Math: The Real and Complex Number Systems: Extend and Use Properties

Students:	DesCartes Statements:
Students:	**RIT 251-260:** • Simplifies expressions containing square roots • Simplifies radical expressions • Uses expressions with absolute value to represent situations
Students:	**RIT 241-250:** • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines) • Estimates the square roots of numbers • Simplifies expressions containing square roots • Uses expressions with absolute value to represent situations
Students:	**RIT 231-240:** • Compares and orders decimal and fractional coordinates on a number line • Compares fractions (e.g., comparing numerators and denominators) • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines) • Determines the relative magnitude of whole numbers • Graphs ordered pairs in all quadrants • Rounds decimals to the nearest hundredth • Simplifies rational expressions with absolute value • Writes whole numbers in standard and exponential form
Students:	**RIT 221-230:** • Applies base ten place value concepts to solve problems using decimals • Compares and orders decimals past the thousandths 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 fractions (e.g., comparing numerators and denominators) • Compares two integers • Computes and interprets distance, given a set of ordered pairs (horizontal and vertical lines) • Determines equivalent fractions using multiples • Determines simple equivalent fractions using multiples • Determines the relative magnitude of whole numbers • Graphs ordered pairs in all quadrants • Identifies a fractions in lowest terms from a region or set • Identifies the place value and value of each digit to the hundredths and thousandths • Locates rational numbers on a number line • Orders fractions and decimals to the hundred thousandths • Orders integers • Orders integers on a number line • Orders rational numbers, in a/b form • 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) • Rounds decimals to nearest thousandth • Rounds decimals to the nearest hundredth • Rounds whole numbers to the nearest million • Uses alternative algorithms to explain the meaning of "fraction" • Writes a decimal for a shaded region to the hundredths place • 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
Students:	**RIT 211-220:** • Applies base ten place value concepts to solve problems using decimals • Compares and orders decimals past the thousandths place • Compares fractions and mixed numbers • Compares fractions and mixed numbers using symbols • Compares fractions greater than or less than a given fraction using visual representations • Compares fractions on a number line • Compares two integers

- Converts fractions to lowest terms
- Defines "integers"
- Determines simple equivalent fractions using multiples
- Determines the distance between horizontal and vertical lines in the first quadrant of a rectangular coordinate system
- 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 fractions in lowest terms from a region or set
- Identifies an integer from a number line
- Identifies eighths, reduced to lowest terms, from a region or set
- Identifies equivalent fractions using visual representations
- Locates the origin on a coordinate grid
- Orders fractions on a number line; orders integers on a number line
- 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
- Represents a decimal to the hundredths place (e.g., three hundredths = 0.03)
- Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred
- Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten thousand
- Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand
- Rounds decimals to the nearest tenth
- Rounds decimals to the nearest whole number
- Rounds wholes numbers to the nearest billion
- Writes mixed numbers as improper fractions and improper fractions as mixed numbers
- Writes whole numbers in standard and expanded form through the hundred thousands

Students:

RIT 201-210:

- Applies base ten place value concepts with whole numbers to solve problems
- Compares fractions (e.g., common denominator, 1 in the numerator, denominator is 2, 3, 4, 6, 8, 10)
- Compares integers on a number line
- Compares whole numbers through the billions using the symbols <, >, or =
- Converts a basic fractional numeral to lowest terms (e.g., halves, thirds, quarters)
- 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)
- Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers)
- Explains the rules for rounding
- Expresses "1" in many different ways (e.g., 3/3, 4/4)
- Graphs ordered pairs in the first quadrant
- Identifies a decimal on a number line to the tenths place
- Identifies equivalent fractions using visual representations
- Identifies halves of a region using nonadjacent parts
- Identifies the numeral and written name for whole numbers over 100,000
- Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place
- Identifies the place value and value of each digit in whole numbers through the billions
- Identifies whole numbers over 999 using base-10 blocks
- Locates the origin on a coordinate grid
- Orders fractions on a number line
- Orders whole numbers a million or greater using < or > symbols
- Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred
- Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten
- Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand
- Rounds decimals to the nearest whole number
- Rounds whole numbers to the nearest hundred thousand
- Rounds wholes numbers to the nearest billion
- Writes equivalent forms of whole numbers using place value (e.g., 54 = 4 tens and 14 ones)
- Writes mixed numbers as improper fractions and improper fractions as mixed numbers
- Writes whole numbers in standard and expanded form through the hundred thousands
- Writes whole numbers using place value terms and vice versa

Students:	**RIT 191-200:** • Compares whole numbers through the thousands using the symbols <, >, or = • Compares whole numbers to 100, using the symbols for 'less than', 'equal to', or 'greater than' (<, =, >) • Determines and names locations in the first quadrant on a labeled grid or coordinate system (e.g., map or graph) • Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) • Identifies 1/3 from a region or set • Identifies 1/4 from a region or set • Identifies 2/3 or 3/3 from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Identifies equivalent fractions using visual representations • Identifies tenths from a region or set • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • Identifies the numeral and written name for whole numbers over 100,000 • Identifies the numeral and written name for whole numbers with a zero between digits to the ten thousands place • Identifies the place value and value of each digit in whole numbers through the hundred thousands • Identifies the place value and value of each digit in whole numbers through the thousands • Identifies whole numbers over 999 using base-10 blocks • Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Matches numeric and visual representation of equivalent fractions • Represents 1/3 with a diagram or model • Represents fractions with denominators other than 2, 3, 4 with a diagram or model • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred • Writes whole numbers in standard and expanded form through the hundreds • Writes whole numbers in standard and expanded form through the thousands
Students:	**RIT 181-190:** • Compares and orders decimals to the hundredths place (same number of digits after decimal) • Compares whole numbers through 999 • Compares whole numbers through 9999 • Counts objects that are grouped into tens and ones • Identifies 1/2 from a region or set • Identifies 1/4 from a region or set • Identifies 2/3 or 3/3 from a region or set • Identifies 2/4, 3/4, or 4/4 from a region or set • Identifies a fraction (denominators other than 2, 3, 4, 8, 10) from a region or set • Identifies eighths from a region or set • Identifies equal parts by using models • Identifies one-half from a region or set • Identifies tenths from a region or set • Identifies the numeral and written name for whole numbers 10,000 to 100,000 • 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 place value and value of each digit in whole numbers through the hundred thousands • 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 tens place • Identifies the place value and value of each digit in whole numbers through the thousands • Identifies whole numbers under 100 given place value terms (e.g., 3 tens and 4 ones = 34) • Represents 3/4 with a diagram or model • Rounds 2- and 3- digit whole numbers to the nearest ten • Rounds 3-digit whole numbers to the nearest hundred
Students:	**RIT 171-180:** • 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 backwards from a given number (given number greater than 10) • Counts by 2's to 100 • Counts objects that are grouped into tens and ones

	• Identifies missing numbers in a series through 100 • Identifies one-half from a region or set • 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 21 to 100 (e.g., 62 is sixty-two, and vice versa) • Identifies the place value and value of each digit in whole numbers through the tens place • Identifies whole numbers 100 - 999 using base-10 blocks • Recognizes and generates equivalent forms for the same number using physical models for whole numbers 11 to 20 • Represents 1/2 with a diagram or model • Represents 1/4 with a diagram or model
Students:	**RIT 161-170:** • Counts 1 to 10 objects • Identifies missing numbers in a series through 100 • 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 • Orders whole numbers less than 10 • Recognizes and generates equivalent forms for the same number using physical models for whole numbers 11 to 20 • Writes whole numbers in standard and expanded form through the tens
Students:	**RIT Below 161:** • 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