Skills and Concepts to Develop (50% Probability*) < 161	Skills and Concepts to Introduce (27% Probability*) 161 - 170
Ratios and Proportional Relationships	**Ratios and Proportional Relationships**
	• Completes a growing arithmetic pattern by naming missing members
Perform Operations	**Perform Operations**
• Uses models to construct whole number addition facts with addends through 10	• 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 99
• Adds two 1-digit numbers with sums to 10 in horizontal format	• Adds two 1-digit numbers with sums to 10 in horizontal format
• Adds 1-digit to multiple-digit number with no regrouping	• Adds two 1-digit numbers with sums between 10 and 19 in horizontal format
• Adds 1-digit to multiple-digit number with regrouping	• 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 1-digit to multiple-digit number with regrouping
	• Adds 2-digit numbers with no regrouping
	• Solves real-world whole number addition problems with sums to 20 (result unknown)
	• 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
	• Subtracts a 2-digit number from a 2-digit number, with no regrouping
	• Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12
	• Tells time to the nearest hour
	• Tells time to the nearest half hour
Extend and Use Properties	**Extend and Use Properties**
• Identifies whole numbers under 100 using base-10 blocks	• Identifies whole numbers under 100 using base-10 blocks
• Identifies the numerical and written name for whole numbers 11 to 20 (e.g., 15 is fifteen, and vice versa)	• Identifies the numerical and written name for whole numbers 11 to 20 (e.g., 15 is fifteen, and vice versa)
	• Counts 1 to 10 objects
	• Identifies missing numbers in a series through 100
	• Recognizes and generates equivalent forms for the same number using physical models for whole numbers 11 to 20
	• Orders whole numbers less than 10
	• Writes whole numbers in standard and expanded form through the tens
New Vocabulary: None	*New Vocabulary:* None
New Signs and Symbols: None	*New Signs and Symbols:* + addition, = is equal to, × multiplication, - subtraction, : used with time, variable

Mathematics

Goal: The Real and Complex Number Systems

RIT Score Range: 161 - 170
Statements Last Updated: Aug 4, 2014

Skills and Concepts to Enhance (73% Probability*) < 161	Skills and Concepts to Develop (50% Probability*) 161 - 170	Skills and Concepts to Introduce (27% Probability*) 171 - 180
Ratios and Proportional Relationships	Ratios and Proportional Relationships	Ratios and Proportional Relationships
	• Completes a growing arithmetic pattern by naming missing members	• Completes a growing arithmetic pattern by naming missing members
		• Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour)
Perform Operations	Perform Operations	Perform Operations
• Uses models to construct whole number addition facts with addends through 10	• Uses a number line to construct addition facts with sums through 20 (whole numbers)	• 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 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 horizontal format	• 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 two 1-digit numbers with sums between 10 and 19 in horizontal format	• Adds two or three 2-digit number with regrouping
• Adds 1-digit to multiple-digit number with regrouping	• Adds two 1-digit numbers with sums between 10 and 19 in vertical format	• Adds 1- and/or 2-digit numbers with sums under 100
	• Adds multiple 1-digit numbers	• Adds 3-digit numbers with no regrouping
	• Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens)	• Adds 3-digit numbers, with regrouping, with sums under 1000
	• Adds 1-digit to multiple-digit number with no regrouping	• Solves real-world whole number addition problems with sums to 20 (result unknown)
	• Adds 1-digit to multiple-digit number with regrouping	• Solves real-world whole number addition problems with sums to 20 (start unknown)
	• Adds 2-digit numbers with no regrouping	• Solves real-world whole number addition problems with sums to 100 (result unknown)
	• Solves real-world whole number addition problems with sums to 20 (result unknown)	• Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only)
	• Subtracts two 1-digit numbers horizontally	• Subtracts a 1-digit number from a 2-digit number with no regrouping, vertically
	• Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only)	• Subtracts a 2-digit number from a 2-digit number, with no regrouping
	• Subtracts two 1-digit numbers vertically	• Subtracts 2- and/or 3-digit numbers with no regrouping
	• Subtracts a 2-digit number from a 2-digit number, with no regrouping	• Solves real-world whole number problems involving subtraction with numbers under 20
	• Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12	• Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12
	• Tells time to the nearest hour	• Multiplies basic facts to 10 x 10 vertically
	• Tells time to the nearest half hour	• Adds 1-digit numbers with sums to 18 (with parentheses)
		• Recognizes addition and subtraction fact families through 18
		• 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)
		• Tells time to the nearest hour
		• Tells time to the nearest half hour
		• Tells time to the nearest 5 minutes
		• Connects money with place value

Skills and Concepts to Enhance (73% Probability*) < 161	Skills and Concepts to Develop (50% Probability*) 161 - 170	Skills and Concepts to Introduce (27% Probability*) 171 - 180
Perform Operations	Perform Operations	Perform Operations
		• Determines the operation needed from a simple problem
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Identifies whole numbers under 100 using base-10 blocks • Identifies the numerical and written name for whole numbers 11 to 20 (e.g., 15 is fifteen, and vice versa)	• Identifies whole numbers under 100 using base-10 blocks • Identifies the numerical and written name for whole numbers 11 to 20 (e.g., 15 is fifteen, and vice versa) • Counts 1 to 10 objects • Identifies missing numbers in a series through 100 • Recognizes and generates equivalent forms for the same number using physical models for whole numbers 11 to 20 • Orders whole numbers less than 10 • Writes whole numbers in standard and expanded form through the tens	• Identifies whole numbers 100 - 999 using base-10 blocks • 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 missing numbers in a series through 100 • Counts by 2's to 100 • Counts backwards from a given number (given number greater than 10) • Recognizes and generates equivalent forms for the same number using physical models for whole numbers 11 to 20 • 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 • 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 • Represents 1/4 with a diagram or model • Identifies one-half from a region or set
New Vocabulary: None	*New Vocabulary:* None	*New Vocabulary:* fact family, fourth, hundred, morning, thirds, thousand
New Signs and Symbols: None	*New Signs and Symbols:* + addition, = is equal to, × multiplication, - subtraction, : used with time, variable	*New Signs and Symbols:* ( ) order of operations, a.m., ¢ cent sign, $ dollar sign, p.m., | tally mark

Skills and Concepts to Enhance (73% Probability*) 161 - 170	Skills and Concepts to Develop (50% Probability*) 171 - 180	Skills and Concepts to Introduce (27% Probability*) 181 - 190
Ratios and Proportional Relationships	**Ratios and Proportional Relationships**	**Ratios and Proportional Relationships**
• Completes a growing arithmetic pattern by naming missing members	• Completes a growing arithmetic pattern by naming missing members • Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour)	• Completes arithmetic growth patterns in number tables by identifying the missing elements • Computes simple conversions among units of time (days, weeks)
Perform Operations	**Perform Operations**	**Perform Operations**
• Uses a number line to construct addition facts with sums through 20 (whole numbers) • Uses models to calculate whole number sums through 99 • Adds two 1-digit numbers with sums to 10 in horizontal 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 1-digit to multiple-digit number with regrouping • Adds 2-digit numbers with no regrouping • Solves real-world whole number addition problems with sums to 20 (result unknown) • 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 • Subtracts a 2-digit number from a 2-digit number, with no regrouping • Instantly recalls basic multiplication facts where one factor is 0-5 and the other factor is 0-12 • Tells time to the nearest hour • Tells time to the nearest half hour	• 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 two or three 2-digit number with regrouping • Adds 1- and/or 2-digit numbers with sums under 100 • Adds 3-digit numbers with no regrouping • Adds 3-digit numbers, with regrouping, with sums under 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 100 (result unknown) • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Subtracts a 1-digit number from a 2-digit number with no regrouping, vertically • 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 • 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 • Adds 1-digit numbers with sums to 18 (with parentheses) • Recognizes addition and subtraction fact families through 18 • 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) • Tells time to the nearest hour • Tells time to the nearest half hour • Tells time to the nearest 5 minutes • Connects money with place value	• Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100 (whole numbers only) • Instantly recalls basic addition facts with sums to 18 in a table • Adds two or three 2-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 with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 100 (result unknown) • Uses models to calculate differences through 100 (whole numbers) • Instantly recalls basic subtraction facts with minuend less than 10 • 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 problems using the inverse relationship between addition and subtraction • Uses counting by multiples for multiplication • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12 • Multiplies basic facts to 10 x 10 vertically • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 2-digit number by a 2-digit number with no regrouping • Solves word problems involving basic whole number multiplication facts to 10 x 10

DesCartes: A Continuum of Learning®

Mathematics
Goal: The Real and Complex Number Systems

Skills and Concepts to Enhance (73% Probability*) 161 - 170	Skills and Concepts to Develop (50% Probability*) 171 - 180	Skills and Concepts to Introduce (27% Probability*) 181 - 190
Perform Operations	Perform Operations	Perform Operations
	• Determines the operation needed from a simple problem	• Uses manipulatives to divide a small set of objects into groups of equal size
		• Uses sharing for division
		• Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction)
		• Models multiplication and division algorithms using arrays (whole numbers)
		• Instantly recalls division facts with dividend and divisors less than 10
		• Solves real-world whole number problems involving addition and subtraction
		• Recognizes addition and subtraction fact families through 18
		• Demonstrates an understanding of the inverse relationship between multiplication and division
		• 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)
		• Finds equivalent combinations of coins with the same value
		• Combines a collection of coins and identifies the correct notation
		• 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
		• Identifies the correct time, given the words, and vice versa
		• 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
		• Determines the operation needed from a simple problem
		• Identifies the number that is 1 less than a given number
		• Distinguishes between odd and even numbers
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Identifies whole numbers under 100 using base-10 blocks	• Identifies whole numbers 100 - 999 using base-10 blocks	• 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 numerical and written name for whole numbers 11 to 20 (e.g., 15 is fifteen, and vice versa)	• 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 to 1000 to 9999 (e.g., 3456 is three thousand, four hundred fifty-six, and vice versa)

Explanatory Notes
* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.

Skills and Concepts to Enhance (73% Probability*) 161 - 170	Skills and Concepts to Develop (50% Probability*) 171 - 180	Skills and Concepts to Introduce (27% Probability*) 181 - 190
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Counts 1 to 10 objects • Identifies missing numbers in a series through 100 • Recognizes and generates equivalent forms for the same number using physical models for whole numbers 11 to 20 • Orders whole numbers less than 10 • Writes whole numbers in standard and expanded form through the tens	• Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa) • Identifies missing numbers in a series through 100 • Counts by 2's to 100 • Counts backwards from a given number (given number greater than 10) • Recognizes and generates equivalent forms for the same number using physical models for whole numbers 11 to 20 • 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 • 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 • Represents 1/4 with a diagram or model • Identifies one-half from a region or set	• Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Compares whole numbers through 999 • Compares whole numbers through 9999 • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • 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 3/4 with a diagram or model • Identifies equal parts by using models • Identifies 1/2 from a region or set • Identifies one-half from a region or set • Identifies 1/4 from a region or set • Identifies 2/4, 3/4, or 4/4 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 • Compares and orders decimals to the hundredths place (same number of digits after decimal)
New Vocabulary: None	*New Vocabulary:* fact family, fourth, hundred, morning, thirds, thousand	*New Vocabulary:* changed, clock, closest, digit, fourths, gave, half past, how much time, hundreds, left, left over, million, nearest, noon, o'clock, one, pennies, quarter past, quarter to, row, ten thousand, unifix cubes, what time
New Signs and Symbols: + addition, = is equal to, × multiplication, - subtraction, : used with time, variable	*New Signs and Symbols:* ( ) order of operations, a.m., ¢ cent sign, $ dollar sign, p.m.,	tally mark	
		New Signs and Symbols: { } set notation, ÷ division, long division symbol, : used with time, : used with time

Skills and Concepts to Enhance (73% Probability*) 171 - 180	Skills and Concepts to Develop (50% Probability*) 181 - 190	Skills and Concepts to Introduce (27% Probability*) 191 - 200
Ratios and Proportional Relationships	Ratios and Proportional Relationships	Ratios and Proportional Relationships
• Completes a growing arithmetic pattern by naming missing members • Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour)	• Completes arithmetic growth patterns in number tables by identifying the missing elements • Computes simple conversions among units of time (days, weeks)	• Solves problems involving basic percent concepts (e.g., 10%, 50%, 100%) • Converts between cups and pints • Converts between cups, pints, and quarts • Computes simple conversions among units of time (minutes, hours) • Solves simple problems involving miles/kilometers per hour • Writes the missing number in a proportion using basic facts
Perform Operations	Perform Operations	Perform Operations
• 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 two or three 2-digit number with regrouping • Adds 1- and/or 2-digit numbers with sums under 100 • Adds 3-digit numbers with no regrouping • Adds 3-digit numbers, with regrouping, with sums under 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 100 (result unknown) • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Subtracts a 1-digit number from a 2-digit number with no regrouping, vertically • 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 • 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 • Adds 1-digit numbers with sums to 18 (with parentheses) • Recognizes addition and subtraction fact families through 18 • 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)	• Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100 (whole numbers only) • Instantly recalls basic addition facts with sums to 18 in a table • Adds two or three 2-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 with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 100 (result unknown) • Uses models to calculate differences through 100 (whole numbers) • Instantly recalls basic subtraction facts with minuend less than 10 • 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 problems using the inverse relationship between addition and subtraction • Uses counting by multiples for multiplication • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12 • Multiplies basic facts to 10 x 10 vertically	• Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with addition and subtraction (whole numbers only) • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only) • 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 with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 20 (change unknown) • Solves whole number addition word problems with sums over 1000 • 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 • Subtracts multiple-digit numbers with no regrouping • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves problems using the inverse relationship between addition and subtraction • 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

Skills and Concepts to Enhance (73% Probability*) 171 - 180	Skills and Concepts to Develop (50% Probability*) 181 - 190	Skills and Concepts to Introduce (27% Probability*) 191 - 200
Perform Operations	Perform Operations	Perform Operations
• Tells time to the nearest hour • Tells time to the nearest half hour • Tells time to the nearest 5 minutes • Connects money with place value • Determines the operation needed from a simple problem	• Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 2-digit number by a 2-digit number with no regrouping • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Uses manipulatives to divide a small set of objects into groups of equal size • Uses sharing for division • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction) • Models multiplication and division algorithms using arrays (whole numbers) • Instantly recalls division facts with dividend and divisors less than 10 • Solves real-world whole number problems involving addition and subtraction • Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding of the inverse relationship between multiplication and division • 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) • Finds equivalent combinations of coins with the same value • Combines a collection of coins and identifies the correct notation • 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 • Identifies the correct time, given the words, and vice versa • 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 • Determines the operation needed from a simple problem • Identifies the number that is 1 less than a given number • Distinguishes between odd and even numbers	• Multiplies a 2-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 manipulatives to divide a small set of objects into groups of equal size • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction) • 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 • 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) • 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 • Solves real-world 1-step problems involving multiplication or division of a whole number by a fraction • 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) • Finds equivalent combinations of coins 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 • Makes change to $1.00 by counting on or subtracting

Skills and Concepts to Enhance (73% Probability*) 171 - 180	Skills and Concepts to Develop (50% Probability*) 181 - 190	Skills and Concepts to Introduce (27% Probability*) 191 - 200
Perform Operations	Perform Operations	Perform Operations
		• 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)
		• Multiplies a decimal by whole number
		• Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division)
		• Computes 1 operation on real-world problems involving money over $5.00 (multiplication/division)
		• Computes basic operations with units of weight/mass
		• Identifies the correct time, given the words, and vice versa
		• 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
		• Determines the operation needed from a simple problem
		• Solves problems using tables
		• Distinguishes between odd and even numbers
		• Identifies numbers as composite
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Identifies whole numbers 100 - 999 using base-10 blocks	• Identifies the numeral and written name for whole numbers 101 to 999 (e.g., 342 is three hundred forty-two, and vice versa)	• Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph)
• 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 to 1000 to 9999 (e.g., 3456 is three thousand, four hundred fifty-six, and vice versa)	• Identifies whole numbers over 999 using base-10 blocks
• 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 10,000 to 100,000	• Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place
• Identifies missing numbers in a series through 100	• Compares whole numbers through 999	• Identifies the numeral and written name for whole numbers 10,000 to 100,000
• Counts by 2's to 100	• Compares whole numbers through 9999	• Identifies the numeral and written name for whole numbers over 100,000
• Counts backwards from a given number (given number greater than 10)	• Rounds 2- and 3- digit whole numbers to the nearest ten	• Compares whole numbers to 100, using the symbols for 'less than', 'equal to', or 'greater than' (<, =, >)
• Recognizes and generates equivalent forms for the same number using physical models for whole numbers 11 to 20	• Rounds 3-digit whole numbers to the nearest hundred	• Compares whole numbers through the thousands using the symbols <, >, or =
• Compares sets of objects and identifies which is equal to, more than, or less than the other (1 to 10 objects)	• Counts objects that are grouped into tens and ones	• Rounds 2- and 3- digit whole numbers to the nearest ten
• Compares whole numbers through 999	• Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34)	• Rounds 3-digit whole numbers to the nearest hundred
• 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	

Skills and Concepts to Enhance (73% Probability*) 171 - 180	Skills and Concepts to Develop (50% Probability*) 181 - 190	Skills and Concepts to Introduce (27% Probability*) 191 - 200
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Identifies the place value and value of each digit in whole numbers through the tens place • Represents 1/2 with a diagram or model • Represents 1/4 with a diagram or model • Identifies one-half from a region or set	• 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 3/4 with a diagram or model • Identifies equal parts by using models • Identifies 1/2 from a region or set • Identifies one-half from a region or set • Identifies 1/4 from a region or set • Identifies 2/4, 3/4, or 4/4 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 • Compares and orders decimals to the hundredths place (same number of digits after decimal)	• 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 • Represents fractions with denominators other than 2, 3, 4 with a diagram or model • 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 tenths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Identifies equivalent fractions using visual representations • Matches numeric and visual representation of equivalent fractions • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers)
New Vocabulary: fact family, fourth, hundred, morning, thirds, thousand *New Signs and Symbols:* ( ) order of operations, a.m., ¢ cent sign, $ dollar sign, p.m., | tally mark	*New Vocabulary:* changed, clock, closest, digit, fourths, gave, half past, how much time, hundreds, left, left over, million, nearest, noon, o'clock, one, pennies, quarter past, quarter to, row, ten thousand, unifix cubes, what time *New Signs and Symbols:* { } set notation, ÷ division, long division symbol, : used with time, : used with time	*New Vocabulary:* billion, composite number, decade, deposit, each, grid, hundred million, miles per hour, prime number, quintillion, standard numeral, trillion *New Signs and Symbols:* ( ) ordered pair, °F degrees Fahrenheit, g gram, > greater than, lb pound, < less than, min minute, mph miles per hour, % percent, • point, R remainder

Skills and Concepts to Enhance (73% Probability*) 181 - 190	Skills and Concepts to Develop (50% Probability*) 191 - 200	Skills and Concepts to Introduce (27% Probability*) 201 - 210
Ratios and Proportional Relationships	**Ratios and Proportional Relationships**	**Ratios and Proportional Relationships**
• Completes arithmetic growth patterns in number tables by identifying the missing elements • Computes simple conversions among units of time (days, weeks)	• Solves problems involving basic percent concepts (e.g., 10%, 50%, 100%) • Converts between cups and pints • Converts between cups, pints, and quarts • Computes simple conversions among units of time (minutes, hours) • Solves simple problems involving miles/kilometers per hour • Writes the missing number in a proportion using basic facts	• Converts between inches and feet • Solves simple problems involving measurement of length • Estimates simple conversions involving length between the customary and metric system • 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 • Applies dimensional analysis to simple real-world problems (time) • Solves simple problems involving miles per gallon • Solves simple problems involving miles/kilometers per hour • Determines unit price • Writes the missing number in a proportion using basic facts • Identifies the percent represented in a 2-D region
Perform Operations	**Perform Operations**	**Perform Operations**
• Uses rounding to estimate answers to real-world problems involving addition of numbers less than 100 (whole numbers only) • Instantly recalls basic addition facts with sums to 18 in a table • Adds two or three 2-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 with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 100 (result unknown) • Uses models to calculate differences through 100 (whole numbers) • Instantly recalls basic subtraction facts with minuend less than 10 • 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	• Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with addition and subtraction (whole numbers only) • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only) • 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 with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 20 (change unknown) • Solves whole number addition word problems with sums over 1000 • 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 • Subtracts multiple-digit numbers with no regrouping • Solves real-world whole number problems involving subtraction with numbers 100 and under	• Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only) • Uses rounding to estimate answers to addition and subtraction problems (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 • Subtracts 3- or 4-digit numbers with regrouping • Subtracts numbers with 5 digits or more with regrouping • Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis) • Solves problems using the inverse relationship between addition and subtraction • 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 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

Skills and Concepts to Enhance (73% Probability*) 181 - 190	Skills and Concepts to Develop (50% Probability*) 191 - 200	Skills and Concepts to Introduce (27% Probability*) 201 - 210
Perform Operations	Perform Operations	Perform Operations
• Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves problems using the inverse relationship between addition and subtraction • Uses counting by multiples for multiplication • Instantly recalls basic multiplication facts where one factor is 6-12 and the other factor is 0-12 • Multiplies basic facts to 10 x 10 vertically • Multiplies a 2-digit number by a 1-digit number with regrouping • Multiplies a 2-digit number by a 2-digit number with no regrouping • Solves word problems involving basic whole number multiplication facts to 10 x 10 • Uses manipulatives to divide a small set of objects into groups of equal size • Uses sharing for division • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction) • Models multiplication and division algorithms using arrays (whole numbers) • Instantly recalls division facts with dividend and divisors less than 10 • Solves real-world whole number problems involving addition and subtraction • Recognizes addition and subtraction fact families through 18 • Demonstrates an understanding of the inverse relationship between multiplication and division • 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) • Finds equivalent combinations of coins with the same value • Combines a collection of coins and identifies the correct notation • 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 • Identifies the correct time, given the words, and vice versa • Determines elapsed clock time	• Solves problems using the inverse relationship between addition and subtraction • 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 • 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 manipulatives to divide a small set of objects into groups of equal size • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction) • 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 • 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) • 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 • Solves real-world 1-step problems involving multiplication or division of a whole number by a fraction • 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)	• 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 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 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 • Determines the remainder in a real-world problem (whole numbers) • Uses division for multiple-step real-world problems (whole numbers) • Solves real-world problems involving 2-step multiple operations, whole numbers only • Adds fractions with like denominators without reducing • 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 • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Multiplies a fraction by a fraction without reducing to simplest form (simple problem) • Adds decimals to the thousandths place horizontally with and 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 • Subtracts decimals through the hundred-thousandths place, vertically • Computes the value of multiple bills and coins (addition/subtraction only)

Explanatory Notes
* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.

Skills and Concepts to Enhance (73% Probability*) 181 - 190	Skills and Concepts to Develop (50% Probability*) 191 - 200	Skills and Concepts to Introduce (27% Probability*) 201 - 210
Perform Operations	**Perform Operations**	**Perform Operations**
• 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 • Determines the operation needed from a simple problem • Identifies the number that is 1 less than a given number • Distinguishes between odd and even numbers	• Finds equivalent combinations of coins 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 • 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) • Multiplies a decimal by whole number • Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division) • Computes 1 operation on real-world problems involving money over $5.00 (multiplication/division) • Computes basic operations with units of weight/mass • Identifies the correct time, given the words, and vice versa • 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 • Determines the operation needed from a simple problem • Solves problems using tables • Distinguishes between odd and even numbers • Identifies numbers as composite	• Multiplies a decimal by whole number • Divides decimal by a whole number • Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division) • Computes addition and subtraction on multiple-step real-world problems involving money • Computes money problems with multiple operations (addition/subtraction only) • Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money • Solves real-world problems involving addition and subtraction of integers • Solves problems involving measurement of time • Solves simple problems involving elapsed time, with the conversion of hours • Solves problems using tables • Writes a terminating decimal as a fraction or mixed number • Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction)
Extend and Use Properties	**Extend and Use Properties**	**Extend and Use Properties**
• 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 • Compares whole numbers through 999 • Compares whole numbers through 9999 • Rounds 2- and 3- digit whole numbers to the nearest ten	• Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph) • 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	• 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 • Determines the distance between points, following grid lines, in the first quadrant on a coordinate graph (as in city blocks) • Locates the origin on a coordinate grid • Identifies whole numbers over 999 using base-10 blocks

Skills and Concepts to Enhance (73% Probability*) 181 - 190	Skills and Concepts to Develop (50% Probability*) 191 - 200	Skills and Concepts to Introduce (27% Probability*) 201 - 210
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Rounds 3-digit whole numbers to the nearest hundred • 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 3/4 with a diagram or model • Identifies equal parts by using models • Identifies 1/2 from a region or set • Identifies one-half from a region or set • Identifies 1/4 from a region or set • Identifies 2/4, 3/4, or 4/4 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 • Compares and orders decimals to the hundredths place (same number of digits after decimal)	• 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 = • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • 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 • Represents fractions with denominators other than 2, 3, 4 with a diagram or model • 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 tenths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Identifies equivalent fractions using visual representations • Matches numeric and visual representation of equivalent fractions • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers)	• 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 • Compares whole numbers through the billions using the symbols <, >, or = • Orders whole numbers a million or greater using < or > symbols • 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 • Rounds wholes numbers to the nearest billion • Explains the rules for rounding • 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 • Identifies equivalent fractions using visual representations • Expresses 1 in many different ways (e.g., 3/3, 4/4) • 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 • Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10) • Orders fractions on a number line • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) • Identifies a decimal on a number line to the tenths place • Rounds decimals to the nearest whole number • Compares integers on a number line

DesCartes: A Continuum of Learning®

Mathematics
Goal: The Real and Complex Number Systems

Skills and Concepts to Enhance (73% Probability*) 181 - 190	Skills and Concepts to Develop (50% Probability*) 191 - 200	Skills and Concepts to Introduce (27% Probability*) 201 - 210
New Vocabulary: changed, clock, closest, digit, fourths, gave, half past, how much time, hundreds, left, left over, million, nearest, noon, o'clock, one, pennies, quarter past, quarter to, row, ten thousand, unifix cubes, what time	*New Vocabulary:* billion, composite number, decade, deposit, each, grid, hundred million, miles per hour, prime number, quintillion, standard numeral, trillion	*New Vocabulary:* biggest, coordinate, coordinate point, expanded numeral, larger, miles per gallon, origin
New Signs and Symbols: { } set notation, ÷ division, long division symbol, : used with time, : used with time	*New Signs and Symbols:* ( ) ordered pair, °F degrees Fahrenheit, g gram, > greater than, lb pound, < less than, min minute, mph miles per hour, % percent, • point, R remainder	*New Signs and Symbols:* ft feet, in. inch, mpg miles per gallon, - negative number

Mathematics
Goal: The Real and Complex Number Systems

RIT Score Range: 201 - 210
Statements Last Updated: Aug 4, 2014

Skills and Concepts to Enhance (73% Probability*) 191 - 200	Skills and Concepts to Develop (50% Probability*) 201 - 210	Skills and Concepts to Introduce (27% Probability*) 211 - 220
Ratios and Proportional Relationships	Ratios and Proportional Relationships	Ratios and Proportional Relationships
• Solves problems involving basic percent concepts (e.g., 10%, 50%, 100%) • Converts between cups and pints • Converts between cups, pints, and quarts • Computes simple conversions among units of time (minutes, hours) • Solves simple problems involving miles/kilometers per hour • Writes the missing number in a proportion using basic facts	• Converts between inches and feet • Solves simple problems involving measurement of length • Estimates simple conversions involving length between the customary and metric system • 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 • Applies dimensional analysis to simple real-world problems (time) • Solves simple problems involving miles per gallon • Solves simple problems involving miles/kilometers per hour • Determines unit price • Writes the missing number in a proportion using basic facts • 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%) • Converts between inches and feet • Converts between inches, feet, and yards • Solves simple problems involving measurement of length • Converts between cups, pints, quarts, and gallons • Apply dimensional analysis to simple real-world problems (capacity) • Computes more difficult conversions among units of time • Applies dimensional analysis to simple real-world problems (time) • Solves simple problems involving miles per gallon • Determines unit price • Solves problems involving rates • 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 • Recognizes and writes proportions • Identifies the percent represented in a 2-D region
Perform Operations	Perform Operations	Perform Operations
• Uses rounding to estimate answers to real-world problems involving numbers less than 1000 with addition and subtraction (whole numbers only) • Uses rounding to estimate answers to addition and subtraction problems (whole numbers only) • 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 with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 20 (change unknown) • Solves whole number addition word problems with sums over 1000 • 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)	• Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only) • Uses rounding to estimate answers to addition and subtraction problems (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 • Subtracts 3- or 4-digit numbers with regrouping • Subtracts numbers with 5 digits or more with regrouping • Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis) • Solves problems using the inverse relationship between addition and subtraction • 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	• 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) • Subtracts numbers with 5 digits or more with regrouping • 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 • Uses multiplication strategies to explain computation (e.g., doubles, 9-patterns, decomposing, partial products) • Multiplies a 3-digit number by a 3-digit number

Skills and Concepts to Enhance (73% Probability*) 191 - 200	Skills and Concepts to Develop (50% Probability*) 201 - 210	Skills and Concepts to Introduce (27% Probability*) 211 - 220
Perform Operations	Perform Operations	Perform Operations
• 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 • Subtracts multiple-digit numbers with no regrouping • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves problems using the inverse relationship between addition and subtraction • 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 • 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 manipulatives to divide a small set of objects into groups of equal size • Models whole number multiplication and division algorithms (e.g., shows multiplication as repeated addition and division as repeated subtraction) • 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 • 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) • 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 • Solves real-world 1-step problems involving multiplication or division of a whole number by a fraction • Adds decimals to the hundredths place (same number of digits)	• 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 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 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 • Determines the remainder in a real-world problem (whole numbers) • Uses division for multiple-step real-world problems (whole numbers) • Solves real-world problems involving 2-step multiple operations, whole numbers only • Adds fractions with like denominators without reducing • 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 • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Multiplies a fraction by a fraction without reducing to simplest form (simple problem) • Adds decimals to the thousandths place horizontally with and without regrouping	• 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 3-digit number by a 2-digit number • Divides a 4-digit number by a 2-digit number • Divides multiple-digit numbers • 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) • Solves real-world problems involving 2-step multiple operations, whole numbers only • Solves real-world multiple-step problems involving whole numbers • Demonstrates an understanding of the inverse relationship between addition and subtraction • Adds fractions with like denominators without reducing • Adds fractions with like denominators with reducing or converting to a mixed fraction • Adds fractions with unlike denominators without reducing • 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 • Uses models to multiply and divide fractions and connect the actions to algorithms • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Solves 1-step real-world problems involving fractions with multiplication and division • Adds decimals to the hundredths place in horizontal format (not same number of digits)

Skills and Concepts to Enhance (73% Probability*) 191 - 200	Skills and Concepts to Develop (50% Probability*) 201 - 210	Skills and Concepts to Introduce (27% Probability*) 211 - 220
Perform Operations	Perform Operations	Perform Operations
• Adds decimals to the hundredths place in vertical format (not same number of digits)	• Subtracts decimals to the hundredths place (same number of digits) with regrouping	• Adds decimals to the thousandths place horizontally with and without regrouping
• Adds decimals to the thousandths place vertically with and without regrouping	• Subtracts decimals to the thousandths place, vertically, with and without regrouping	• Adds decimals through the hundred-thousandths place
• Identifies the value of a collection of coins to $1.00 (without picture of coins)	• Subtracts decimals through the hundred-thousandths place, vertically	• Subtracts decimals to the thousandths place, horizontally, with and without regrouping
• Adds money with regrouping	• Computes the value of multiple bills and coins (addition/subtraction only)	• Computes the value of multiple bills and coins (addition/subtraction only)
• Identifies the value of a collection of coins and bills to $10.00 by counting on (without picture of money)	• Multiplies a decimal by whole number	• Analyzes and computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)
• Finds equivalent combinations of coins with the same value	• Divides decimal by a whole number	• Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths)
• Subtracts decimals to the hundredths place (same number of digits) with regrouping	• Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division)	• Multiplies a decimal by a decimal (factors to hundredths)
• Subtracts decimals to the thousandths place, vertically, with and without regrouping	• Computes addition and subtraction on multiple-step real-world problems involving money	• Divides decimal by a whole number
• Makes change to $1.00 by counting on or subtracting	• Computes money problems with multiple operations (addition/subtraction only)	• Analyzes and computes 1 operation on real-world problems involving money over $5.00 (multiplication/division)
• Solves real-world problems involving decimals (not money) using addition and subtraction	• Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money	• Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division)
• Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only)	• Solves real-world problems involving addition and subtraction of integers	• Computes addition and subtraction on multiple-step real-world problems involving money
• Computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)	• Solves problems involving measurement of time	• Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money
• Multiplies a decimal by whole number	• Solves simple problems involving elapsed time, with the conversion of hours	• Adds integers with like signs
• Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division)	• Solves problems using tables	• Uses models to add and subtract integers and connect the actions to algorithms
• Computes 1 operation on real-world problems involving money over $5.00 (multiplication/division)	• Writes a terminating decimal as a fraction or mixed number	• Solves real-world problems involving addition and subtraction of integers
• Computes basic operations with units of weight/mass	• Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction)	• Multiplies integers with unlike signs
• Identifies the correct time, given the words, and vice versa		• Divides integers with unlike signs
• Determines elapsed clock time		• Divides integers with like signs
• Tells time to the nearest quarter hour		• Demonstrates an understanding that division by 0 is undefined
• Determines elapsed time involving whole hours, whole days, whole years		• Solves difficult problems involving elapsed time, with the conversion of hours
• Tells time to the nearest 1 minute		• Selects and uses the appropriate units depending on degree of accuracy required to solve problems
• Solves simple problems involving elapsed time, with the conversion of hours		• Expresses a simple fraction as a decimal
• Determines the operation needed from a simple problem		• Writes a simple mixed fraction as a decimal and vice versa
• Solves problems using tables		• Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10
• Distinguishes between odd and even numbers		• Expresses a percent as a decimal and vice versa
• Identifies numbers as composite		• Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction)

Skills and Concepts to Enhance (73% Probability*) 191 - 200	Skills and Concepts to Develop (50% Probability*) 201 - 210	Skills and Concepts to Introduce (27% Probability*) 211 - 220
Perform Operations	Perform Operations	Perform Operations
		• Determines factors of whole numbers • Identifies numbers as prime • Identifies common factors of two or more numbers • Identifies the greatest common factor of whole numbers
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph) • 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 • 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 = • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • 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 • Represents fractions with denominators other than 2, 3, 4 with a diagram or model • 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 tenths from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Identifies equivalent fractions using visual representations • Matches numeric and visual representation of equivalent fractions	• 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 • Determines the distance between points, following grid lines, in the first quadrant on a coordinate graph (as in city blocks) • Locates the origin on a coordinate grid • 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 • Compares whole numbers through the billions using the symbols <, >, or = • Orders whole numbers a million or greater using < or > symbols • 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 • Rounds wholes numbers to the nearest billion • Explains the rules for rounding • 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 • Identifies equivalent fractions using visual representations • Expresses 1 in many different ways (e.g., 3/3, 4/4)	• 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 • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system • Locates the origin on a coordinate grid • 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 wholes numbers to the nearest billion • Writes whole numbers in standard and expanded form through the hundred thousands • Identifies equivalent fractions using visual representations • Identifies a fractions in lowest terms from a region or set • Identifies eighths, reduced to lowest terms, from a region or set • Determines simple equivalent fractions using multiples • Converts fractions to lowest terms • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • 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 • Orders fractions on a number line • 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) • Compares and orders decimals past the thousandths place • Rounds decimals to the nearest whole number • Rounds decimals to the nearest tenth • Applies base ten place value concepts to solve problems using decimals

Explanatory Notes
* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.

Skills and Concepts to Enhance (73% Probability*) 191 - 200	Skills and Concepts to Develop (50% Probability*) 201 - 210	Skills and Concepts to Introduce (27% Probability*) 211 - 220
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers)	• 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 • Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10) • Orders fractions on a number line • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) • Identifies a decimal on a number line to the tenths place • Rounds decimals to the nearest whole number • Compares integers on a number line	• Identifies an integer from a number line • Compares two integers • Orders integers on a number line • Defines integers
New Vocabulary: billion, composite number, decade, deposit, each, grid, hundred million, miles per hour, prime number, quintillion, standard numeral, trillion *New Signs and Symbols:* ( ) ordered pair, °F degrees Fahrenheit, g gram, > greater than, lb pound, < less than, min minute, mph miles per hour, % percent, • point, R remainder	*New Vocabulary:* biggest, coordinate, coordinate point, expanded numeral, larger, miles per gallon, origin *New Signs and Symbols:* ft feet, in. inch, mpg miles per gallon, - negative number	*New Vocabulary:* century, coin, common factor, decimal form, greatest common factor, how long, lowest term, lowest terms, reduce, triple *New Signs and Symbols:* $ dollar sign, hr hour, kg kilogram, - negative sign, ≠ not equal to, yd yard

Skills and Concepts to Enhance (73% Probability*) 201 - 210	Skills and Concepts to Develop (50% Probability*) 211 - 220	Skills and Concepts to Introduce (27% Probability*) 221 - 230
Ratios and Proportional Relationships	**Ratios and Proportional Relationships**	**Ratios and Proportional Relationships**
• Converts between inches and feet • Solves simple problems involving measurement of length • Estimates simple conversions involving length between the customary and metric system • 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 • Applies dimensional analysis to simple real-world problems (time) • Solves simple problems involving miles per gallon • Solves simple problems involving miles/kilometers per hour • Determines unit price • Writes the missing number in a proportion using basic facts • 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%) • Converts between inches and feet • Converts between inches, feet, and yards • Solves simple problems involving measurement of length • Converts between cups, pints, quarts, and gallons • Apply dimensional analysis to simple real-world problems (capacity) • Computes more difficult conversions among units of time • Applies dimensional analysis to simple real-world problems (time) • Solves simple problems involving miles per gallon • Determines unit price • Solves problems involving rates • 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 • Recognizes and writes proportions • Identifies the percent represented in a 2-D region	• Solves real-world problems involving decimals (not money) using multiplication • 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) • Solves problems involving percents • Solves problems involving tax and tips • Converts between inches, feet, and yards • Converts between millimeters, centimeters, meters, and kilometers • Uses dimensional analysis for unit conversions (length) • Solves problems involving length in the customary system and converts to larger or smaller units • Converts between ounces and pounds • Converts between ounces, pounds, and tons • Converts between cups, pints, quarts, and gallons • Converts within the metric system • Apply dimensional analysis to simple real-world problems (capacity) • Solves problems involving capacity in the customary system and converts to larger or smaller units • Computes 2-step conversions between units of time • Applies dimensional analysis to simple real-world problems (time) • Solves complex problems involving miles per gallon • Solves complex problems involving miles/kilometers per hour • Solves problems involving rates • Solves problems involving perimeter and converts to larger or smaller units • Interprets data given in circle graphs to solve complex problems (with percents) • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa • 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)
Perform Operations	**Perform Operations**	**Perform Operations**
• Uses rounding to estimate answers to real-world problems involving numbers 1000 or greater with addition and subtraction (whole numbers only)	• 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 multiplication and division of numbers less than 100 (whole numbers only)

Explanatory Notes
* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.

Skills and Concepts to Enhance (73% Probability*) 201 - 210	Skills and Concepts to Develop (50% Probability*) 211 - 220	Skills and Concepts to Introduce (27% Probability*) 221 - 230
Perform Operations	**Perform Operations**	**Perform Operations**
• Uses rounding to estimate answers to addition and subtraction problems (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 less than 1000 with multiplication and division (whole numbers only)
• Adds multiple-digit numbers, with regrouping, with sums over 1000	• 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 numbers 1000 or greater using multiplication and division (whole numbers only)
• Adds multiple-digit numbers with sums under 1000	• Uses rounding to estimate answers to difficult multiplication and division problems (whole numbers only)	• Multiplies multiple-digit numbers
• Performs mental computation with more than 4 addends	• Subtracts numbers with 5 digits or more with regrouping	• Divides a 4-digit number by a 2-digit number
• Subtracts 3- or 4-digit numbers with regrouping	• Instantly recalls basic multiplication and division facts in a table	• Divides multiple-digit numbers
• Subtracts numbers with 5 digits or more with regrouping	• Multiplies a 2-digit number by a 2-digit number with regrouping	• Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor)
• Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis)	• Multiplies a 3-digit number by a 2-digit number with regrouping	• Solves real-world multiple-step problems involving whole numbers
• Solves problems using the inverse relationship between addition and subtraction	• Performs mental computation with multiplication	• Demonstrates an understanding of multiple properties
• Instantly recalls basic multiplication and division facts in a table	• Uses multiplication strategies to explain computation (e.g., doubles, 9-patterns, decomposing, partial products)	• Adds fractions with like denominators with reducing or converting to a mixed fraction
• Multiplies a 2-digit number by a 1-digit number with regrouping	• Multiplies a 3-digit number by a 3-digit number	• Adds fractions with unlike denominators without reducing
• Multiplies a 3- or 4-digit number by a 1-digit number	• Multiplies a 4- or more digit number by multiples of 100 or 1000	• Adds fractions with unlike denominators with reducing or converting to a mixed fraction
• Multiplies multiple 1-digit numbers	• Multiplies multiple-digit numbers	• Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)
• Multiplies a 2-digit number by a 2-digit number with regrouping	• Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)	• Adds mixed fractions where converting from improper fractions is necessary
• Multiplies a 3-digit number by a 2-digit number with regrouping	• Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder	• Subtracts fractions with like denominators with reducing
• Performs mental computation with multiplication	• Performs mental computation with division	• Subtracts fractions with unlike denominators without reducing
• Multiplies a 2- or 3-digit number by multiples of 10 or 100	• Divides a 4-digit number by a 1-digit number with no remainder	• Subtracts fractions with unlike denominators with reducing
• Multiplies a 3-digit number by a 3-digit number	• Divides a 3-digit number by a 2-digit number	• Subtracts mixed fractions with unlike denominators with no regrouping
• Solves word problems involving whole number multiplication with numbers greater than 10 x 10	• Divides a 4-digit number by a 2-digit number	• Subtracts whole numbers, fractions, and mixed fractions
• Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)	• Divides multiple-digit numbers	• Subtracts whole numbers, fractions, and mixed fractions with regrouping
• Instantly recalls division facts with dividend and divisors less than 13	• Solves whole number word problems with division over 10 x 10	• Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary
• Divides a 2-digit number by a 1-digit number with no remainder	• Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor)	• Uses models to multiply and divide fractions and connect the actions to algorithms
• Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder	• Solves real-world problems involving 2-step multiple operations, whole numbers only	• Multiplies a fraction by a fraction without reducing to simplest form (complex problem)
• Performs mental computation with division	• Solves real-world multiple-step problems involving whole numbers	• Multiplies a fraction by a fraction where reducing to simplest form is necessary
• Divides a 3-digit number by a 1-digit number with no remainder	• Demonstrates an understanding of the inverse relationship between addition and subtraction	• Multiplies a fraction by a whole number
• Divides a 4-digit number by a 1-digit number with no remainder	• Adds fractions with like denominators without reducing	• Multiplies mixed fractions
• Divides a 3-digit number by a multiple of 10	• Adds fractions with like denominators with reducing or converting to a mixed fraction	• Divides a fraction by a fraction
• Divides a 4-digit number by a 2-digit number	• Adds fractions with unlike denominators without reducing	• Divides a mixed fraction by a fraction
• Solves word problems with whole number division facts with dividend and divisors less than 11	• Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)	
• 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		
• Determines the remainder in a real-world problem (whole numbers)		

DesCartes: A Continuum of Learning®

Mathematics
Goal: The Real and Complex Number Systems

Skills and Concepts to Enhance (73% Probability*) 201 - 210	Skills and Concepts to Develop (50% Probability*) 211 - 220	Skills and Concepts to Introduce (27% Probability*) 221 - 230
Perform Operations	Perform Operations	Perform Operations
• Uses division for multiple-step real-world problems (whole numbers) • Solves real-world problems involving 2-step multiple operations, whole numbers only • Adds fractions with like denominators without reducing • 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 • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Multiplies a fraction by a fraction without reducing to simplest form (simple problem) • Adds decimals to the thousandths place horizontally with and 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 • Subtracts decimals through the hundred-thousandths place, vertically • Computes the value of multiple bills and coins (addition/subtraction only) • Multiplies a decimal by whole number • Divides decimal by a whole number • Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division) • Computes addition and subtraction on multiple-step real-world problems involving money • Computes money problems with multiple operations (addition/subtraction only) • Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money • Solves real-world problems involving addition and subtraction of integers • Solves problems involving measurement of time • Solves simple problems involving elapsed time, with the conversion of hours • Solves problems using tables • Writes a terminating decimal as a fraction or mixed number • Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction)	• 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 • Uses models to multiply and divide fractions and connect the actions to algorithms • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Solves 1-step real-world problems involving fractions with multiplication and division • 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, 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) • Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths) • Multiplies a decimal by a decimal (factors to hundredths) • Divides decimal by a whole number • Analyzes and computes 1 operation on real-world problems involving money over $5.00 (multiplication/division) • Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division) • Computes addition and subtraction on multiple-step real-world problems involving money • Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money • Adds integers with like signs • Uses models to add and subtract integers and connect the actions to algorithms • Solves real-world problems involving addition and subtraction of integers	• Solves 1-step real-world problems involving fractions with multiplication and division • Solves 2- or more step real-world problems involving fractions with multiplication and division • Solves problems involving fractions (e.g., multiple operations, conversions) • 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 • Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths) • Multiplies a decimal by a decimal (factors to hundredths) • Multiplies a decimal by 10, 100, 1000 • Multiplies a decimal by a decimal (factors to thousandths) • Divides a decimal by 10, 100, 1000 • Divides a decimal by a decimal • Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division) • Computes the value of multiple bills and coins (multiplication/division) • Calculate the sum of integers using a number line • Adds integers with unlike signs • Adds several positive and negative integers • Uses models to add and subtract integers and connect the actions to algorithms • Subtracts integers • Solves real-world problems involving addition and subtraction of integers • Solves problems involving addition and subtraction of integers • Multiplies integers with unlike signs • Divides integers with unlike signs • Divides integers with like signs • Adds rational expressions in decimal form • Identifies the additive inverse property

Explanatory Notes
* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.

DesCartes: A Continuum of Learning®

Mathematics

Goal: The Real and Complex Number Systems

Skills and Concepts to Enhance (73% Probability*) 201 - 210	Skills and Concepts to Develop (50% Probability*) 211 - 220	Skills and Concepts to Introduce (27% Probability*) 221 - 230
Perform Operations	**Perform Operations**	**Perform Operations**
	• Multiplies integers with unlike signs • Divides integers with unlike signs • Divides integers with like signs • Demonstrates an understanding that division by 0 is undefined • Solves difficult problems involving elapsed time, with the conversion of hours • Selects and uses the appropriate units depending on degree of accuracy required to solve problems • 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 • Expresses a percent as a decimal and vice versa • Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction) • Determines factors of whole numbers • Identifies numbers as prime • Identifies common factors of two or more numbers • Identifies the greatest common factor of whole numbers	• Solves difficult problems involving elapsed time, with the conversion of hours • Interprets data given in tables to solve problems • 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 • Determines factors of whole numbers • Uses multiple number theory concepts to solve problems (e.g., factors, digits, odd/even, divisibility) • Uses factor and multiple concepts to solve simple problems • Identifies common factors of two or more numbers • Identifies the greatest common factor of whole numbers
Extend and Use Properties	**Extend and Use Properties**	**Extend and Use Properties**
• 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 • Determines the distance between points, following grid lines, in the first quadrant on a coordinate graph (as in city blocks) • Locates the origin on a coordinate grid • 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 • Compares whole numbers through the billions using the symbols <, >, or = • Orders whole numbers a million or greater using < or > symbols • 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	• 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 • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system • Locates the origin on a coordinate grid • 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 wholes numbers to the nearest billion • Writes whole numbers in standard and expanded form through the hundred thousands • Identifies equivalent fractions using visual representations • Identifies a fractions in lowest terms from a region or set • Identifies eighths, reduced to lowest terms, from a region or set • Determines simple equivalent fractions using multiples • Converts fractions to lowest terms • Writes mixed numbers as improper fractions and improper fractions as mixed numbers	• Graphs ordered pairs in all quadrants • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines) • Determines the relative magnitude of whole numbers • Rounds whole numbers to the nearest million • 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 • Compares fractions (e.g., comparing numerators and denominators) • 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 • Compares and orders decimals to the hundredths place (not same number of digits after decimal)

Skills and Concepts to Enhance (73% Probability*) 201 - 210	Skills and Concepts to Develop (50% Probability*) 211 - 220	Skills and Concepts to Introduce (27% Probability*) 221 - 230
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Rounds wholes numbers to the nearest billion • Explains the rules for rounding • 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 • Identifies equivalent fractions using visual representations • Expresses 1 in many different ways (e.g., 3/3, 4/4) • 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 • Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10) • Orders fractions on a number line • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) • Identifies a decimal on a number line to the tenths place • Rounds decimals to the nearest whole number • Compares integers on a 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 • Orders fractions on a number line • 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) • Compares and orders decimals past the thousandths place • Rounds decimals to the nearest whole number • Rounds decimals to the nearest tenth • Applies base ten place value concepts to solve problems using decimals • Identifies an integer from a number line • Compares two integers • Orders integers on a number line • Defines integers	• Compares and orders decimals to the thousandths place (not same number of digits after decimal) • Compares and orders decimals past the thousandths place • Rounds decimals to the nearest hundredth • Rounds decimals to nearest thousandth • Identifies the place value and value of each digit to the hundredths and thousandths • Applies base ten place value concepts to solve problems using decimals • Compares two integers • Orders integers on a number line • Orders integers • Locates rational numbers on a number line • Orders rational numbers, in a/b form • Orders fractions and decimals to the hundred thousandths
New Vocabulary: biggest, coordinate, coordinate point, expanded numeral, larger, miles per gallon, origin	*New Vocabulary:* century, coin, common factor, decimal form, greatest common factor, how long, lowest term, lowest terms, reduce, triple	*New Vocabulary:* real number, ten million
New Signs and Symbols: ft feet, in. inch, mpg miles per gallon, - negative number	*New Signs and Symbols:* $ dollar sign, hr hour, kg kilogram, - negative sign, ≠ not equal to, yd yard	*New Signs and Symbols:* ( ) parenthesis around an integer, cm centimeter/centimetre, °C degrees Celsius, km kilometer/kilometre, mL milliliter/millilitre, # number, / per, + positive number, : ratio

DesCartes: A Continuum of Learning®

Mathematics

Goal: The Real and Complex Number Systems

Skills and Concepts to Enhance (73% Probability*) 211 - 220	Skills and Concepts to Develop (50% Probability*) 221 - 230	Skills and Concepts to Introduce (27% Probability*) 231 - 240
Ratios and Proportional Relationships	Ratios and Proportional Relationships	Ratios and Proportional Relationships
• Solves problems involving equivalent fractions • Solves 1-step problems involving proportions • Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%) • Converts between inches and feet • Converts between inches, feet, and yards • Solves simple problems involving measurement of length • Converts between cups, pints, quarts, and gallons • Apply dimensional analysis to simple real-world problems (capacity) • Computes more difficult conversions among units of time • Applies dimensional analysis to simple real-world problems (time) • Solves simple problems involving miles per gallon • Determines unit price • Solves problems involving rates • 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 • Recognizes and writes proportions • Identifies the percent represented in a 2-D region	• Solves real-world problems involving decimals (not money) using multiplication • 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) • Solves problems involving percents • Solves problems involving tax and tips • Converts between inches, feet, and yards • Converts between millimeters, centimeters, meters, and kilometers • Uses dimensional analysis for unit conversions (length) • Solves problems involving length in the customary system and converts to larger or smaller units • Converts between ounces and pounds • Converts between ounces, pounds, and tons • Converts between cups, pints, quarts, and gallons • Converts within the metric system • Apply dimensional analysis to simple real-world problems (capacity) • Solves problems involving capacity in the customary system and converts to larger or smaller units • Computes 2-step conversions between units of time • Applies dimensional analysis to simple real-world problems (time) • Solves complex problems involving miles per gallon • Solves complex problems involving miles/kilometers per hour • Solves problems involving rates • Solves problems involving perimeter and converts to larger or smaller units • Interprets data given in circle graphs to solve complex problems (with percents) • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa • 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)	• Uses estimation to solve problems involving proportional reasoning (decimals only) • Solves real-world problems involving decimals (not money) using multiplication • 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 • Converts between millimeters, centimeters, meters, and kilometers • Uses dimensional analysis for unit conversions (length) • Converts between the customary and metric system given conversion ratios (2-step, length) • Apply dimensional analysis to simple real-world problems (length) • Solves problems involving length in the customary system and converts to larger or smaller units • Converts between grams and kilograms • Solves problems involving weight in the customary system and converts to larger or smaller units • Converts within the metric system • Apply dimensional analysis to simple real-world problems (capacity) • Solves problems involving capacity in the customary system and converts to larger or smaller units • Solves complex problems involving miles per gallon • Solves problems comparing unit prices • Solves problems involving rates • Interprets data given in circle graphs to solve complex problems (with percents) • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa • Identifies the ratio from a given real-world situation

Skills and Concepts to Enhance (73% Probability*) 211 - 220	Skills and Concepts to Develop (50% Probability*) 221 - 230	Skills and Concepts to Introduce (27% Probability*) 231 - 240
Perform Operations	Perform Operations	Perform Operations
• 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 multiplication and division of numbers less than 100 (whole numbers only)	• Divides multiple-digit numbers
• 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 less than 1000 with multiplication and division (whole numbers only)	• Divides numbers by powers of 10
• 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 numbers 1000 or greater using multiplication and division (whole numbers only)	• Adds fractions with unlike denominators with reducing or converting to a mixed fraction
• Uses rounding to estimate answers to difficult multiplication and division problems (whole numbers only)	• Multiplies multiple-digit numbers	• Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)
• Subtracts numbers with 5 digits or more with regrouping	• Divides a 4-digit number by a 2-digit number	• Adds mixed fractions where converting from improper fractions is necessary
• Instantly recalls basic multiplication and division facts in a table	• Divides multiple-digit numbers	• Subtracts whole numbers, fractions, and mixed fractions
• Multiplies a 2-digit number by a 2-digit number with regrouping	• Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor)	• Subtracts whole numbers, fractions, and mixed fractions with regrouping
• Multiplies a 3-digit number by a 2-digit number with regrouping	• Solves real-world multiple-step problems involving whole numbers	• Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary
• Performs mental computation with multiplication	• Demonstrates an understanding of multiple properties	• Uses models to multiply and divide fractions and connect the actions to algorithms
• Uses multiplication strategies to explain computation (e.g., doubles, 9-patterns, decomposing, partial products)	• Adds fractions with like denominators with reducing or converting to a mixed fraction	• Multiplies mixed fractions
• Multiplies a 3-digit number by a 3-digit number	• Adds fractions with unlike denominators without reducing	• Uses models to multiply and divide fractions and mixed fractions and connect the actions to algorithms
• Multiplies a 4- or more digit number by multiples of 100 or 1000	• Adds fractions with unlike denominators with reducing or converting to a mixed fraction	• Divides a fraction by a fraction
• Multiplies multiple-digit numbers	• Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)	• Divides a fraction by a whole number
• Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)	• Adds mixed fractions where converting from improper fractions is necessary	• Divides a whole number by a fraction
• Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder	• Subtracts fractions with like denominators with reducing	• Divides a mixed fraction by a whole number
• Performs mental computation with division	• Subtracts fractions with unlike denominators without reducing	• Divides a whole number by a mixed fraction
• Divides a 4-digit number by a 1-digit number with no remainder	• Subtracts fractions with unlike denominators with reducing	• Divides a mixed fraction by a fraction
• Divides a 3-digit number by a 2-digit number	• Subtracts mixed fractions with unlike denominators with no regrouping	• Divides a fraction by a mixed fraction
• Divides a 4-digit number by a 2-digit number	• Subtracts whole numbers, fractions, and mixed fractions	• Divides a mixed fraction by a mixed fraction
• Divides multiple-digit numbers	• Subtracts whole numbers, fractions, and mixed fractions with regrouping	• Solves 2- or more step real-world problems involving fractions with multiplication and division
• Solves whole number word problems with division over 10 x 10	• Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary	• Solves problems involving fractions (e.g., multiple operations, conversions)
• Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor)	• Uses models to multiply and divide fractions and connect the actions to algorithms	• Subtracts a decimal from a whole number, horizontally
• Solves real-world problems involving 2-step multiple operations, whole numbers only	• Multiplies a fraction by a fraction without reducing to simplest form (complex problem)	• Multiplies a decimal by 10, 100, 1000
• Solves real-world multiple-step problems involving whole numbers	• Multiplies a fraction by a fraction where reducing to simplest form is necessary	• Divides a whole number by a decimal
• Demonstrates an understanding of the inverse relationship between addition and subtraction	• Multiplies a fraction by a whole number	• Divides a decimal by 10, 100, 1000
• Adds fractions with like denominators without reducing	• Multiplies mixed fractions	• Divides a decimal by a decimal
• Adds fractions with like denominators with reducing or converting to a mixed fraction		• Adds integers with unlike signs
		• Adds several positive and negative integers
		• Subtracts integers
		• Solves problems involving addition and subtraction of integers
		• Multiplies integers with like signs

DesCartes: A Continuum of Learning®

Mathematics
Goal: The Real and Complex Number Systems

Skills and Concepts to Enhance (73% Probability*) 211 - 220	Skills and Concepts to Develop (50% Probability*) 221 - 230	Skills and Concepts to Introduce (27% Probability*) 231 - 240
Perform Operations	**Perform Operations**	**Perform Operations**
• Adds fractions with unlike denominators without reducing	• Divides a fraction by a fraction	• Divides integers with like signs
• Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)	• Divides a mixed fraction by a fraction	• Subtracts rational expressions in decimal form
• Subtracts simple fractions with unlike denominators without reducing (e.g., halves, quarters, thirds, eighths)	• Solves 1-step real-world problems involving fractions with multiplication and division	• Multiplies rational expressions
• Subtracts fractions with unlike denominators without reducing	• Solves 2- or more step real-world problems involving fractions with multiplication and division	• Identifies the additive inverse property
• Subtracts mixed fractions with like denominators with no regrouping	• Solves problems involving fractions (e.g., multiple operations, conversions)	• Interprets data given in tables to solve problems
• Subtracts mixed fractions with unlike denominators with no regrouping	• Adds decimals to the hundredths place in horizontal format (not same number of digits)	• Writes a fraction as a decimal and vice versa
• Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary	• Adds decimals through the hundred-thousandths place	• Writes a fraction as a mixed decimal and vice versa
• Uses models to multiply and divide fractions and connect the actions to algorithms	• Subtracts decimals to the hundredths place (not same number of digits)	
• Multiplies a fraction by a fraction where reducing to simplest form is necessary	• Subtracts decimals to the thousandths place, horizontally, with and without regrouping	
• Multiplies a fraction by a whole number	• Subtracts decimals through the hundred-thousandths place, horizontally	
• Solves 1-step real-world problems involving fractions with multiplication and division	• Subtracts a decimal from a whole number, horizontally	
• Adds decimals to the hundredths place in horizontal format (not same number of digits)	• Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths)	
• Adds decimals to the thousandths place horizontally with and without regrouping	• Multiplies a decimal by a decimal (factors to hundredths)	
• Adds decimals through the hundred-thousandths place	• Multiplies a decimal by 10, 100, 1000	
• Subtracts decimals to the thousandths place, horizontally, with and without regrouping	• Multiplies a decimal by a decimal (factors to thousandths)	
• Computes the value of multiple bills and coins (addition/subtraction only)	• Divides a decimal by 10, 100, 1000	
• Analyzes and computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)	• Divides a decimal by a decimal	
• Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths)	• Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division)	
• Multiplies a decimal by a decimal (factors to hundredths)	• Computes the value of multiple bills and coins (multiplication/division)	
• Divides decimal by a whole number	• Calculate the sum of integers using a number line	
• Analyzes and computes 1 operation on real-world problems involving money over $5.00 (multiplication/division)	• Adds integers with unlike signs	
• Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division)	• Adds several positive and negative integers	
• Computes addition and subtraction on multiple-step real-world problems involving money	• Uses models to add and subtract integers and connect the actions to algorithms	
• Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money	• Subtracts integers	
• Adds integers with like signs	• Solves real-world problems involving addition and subtraction of integers	
	• Solves problems involving addition and subtraction of integers	
	• Multiplies integers with unlike signs	
	• Divides integers with unlike signs	
	• Divides integers with like signs	
	• Adds rational expressions in decimal form	

Skills and Concepts to Enhance (73% Probability*) 211 - 220	Skills and Concepts to Develop (50% Probability*) 221 - 230	Skills and Concepts to Introduce (27% Probability*) 231 - 240
Perform Operations	Perform Operations	Perform Operations
• Uses models to add and subtract integers and connect the actions to algorithms • Solves real-world problems involving addition and subtraction of integers • Multiplies integers with unlike signs • Divides integers with unlike signs • Divides integers with like signs • Demonstrates an understanding that division by 0 is undefined • Solves difficult problems involving elapsed time, with the conversion of hours • Selects and uses the appropriate units depending on degree of accuracy required to solve problems • 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 • Expresses a percent as a decimal and vice versa • Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction) • Determines factors of whole numbers • Identifies numbers as prime • Identifies common factors of two or more numbers • Identifies the greatest common factor of whole numbers	• Identifies the additive inverse property • Solves difficult problems involving elapsed time, with the conversion of hours • Interprets data given in tables to solve problems • 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 • Determines factors of whole numbers • Uses multiple number theory concepts to solve problems (e.g., factors, digits, odd/even, divisibility) • Uses factor and multiple concepts to solve simple problems • Identifies common factors of two or more numbers • Identifies the greatest common factor of whole numbers	
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• 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 • Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system • Locates the origin on a coordinate grid • 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 wholes numbers to the nearest billion • Writes whole numbers in standard and expanded form through the hundred thousands • Identifies equivalent fractions using visual representations • Identifies a fractions in lowest terms from a region or set • Identifies eighths, reduced to lowest terms, from a region or set	• Graphs ordered pairs in all quadrants • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines) • Determines the relative magnitude of whole numbers • Rounds whole numbers to the nearest million • 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 • Compares fractions (e.g., comparing numerators and denominators) • Uses alternative algorithms to explain the meaning of fraction • Represents a decimal to thousandths place (e.g., three thousandths = 0.003)	• Simplifies rational expressions with absolute value • Graphs ordered pairs in all quadrants • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines) • Determines the relative magnitude of whole numbers • Writes whole numbers in standard and exponential form • Compares fractions (e.g., comparing numerators and denominators) • Rounds decimals to the nearest hundredth • Compares and orders decimal and fractional coordinates on a number line

Explanatory Notes
* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.

Skills and Concepts to Enhance (73% Probability*) 211 - 220	Skills and Concepts to Develop (50% Probability*) 221 - 230	Skills and Concepts to Introduce (27% Probability*) 231 - 240
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Determines simple equivalent fractions using multiples • Converts fractions to lowest terms • Writes mixed numbers as improper fractions and improper fractions as mixed numbers • 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 • Orders fractions on a number line • 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) • Compares and orders decimals past the thousandths place • Rounds decimals to the nearest whole number • Rounds decimals to the nearest tenth • Applies base ten place value concepts to solve problems using decimals • Identifies an integer from a number line • Compares two integers • Orders integers on a number line • Defines integers	• 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 • 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 • Rounds decimals to the nearest hundredth • Rounds decimals to nearest thousandth • Identifies the place value and value of each digit to the hundredths and thousandths • Applies base ten place value concepts to solve problems using decimals • Compares two integers • Orders integers on a number line • Orders integers • Locates rational numbers on a number line • Orders rational numbers, in a/b form • Orders fractions and decimals to the hundred thousandths	
New Vocabulary: century, coin, common factor, decimal form, greatest common factor, how long, lowest term, lowest terms, reduce, triple	*New Vocabulary:* real number, ten million	*New Vocabulary:* discount, equality
New Signs and Symbols: $ dollar sign, hr hour, kg kilogram, - negative sign, ≠ not equal to, yd yard	*New Signs and Symbols:* ( ) parenthesis around an integer, cm centimeter/centimetre, °C degrees Celsius, km kilometer/kilometre, mL milliliter/millilitre, # number, / per, + positive number, : ratio	*New Signs and Symbols:* || absolute value, oz ounce

Skills and Concepts to Enhance (73% Probability*) 221 - 230	Skills and Concepts to Develop (50% Probability*) 231 - 240	Skills and Concepts to Introduce (27% Probability*) 241 - 250
Ratios and Proportional Relationships	Ratios and Proportional Relationships	Ratios and Proportional Relationships
• Solves real-world problems involving decimals (not money) using multiplication	• Uses estimation to solve problems involving proportional reasoning (decimals only)	• Solves real-world problems involving decimals (not money) using multiplication
• Solves problems involving ratios	• Solves real-world problems involving decimals (not money) using multiplication	• Solves multiple-step problems involving proportions
• Solves 1-step problems involving proportions	• Solves problems involving equivalent fractions (analysis)	• Solves problems involving a fractional increase
• Calculates basic percents of a number (e.g., 10%, 20%, 25%, 50%, 100%)	• Solves problems involving ratios	• Calculates the percent one number is of another (e.g., 20 is what % of 90)
• Calculates a percent of a number (e.g., 6% of 30)	• Solves multiple-step problems involving proportions	• Calculates a percent of a rational number (e.g., 6% of 0.78)
• Calculates a number from a percent (e.g., 4 is 9% of what)	• Calculates a percent of a number (e.g., 6% of 30)	• Solves problems involving percents (analysis)
• Solves problems involving percents	• Calculates the percent one number is of another (e.g., 20 is what % of 90)	• Solves problems involving simple percent discounts (e.g., finding sale price)
• Solves problems involving tax and tips	• Solves problems involving percents	• Solves problems involving complex percent discounts (e.g., finding percent discount, regular price)
• Converts between inches, feet, and yards	• Solves problems involving percents (analysis)	• Calculates commission/deductions and total pay
• Converts between millimeters, centimeters, meters, and kilometers	• Solves problems involving simple percent discounts (e.g., finding sale price)	• Solves problems involving successive discounts
• Uses dimensional analysis for unit conversions (length)	• Solves problems involving percent increase and decrease	• Uses dimensional analysis for unit conversions (length)
• Solves problems involving length in the customary system and converts to larger or smaller units	• Solves problems involving tax and tips	• Apply dimensional analysis to simple real-world problems (length)
• Converts between ounces and pounds	• Calculates commission/deductions and total pay	• Solves problems involving weight in the customary system and converts to larger or smaller units
• Converts between ounces, pounds, and tons	• Converts between millimeters, centimeters, meters, and kilometers	• Uses dimensional analysis for unit conversions (time)
• Converts between cups, pints, quarts, and gallons	• Uses dimensional analysis for unit conversions (length)	• Solves problems involving rate conversions (e.g., mi/hr to ft/sec)
• Converts within the metric system	• Converts between the customary and metric system given conversion ratios (2-step, length)	• Identifies the ratio from a given real-world situation
• Apply dimensional analysis to simple real-world problems (capacity)	• Apply dimensional analysis to simple real-world problems (length)	
• Solves problems involving capacity in the customary system and converts to larger or smaller units	• Solves problems involving length in the customary system and converts to larger or smaller units	
• Computes 2-step conversions between units of time	• Converts between grams and kilograms	
• Applies dimensional analysis to simple real-world problems (time)	• Solves problems involving weight in the customary system and converts to larger or smaller units	
• Solves complex problems involving miles per gallon	• Converts within the metric system	
• Solves complex problems involving miles/kilometers per hour	• Apply dimensional analysis to simple real-world problems (capacity)	
• Solves problems involving rates	• Solves problems involving capacity in the customary system and converts to larger or smaller units	
• Solves problems involving perimeter and converts to larger or smaller units	• Solves complex problems involving miles per gallon	
• Interprets data given in circle graphs to solve complex problems (with percents)	• Solves problems comparing unit prices	
• Expresses a percent as a fraction and vice versa	• Solves problems involving rates	
• Writes a ratio as a percent and vice versa	• Interprets data given in circle graphs to solve complex problems (with percents)	
• Uses concrete and pictorial models to represent ratios	• Expresses a percent as a fraction and vice versa	
• Writes the missing number in a proportion with numbers other than basic facts (e.g., 5/13=?/117)	• Writes a ratio as a percent and vice versa	
	• Identifies the ratio from a given real-world situation	

Explanatory Notes
* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.

Mathematics

Goal: The Real and Complex Number Systems

RIT Score Range: 231 - 240
Statements Last Updated: Aug 4, 2014

Skills and Concepts to Enhance (73% Probability*) 221 - 230	Skills and Concepts to Develop (50% Probability*) 231 - 240	Skills and Concepts to Introduce (27% Probability*) 241 - 250
Perform Operations	Perform Operations	Perform Operations
• 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) • Multiplies multiple-digit numbers • Divides a 4-digit number by a 2-digit number • Divides multiple-digit numbers • Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor) • Solves real-world multiple-step problems involving whole numbers • Demonstrates an understanding of multiple properties • 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 simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) • 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 • 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 • Uses models to multiply and divide fractions and connect the actions to algorithms • Multiplies a fraction by a fraction without reducing to simplest form (complex problem) • Multiplies a fraction by a fraction where reducing to simplest form is necessary • Multiplies a fraction by a whole number • Multiplies mixed fractions	• Divides multiple-digit numbers • Divides numbers by powers of 10 • Adds fractions with unlike denominators with reducing or converting to a mixed fraction • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) • Adds mixed fractions where converting from improper fractions is necessary • Subtracts whole numbers, fractions, and mixed fractions • 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 • Uses models to multiply and divide fractions and connect the actions to algorithms • Multiplies mixed fractions • Uses models to multiply and divide fractions and mixed fractions and connect the actions to algorithms • Divides a fraction by a fraction • Divides a fraction by a whole number • Divides a whole number by a fraction • Divides a mixed fraction by a whole number • Divides a whole number by a mixed fraction • Divides a mixed fraction by a fraction • Divides a fraction by a mixed fraction • Divides a mixed fraction by a mixed fraction • Solves 2- or more step real-world problems involving fractions with multiplication and division • Solves problems involving fractions (e.g., multiple operations, conversions) • Subtracts a decimal from a whole number, horizontally • Multiplies a decimal by 10, 100, 1000 • Divides a whole number by a decimal • Divides a decimal by 10, 100, 1000 • Divides a decimal by a decimal • Adds integers with unlike signs • Adds several positive and negative integers • Subtracts integers • Solves problems involving addition and subtraction of integers • Multiplies integers with like signs	• Uses a number line to determine the distance between a positive and negative number • Subtracts integers • Uses the multiplicative inverse property with rational numbers • Uses factor and multiple concepts to solve difficult problems • Identifies the least common multiple of whole numbers

Explanatory Notes
* At the range mid-point, this is the probability students would correctly answer items measuring these concepts and skills. Both data from test items and review by NWEA curriculum specialists are used to place Learning Continuum statements into appropriate RIT ranges. Blank cells indicate data are limited or unavailable for this range or document version.

Skills and Concepts to Enhance (73% Probability*) 221 - 230	Skills and Concepts to Develop (50% Probability*) 231 - 240	Skills and Concepts to Introduce (27% Probability*) 241 - 250
Perform Operations	Perform Operations	Perform Operations
• Divides a fraction by a fraction	• Divides integers with like signs	
• Divides a mixed fraction by a fraction	• Subtracts rational expressions in decimal form	
• Solves 1-step real-world problems involving fractions with multiplication and division	• Multiplies rational expressions	
• Solves 2- or more step real-world problems involving fractions with multiplication and division	• Identifies the additive inverse property	
• Solves problems involving fractions (e.g., multiple operations, conversions)	• Interprets data given in tables to solve problems	
• Adds decimals to the hundredths place in horizontal format (not same number of digits)	• Writes a fraction as a decimal and vice versa	
• Adds decimals through the hundred-thousandths place	• Writes a fraction as a mixed decimal and vice versa	
• 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		
• Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths)		
• Multiplies a decimal by a decimal (factors to hundredths)		
• Multiplies a decimal by 10, 100, 1000		
• Multiplies a decimal by a decimal (factors to thousandths)		
• Divides a decimal by 10, 100, 1000		
• Divides a decimal by a decimal		
• Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division)		
• Computes the value of multiple bills and coins (multiplication/division)		
• Calculate the sum of integers using a number line		
• Adds integers with unlike signs		
• Adds several positive and negative integers		
• Uses models to add and subtract integers and connect the actions to algorithms		
• Subtracts integers		
• Solves real-world problems involving addition and subtraction of integers		
• Solves problems involving addition and subtraction of integers		
• Multiplies integers with unlike signs		
• Divides integers with unlike signs		
• Divides integers with like signs		
• Adds rational expressions in decimal form		

Skills and Concepts to Enhance (73% Probability*) 221 - 230	Skills and Concepts to Develop (50% Probability*) 231 - 240	Skills and Concepts to Introduce (27% Probability*) 241 - 250
Perform Operations	**Perform Operations**	**Perform Operations**
• Identifies the additive inverse property • Solves difficult problems involving elapsed time, with the conversion of hours • Interprets data given in tables to solve problems • 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 • Determines factors of whole numbers • Uses multiple number theory concepts to solve problems (e.g., factors, digits, odd/even, divisibility) • Uses factor and multiple concepts to solve simple problems • Identifies common factors of two or more numbers • Identifies the greatest common factor of whole numbers		
Extend and Use Properties	**Extend and Use Properties**	**Extend and Use Properties**
• Graphs ordered pairs in all quadrants • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines) • Determines the relative magnitude of whole numbers • Rounds whole numbers to the nearest million • 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 • Compares fractions (e.g., comparing numerators and denominators) • 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 • 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 • Rounds decimals to the nearest hundredth • Rounds decimals to nearest thousandth	• Simplifies rational expressions with absolute value • Graphs ordered pairs in all quadrants • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines) • Determines the relative magnitude of whole numbers • Writes whole numbers in standard and exponential form • Compares fractions (e.g., comparing numerators and denominators) • Rounds decimals to the nearest hundredth • Compares and orders decimal and fractional coordinates on a number line	• Estimates the square roots of numbers • Simplifies expressions containing square roots • Uses expressions with absolute value to represent situations • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)

Skills and Concepts to Enhance (73% Probability*) 221 - 230	Skills and Concepts to Develop (50% Probability*) 231 - 240	Skills and Concepts to Introduce (27% Probability*) 241 - 250
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Identifies the place value and value of each digit to the hundredths and thousandths • Applies base ten place value concepts to solve problems using decimals • Compares two integers • Orders integers on a number line • Orders integers • Locates rational numbers on a number line • Orders rational numbers, in a/b form • Orders fractions and decimals to the hundred thousandths		
New Vocabulary: real number, ten million	*New Vocabulary:* discount, equality	*New Vocabulary:* feet per second, least common multiple
New Signs and Symbols: ( ) parenthesis around an integer, cm centimeter/centimetre, °C degrees Celsius, km kilometer/kilometre, mL milliliter/millilitre, # number, / per, + positive number, : ratio	*New Signs and Symbols:* || absolute value, oz ounce	*New Signs and Symbols:* LCM lowest common multiple, sec second, square root symbol

Explanatory Notes

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Skills and Concepts to Enhance (73% Probability*) 231 - 240	Skills and Concepts to Develop (50% Probability*) 241 - 250	Skills and Concepts to Introduce (27% Probability*) 251 - 260
Ratios and Proportional Relationships	Ratios and Proportional Relationships	Ratios and Proportional Relationships
• Uses estimation to solve problems involving proportional reasoning (decimals only) • Solves real-world problems involving decimals (not money) using multiplication • 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 • Converts between millimeters, centimeters, meters, and kilometers • Uses dimensional analysis for unit conversions (length) • Converts between the customary and metric system given conversion ratios (2-step, length) • Apply dimensional analysis to simple real-world problems (length) • Solves problems involving length in the customary system and converts to larger or smaller units • Converts between grams and kilograms • Solves problems involving weight in the customary system and converts to larger or smaller units • Converts within the metric system • Apply dimensional analysis to simple real-world problems (capacity) • Solves problems involving capacity in the customary system and converts to larger or smaller units • Solves complex problems involving miles per gallon • Solves problems comparing unit prices • Solves problems involving rates • Interprets data given in circle graphs to solve complex problems (with percents) • Expresses a percent as a fraction and vice versa • Writes a ratio as a percent and vice versa • Identifies the ratio from a given real-world situation	• Solves real-world problems involving decimals (not money) using multiplication • 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 successive discounts • Uses dimensional analysis for unit conversions (length) • Apply dimensional analysis to simple real-world problems (length) • Solves problems involving weight in the customary system and converts to larger or smaller units • Uses dimensional analysis for unit conversions (time) • Solves problems involving rate conversions (e.g., mi/hr to ft/sec) • Identifies the ratio from a given real-world situation	• Solves problems involving complex percent discounts (e.g., finding percent discount, regular price) • Solves problems involving successive discounts • Uses dimensional analysis for unit conversions (time) • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)

Skills and Concepts to Enhance (73% Probability*) 231 - 240	Skills and Concepts to Develop (50% Probability*) 241 - 250	Skills and Concepts to Introduce (27% Probability*) 251 - 260
Perform Operations	Perform Operations	Perform Operations
• Divides multiple-digit numbers	• Uses a number line to determine the distance between a positive and negative number	• Uses the additive inverse property with rational numbers
• Divides numbers by powers of 10	• Subtracts integers	• Performs operations on complex numbers and expresses the results in simplest form
• Adds fractions with unlike denominators with reducing or converting to a mixed fraction	• Uses the multiplicative inverse property with rational numbers	• Uses factor and multiple concepts to solve difficult problems
• Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)	• Uses factor and multiple concepts to solve difficult problems	
• Adds mixed fractions where converting from improper fractions is necessary	• Identifies the least common multiple of whole numbers	
• Subtracts whole numbers, fractions, and mixed fractions		
• 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		
• Uses models to multiply and divide fractions and connect the actions to algorithms		
• Multiplies mixed fractions		
• Uses models to multiply and divide fractions and mixed fractions and connect the actions to algorithms		
• Divides a fraction by a fraction		
• Divides a fraction by a whole number		
• Divides a whole number by a fraction		
• Divides a mixed fraction by a whole number		
• Divides a whole number by a mixed fraction		
• Divides a mixed fraction by a fraction		
• Divides a fraction by a mixed fraction		
• Divides a mixed fraction by a mixed fraction		
• Solves 2- or more step real-world problems involving fractions with multiplication and division		
• Solves problems involving fractions (e.g., multiple operations, conversions)		
• Subtracts a decimal from a whole number, horizontally		
• Multiplies a decimal by 10, 100, 1000		
• Divides a whole number by a decimal		
• Divides a decimal by 10, 100, 1000		
• Divides a decimal by a decimal		
• Adds integers with unlike signs		
• Adds several positive and negative integers		
• Subtracts integers		
• Solves problems involving addition and subtraction of integers		
• Multiplies integers with like signs		

Skills and Concepts to Enhance (73% Probability*) 231 - 240	Skills and Concepts to Develop (50% Probability*) 241 - 250	Skills and Concepts to Introduce (27% Probability*) 251 - 260
Perform Operations	Perform Operations	Perform Operations
• Divides integers with like signs • Subtracts rational expressions in decimal form • Multiplies rational expressions • Identifies the additive inverse property • Interprets data given in tables to solve problems • Writes a fraction as a decimal and vice versa • Writes a fraction as a mixed decimal and vice versa		
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Simplifies rational expressions with absolute value • Graphs ordered pairs in all quadrants • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines) • Determines the relative magnitude of whole numbers • Writes whole numbers in standard and exponential form • Compares fractions (e.g., comparing numerators and denominators) • Rounds decimals to the nearest hundredth • Compares and orders decimal and fractional coordinates on a number line	• Estimates the square roots of numbers • Simplifies expressions containing square roots • Uses expressions with absolute value to represent situations • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)	• Simplifies expressions containing square roots • Simplifies radical expressions • Uses expressions with absolute value to represent situations
New Vocabulary: discount, equality	*New Vocabulary:* feet per second, least common multiple	*New Vocabulary:* None
New Signs and Symbols: || absolute value, oz ounce	*New Signs and Symbols:* LCM lowest common multiple, sec second, square root symbol	*New Signs and Symbols:* i square root of -1

Explanatory Notes
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Mathematics

Goal: The Real and Complex Number Systems

RIT Score Range: 251 - 260
Statements Last Updated: Aug 4, 2014

Skills and Concepts to Enhance (73% Probability*) 241 - 250	Skills and Concepts to Develop (50% Probability*) 251 - 260	Skills and Concepts to Introduce (27% Probability*) > 260
Ratios and Proportional Relationships	Ratios and Proportional Relationships	Ratios and Proportional Relationships
• Solves real-world problems involving decimals (not money) using multiplication • 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 successive discounts • Uses dimensional analysis for unit conversions (length) • Apply dimensional analysis to simple real-world problems (length) • Solves problems involving weight in the customary system and converts to larger or smaller units • Uses dimensional analysis for unit conversions (time) • Solves problems involving rate conversions (e.g., mi/hr to ft/sec) • Identifies the ratio from a given real-world situation	• Solves problems involving complex percent discounts (e.g., finding percent discount, regular price) • Solves problems involving successive discounts • Uses dimensional analysis for unit conversions (time) • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)	• Solves problems involving successive discounts • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)
Perform Operations	Perform Operations	Perform Operations
• Uses a number line to determine the distance between a positive and negative number • Subtracts integers • Uses the multiplicative inverse property with rational numbers • Uses factor and multiple concepts to solve difficult problems • Identifies the least common multiple of whole numbers	• Uses the additive inverse property with rational numbers • Performs operations on complex numbers and expresses the results in simplest form • Uses factor and multiple concepts to solve difficult problems	• Performs operations on complex numbers and expresses the results in simplest form
Extend and Use Properties	Extend and Use Properties	Extend and Use Properties
• Estimates the square roots of numbers • Simplifies expressions containing square roots • Uses expressions with absolute value to represent situations • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines)	• Simplifies expressions containing square roots • Simplifies radical expressions • Uses expressions with absolute value to represent situations	
New Vocabulary: feet per second, least common multiple	*New Vocabulary:* None	*New Vocabulary:* None
New Signs and Symbols: LCM lowest common multiple, sec second, square root symbol	*New Signs and Symbols:* i square root of -1	*New Signs and Symbols:* None

Skills and Concepts to Enhance (73% Probability*) 251 - 260	Skills and Concepts to Develop (50% Probability*) > 260
Ratios and Proportional Relationships	Ratios and Proportional Relationships
• Solves problems involving complex percent discounts (e.g., finding percent discount, regular price) • Solves problems involving successive discounts • Uses dimensional analysis for unit conversions (time) • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)	• Solves problems involving successive discounts • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)
Perform Operations	Perform Operations
• Uses the additive inverse property with rational numbers • Performs operations on complex numbers and expresses the results in simplest form • Uses factor and multiple concepts to solve difficult problems	• Performs operations on complex numbers and expresses the results in simplest form
New Vocabulary: None	*New Vocabulary:* None
New Signs and Symbols: i square root of -1	*New Signs and Symbols:* None