • Translates a 2-step problem to a symbolic expression or equation • Relates everyday language to mathematical language and symbols and progresses toward the use of appropriate terminology (e.g., "repeated addition" becomes "multiplication," "fair share" becomes "divide," "balance the equation" becomes "solve the equation")** • Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem situations • Describes a realistic situation using information given in a linear equation*

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	balances)* • Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers 100 and under) • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under)* • Solves 2-step open sentences with missing addends*	• Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under)* • Solves 2-step open sentences with missing addends* • Solves open sentences with basic-facts calculations on both sides of the sentence
New Vocabulary: product, subtrahend	*New Vocabulary:* none	*New Vocabulary:* minimum
New Signs and Symbols: none	*New Signs and Symbols:* ¢ cent sign, ÷ division, $ dollar sign, > greater than, < less than, × multiplication	*New Signs and Symbols:* ( ) order of operations, + positive number, = is equal to

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 201 - 210

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
Patterns	**Patterns**	**Patterns**
• Extends a growing arithmetic pattern, defined by objects or diagrams* • Completes a growing arithmetic pattern using models by identifying the missing members* • Extends a decreasing arithmetic patterns* • Extends patterns formed by letters*	• Extends a growing arithmetic pattern, defined by objects or diagrams* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)* • Extends a pattern formed by rotating a geometric figure	• Extends a repeating pattern of geometric shapes in a grid* • Extends a growing geometric pattern - using numbers* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends, or completes, growing patterns defined by equations or number facts • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)*
Write, Simplify, Evaluate Algebraic Expressions	**Write, Simplify, Evaluate Algebraic Expressions**	**Write, Simplify, Evaluate Algebraic Expressions**
Describing Change and Representations	**Describing Change and Representations**	**Describing Change and Representations**
• Looks for a simple linear pattern in a table to solve a problem	• Looks for a linear pattern to solve a problem • Looks for a repeating pattern to solve a problem* • Use patterns and their generalizations to make and justify inferences and predictions* • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations*	• Looks for a growing pattern to solve a problem • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations* • Interprets data in line graphs (e.g., change over time) • Identifies rules and applies them to new patterns • Determines the rule and completes a simple function machine output*
Write and Solve Equations and Inequalities	**Write and Solve Equations and Inequalities**	**Write and Solve Equations and Inequalities**
• Translates a 1-step problem to a symbolic expression or equation • Relates everyday language to mathematical language and symbols, and progresses toward the use of appropriate terminology (e.g., "add more" becomes "plus")* • Relates everyday language to mathematical language and symbols and progresses toward the use of appropriate terminology (e.g., "repeated addition" becomes "multiplication," "fair share" becomes "divide," "balance the equation" becomes "solve the equation")** • Uses algebraic reasoning to solve problems involving equality relationships*	• Translates a 1-step problem to a symbolic expression or equation • Translates a 2-step problem to a symbolic expression or equation • Relates everyday language to mathematical language and symbols and progresses toward the use of appropriate terminology (e.g., "repeated addition" becomes "multiplication," "fair share" becomes "divide," "balance the equation" becomes "solve the equation")** • Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem situations	• Translates a 2-step problem to a symbolic expression or equation • Expresses the solution clearly and logically by using the appropriate mathematical terms and notation* • Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem situations • Solves simple open sentences with missing factors (numbers over 100) • Solves open sentences using the distributive property • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors

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• Solves basic facts addition and subtraction open sentences using diagrams and models (e.g., using balances)* • Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers 100 and under) • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under)* • Solves 2-step open sentences with missing addends*	• Describes a realistic situation using information given in a linear equation* • Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under)* • Solves 2-step open sentences with missing addends* • Solves open sentences with basic-facts calculations on both sides of the sentence	• Applies algebraic methods to solve theoretical problems
New Vocabulary: none	*New Vocabulary:* minimum	*New Vocabulary:* high
New Signs and Symbols: ¢ cent sign, ÷ division, $ dollar sign, > greater than, < less than, × multiplication	*New Signs and Symbols:* ( ) order of operations, + positive number, = is equal to	*New Signs and Symbols:* °F Degrees Fahrenheit, d distance, mph miles per hour, ? next in sequence, t time

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 211 - 220

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
Patterns	**Patterns**	**Patterns**
• Extends a growing arithmetic pattern, defined by objects or diagrams* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)* • Extends a pattern formed by rotating a geometric figure	• Extends a repeating pattern of geometric shapes in a grid* • Extends a growing geometric pattern - using numbers* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends, or completes, growing patterns defined by equations or number facts • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)*	• Extends a growing pattern of triangular numbers, defined by objects or diagrams
Write, Simplify, Evaluate Algebraic Expressions	**Write, Simplify, Evaluate Algebraic Expressions**	**Write, Simplify, Evaluate Algebraic Expressions**
		• Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation*
Describing Change and Representations	**Describing Change and Representations**	**Describing Change and Representations**
• Looks for a linear pattern to solve a problem • Looks for a repeating pattern to solve a problem* • Use patterns and their generalizations to make and justify inferences and predictions* • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations*	• Looks for a growing pattern to solve a problem • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations* • Interprets data in line graphs (e.g., change over time) • Identifies rules and applies them to new patterns • Determines the rule and completes a simple function machine output*	• Looks for a growing pattern to solve a problem • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations* • Completes a function table according to a rule*
Write and Solve Equations and Inequalities	**Write and Solve Equations and Inequalities**	**Write and Solve Equations and Inequalities**
• Translates a 1-step problem to a symbolic expression or equation • Translates a 2-step problem to a symbolic expression or equation • Relates everyday language to mathematical language and symbols and progresses toward the use of appropriate terminology (e.g., "repeated addition" becomes "multiplication," "fair share" becomes "divide," "balance the equation" becomes "solve the equation")** • Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem	• Translates a 2-step problem to a symbolic expression or equation • Expresses the solution clearly and logically by using the appropriate mathematical terms and notation* • Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem situations • Solves simple open sentences with missing factors (numbers over 100) • Solves open sentences using the distributive property • Solves open sentences with calculations on both sides of the sentence	• Translates a problem to a symbolic expression or equation (analysis)* • Expresses the solution clearly and logically by using the appropriate mathematical terms and notation* • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Applies algebraic methods to solve theoretical problems • Applies algebraic methods to solve real-world problems*

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situations • Describes a realistic situation using information given in a linear equation* • Solves complex open linear sentences using diagrams and models (e.g., using balances)* • Solves 1-step open sentences with missing addends (numbers over 100) • Solves simple open sentences with missing factors (numbers 100 and under)* • Solves 2-step open sentences with missing addends* • Solves open sentences with basic-facts calculations on both sides of the sentence	• Solves 2-step open sentences with missing factors • Applies algebraic methods to solve theoretical problems	
New Vocabulary: minimum	*New Vocabulary:* high	*New Vocabulary:* none
New Signs and Symbols: ( ) order of operations, + positive number, = is equal to	*New Signs and Symbols:* °F Degrees Fahrenheit, d distance, mph miles per hour, ? next in sequence, t time	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 221 - 230

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
Patterns	**Patterns**	**Patterns**
• Extends a repeating pattern of geometric shapes in a grid* • Extends a growing geometric pattern - using numbers* • Extends a pattern formed by two arithmetic growing patterns - odd and even terms (such as 1,5,4,8,7,...) • Extends, or completes, growing patterns defined by equations or number facts • Extends a growing pattern of numbers - explicit quadratic rule - recursive rule is to add x more each time (such as 1,2,4,7,...)*	• Extends a growing pattern of triangular numbers, defined by objects or diagrams	• Recognizes and extends arithmetic sequences (predicts nth term)
Write, Simplify, Evaluate Algebraic Expressions	**Write, Simplify, Evaluate Algebraic Expressions**	**Write, Simplify, Evaluate Algebraic Expressions**
	• Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation*	
Describing Change and Representations	**Describing Change and Representations**	**Describing Change and Representations**
• Looks for a growing pattern to solve a problem • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations* • Interprets data in line graphs (e.g., change over time) • Identifies rules and applies them to new patterns • Determines the rule and completes a simple function machine output*	• Looks for a growing pattern to solve a problem • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations* • Completes a function table according to a rule*	• Completes a function table according to a rule*
Write and Solve Equations and Inequalities	**Write and Solve Equations and Inequalities**	**Write and Solve Equations and Inequalities**
• Translates a 2-step problem to a symbolic expression or equation • Expresses the solution clearly and logically by using the appropriate mathematical terms and notation* • Uses algebraic reasoning to solve problems involving equality relationships* • Uses simple linear equations to represent problem situations • Solves simple open sentences with missing factors (numbers over 100) • Solves open sentences using the distributive property • Solves open sentences with calculations on both sides of the sentence	• Translates a problem to a symbolic expression or equation (analysis)* • Expresses the solution clearly and logically by using the appropriate mathematical terms and notation* • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Applies algebraic methods to solve theoretical problems • Applies algebraic methods to solve real-world problems*	• Translates a problem to a symbolic expression or equation (analysis)* • Solves 2-step open sentences with missing factors (variables on both sides of the sentence)* • Applies algebraic methods to solve real-world problems*

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• Solves 2-step open sentences with missing factors • Applies algebraic methods to solve theoretical problems		
New Vocabulary: high	*New Vocabulary:* none	*New Vocabulary:* arithmetic progression
New Signs and Symbols: °F Degrees Fahrenheit, `d` distance, mph miles per hour, `?` next in sequence, `t` time	*New Signs and Symbols:* none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 231 - 240

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
Patterns	**Patterns**	**Patterns**
• Extends a growing pattern of triangular numbers, defined by objects or diagrams	• Recognizes and extends arithmetic sequences (predicts nth term)	
Write, Simplify, Evaluate Algebraic Expressions	**Write, Simplify, Evaluate Algebraic Expressions**	**Write, Simplify, Evaluate Algebraic Expressions**
• Describes and uses a variable with whole numbers, multiplication, and division in a contextual situation*		
Describing Change and Representations	**Describing Change and Representations**	**Describing Change and Representations**
• Looks for a growing pattern to solve a problem • Produces a valid conjecture using inductive reasoning by generalizing from a pattern of observations* • Completes a function table according to a rule*	• Completes a function table according to a rule*	• Represents growing arithmetic patterns using algebraic expressions or equations* • Identifies and describes situations with varying rates of change*
Write and Solve Equations and Inequalities	**Write and Solve Equations and Inequalities**	**Write and Solve Equations and Inequalities**
• Translates a problem to a symbolic expression or equation (analysis)* • Expresses the solution clearly and logically by using the appropriate mathematical terms and notation* • Solves open sentences with calculations on both sides of the sentence • Solves 2-step open sentences with missing factors • Applies algebraic methods to solve theoretical problems • Applies algebraic methods to solve real-world problems*	• Translates a problem to a symbolic expression or equation (analysis)* • Solves 2-step open sentences with missing factors (variables on both sides of the sentence)* • Applies algebraic methods to solve real-world problems*	• Solves 2-step open sentences with missing factors (variables on both sides of the sentence)* • Applies algebraic methods to solve real-world problems*
New Vocabulary: none	*New Vocabulary:* arithmetic progression	*New Vocabulary:* none
New Signs and Symbols: none	*New Signs and Symbols:* none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: 241 - 250

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop 241 - 250	Skills and Concepts to Introduce Above 250
Patterns	**Patterns**	**Patterns**
• Recognizes and extends arithmetic sequences (predicts nth term)		
Write, Simplify, Evaluate Algebraic Expressions	**Write, Simplify, Evaluate Algebraic Expressions**	**Write, Simplify, Evaluate Algebraic Expressions**
Describing Change and Representations	**Describing Change and Representations**	**Describing Change and Representations**
• Completes a function table according to a rule*	• Represents growing arithmetic patterns using algebraic expressions or equations* • Identifies and describes situations with varying rates of change*	• Uses graphs to represent functions and interpret slope*
Write and Solve Equations and Inequalities	**Write and Solve Equations and Inequalities**	**Write and Solve Equations and Inequalities**
• Translates a problem to a symbolic expression or equation (analysis)* • Solves 2-step open sentences with missing factors (variables on both sides of the sentence)* • Applies algebraic methods to solve real-world problems*	• Solves 2-step open sentences with missing factors (variables on both sides of the sentence)* • Applies algebraic methods to solve real-world problems*	• Uses algebraic terms appropriately (e.g., "equation," "inequality," "variable," "expression," "term," "coefficient," "domain," "range")*
New Vocabulary: arithmetic progression	*New Vocabulary:* none	*New Vocabulary:* x-coordinate, y-coordinate
New Signs and Symbols: none	*New Signs and Symbols:* none	*New Signs and Symbols:* ( ) ordered pair

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Subject: Mathematics
Goal Strand: Algebra
RIT Score Range: Above 250

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop Above 250
Patterns	**Patterns**
Write, Simplify, Evaluate Algebraic Expressions	**Write, Simplify, Evaluate Algebraic Expressions**
Describing Change and Representations	**Describing Change and Representations**
• Represents growing arithmetic patterns using algebraic expressions or equations* • Identifies and describes situations with varying rates of change*	• Uses graphs to represent functions and interpret slope*
Write and Solve Equations and Inequalities	**Write and Solve Equations and Inequalities**
• Solves 2-step open sentences with missing factors (variables on both sides of the sentence)* • Applies algebraic methods to solve real-world problems*	• Uses algebraic terms appropriately (e.g., "equation," "inequality," "variable," "expression," "term," "coefficient," "domain," "range")*
New Vocabulary: none	*New Vocabulary:* x-coordinate, y-coordinate
New Signs and Symbols: none	*New Signs and Symbols:* ( ) ordered pair

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: Below 161

Skills and Concepts to Develop Below 161	Skills and Concepts to Introduce 161 - 170
Single Figures, Circles, Lines, and Angles	**Single Figures, Circles, Lines, and Angles**
	• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies sides and vertices of polygons • Identifies bases of a cylinder* • Identifies and names a cone
Coordinate Geometry, Symmetry and Transformations	**Coordinate Geometry, Symmetry and Transformations**
• Predicts the shape after unfolding a figure*	
Relationships Between and Among Multiple Figures	**Relationships Between and Among Multiple Figures**
• Identifies figures that are the same size and shape	• Compares open and closed figures* • Sorts solid figures and objects according to attributes* • Identifies figures that are the same size and shape
New Vocabulary: size	*New Vocabulary:* circle, corner, cylinder, flat
New Signs and Symbols: none	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 161 - 170

Skills and Concepts to Enhance Below 161	Skills and Concepts to Develop 161 - 170	Skills and Concepts to Introduce 171 - 180
Single Figures, Circles, Lines, and Angles	**Single Figures, Circles, Lines, and Angles**	**Single Figures, Circles, Lines, and Angles**
	• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies sides and vertices of polygons • Identifies bases of a cylinder* • Identifies and names a cone	• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies and names a cube
Coordinate Geometry, Symmetry and Transformations	**Coordinate Geometry, Symmetry and Transformations**	**Coordinate Geometry, Symmetry and Transformations**
• Predicts the shape after unfolding a figure*		• Identifies spatial sense concepts (e.g., outside, inside, between, over, under, above, below, behind, in front, middle)*
Relationships Between and Among Multiple Figures	**Relationships Between and Among Multiple Figures**	**Relationships Between and Among Multiple Figures**
• Identifies figures that are the same size and shape	• Compares open and closed figures* • Sorts solid figures and objects according to attributes* • Identifies figures that are the same size and shape	• Recognizes geometric shapes in real-world objects • Identifies figures that are similar
New Vocabulary: size	*New Vocabulary:* circle, corner, cylinder, flat	*New Vocabulary:* diamond, geometric figure, outside, ray, similar
New Signs and Symbols: none	*New Signs and Symbols:* none	*New Signs and Symbols:* ? next in sequence

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 171 - 180

Skills and Concepts to Enhance 161 - 170	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
Single Figures, Circles, Lines, and Angles	**Single Figures, Circles, Lines, and Angles**	**Single Figures, Circles, Lines, and Angles**
• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies sides and vertices of polygons • Identifies bases of a cylinder* • Identifies and names a cone	• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies and names a cube	• Identifies points on a line* • Identifies congruent line segments* • Identifies and names multiple shapes (e.g., square, rectangle, triangle, circle)* • Classifies polygons by sides and vertices • Identifies and names a cube • Identifies and names a sphere
Coordinate Geometry, Symmetry and Transformations	**Coordinate Geometry, Symmetry and Transformations**	**Coordinate Geometry, Symmetry and Transformations**
	• Identifies spatial sense concepts (e.g., outside, inside, between, over, under, above, below, behind, in front, middle)*	• Identifies plane figures with line symmetry • Identifies transformations of plane figures (rotations/turns) • Identifies transformations of plane figures (translations/slides)* • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*
Relationships Between and Among Multiple Figures	**Relationships Between and Among Multiple Figures**	**Relationships Between and Among Multiple Figures**
• Compares open and closed figures* • Sorts solid figures and objects according to attributes* • Identifies figures that are the same size and shape	• Recognizes geometric shapes in real-world objects • Identifies figures that are similar	• Identifies congruent figures • Identifies figures that are similar
New Vocabulary: circle, corner, cylinder, flat	*New Vocabulary:* diamond, geometric figure, outside, ray, similar	*New Vocabulary:* clockwise, flip, grid, line of symmetry, rectangular solid, rotation, symmetry, turn
New Signs and Symbols: none	*New Signs and Symbols:* ? next in sequence	*New Signs and Symbols:* ( ) ordered pair, • point

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 181 - 190

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
Single Figures, Circles, Lines, and Angles	**Single Figures, Circles, Lines, and Angles**	**Single Figures, Circles, Lines, and Angles**
• Identifies and names a triangle • Identifies and names a square • Identifies and names a rectangle* • Identifies and names a circle* • Identifies and names a cube	• Identifies points on a line* • Identifies congruent line segments* • Identifies and names multiple shapes (e.g., square, rectangle, triangle, circle)* • Classifies polygons by sides and vertices • Identifies and names a cube • Identifies and names a sphere	• Identifies lines* • Identifies parallel lines • Identifies angles* • Identifies points on a circle* • Identifies diagonals of a polygon • Identifies and names a polygon* • Identifies and names a pentagon* • Identifies the number of faces on rectangular prisms • Identifies and names a cylinder • Identifies and names a sphere
Coordinate Geometry, Symmetry and Transformations	**Coordinate Geometry, Symmetry and Transformations**	**Coordinate Geometry, Symmetry and Transformations**
• Identifies spatial sense concepts (e.g., outside, inside, between, over, under, above, below, behind, in front, middle)*	• Identifies plane figures with line symmetry • Identifies transformations of plane figures (rotations/turns) • Identifies transformations of plane figures (translations/slides)* • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*	• Identifies position of shapes (e.g., inside, outside, between)* • Identifies plane figures with line symmetry • Identifies the number of lines of symmetry in plane figures • Identifies transformations of plane figures (reflections/flips) • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*
Relationships Between and Among Multiple Figures	**Relationships Between and Among Multiple Figures**	**Relationships Between and Among Multiple Figures**
• Recognizes geometric shapes in real-world objects • Identifies figures that are similar	• Identifies congruent figures • Identifies figures that are similar	• Sorts 2-D shapes and objects according to their attributes • Creates a new shape by combining different shapes, or identifies the different shapes that were used to make the original shape* • Identifies figures that are the same size and shape (analysis)* • Identifies congruent figures
New Vocabulary: diamond, geometric figure, outside, ray, similar	*New Vocabulary:* clockwise, flip, grid, line of symmetry, rectangular solid, rotation, symmetry, turn	*New Vocabulary:* diagonal, face, inside, intersect, kite, large, oval, parallel, plane, polygon, rhombus, same shape, straight, twist, vertical line
New Signs and Symbols: ? next in sequence	*New Signs and Symbols:* ( ) ordered pair, • point	*New Signs and Symbols:* • multiplication symbol (dot)

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 191 - 200

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
Single Figures, Circles, Lines, and Angles	**Single Figures, Circles, Lines, and Angles**	**Single Figures, Circles, Lines, and Angles**
• Identifies points on a line* • Identifies congruent line segments* • Identifies and names multiple shapes (e.g., square, rectangle, triangle, circle)* • Classifies polygons by sides and vertices • Identifies and names a cube • Identifies and names a sphere	• Identifies lines* • Identifies parallel lines • Identifies angles* • Identifies points on a circle* • Identifies diagonals of a polygon • Identifies and names a polygon* • Identifies and names a pentagon* • Identifies the number of faces on rectangular prisms • Identifies and names a cylinder • Identifies and names a sphere	• Identifies the intersection point of two lines* • Identifies intersecting lines • Identifies parallel lines • Identifies angles* • Identifies right angles* • Identifies and names a parallelogram* • Identifies and names a polygon* • Identifies and names a hexagon* • Identifies and names a octagon* • Classifies polygons by sides and angles • Classifies cubes by their properties (e.g., edges with equal lengths, faces with equal areas and congruent shapes, right angle corners) • Identifies a cube from a net • Identifies and names a cylinder • Classifies cylinders by their properties (e.g., base shape, lateral surface shape, vertices)*
Coordinate Geometry, Symmetry and Transformations	**Coordinate Geometry, Symmetry and Transformations**	**Coordinate Geometry, Symmetry and Transformations**
• Identifies plane figures with line symmetry • Identifies transformations of plane figures (rotations/turns) • Identifies transformations of plane figures (translations/slides)* • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*	• Identifies position of shapes (e.g., inside, outside, between)* • Identifies plane figures with line symmetry • Identifies the number of lines of symmetry in plane figures • Identifies transformations of plane figures (reflections/flips) • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*	• Classifies plane figures by the number of lines of symmetry* • Defines transformations* • Graphs ordered pairs in the first quadrant • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)* • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system*
Relationships Between and Among Multiple Figures	**Relationships Between and Among Multiple Figures**	**Relationships Between and Among Multiple Figures**
• Identifies congruent figures • Identifies figures that are similar	• Sorts 2-D shapes and objects according to their attributes • Creates a new shape by combining different shapes, or identifies the different shapes that were used to make the original shape*	

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	• Identifies figures that are the same size and shape (analysis)* • Identifies congruent figures	
New Vocabulary: clockwise, flip, grid, line of symmetry, rectangular solid, rotation, symmetry, turn	*New Vocabulary:* diagonal, face, inside, intersect, kite, large, oval, parallel, plane, polygon, rhombus, same shape, straight, twist, vertical line	*New Vocabulary:* coordinate point, edge, fold, larger, mirror image, octagon, ordered pair, parallel line, rectangular box, regular polygon, trapezoid, vertex
New Signs and Symbols: ( ) ordered pair, • point	*New Signs and Symbols:* • multiplication symbol (dot)	*New Signs and Symbols:* ↔ line symbol

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 201 - 210

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
Single Figures, Circles, Lines, and Angles	**Single Figures, Circles, Lines, and Angles**	**Single Figures, Circles, Lines, and Angles**
• Identifies lines* • Identifies parallel lines • Identifies angles* • Identifies points on a circle* • Identifies diagonals of a polygon • Identifies and names a polygon* • Identifies and names a pentagon* • Identifies the number of faces on rectangular prisms • Identifies and names a cylinder • Identifies and names a sphere	• Identifies the intersection point of two lines* • Identifies intersecting lines • Identifies parallel lines • Identifies angles* • Identifies right angles* • Identifies and names a parallelogram* • Identifies and names a polygon* • Identifies and names a hexagon* • Identifies and names a octagon* • Classifies polygons by sides and angles • Classifies cubes by their properties (e.g., edges with equal lengths, faces with equal areas and congruent shapes, right angle corners) • Identifies a cube from a net • Identifies and names a cylinder • Classifies cylinders by their properties (e.g., base shape, lateral surface shape, vertices)*	• Identifies rays* • Identifies perpendicular lines* • Describes relationships among points, lines, and planes, and identifies models in the environment* • Identifies right angles within adjacent angles* • Identifies properties of angles • Identifies acute angles • Identifies obtuse angles • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Identifies and names a quadrilateral* • Classifies polygons by type of angle* • Classifies polygons by number of sides* • Identifies corners (vertices) of cubes* • Identifies the net which makes a cube-like (open box) figure* • Identifies and names a rectangular prism* • Classifies triangular prisms by their properties (e.g., base shape, lateral surface shape, vertices)*
Coordinate Geometry, Symmetry and Transformations	**Coordinate Geometry, Symmetry and Transformations**	**Coordinate Geometry, Symmetry and Transformations**
• Identifies position of shapes (e.g., inside, outside, between)* • Identifies plane figures with line symmetry • Identifies the number of lines of symmetry in plane figures • Identifies transformations of plane figures (reflections/flips) • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)*	• Classifies plane figures by the number of lines of symmetry* • Defines transformations* • Graphs ordered pairs in the first quadrant • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)* • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system*	• Classifies plane figures by the number of lines of symmetry* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)* • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system*
Relationships Between and Among Multiple Figures	**Relationships Between and Among Multiple Figures**	**Relationships Between and Among Multiple Figures**
• Sorts 2-D shapes and objects according to their attributes		• Predicts and verifies the effects of combining or subdividing basic shapes

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• Creates a new shape by combining different shapes, or identifies the different shapes that were used to make the original shape* • Identifies figures that are the same size and shape (analysis)* • Identifies congruent figures		• Compares simple plane figures to solid figures (e.g., circle/sphere, square/cube, rectangle/rectangular solid)* • Identifies similar and congruent triangles* • Identifies congruent polygons and their corresponding sides and angles* • Defines "similarity"* • Recognizes similar figures in the real world* • Uses similar figures to construct ratios and solve for a missing side*
New Vocabulary: diagonal, face, inside, intersect, kite, large, oval, parallel, plane, polygon, rhombus, same shape, straight, twist, vertical line	*New Vocabulary:* coordinate point, edge, fold, larger, mirror image, octagon, ordered pair, parallel line, rectangular box, regular polygon, trapezoid, vertex	*New Vocabulary:* acute angle, congruent angle, dilation, enlargement, geometric solid, obtuse angle, perpendicular line, straight angle, tessellation, three-dimensional, transformation, translation, union
New Signs and Symbols: • multiplication symbol (dot)	*New Signs and Symbols:* ↔ line symbol	*New Signs and Symbols:* ∠ angle, angle marker (arc), ° degrees, right angle marker, segment overbar

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 211 - 220

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
Single Figures, Circles, Lines, and Angles	**Single Figures, Circles, Lines, and Angles**	**Single Figures, Circles, Lines, and Angles**
• Identifies the intersection point of two lines* • Identifies intersecting lines • Identifies parallel lines • Identifies angles* • Identifies right angles* • Identifies and names a parallelogram* • Identifies and names a polygon* • Identifies and names a hexagon* • Identifies and names a octagon* • Classifies polygons by sides and angles • Classifies cubes by their properties (e.g., edges with equal lengths, faces with equal areas and congruent shapes, right angle corners) • Identifies a cube from a net • Identifies and names a cylinder • Classifies cylinders by their properties (e.g., base shape, lateral surface shape, vertices)*	• Identifies rays* • Identifies perpendicular lines* • Describes relationships among points, lines, and planes, and identifies models in the environment* • Identifies right angles within adjacent angles* • Identifies properties of angles • Identifies acute angles • Identifies obtuse angles • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Identifies and names a quadrilateral* • Classifies polygons by type of angle* • Classifies polygons by number of sides* • Identifies corners (vertices) of cubes* • Identifies the net which makes a cube-like (open box) figure* • Identifies and names a rectangular prism* • Classifies triangular prisms by their properties (e.g., base shape, lateral surface shape, vertices)*	• Identifies rays* • Determines which lines are perpendicular (analysis)* • Identifies right angles within adjacent angles* • Identifies and determines missing angle measures for supplementary angles • Identifies acute angles • Recognizes the interior angle relationships of triangles • Classifies equilateral triangles* • Identifies and names a trapezoid* • Identifies the radius of a circle • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Identifies and names a quadrilateral* • Compares polygons by properties • Identifies the number of diagonals of regular polygons* • Classifies polygons by type of angle* • Identifies the number of edges on rectangular prisms*
Coordinate Geometry, Symmetry and Transformations	**Coordinate Geometry, Symmetry and Transformations**	**Coordinate Geometry, Symmetry and Transformations**
• Classifies plane figures by the number of lines of symmetry* • Defines transformations* • Graphs ordered pairs in the first quadrant • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)* • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system*	• Classifies plane figures by the number of lines of symmetry* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)* • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system*	• Predicts changes necessary to create symmetry in basic plane shapes* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)* • Determines coordinates of geometric figures in the first quadrant • Determines the distance between points, following grid lines, in the first quadrant on a coordinate graph (as in city blocks)*
Relationships Between and Among Multiple Figures	**Relationships Between and Among Multiple Figures**	**Relationships Between and Among Multiple Figures**
	• Predicts and verifies the effects of combining or	• Uses similar figures to construct ratios and solve for a

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	subdividing basic shapes • Compares simple plane figures to solid figures (e.g., circle/sphere, square/cube, rectangle/rectangular solid)* • Identifies similar and congruent triangles* • Identifies congruent polygons and their corresponding sides and angles* • Defines "similarity"* • Recognizes similar figures in the real world* • Uses similar figures to construct ratios and solve for a missing side*	missing side* • Uses similar triangles to construct ratios and solve for a missing side
New Vocabulary: coordinate point, edge, fold, larger, mirror image, octagon, ordered pair, parallel line, rectangular box, regular polygon, trapezoid, vertex	*New Vocabulary:* acute angle, congruent angle, dilation, enlargement, geometric solid, obtuse angle, perpendicular line, straight angle, tessellation, three-dimensional, transformation, translation, union	*New Vocabulary:* arc, center, central angle, complementary angle, congruent side, equilateral, interior angle, isosceles triangle, obtuse triangle, right triangle, scalene triangle, sum of measures
New Signs and Symbols: ↔ line symbol	*New Signs and Symbols:* ∠ angle, angle marker (arc), ° degrees, right angle marker, segment overbar	*New Signs and Symbols:* = is equal to, parallel symbol, π pi, Δ triangle

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 221 - 230

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
Single Figures, Circles, Lines, and Angles	**Single Figures, Circles, Lines, and Angles**	**Single Figures, Circles, Lines, and Angles**
• Identifies rays* • Identifies perpendicular lines* • Describes relationships among points, lines, and planes, and identifies models in the environment* • Identifies right angles within adjacent angles* • Identifies properties of angles • Identifies acute angles • Identifies obtuse angles • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Identifies and names a quadrilateral* • Classifies polygons by type of angle* • Classifies polygons by number of sides* • Identifies corners (vertices) of cubes* • Identifies the net which makes a cube-like (open box) figure* • Identifies and names a rectangular prism* • Classifies triangular prisms by their properties (e.g., base shape, lateral surface shape, vertices)*	• Identifies rays* • Determines which lines are perpendicular (analysis)* • Identifies right angles within adjacent angles* • Identifies and determines missing angle measures for supplementary angles • Identifies acute angles • Recognizes the interior angle relationships of triangles • Classifies equilateral triangles* • Identifies and names a trapezoid* • Identifies the radius of a circle • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Identifies and names a quadrilateral* • Compares polygons by properties • Identifies the number of diagonals of regular polygons* • Classifies polygons by type of angle* • Identifies the number of edges on rectangular prisms*	• Determines which lines are perpendicular (analysis)* • Identifies and measures straight angles • Identifies parts of a right triangle (legs, hypotenuse, angles)* • Recognizes the interior angle relationships of triangles • Classifies isosceles triangles • Classifies scalene triangles* • Compares polygons by properties • Classifies square pyramids by their properties (e.g., base shape, lateral surface shape, vertices)* • Classifies rectangular pyramids by their properties (e.g., base shape, lateral surface shape, vertices)*
Coordinate Geometry, Symmetry and Transformations	**Coordinate Geometry, Symmetry and Transformations**	**Coordinate Geometry, Symmetry and Transformations**
• Classifies plane figures by the number of lines of symmetry* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)* • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system*	• Predicts changes necessary to create symmetry in basic plane shapes* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)* • Determines coordinates of geometric figures in the first quadrant • Determines the distance between points, following grid lines, in the first quadrant on a coordinate graph (as in city blocks)*	• Identifies geometric transformations (dilations)
Relationships Between and Among Multiple Figures	**Relationships Between and Among Multiple Figures**	**Relationships Between and Among Multiple Figures**
• Predicts and verifies the effects of combining or	• Uses similar figures to construct ratios and solve for a	• Identifies properties of congruent triangles*

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subdividing basic shapes • Compares simple plane figures to solid figures (e.g., circle/sphere, square/cube, rectangle/rectangular solid)* • Identifies similar and congruent triangles* • Identifies congruent polygons and their corresponding sides and angles* • Defines "similarity"* • Recognizes similar figures in the real world* • Uses similar figures to construct ratios and solve for a missing side*	missing side* • Uses similar triangles to construct ratios and solve for a missing side	• Uses similar triangles to construct ratios and solve for a missing side
New Vocabulary: acute angle, congruent angle, dilation, enlargement, geometric solid, obtuse angle, perpendicular line, straight angle, tessellation, three-dimensional, transformation, translation, union	*New Vocabulary:* arc, center, central angle, complementary angle, congruent side, equilateral, interior angle, isosceles triangle, obtuse triangle, right triangle, scalene triangle, sum of measures	*New Vocabulary:* acute triangle, corresponding side, equiangular triangle, square pyramid
New Signs and Symbols: ∠ angle, angle marker (arc), ° degrees, right angle marker, segment overbar	*New Signs and Symbols:* = is equal to, parallel symbol, π pi, Δ triangle	*New Signs and Symbols:* congruent segment symbol

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 231 - 240

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
Single Figures, Circles, Lines, and Angles	**Single Figures, Circles, Lines, and Angles**	**Single Figures, Circles, Lines, and Angles**
• Identifies rays* • Determines which lines are perpendicular (analysis)* • Identifies right angles within adjacent angles* • Identifies and determines missing angle measures for supplementary angles • Identifies acute angles • Recognizes the interior angle relationships of triangles • Classifies equilateral triangles* • Identifies and names a trapezoid* • Identifies the radius of a circle • Identifies the diameter of a circle* • Identifies the circumference of circle* • Identifies the number of degrees in a circle* • Identifies and names a quadrilateral* • Compares polygons by properties • Identifies the number of diagonals of regular polygons* • Classifies polygons by type of angle* • Identifies the number of edges on rectangular prisms*	• Determines which lines are perpendicular (analysis)* • Identifies and measures straight angles • Identifies parts of a right triangle (legs, hypotenuse, angles)* • Recognizes the interior angle relationships of triangles • Classifies isosceles triangles • Classifies scalene triangles* • Compares polygons by properties • Classifies square pyramids by their properties (e.g., base shape, lateral surface shape, vertices)* • Classifies rectangular pyramids by their properties (e.g., base shape, lateral surface shape, vertices)*	• Identifies properties of congruent angles* • Identifies and determines missing angle measures for complementary angles • Defines angles using properties (e.g., acute, obtuse, right, straight, reflex)* • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side* • Classifies right triangles by defining properties* • Identifies and names a rhombus* • Identifies symmetry of a sphere*
Coordinate Geometry, Symmetry and Transformations	**Coordinate Geometry, Symmetry and Transformations**	**Coordinate Geometry, Symmetry and Transformations**
• Predicts changes necessary to create symmetry in basic plane shapes* • Identifies geometric transformations (rotations)* • Identifies geometric transformations (translations)* • Identifies geometric transformations (reflections)* • Determines coordinates of geometric figures in the first quadrant • Determines the distance between points, following grid lines, in the first quadrant on a coordinate graph (as in city blocks)*	• Identifies geometric transformations (dilations)	
Relationships Between and Among Multiple Figures	**Relationships Between and Among Multiple Figures**	**Relationships Between and Among Multiple Figures**
• Uses similar figures to construct ratios and solve for a missing side* • Uses similar triangles to construct ratios and solve for a	• Identifies properties of congruent triangles* • Uses similar triangles to construct ratios and solve for a missing side	• Identifies properties of similar figures*

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missing side		
New Vocabulary: arc, center, central angle, complementary angle, congruent side, equilateral, interior angle, isosceles triangle, obtuse triangle, right triangle, scalene triangle, sum of measures	*New Vocabulary:* acute triangle, corresponding side, equiangular triangle, square pyramid	*New Vocabulary:* adjacent angle, infinite
New Signs and Symbols: = is equal to, parallel symbol, π pi, Δ triangle	*New Signs and Symbols:* congruent segment symbol	*New Signs and Symbols:* + addition, ≅ is congruent to, < less than, m measure of angle, → ray symbol

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: 241 - 250

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop 241 - 250	Skills and Concepts to Introduce Above 250
Single Figures, Circles, Lines, and Angles	**Single Figures, Circles, Lines, and Angles**	**Single Figures, Circles, Lines, and Angles**
• Determines which lines are perpendicular (analysis)* • Identifies and measures straight angles • Identifies parts of a right triangle (legs, hypotenuse, angles)* • Recognizes the interior angle relationships of triangles • Classifies isosceles triangles • Classifies scalene triangles* • Compares polygons by properties • Classifies square pyramids by their properties (e.g., base shape, lateral surface shape, vertices)* • Classifies rectangular pyramids by their properties (e.g., base shape, lateral surface shape, vertices)*	• Identifies properties of congruent angles* • Identifies and determines missing angle measures for complementary angles • Defines angles using properties (e.g., acute, obtuse, right, straight, reflex)* • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side* • Classifies right triangles by defining properties* • Identifies and names a rhombus* • Identifies symmetry of a sphere*	• Identifies properties of congruent angles* • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side* • Classifies right triangles by defining properties* • Identifies and names a rhombus*
Coordinate Geometry, Symmetry and Transformations	**Coordinate Geometry, Symmetry and Transformations**	**Coordinate Geometry, Symmetry and Transformations**
• Identifies geometric transformations (dilations)		
Relationships Between and Among Multiple Figures	**Relationships Between and Among Multiple Figures**	**Relationships Between and Among Multiple Figures**
• Identifies properties of congruent triangles* • Uses similar triangles to construct ratios and solve for a missing side	• Identifies properties of similar figures*	
New Vocabulary: acute triangle, corresponding side, equiangular triangle, square pyramid	*New Vocabulary:* adjacent angle, infinite	*New Vocabulary:* none
New Signs and Symbols: congruent segment symbol	*New Signs and Symbols:* + addition, ≅ is congruent to, < less than, m measure of angle, → ray symbol	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Geometry
RIT Score Range: Above 250

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop Above 250
Single Figures, Circles, Lines, and Angles	**Single Figures, Circles, Lines, and Angles**
• Identifies properties of congruent angles* • Identifies and determines missing angle measures for complementary angles • Defines angles using properties (e.g., acute, obtuse, right, straight, reflex)* • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side* • Classifies right triangles by defining properties* • Identifies and names a rhombus* • Identifies symmetry of a sphere*	• Identifies properties of congruent angles* • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side* • Classifies right triangles by defining properties* • Identifies and names a rhombus*
Coordinate Geometry, Symmetry and Transformations	**Coordinate Geometry, Symmetry and Transformations**
Relationships Between and Among Multiple Figures	**Relationships Between and Among Multiple Figures**
• Identifies properties of similar figures*	
New Vocabulary: adjacent angle, infinite	*New Vocabulary:* none
New Signs and Symbols: + addition, ≅ is congruent to, < less than, m measure of angle, → ray symbol	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Data Analysis, Statistics, and Probability
RIT Score Range: Below 171

Skills and Concepts to Develop Below 171	Skills and Concepts to Introduce 171 - 180
Data Analysis and Statistics	**Data Analysis and Statistics**
• Solves simple problems based on data from tables* • Compares data from simple graphs (e.g., largest, smallest, most often, least often)	• Interprets simple graphs or tables • Interprets data using tally charts • Reads and interprets data from a pictograph* • Solves simple problems based on data from pictographs • Displays data appropriately - bar graph - scale is 1 to 1* • Solves simple problems based on data from bar graphs • Compares data from simple graphs (e.g., largest, smallest, most often, least often)
Probability	**Probability**
	• Investigates probability of "more likely" or "less likely" using a table*
New Vocabulary: dollar, fewest, longest, shortest	*New Vocabulary:* fewer, less, quart, taller
New Signs and Symbols: $ dollar sign, = is equal to	*New Signs and Symbols:* cm centimeter/centimetre, in. inch, | tally mark

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Subject: Mathematics
Goal Strand: Data Analysis, Statistics, and Probability
RIT Score Range: 171 - 180

Skills and Concepts to Enhance Below 171	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
Data Analysis and Statistics	**Data Analysis and Statistics**	**Data Analysis and Statistics**
• Solves simple problems based on data from tables* • Compares data from simple graphs (e.g., largest, smallest, most often, least often)	• Interprets simple graphs or tables • Interprets data using tally charts • Reads and interprets data from a pictograph* • Solves simple problems based on data from pictographs • Displays data appropriately - bar graph - scale is 1 to 1* • Solves simple problems based on data from bar graphs • Compares data from simple graphs (e.g., largest, smallest, most often, least often)	• Interprets simple graphs or tables • Solves simple problems based on data from tally charts* • Solves simple problems based on data from pictographs • Reads and interprets data from a bar graph • Solves simple problems based on data from bar graphs
Probability	**Probability**	**Probability**
	• Investigates probability of "more likely" or "less likely" using a table*	• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with objects hidden in containers*
New Vocabulary: dollar, fewest, longest, shortest	*New Vocabulary:* fewer, less, quart, taller	*New Vocabulary:* average, consecutive, lowest, most likely, most often, spinner
New Signs and Symbols: $ dollar sign, = is equal to	*New Signs and Symbols:* cm centimeter/centimetre, in. inch, | tally mark	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Data Analysis, Statistics, and Probability
RIT Score Range: 181 - 190

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
Data Analysis and Statistics	**Data Analysis and Statistics**	**Data Analysis and Statistics**
• Interprets simple graphs or tables • Interprets data using tally charts • Reads and interprets data from a pictograph* • Solves simple problems based on data from pictographs • Displays data appropriately - bar graph - scale is 1 to 1* • Solves simple problems based on data from bar graphs • Compares data from simple graphs (e.g., largest, smallest, most often, least often)	• Interprets simple graphs or tables • Solves simple problems based on data from tally charts* • Solves simple problems based on data from pictographs • Reads and interprets data from a bar graph • Solves simple problems based on data from bar graphs	• Solves problems using tables • Solves problems using tally charts* • Reads and interprets data from a bar graph • Reads and interprets dual bar graphs* • Reads and interprets simple line graphs • Reads and interprets data given in percent form on a circle graph* • Draws conclusions from data - tally charts or frequency tables*
Probability	**Probability**	**Probability**
• Investigates probability of "more likely" or "less likely" using a table*	• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with objects hidden in containers*	• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with a dart board*
New Vocabulary: fewer, less, quart, taller	*New Vocabulary:* average, consecutive, lowest, most likely, most often, spinner	*New Vocabulary:* line graph
New Signs and Symbols: cm centimeter/centimetre, in. inch, | tally mark	*New Signs and Symbols:* none	*New Signs and Symbols:* a.m., °F Degrees Fahrenheit, g gram, lb pound, min minute, p.m., % percent, : used with time

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Subject: Mathematics
Goal Strand: Data Analysis, Statistics, and Probability
RIT Score Range: 191 - 200

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
Data Analysis and Statistics	**Data Analysis and Statistics**	**Data Analysis and Statistics**
• Interprets simple graphs or tables • Solves simple problems based on data from tally charts* • Solves simple problems based on data from pictographs • Reads and interprets data from a bar graph • Solves simple problems based on data from bar graphs	• Solves problems using tables • Solves problems using tally charts* • Reads and interprets data from a bar graph • Reads and interprets dual bar graphs* • Reads and interprets simple line graphs • Reads and interprets data given in percent form on a circle graph* • Draws conclusions from data - tally charts or frequency tables*	• Reads and interprets tables* • Solves problems using tables • Understands how the omission or duplication of data affects the interpretation of results from a pictograph* • Organizes data to create simple bar graphs • Solves problems using bar graphs • Solves problems using dual bar graphs* • Solves problems using line graphs* • Displays data appropriately - simple circle graph - no calculations necessary* • Reads and interprets data given in percent form on a circle graph* • Interprets data given in circle graphs to solve simple problems (with percents) • Solves problems using Venn diagrams • Draws conclusions from data - bar graphs • Predicts from pictographs and bar graphs* • Predicts from simple charts and tables
Probability	**Probability**	**Probability**
• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with objects hidden in containers*	• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with a dart board*	• Recognizes events that are certain, likely, unlikely, possible, or impossible* • Uses the concept of chance to determine the likelihood of an event* • Determines the probability for a simple experiment using one or more coins • Determines the probability for a simple experiment using objects - must determine size of sample space
New Vocabulary: average, consecutive, lowest, most likely, most often, spinner	*New Vocabulary:* line graph	*New Vocabulary:* bar graph, below, less likely, maximum, random, square mile, times
New Signs and Symbols: none	*New Signs and Symbols:* a.m., °F Degrees Fahrenheit, g gram, lb pound, min minute, p.m., % percent, : used with time	*New Signs and Symbols:* ft feet, kg kilogram

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Subject: Mathematics
Goal Strand: Data Analysis, Statistics, and Probability
RIT Score Range: 201 - 210

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
Data Analysis and Statistics	**Data Analysis and Statistics**	**Data Analysis and Statistics**
• Solves problems using tables • Solves problems using tally charts* • Reads and interprets data from a bar graph • Reads and interprets dual bar graphs* • Reads and interprets simple line graphs • Reads and interprets data given in percent form on a circle graph* • Draws conclusions from data - tally charts or frequency tables*	• Reads and interprets tables* • Solves problems using tables • Understands how the omission or duplication of data affects the interpretation of results from a pictograph* • Organizes data to create simple bar graphs • Solves problems using bar graphs • Solves problems using dual bar graphs* • Solves problems using line graphs* • Displays data appropriately - simple circle graph - no calculations necessary* • Reads and interprets data given in percent form on a circle graph* • Interprets data given in circle graphs to solve simple problems (with percents) • Solves problems using Venn diagrams • Draws conclusions from data - bar graphs • Predicts from pictographs and bar graphs* • Predicts from simple charts and tables	• Solves problems using pictographs* • Solves problems using bar graphs • Solves problems using line graphs* • Reads and interprets circle graphs* • Interprets data given in circle graphs to solve simple problems (with percents) • Solves problems using circle graphs* • Reads and interprets Venn diagrams • Reads and interprets data in line plots* • Determines the average (mean) of a simple set of data • Solves simple problems involving mean • Draws conclusions from data - charts* • Predicts from pictographs and bar graphs* • Predicts from plotted data*
Probability	**Probability**	**Probability**
• Investigates probability of "more likely" or "less likely" using a spinner • Investigates probability of "more likely" or "less likely" with a dart board*	• Recognizes events that are certain, likely, unlikely, possible, or impossible* • Uses the concept of chance to determine the likelihood of an event* • Determines the probability for a simple experiment using one or more coins • Determines the probability for a simple experiment using objects - must determine size of sample space	• Uses systematic lists to represent problems* • Determines the probability for a simple experiment using one die • Determines probability from a real-world situation - number of possible outcomes given • Determines the probabilities for a simple experiment using a frequency table - must determine size of sample space • Determines probability when drawing objects from containers - must determine size of sample space • Determines the possible outcomes for a simple probability experiment using spinners • Solves problems involving permutations • Determines the number of possible combinations of given items • Predicts the sample space, based on the outcome of an

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		experiment - tally sheet* • Uses the results of probability experiments or events to predict future events*
New Vocabulary: line graph	*New Vocabulary:* bar graph, below, less likely, maximum, random, square mile, times	*New Vocabulary:* combinations, likelihood, line of best fit, line plot, mean, number cube, outcome, prove, systematic list, tails
New Signs and Symbols: a.m., °F Degrees Fahrenheit, g gram, lb pound, min minute, p.m., % percent, : used with time	*New Signs and Symbols:* ft feet, kg kilogram	*New Signs and Symbols:* { } set notation, ¢ cent sign, hr hour

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Subject: Mathematics
Goal Strand: Data Analysis, Statistics, and Probability
RIT Score Range: 211 - 220

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
Data Analysis and Statistics	**Data Analysis and Statistics**	**Data Analysis and Statistics**
• Reads and interprets tables* • Solves problems using tables • Understands how the omission or duplication of data affects the interpretation of results from a pictograph* • Organizes data to create simple bar graphs • Solves problems using bar graphs • Solves problems using dual bar graphs* • Solves problems using line graphs* • Displays data appropriately - simple circle graph - no calculations necessary* • Reads and interprets data given in percent form on a circle graph* • Interprets data given in circle graphs to solve simple problems (with percents) • Solves problems using Venn diagrams • Draws conclusions from data - bar graphs • Predicts from pictographs and bar graphs* • Predicts from simple charts and tables	• Solves problems using pictographs* • Solves problems using bar graphs • Solves problems using line graphs* • Reads and interprets circle graphs* • Interprets data given in circle graphs to solve simple problems (with percents) • Solves problems using circle graphs* • Reads and interprets Venn diagrams • Reads and interprets data in line plots* • Determines the average (mean) of a simple set of data • Solves simple problems involving mean • Draws conclusions from data - charts* • Predicts from pictographs and bar graphs* • Predicts from plotted data*	• Determines the most accurate sample for a situation* • Interprets data given in tables to solve problems • Interprets data given in circle graphs to solve complex problems (with percents) • Solves problems using circle graphs* • Determines the average (mean) of a simple set of data • Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves simple problems involving mean • Solves problems with missing data when the mean is known • Determines the middle value (median) from a simple set of data* • Determines the mode of a set of data • Draws conclusions from data - charts* • Predicts from line graphs* • Predicts from plotted data*
Probability	**Probability**	**Probability**
• Recognizes events that are certain, likely, unlikely, possible, or impossible* • Uses the concept of chance to determine the likelihood of an event* • Determines the probability for a simple experiment using one or more coins • Determines the probability for a simple experiment using objects - must determine size of sample space	• Uses systematic lists to represent problems* • Determines the probability for a simple experiment using one die • Determines probability from a real-world situation - number of possible outcomes given • Determines the probabilities for a simple experiment using a frequency table - must determine size of sample space • Determines probability when drawing objects from containers - must determine size of sample space • Determines the possible outcomes for a simple probability experiment using spinners • Solves problems involving permutations • Determines the number of possible combinations of given items • Predicts the sample space, based on the outcome of an	• Determines likelihood using tree diagrams* • Determines probability - must determine size of sample space • Determines the possible outcomes for a simple probability experiment using spinners • Determines the possible outcomes for a simple probability experiment using dart boards* • Solves problems involving combinations • Determines the number of possible combinations of given items • Determines the outcome of simple multiple events* • Uses previous results to predict future events* • Computes probability as a fraction, given equivalent forms* • Given probability as a decimal, estimates probability as a fraction*

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	experiment - tally sheet* • Uses the results of probability experiments or events to predict future events*	
New Vocabulary: bar graph, below, less likely, maximum, random, square mile, times	*New Vocabulary:* combinations, likelihood, line of best fit, line plot, mean, number cube, outcome, prove, systematic list, tails	*New Vocabulary:* frequency table, median, mode, survey
New Signs and Symbols: ft feet, kg kilogram	*New Signs and Symbols:* { } set notation, ¢ cent sign, hr hour	*New Signs and Symbols:* h hour (SI metric), − negative number, oz ounce, P( ) probability, s second (SI metric)

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Subject: Mathematics
Goal Strand: Data Analysis, Statistics, and Probability
RIT Score Range: 221 - 230

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
Data Analysis and Statistics	**Data Analysis and Statistics**	**Data Analysis and Statistics**
• Solves problems using pictographs* • Solves problems using bar graphs • Solves problems using line graphs* • Reads and interprets circle graphs* • Interprets data given in circle graphs to solve simple problems (with percents) • Solves problems using circle graphs* • Reads and interprets Venn diagrams • Reads and interprets data in line plots* • Determines the average (mean) of a simple set of data • Solves simple problems involving mean • Draws conclusions from data - charts* • Predicts from pictographs and bar graphs* • Predicts from plotted data*	• Determines the most accurate sample for a situation* • Interprets data given in tables to solve problems • Interprets data given in circle graphs to solve complex problems (with percents) • Solves problems using circle graphs* • Determines the average (mean) of a simple set of data • Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves simple problems involving mean • Solves problems with missing data when the mean is known • Determines the middle value (median) from a simple set of data* • Determines the mode of a set of data • Draws conclusions from data - charts* • Predicts from line graphs* • Predicts from plotted data*	• Organizes data using tables* • Interprets data given in tables to solve problems • Determines appropriate intervals and/or scale for a bar graph* • Interprets data given in horizontal and vertical bar graphs to solve problems • Interprets data given in line graphs to solve problems* • Interprets data given in circle graphs to solve complex problems (with percents) • Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves problems with missing data when the mean is known • Determines the median from a complex set of data (e.g., not in order, many data points) • Determines the range of a complex set of data • Predicts from an analysis of data and statistical measures* • Predicts from charts and tables
Probability	**Probability**	**Probability**
• Uses systematic lists to represent problems* • Determines the probability for a simple experiment using one die • Determines probability from a real-world situation - number of possible outcomes given • Determines the probabilities for a simple experiment using a frequency table - must determine size of sample space • Determines probability when drawing objects from containers - must determine size of sample space • Determines the possible outcomes for a simple probability experiment using spinners • Solves problems involving permutations • Determines the number of possible combinations of	• Determines likelihood using tree diagrams* • Determines probability - must determine size of sample space • Determines the possible outcomes for a simple probability experiment using spinners • Determines the possible outcomes for a simple probability experiment using dart boards* • Solves problems involving combinations • Determines the number of possible combinations of given items • Determines the outcome of simple multiple events* • Uses previous results to predict future events* • Computes probability as a fraction, given equivalent forms*	• Determines certainty from a set data* • Determines sample space given probability of all possible outcomes* • Determines probability - must determine size of sample space • Modifies sample space to change the probability of an event*

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given items • Predicts the sample space, based on the outcome of an experiment - tally sheet* • Uses the results of probability experiments or events to predict future events*	• Given probability as a decimal, estimates probability as a fraction*	
New Vocabulary: combinations, likelihood, line of best fit, line plot, mean, number cube, outcome, prove, systematic list, tails	*New Vocabulary:* frequency table, median, mode, survey	*New Vocabulary:* average salary, meters per minute, middle, sample, successive
New Signs and Symbols: { } set notation, ¢ cent sign, hr hour	*New Signs and Symbols:* h hour (SI metric), − negative number, oz ounce, P( ) probability, s second (SI metric)	*New Signs and Symbols:* $ dollar sign, °C Degrees Celsius, m meter/metre, mL milliliter/millilitre, ? next in sequence

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Subject: Mathematics
Goal Strand: Data Analysis, Statistics, and Probability
RIT Score Range: 231 - 240

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
Data Analysis and Statistics	**Data Analysis and Statistics**	**Data Analysis and Statistics**
• Determines the most accurate sample for a situation* • Interprets data given in tables to solve problems • Interprets data given in circle graphs to solve complex problems (with percents) • Solves problems using circle graphs* • Determines the average (mean) of a simple set of data • Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves simple problems involving mean • Solves problems with missing data when the mean is known • Determines the middle value (median) from a simple set of data* • Determines the mode of a set of data • Draws conclusions from data - charts* • Predicts from line graphs* • Predicts from plotted data*	• Organizes data using tables* • Interprets data given in tables to solve problems • Determines appropriate intervals and/or scale for a bar graph* • Interprets data given in horizontal and vertical bar graphs to solve problems • Interprets data given in line graphs to solve problems* • Interprets data given in circle graphs to solve complex problems (with percents) • Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves problems with missing data when the mean is known • Determines the median from a complex set of data (e.g., not in order, many data points) • Determines the range of a complex set of data • Predicts from an analysis of data and statistical measures* • Predicts from charts and tables	• Reads and interprets data in tables • Determines the range of a complex set of data • Predicts from an analysis of data and statistical measures*
Probability	**Probability**	**Probability**
• Determines likelihood using tree diagrams* • Determines probability - must determine size of sample space • Determines the possible outcomes for a simple probability experiment using spinners • Determines the possible outcomes for a simple probability experiment using dart boards* • Solves problems involving combinations • Determines the number of possible combinations of given items • Determines the outcome of simple multiple events* • Uses previous results to predict future events* • Computes probability as a fraction, given equivalent forms*	• Determines certainty from a set data* • Determines sample space given probability of all possible outcomes* • Determines probability - must determine size of sample space • Modifies sample space to change the probability of an event*	• Determines certainty from a set data* • Determines probability using counting procedures* • Determines probability using tables • Determines probability using an area model • Uses theoretical probability to predict future events

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• Given probability as a decimal, estimates probability as a fraction*		
New Vocabulary: frequency table, median, mode, survey	*New Vocabulary:* average salary, meters per minute, middle, sample, successive	*New Vocabulary:* mileage table
New Signs and Symbols: h hour (SI metric), – negative number, oz ounce, P( ) probability, s second (SI metric)	*New Signs and Symbols:* $ dollar sign, °C Degrees Celsius, m meter/metre, mL milliliter/millilitre, ? next in sequence	*New Signs and Symbols:* ° degrees, E east, × multiplication, NE northeast, NNE north northeast, N north, NW northwest, S south, W west

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Subject: Mathematics
Goal Strand: Data Analysis, Statistics, and Probability
RIT Score Range: 241 - 250

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop 241 - 250	Skills and Concepts to Introduce Above 250
Data Analysis and Statistics	**Data Analysis and Statistics**	**Data Analysis and Statistics**
• Organizes data using tables* • Interprets data given in tables to solve problems • Determines appropriate intervals and/or scale for a bar graph* • Interprets data given in horizontal and vertical bar graphs to solve problems • Interprets data given in line graphs to solve problems* • Interprets data given in circle graphs to solve complex problems (with percents) • Determines the mean of a complex set of data (e.g., fractions, integers, many data points) • Estimates the mean from a set of data* • Solves problems with missing data when the mean is known • Determines the median from a complex set of data (e.g., not in order, many data points) • Determines the range of a complex set of data • Predicts from an analysis of data and statistical measures* • Predicts from charts and tables	• Reads and interprets data in tables • Determines the range of a complex set of data • Predicts from an analysis of data and statistical measures*	• Uses random sampling techniques* • Displays data appropriately - circle graph - calculations necessary* • Solves complex problems involving mean*
Probability	**Probability**	**Probability**
• Determines certainty from a set data* • Determines sample space given probability of all possible outcomes* • Determines probability - must determine size of sample space • Modifies sample space to change the probability of an event*	• Determines certainty from a set data* • Determines probability using counting procedures* • Determines probability using tables • Determines probability using an area model • Uses theoretical probability to predict future events	• Determines certainty from a set data*
New Vocabulary: average salary, meters per minute, middle, sample, successive	*New Vocabulary:* mileage table	*New Vocabulary:* none
New Signs and Symbols: $ dollar sign, °C Degrees Celsius, m meter/metre, mL milliliter/millilitre, ? next in sequence	*New Signs and Symbols:* ° degrees, E east, × multiplication, NE northeast, NNE north northeast, N north, NW northwest, S south, W west	*New Signs and Symbols:* none

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Subject: Mathematics
Goal Strand: Data Analysis, Statistics, and Probability
RIT Score Range: Above 250

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop Above 250
Data Analysis and Statistics	**Data Analysis and Statistics**
• Reads and interprets data in tables • Determines the range of a complex set of data • Predicts from an analysis of data and statistical measures*	• Uses random sampling techniques* • Displays data appropriately - circle graph - calculations necessary* • Solves complex problems involving mean*
Probability	**Probability**
• Determines certainty from a set data* • Determines probability using counting procedures* • Determines probability using tables • Determines probability using an area model • Uses theoretical probability to predict future events	• Determines certainty from a set data*
New Vocabulary: mileage table	*New Vocabulary:* none
New Signs and Symbols: ° degrees, E east, × multiplication, NE northeast, NNE north northeast, N north, NW northwest, S south, W west	*New Signs and Symbols:* none

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