# DesCartes: A Continuum of Learning®

## Mathematics

Goal: Operations and Algebraic Thinking

**RIT Score Range:** 201 - 210
**Statements Last Updated:** Mar 10, 2014

| Skills and Concepts to Enhance (73% Probability*) 191 - 200 | Skills and Concepts to Develop (50% Probability*) 201 - 210 | Skills and Concepts to Introduce (27% Probability*) 211 - 220 |
|---|---|---|
| **Expressions and Equations** | **Expressions and Equations** | **Expressions and Equations** |
| • Solves real-world whole number problems involving subtraction with numbers under 1000<br>• Solves whole number subtraction word problems with numbers over 1000<br>• Evaluates numerical expressions using grouping symbols (whole numbers only)<br>• Demonstrates an understanding of the zero property of multiplication<br>• Computes half price (multiplication/division)<br>• Uses algebraic reasoning to solve problems involving equality relationships<br>• Solves 1-step open sentences with missing addends (numbers 100 and under)<br>• Solves 1-step open sentences with missing addends (numbers over 100)<br>• Solves simple open sentences with missing factors (numbers 100 and under)<br>• Solves 2-step open sentences with missing addends<br>• Writes equivalent forms of whole numbers 11 to 20 using addition (e.g., 14 = 7 + 7) | • Uses rounding to estimate answers to 2-step problems involving money (using decimals)<br>• Solves whole number subtraction word problems with numbers over 1000<br>• Evaluates numerical expressions using grouping symbols (whole numbers only)<br>• Demonstrates an understanding of the commutative property of addition<br>• Understands equivalence and extends the concept to number sentences involving variables (e.g., 8 + 2 = [] + 2)<br>• Uses algebraic reasoning to solve problems involving equality relationships<br>• Uses simple linear equations to represent problem situations<br>• Describes a realistic situation using information given in a linear equation<br>• Solves 1-step open sentences with missing addends (numbers over 100)<br>• Solves simple open sentences with missing factors (numbers 100 and under)<br>• Solves 2-step open sentences with missing addends<br>• Solves open sentences with basic-facts calculations on both sides of the sentence<br>• Translates a 2-step problem to a symbolic expression or equation<br>• Solves real-world problems using reasoning strategies | • Uses rounding to estimate answers to 2-step problems involving money (using decimals)<br>• Demonstrates an understanding of the associative property of multiplication<br>• Demonstrates an understanding of the distributive property of multiplication by decomposing a term<br>• Calculates the value of a power (e.g., 2^3 = 8)<br>• Uses a table of input/output values to represent patterns<br>• Understands equivalence and extends the concept to number sentences involving variables (e.g., 8 + 2 = [] + 2)<br>• Uses algebraic reasoning to solve problems involving equality relationships<br>• Uses simple linear equations to represent problem situations<br>• Solves simple open sentences with missing factors (numbers over 100)<br>• Solves open sentences using the distributive property<br>• Solves open sentences with calculations on both sides of the sentence<br>• Solves 2-step open sentences with missing factors<br>• Solves 1-step linear equations<br>• Applies algebraic methods to solve theoretical problems<br>• Translates a 2-step problem to a symbolic expression or equation<br>• Solves real-world problems using reasoning strategies<br>• Uses powers to represent 10, 100, 1000, 10,000, and 100,000 |
| **Use Functions to Model Relationships** | **Use Functions to Model Relationships** | **Use Functions to Model Relationships** |
| • Extends a growing arithmetic pattern, defined by objects or diagrams<br>• Analyzes a growing, arithmetic pattern with numbers to determine the rule<br>• Completes a simple function table based on real-life situations (e.g., the number of tricycles related to the number of wheels)<br>• Reads data in a line graph - no calculations | • Extends a growing arithmetic pattern, defined by objects or diagrams<br>• Completes a simple function table based on real-life situations (e.g., the number of tricycles related to the number of wheels)<br>• Completes a function table given a simple rule (e.g., x + 2)<br>• Predicts from simple charts and tables | • Completes a function table given a simple rule (e.g., x + 2)<br>• Solves problems involving simple functions<br>• Looks for a growing pattern to solve a problem<br>• Interprets data in line graphs (e.g., change over time) |
| *New Vocabulary:* longer | *New Vocabulary:* minimum, plus | *New Vocabulary:* None |
| *New Signs and Symbols:* ( ) order of operations, ÷ division, $ dollar sign | *New Signs and Symbols:* °C degrees Celsius, = is equal to, min minute, - negative number, p.m., + positive number | *New Signs and Symbols:* ( ) parenthesis around an integer, a.m., ¢ cent sign, °F degrees Fahrenheit, $ dollar sign, lb pound, mph miles per hour |

**Explanatory Notes**
* 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.