

# **DesCartes: A Continuum of Learning®**

### **Mathematics**

Goal: Number and Operations

RIT Score Range: 221 - 230 Statements Last Updated: Mar 10, 2014

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
Understand Place Value, Counting, and Cardinality	Understand Place Value, Counting, and Cardinality	Understand Place Value, Counting, and Cardinality
• Predicts the relative size of the answer when computing with 10's,	Multiplies a decimal by 10, 100, 1000	Divides numbers by powers of 10
100's, 1000's	Divides a decimal by 10, 100, 1000	Multiplies a decimal by 10, 100, 1000
• Rounds 4-, 5-, and 6-digit whole numbers to the nearest hundred	Determines the relative magnitude of whole numbers	• Divides a decimal by 10, 100, 1000
• Rounds 4-, 5-, and 6-digit whole numbers to the nearest thousand	Rounds whole numbers to the nearest million	Determines the relative magnitude of whole numbers
• Rounds 4-, 5-, and 6-digit whole numbers to the nearest ten thousand	Writes equivalent forms of whole numbers using place value (numbers)	Writes whole numbers in standard and exponential form
<ul> <li>Rounds wholes numbers to the nearest billion</li> </ul>	100 or greater) (e.g., 253 = 2 hundreds, 5 tens, and 3 ones)	Rounds decimals to the nearest hundredth
Writes whole numbers in standard and expanded form through the hundred thousands	Writes whole numbers in standard and exponential form     Represents a decimal to thousandths place (e.g., three thousandths =	
• Represents a decimal to the hundredths place (e.g., three hundredths = 0.03)	0.003)	
Compares and orders decimals past the thousandths place	Represents a decimal to the hundred thousandths place - (e.g., three hundred thousandths = 0. 00003)	
Rounds decimals to the nearest whole number     Rounds decimals to the nearest tenth	Compares and orders decimals to the hundredths place (not same number of digits after decimal)	
Applies base ten place value concepts to solve problems using decimals	Compares and orders decimals to the thousandths place (not same number of digits after decimal)	
deamais	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 difficult multiplication and	Multiplies multiple-digit numbers	Subtracts a decimal from a whole number, horizontally
division problems (whole numbers only)	Divides a 4-digit number by a 2-digit number	Divides a whole number by a decimal
Subtracts numbers with 5 digits or more with regrouping     Instantly recalls basic multiplication and division facts in a table	Adds decimals to the hundredths place in horizontal format (not same number of digits)	Divides a decimal by a decimal
Multiplies a 2-digit number by a 2-digit number with regrouping	Adds decimals through the hundred-thousandths place	
Multiplies a 3-digit number by a 2-digit number with regrouping     Performs mental computation with multiplication	Subtracts decimals to the hundredths place (not same number of digits)	
<ul> <li>Performs mental computation with multiplication</li> <li>Uses multiplication strategies to explain computation (e.g., doubles, 9-</li> </ul>	Subtracts a decimal from a whole number, horizontally	
<ul> <li>Oses multiplication strategies to explain computation (e.g., doubles, 9- patterns, decomposing, partial products)</li> </ul>	Multiplies a decimal by a decimal, vertical form (factors to tenths or	
Multiplies a 3-digit number by a 3-digit number	hundredths)	
Multiplies a 4- or more digit number by multiples of 100 or 1000	Multiplies a decimal by a decimal (factors to hundredths)	
Multiplies multiple-digit numbers	Multiplies a decimal by a decimal (factors to thousandths)	
Divides a 2-digit number or a 3-digit number by a 1-digit number with a remainder	Divides a decimal by a decimal	
Divides a 4-digit number by a 1-digit number with no remainder		
Divides a 4-digit number by a 1-digit number     Divides a 3-digit number by a 2-digit number		

#### **Explanatory Notes**

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Number and Operations in Base Ten	Number and Operations in Base Ten	Number and Operations in Base Ten
Divides a 4-digit number by a 2-digit number		
Adds decimals to the hundredths place in horizontal format (not same number of digits)		
<ul> <li>Adds decimals to the thousandths place horizontally with and without regrouping</li> </ul>		
Adds decimals through the hundred-thousandths place		
<ul> <li>Multiplies a decimal by a decimal, vertical form (factors to tenths or hundredths)</li> </ul>		
<ul> <li>Multiplies a decimal by a decimal (factors to hundredths)</li> </ul>		
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 with reducing or converting to a	Adds fractions with like denominators with reducing or converting to a mixed fraction	Adds fractions with unlike denominators with reducing or converting to a mixed fraction
mixed fraction	Adds fractions with unlike denominators without reducing	Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)
Adds fractions with unlike denominators without reducing	Adds fractions with unlike denominators with reducing or converting to a mixed fraction	Adds mixed fractions where converting from improper fractions is
<ul> <li>Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths)</li> </ul>	Adds simple mixed fractions with unlike denominators (e.g., halves,	necessary
Subtracts simple fractions with unlike denominators without reducing	thirds, fourths, eighths)	Subtracts whole numbers, fractions, and mixed fractions
(e.g., halves, quarters, thirds, eighths)	Adds mixed fractions where converting from improper fractions is	Subtracts whole numbers, fractions, and mixed fractions with
Subtracts fractions with unlike denominators without reducing	necessary	regrouping
Subtracts mixed fractions with like denominators with no regrouping	Subtracts fractions with like denominators with reducing	Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary
Subtracts mixed fractions with unlike denominators with no regrouping	Subtracts fractions with unlike denominators without reducing  Out to set fractions with welling denominators with seducing	Uses models to multiply and divide fractions and connect the actions
Solves real-world problems involving addition and subtraction of fractions where converting one depending to a page 200.	Subtracts fractions with unlike denominators with reducing     Subtracts mixed fractions with unlike denominators with no regrouping	to algorithms
fractions where converting one denominator is necessary  • Uses models to multiply and divide fractions and connect the actions to	Subtracts mixed fractions with unlike denominators with no regrouping     Subtracts whole numbers, fractions, and mixed fractions	Multiplies mixed fractions
algorithms	Subtracts whole numbers, fractions, and mixed fractions with	Uses models to multiply and divide fractions and mixed fractions and connect the actions to algorithms
<ul> <li>Multiplies a fraction by a fraction where reducing to simplest form is necessary</li> </ul>	regrouping	Divides a fraction by a whole number
Multiplies a fraction by a whole number	Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary	Divides a whole number by a fraction
Solves 1-step real-world problems involving fractions with	Uses models to multiply and divide fractions and connect the actions	Divides a mixed fraction by a fraction
multiplication and division	to algorithms	Solves 2- or more step real-world problems involving fractions with
<ul> <li>Solves 1-step problems involving proportions</li> </ul>	Multiplies a fraction by a fraction without reducing to simplest form	multiplication and division
• Identifies equivalent fractions using visual representations	(complex problem)	Solves problems involving fractions (e.g., multiple operations, conversions)
<ul> <li>Identifies a fractions in lowest terms from a region or set</li> </ul>	Multiplies a fraction by a fraction where reducing to simplest form is necessary	Compares fractions (e.g., comparing numerators and denominators)
• Identifies eighths, reduced to lowest terms, from a region or set	Multiplies a fraction by a whole number	Writes a fraction as a decimal and vice versa
Determines simple equivalent fractions using multiples	Multiplies mixed fractions	Compares and orders decimal and fractional coordinates on a number
Converts fractions to lowest terms	Divides a mixed fraction by a fraction	line
<ul> <li>Writes mixed numbers as improper fractions and improper fractions as mixed numbers</li> </ul>	Solves 1-step real-world problems involving fractions with multiplication and division	

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multiplication and division



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

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