

Math DesCartes: Numbers and Operations

Skills: Computation Strategies – Addition and Subtraction

Students:	DesCartes Skills: (Highlight the skills related to your chosen standard/concept)	
	RIT 241-250: <ul style="list-style-type: none"> Subtracts integers Solves real-world problems involving addition and subtraction of integers (analysis) 	regrouping <ul style="list-style-type: none"> Subtracts decimals through the hundred-thousandths place, horizontally Subtracts a decimal from a whole number, horizontally Adds integers with unlike signs Adds several positive and negative integers Solves real-world problems involving addition and subtraction of integers Solves problems involving addition and subtraction of integers Adds rational expressions in decimal form
	RIT 231-240: <ul style="list-style-type: none"> Adds fractions with unlike denominators with reducing or converting to a mixed fraction Adds whole numbers, fractions, and mixed fractions without reducing Adds mixed fractions where converting from improper fractions is necessary Subtracts whole numbers, fractions, and mixed fractions with regrouping Solves real-world problems involving addition and subtraction of fractions where converting both denominators is necessary Subtracts a decimal from a whole number, horizontally Adds integers with unlike signs Adds several positive and negative integers Subtracts integers Solves real-world problems involving addition and subtraction of integers (analysis) Subtracts rational expressions in decimal form 	RIT 211-220: <ul style="list-style-type: none"> Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) Subtracts numbers with 5 digits or more with regrouping Uses strategies to determine 2 or more missing digits (addition/subtraction only) Adds fractions with like denominators without reducing Adds fractions with like denominators with reducing or converting to a mixed fraction Adds fractions with unlike denominators without reducing Adds mixed fractions with like denominators Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) Subtracts simple fractions with unlike denominators without reducing (e.g., halves, quarters, thirds, eighths) Subtracts fractions with unlike denominators without reducing Subtracts mixed fractions with like denominators with no regrouping Subtracts mixed fractions with unlike denominators with no regrouping Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary Adds decimals to the hundredths place in horizontal format (not same number of digits) Adds decimals to the thousandths place horizontally with and without regrouping Adds decimals through the hundred-thousandths place Subtracts decimals to the thousandths place, vertically, with the zero missing in the ones place Subtracts decimals to the thousandths place, horizontally, with and without regrouping Computes the value of multiple bills and coins (addition/subtraction only) Analyzes and computes 1 operation on real-world problems involving money over \$5.00 (addition/subtraction only) Computes addition and subtraction on multiple-step real-world problems involving money
	RIT 221-230: <ul style="list-style-type: none"> Adds fractions with like denominators with reducing or converting to a mixed fraction Adds fractions with unlike denominators without reducing Adds fractions with unlike denominators with reducing or converting to a mixed fraction Adds whole numbers, fractions, and mixed fractions without reducing Adds mixed fractions where converting from improper fractions is necessary Subtracts fractions with like denominators with reducing Subtracts fractions with unlike denominators without reducing Subtracts fractions with unlike denominators with reducing Subtracts mixed fractions with unlike denominators with no regrouping Subtracts whole numbers, fractions, and mixed fractions with regrouping Solves real-world problems involving addition and subtraction of fractions where converting one denominator is necessary Adds decimals to the hundredths place in horizontal format (not same number of digits) Adds decimals through the hundred-thousandths place Subtracts decimals to the hundredths place (not same number of digits) Subtracts decimals to the thousandths place, horizontally, with and without 	

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<ul style="list-style-type: none"> • Adds integers with like signs • Solves real-world problems involving addition and subtraction of integers 	<p>addition and subtraction of integers</p>
<p>RIT 201-210:</p> <ul style="list-style-type: none"> • Instantly recalls basic addition facts with sums to 18 in a table • Uses reasoning strategies to solve magic squares and related puzzles (addition, whole numbers only) • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Performs mental computation with more than 4 addends • Solves real-world whole number addition problems with sums to 100 (start unknown) • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers 1000 and over • Subtracts numbers with 5 digits or more with regrouping • Uses strategies to determine 2 or more missing digits (addition/subtraction only) • Solves real-world whole number problems involving subtraction with numbers 100 and under (analysis) • Solves whole number subtraction word problems with numbers over 1000 • Adds fractions with like denominators without reducing • Adds simple mixed fractions with unlike denominators (e.g., halves, thirds, fourths, eighths) • Adds whole numbers and fractions • Subtracts fractions with like denominators without reducing • Subtracts mixed fractions with like denominators with no regrouping • Subtracts whole numbers, fractions, and mixed fractions • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Adds decimals to the hundredths place in vertical format (not same number of digits) • Adds decimals to the thousandths place horizontally with and without regrouping • Finds equivalent combinations of dollars and cents with the same value • Subtracts decimals to the hundredths place (same number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Subtracts decimals through the hundred-thousandths place, vertically • Computes the value of multiple bills and coins (addition/subtraction only) • Computes addition and subtraction on multiple-step real-world problems involving money • Solves real-world problems involving 	<p>RIT 191-200:</p> <ul style="list-style-type: none"> • Adds 2-digit to 3-digit number with regrouping • Uses number sense strategies to determine the correct answer for an addition computation • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers with sums under 1000 • Solves real-world whole number addition problems with sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 100 (start unknown) • Solves whole number addition word problems with sums over 1000 • Subtracts 1-digit number from a 2-digit number with regrouping • Subtracts a 2-digit number from a 2-digit number, with regrouping • Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on) • Subtracts a 2-digit number from a 3-digit number with a single regrouping • Subtracts 3- or 4-digit numbers with regrouping • Performs mental subtraction with numbers under 1000 • Performs mental subtraction with numbers 1000 and over • Subtracts multiple-digit numbers with no regrouping • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves real-world whole number problems involving subtraction with numbers under 1000 • Solves whole number subtraction word problems with numbers over 1000 • Solves problems using the inverse relationship between addition and subtraction • Subtracts fractions with like denominators without reducing • Solves real-world 1-step problems involving addition and subtraction of fractions with like denominators • Adds decimals to the hundredths place (same number of digits) • Adds decimals to the hundredths place in vertical format (not same number of digits) • 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"

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<p>(without picture of money)</p> <ul style="list-style-type: none"> • Identifies value of a collection of coins and bills to \$100.00 by "counting on" • Finds equivalent combinations of coins with the same value • Finds equivalent combinations of dollars and cents with the same value • Subtracts decimals to the hundredths place (same number of digits) without regrouping • Subtracts decimals to the hundredths place (same number of digits) with regrouping • Subtracts decimals to the thousandths place, vertically, with and without regrouping • Makes change to \$1.00 by "counting on" or subtracting • Solves real-world problems involving decimals (not money) using addition and subtraction • Computes with dollars and cents up to and including \$5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on real-world problems involving money over \$5.00 (addition/subtraction only) 	<p>regrouping</p> <ul style="list-style-type: none"> • Performs mental subtraction with numbers under 1000 • Subtracts multiple-digit numbers with no regrouping • Solves real-world whole number problems involving subtraction with numbers under 20 • Solves real-world whole number problems involving subtraction with numbers 100 and under • Solves real-world whole number problems involving subtraction with numbers under 1000 • Solves real-world whole number problems involving addition and subtraction • Adds decimals to the hundredths place (same number of digits) • Identifies the value of a collection of coins to \$1.00 (without picture of coins) • Adds money with regrouping • Identifies the value of a collection of coins and bills to \$10.00 by "counting on" (with picture of money) • Identifies the value of a collection of coins & bills to \$100.00 by "counting on" • Finds equivalent combinations of coins with the same value • Combines a collection of coins and identifies the correct notation • Subtracts decimals to the hundredths place (same number of digits) without regrouping • Makes change to \$1.00 by "counting on" or subtracting • Computes with dollars and cents up to and including \$5.00 and converts to decimals (addition/subtraction only) • Computes 1 operation on addition or subtraction real-world problems involving money up to \$5.00
<p>RIT 181-190:</p> <ul style="list-style-type: none"> • Adds 1-digit to multiple-digit number with regrouping • Adds two or three 2-digit number with regrouping • Adds 2-digit to 3-digit number with regrouping • Adds 3-digit numbers, with regrouping, with sums under 1000 • Performs mental computation with 2, 3, or 4 addends • Adds two 3- and/or 4-digit numbers, with regrouping, with sums over 1000 • Adds multiple-digit numbers, with regrouping, with sums over 1000 • Solves real-world whole number addition problems w/ sums to 20 (result unknown) - with extraneous information given • Solves real-world whole number addition problems with sums to 20 (start unknown) • Solves real-world whole number addition problems with sums to 100 (result unknown) • Solves real-world whole number addition problems with sums to 1000 • Instantly recalls basic subtraction facts with minuend less than 10 • Subtracts a 1-digit number from a multiple-digit number • Subtracts 1-digit number from a 2-digit number with regrouping • Subtracts a 2-digit number from a 2-digit number, with regrouping • Uses strategies for sums and differences with 2-digit numbers (e.g., decomposing, compatible, compensation, partial sums, counting on) • Subtracts 2- and/or 3-digit numbers with no regrouping • Subtracts 3- or 4-digit numbers with 	<p>RIT 171-180:</p> <ul style="list-style-type: none"> • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000 • Adds two or three 2-digit number with regrouping • Adds 1-, 2-, and/or 3-digit numbers with sums under 100 • Adds 3-digit numbers with no regrouping • Adds 3-digit numbers, with regrouping, with sums under 1000 • Adds multiple-digit numbers, with no regrouping, with sums over 1000 • Solves real-world whole number addition problems with sums to 20 (result unknown) • Solves real-world whole number addition problems with sums to 20 (start unknown) • Solves real-world whole number addition problems with sums to 20 (change unknown) • Solves real-world whole number addition problems with sums to 100 (result unknown)

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	<ul style="list-style-type: none"> • Solves real-world whole number addition problems with sums to 1000 • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Uses strategies for subtraction facts (e.g., counting back, one less, two less) • Subtracts a 1-digit number from a 2-digit number with no regrouping, vertically • Subtracts a 1-digit number from a multiple-digit number • Subtracts a 2-digit number from a 2-digit number, with no regrouping • Subtracts 2- and/or 3-digit numbers with no regrouping • Solves real-world whole number problems involving subtraction with numbers under 20 • Adds 1-digit numbers with sums to 18 (with parentheses) • Adds money vertically with no regrouping • Identifies the value of a collection of coins to \$1.00 (with pictures of coins) • Identifies the value of a collection of coins and bills to \$10.00 by "counting on" (with picture of money)
	<p>RIT 161-170:</p> <ul style="list-style-type: none"> • Adds two 1-digit numbers with sums to 10 in horizontal format • Adds two 1-digit numbers with sums to 10 in vertical format • Adds two 1-digit numbers with sums between 10 and 19 in horizontal format • Adds two 1-digit numbers with sums between 10 and 19 in vertical format • Adds multiple 1-digit numbers • Uses strategies for addition facts (e.g., compatible numbers, counting on, doubles, neighbors, making tens) • Adds 1-digit to multiple-digit number with no regrouping • Adds 2-digit numbers with no regrouping • Adds 2-digit to 3-digit number, with no regrouping, with sums under 1000 • Solves real-world whole number addition problems with sums to 20 (result unknown) • Subtracts two 1-digit numbers horizontally • Subtracts a 1-digit number from a 2-digit number that is less than 20 (whole numbers only) • Subtracts two 1-digit numbers vertically • Uses strategies for subtraction facts (e.g., counting back, one less, two less) • Subtracts a 2-digit number from a 2-digit number, with no regrouping • Adds money vertically with no regrouping
	<p>RIT Below 161:</p> <ul style="list-style-type: none"> • Adds two 1-digit numbers with sums to 10 in horizontal format

Lesson Title:

Standard/Concept for All:

Introduction: (Get Attention; Connect to Prior Knowledge)

For Students Ready for a Challenge:

Lesson/Activity:

Resources:

Means of Assessment:

For Most Students:

Lesson/Activity:

Resources:

Means of Assessment:

For Students Needing Extra Support:

Lesson/Activity:

Resources:

Means of Assessment:

Closure/Summary for All:

