

DesCartes: A Continuum of Learning®

Mathematics

Goal: Number and Operations

RIT Score Range: 211 - 220 Statements Last Updated: Mar 10, 2014

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
Understand Place Value, Counting, and Cardinality	Understand Place Value, Counting, and Cardinality	Understand Place Value, Counting, and Cardinality
 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 	 Predicts the relative size of the answer when computing with 10's, 100's, 1000's Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred 	Multiplies a decimal by 10, 100, 1000 Divides a decimal by 10, 100, 1000 Determines the relative propriet decimal appropriate to a facility propriet.
 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 Rounds decimals to the nearest whole number 	 Rounds 4-, 5-, and 6-digit whole numbers to the nearest housand 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 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 	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 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 = 0.0003) 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
Number and Operations in Base Ten	Number and Operations in Base Ten	Number and Operations in Base Ten
 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 Instantly recalls basic multiplication and division facts in a table Multiplies a 2-digit number by a 1-digit number with regrouping 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 Multiplies a 3-digit number by a 2-digit number with regrouping Performs mental computation with multiplication 	 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 Multiplies a 4- or more digit number by multiples of 100 or 1000 Multiplies multiple-digit numbers Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder 	 Multiplies multiple-digit numbers Divides a 4-digit number by a 2-digit number 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 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 a decimal (factors to thousandths) Divides a decimal by a decimal

* 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.



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201 - 210 Number and Operations in Base Ten	211 - 220 Number and Operations in Base Ten	221 - 230 Number and Operations in Base Ten
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	Number and Operations in base ren
Multiplies a 3-digit number by a 3-digit number	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 2-digit number by a 1-digit number with no remainder	Divides a 4-digit number by a 2-digit number	
Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder	Adds decimals to the hundredths place in horizontal format (not same number of digits)	
Divides a 3-digit number by a 1-digit number with no remainder	Adds decimals to the thousandths place horizontally with and without	
Divides a 4-digit number by a 1-digit number with no remainder	regrouping	
Divides a 3-digit number by a multiple of 10	Adds decimals through the hundred-thousandths place	
Divides a 4-digit number by a 2-digit number	Multiplies a decimal by a decimal, vertical form (factors to tenths or	
Adds decimals to the thousandths place horizontally with and without regrouping	hundredths) • Multiplies a decimal by a decimal (factors to hundredths)	
Subtracts decimals to the hundredths place (same number of digits) with regrouping	Divides decimal by a whole number	
Multiplies a decimal by whole number		
Divides decimal by a whole number		
Number and Operations - Fractions	Number and Operations - Fractions	Number and Operations - Fractions
Adds fractions with like denominators without reducing	Adds fractions with like denominators without reducing	Adds fractions with like denominators with reducing or converting to a
Adds whole numbers and fractions	Adds fractions with like denominators with reducing or converting to a	mixed fraction
Uses models to add and subtract fractions and connect the actions to	mixed fraction	Adds fractions with unlike denominators without reducing
algorithms	Adds fractions with unlike denominators without reducing	Adds fractions with unlike denominators with reducing or converting to a mixed fraction
Subtracts fractions with like denominators without reducing Subtracts grized fractions with like denominators with an angrey plant.	 Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) 	Adds simple mixed fractions with unlike denominators (e.g., halves,
 Subtracts mixed fractions with like denominators with no regrouping Solves real-world 1-step problems involving addition and subtraction of 	Subtracts simple fractions with unlike denominators without reducing	thirds, fourths, eighths)
fractions with like denominators	(e.g., halves, quarters, thirds, eighths)	Adds mixed fractions where converting from improper fractions is
Multiplies a fraction by a fraction without reducing to simplest form	Subtracts fractions with unlike denominators without reducing	necessary
(simple problem)	Subtracts mixed fractions with like denominators with no regrouping	Subtracts fractions with like denominators with reducing
 Identifies halves of a region using nonadjacent parts 	Subtracts mixed fractions with unlike denominators with no regrouping	Subtracts fractions with unlike denominators without reducing
 Identifies equivalent fractions using visual representations 	Solves real-world problems involving addition and subtraction of	Subtracts fractions with unlike denominators with reducing
• Expresses 1 in many different ways (e.g., 3/3, 4/4)	fractions where converting one denominator is necessary	• Subtracts mixed fractions with unlike denominators with no regrouping
 Converts a basic fractional numeral to lowest terms (e.g., halves, thirds, quarters) 	Uses models to multiply and divide fractions and connect the actions to algorithms	Subtracts whole numbers, fractions, and mixed fractions Subtracts whole numbers, fractions, and mixed fractions with
Writes mixed numbers as improper fractions and improper fractions as mixed numbers	Multiplies a fraction by a fraction where reducing to simplest form is necessary	regrouping Solves real-world problems involving addition and subtraction of
• Compares fractions (e.g., common denominator, 1 in the numerator,	Multiplies a fraction by a whole number	fractions where converting one denominator is necessary
denominator is 2, 3, 4, 6, 8, 10)	Solves 1-step real-world problems involving fractions with multiplication and division	Uses models to multiply and divide fractions and connect the actions to algorithms
Orders fractions on a number line	Solves 1-step problems involving proportions	Multiplies a fraction by a fraction without reducing to simplest form
 Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers) 	Identifies equivalent fractions using visual representations	(complex problem)
Writes a terminating decimal as a fraction or mixed number	Identifies a fractions in lowest terms from a region or set	Multiplies a fraction by a fraction where reducing to simplest form is necessary

Evalanatory Note

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Number and Operations - Fractions	Number and Operations - Fractions	Number and Operations - Fractions
Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction) Writes the missing number in a proportion using basic facts	• Identifies eighths, reduced to lowest terms, from a region or set	Multiplies a fraction by a whole number
	Determines simple equivalent fractions using multiples	Multiplies mixed fractions
	Converts fractions to lowest terms	Divides a mixed fraction by a fraction
	Writes mixed numbers as improper fractions and improper fractions as mixed numbers	Solves 1-step real-world problems involving fractions with multiplication and division
	Compares fractions on a number line	Solves 2- or more step real-world problems involving fractions with multiplication and division
	Compares fractions greater than or less than a given fraction using visual representations	
		Solves problems involving fractions (e.g., multiple operations,
	Compares fractions and mixed numbers	conversions)
	Compares fractions and mixed numbers using symbols	Solves 1-step problems involving proportions
	Orders fractions on a number line	Identifies a fractions in lowest terms from a region or set
	Explains different interpretations of fractions (e.g., parts of a whole, parts of a set, and division of whole numbers by whole numbers)	Determines simple equivalent fractions using multiples
		Determines equivalent fractions using multiples
	Expresses a simple fraction as a decimal	Compares fractions (e.g., comparing numerators and denominators)
	Writes a fraction or mixed number as a decimal when the denominator is a multiple of 10	Uses alternative algorithms to explain the meaning of fraction
		Writes a decimal for a shaded region to the hundredths place
	Expresses the equivalent form of a fraction, decimal, and/or percent (simple fraction)	Writes a fraction or mixed number as a decimal when the denominato is a multiple of 10
New Vocabulary: biggest, expanded numeral	New Vocabulary: lowest term, lowest terms, reduce, triple	New Vocabulary: short, ten million
New Signs and Symbols: ¢ cent sign	New Signs and Symbols: ≠ not equal to	New Signs and Symbols: None

Explanatory Note

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