DesCartes: A Continuum of Learning®

Mathematics
Goal: Operations and Algebraic Thinking

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
Represent and Solve Problems	**Represent and Solve Problems**	**Represent and Solve Problems**
• 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)	• Models algorithms using place value concepts (multiplication and division with whole 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)	• Evaluates numerical expressions using the order of operations (whole numbers only)
• Models whole number multiplication and division algorithms (e.g., uses physical materials to show 4 groups of 3 objects)	• Models algorithms using place value concepts (multiplication and division with whole numbers)	• Solves multiple-step problems involving proportions
• Performs mental computation with division	• Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor)	• Represents relationships of quantities in the form of an expression
• Solves whole number word problems with division over 10 x 10	• Solves real-world multiple-step problems involving whole numbers	• Applies algebraic methods to solve real-world problems
• Solves complex word problems involving whole number division with remainder (e.g., 2-step, 2-digit divisor)	• Demonstrates an understanding of multiple properties	• Solves problems comparing unit prices
• Solves real-world problems involving 2-step multiple operations, whole numbers only	• Represents relationships of quantities in the form of an expression	• Uses pictures to represent problems
• Solves real-world multiple-step problems involving whole numbers	• Solves open sentences with calculations on both sides of the sentence	
• Predicts the relative size of the answer when multiplying whole numbers	• Applies algebraic methods to solve theoretical problems	
• Demonstrates an understanding of the inverse relationship between addition and subtraction	• Applies algebraic methods to solve real-world problems	
• Demonstrates an understanding of the commutative property of multiplication with simple problems	• Uses pictures to represent problems	
• Demonstrates an understanding of the associative property of multiplication	• Uses multiple number theory concepts to solve problems (e.g., factors, digits, odd/even, divisibility)	
• Demonstrates an understanding of the distributive property of multiplication by decomposing a term		
• Understands equivalence and extends the concept to number sentences involving variables (e.g., 8 + 2 = [] + 2)		
• Uses algebraic reasoning to solve problems involving equality relationships		
• Uses simple linear equations to represent problem situations		
• Solves simple open sentences with missing factors (numbers over 100)		
• Solves open sentences using the distributive property		
• Solves open sentences with calculations on both sides of the sentence		
• Applies algebraic methods to solve theoretical problems		
• Uses pictures to represent problems		
• Translates a 2-step problem to a symbolic expression or equation		
Analyze Patterns and Relationships	**Analyze Patterns and Relationships**	**Analyze Patterns and Relationships**
• Completes a function table given a simple rule (e.g., x + 2)	• Extends a growing pattern of triangular numbers, defined by objects or diagrams	
• Determines the rule given a simple real-world function table (e.g., # Dogs compared to # Legs)	• Looks for a growing pattern to solve a problem	
• Determines the rule and completes a simple function machine output	• Determines factors of whole numbers	

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

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Analyze Patterns and Relationships	Analyze Patterns and Relationships	Analyze Patterns and Relationships
• Looks for a growing pattern to solve a problem • Determines factors of whole numbers • Identifies numbers as prime	• Uses factor and multiple concepts to solve simple problems	
New Vocabulary: None	*New Vocabulary:* None	*New Vocabulary:* None
New Signs and Symbols: ( ) parenthesis around an integer, { } set notation	*New Signs and Symbols:* None	*New Signs and Symbols:* None