DesCartes: A Continuum of Learning®

Mathematics
Goal: Measurement and Data

RIT Score Range: < 161
Statements Last Updated: Sep 23, 2013

Skills and Concepts to Develop (50% Probability*) < 161	Skills and Concepts to Introduce (27% Probability*) 161 - 170
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
	• Compares objects (shorter, longer)
	• Estimates and measures length of an object to the nearest inch using a picture of a ruler
	• Measures length with customary measures to the inch mark
	• Measures length with metric measures to the centimeter mark
	• Identifies time of day (e.g., morning, afternoon)
	• Tells time to the nearest hour
	• Tells time to the nearest half hour
Represent and Interpret Data	Represent and Interpret Data
• Reads a simple pictograph - comparisons (e.g., largest smallest, most often, least often)	• Reads a chart or table - numbers
	• Reads a simple pictograph - comparisons (e.g., largest smallest, most often, least often)
	• Displays data appropriately - bar graph - scale is 1 to 1
	• Reads a simple bar graph - comparisons (e.g., largest, smallest, most often, least often)
	• Compares data from simple graphs (e.g., largest, smallest, most often, least often)
New Vocabulary: None	*New Vocabulary:* dollar, longest, shortest
New Signs and Symbols: None	*New Signs and Symbols:* = is equal to, : used with time

DesCartes: A Continuum of Learning®

Mathematics
Goal: Measurement and Data

Skills and Concepts to Enhance (73% Probability*) < 161	Skills and Concepts to Develop (50% Probability*) 161 - 170	Skills and Concepts to Introduce (27% Probability*) 171 - 180
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
	• Compares objects (shorter, longer) • Estimates and measures length of an object to the nearest inch using a picture of a ruler • Measures length with customary measures to the inch mark • Measures length with metric measures to the centimeter mark • Identifies time of day (e.g., morning, afternoon) • Tells time to the nearest hour • Tells time to the nearest half hour	• 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) • Estimates and measures length of an object to the nearest centimeter using a picture of a ruler • Measures length with customary measures to the inch mark • Tells time to the nearest hour • Tells time to the nearest half hour • Tells time to the nearest 5 minutes • Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour) • Connects money with place value • Determines the area of irregular shapes by counting square units
Represent and Interpret Data	Represent and Interpret Data	Represent and Interpret Data
• Reads a simple pictograph - comparisons (e.g., largest smallest, most often, least often)	• Reads a chart or table - numbers • Reads a simple pictograph - comparisons (e.g., largest smallest, most often, least often) • Displays data appropriately - bar graph - scale is 1 to 1 • Reads a simple bar graph - comparisons (e.g., largest, smallest, most often, least often) • Compares data from simple graphs (e.g., largest, smallest, most often, least often)	• Reads a chart or table - comparisons • Reads a chart or table - numbers • Interprets simple graphs or tables • Reads a simple pictograph - comparisons (e.g., largest smallest, most often, least often) • Solves simple problems based on data from pictographs • Reads a simple bar graph - comparisons (e.g., largest, smallest, most often, least often) • Reads a simple bar graph - numbers (e.g., how many) • Solves simple problems based on data from bar graphs • Compares data from simple graphs (e.g., largest, smallest, most often, least often)
New Vocabulary: None	*New Vocabulary:* dollar, longest, shortest	*New Vocabulary:* morning
New Signs and Symbols: None	*New Signs and Symbols:* = is equal to, : used with time	*New Signs and Symbols:* a.m., ¢ cent sign, $ dollar sign, p.m.

Skills and Concepts to Enhance (73% Probability*) 161 - 170	Skills and Concepts to Develop (50% Probability*) 171 - 180	Skills and Concepts to Introduce (27% Probability*) 181 - 190
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
· Compares objects (shorter, longer) · Estimates and measures length of an object to the nearest inch using a picture of a ruler · Measures length with customary measures to the inch mark · Measures length with metric measures to the centimeter mark · Identifies time of day (e.g., morning, afternoon) · Tells time to the nearest hour · Tells time to the nearest half hour	· 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) · Estimates and measures length of an object to the nearest centimeter using a picture of a ruler · Measures length with customary measures to the inch mark · Tells time to the nearest hour · Tells time to the nearest half hour · Tells time to the nearest 5 minutes · Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour) · Connects money with place value · Determines the area of irregular shapes by counting square units	· 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) · Finds equivalent combinations of coins with the same value · Combines a collection of coins and identifies the correct notation · 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 · Selects and uses the appropriate type and size of unit in customary system (length) · Uses a variety of non-standard units to measure the same length · Determines more capacity or less capacity · Identifies the correct time, given the words, and vice versa · Determines elapsed clock time · Determines elapsed time under 1 hour or to the hour · Determines elapsed time involving whole hours, whole days, whole years · Tells time to the nearest 5 minutes · Computes simple conversions among units of time (days, weeks) · Determines the perimeter of a figure where all sides are labeled · Determines the area of irregular shapes by counting square units
Represent and Interpret Data	Represent and Interpret Data	Represent and Interpret Data
· Reads a chart or table - numbers · Reads a simple pictograph - comparisons (e.g., largest smallest, most often, least often) · Displays data appropriately - bar graph - scale is 1 to 1 · Reads a simple bar graph - comparisons (e.g., largest, smallest, most often, least often) · Compares data from simple graphs (e.g., largest, smallest, most often, least often)	· Reads a chart or table - comparisons · Reads a chart or table - numbers · Interprets simple graphs or tables · Reads a simple pictograph - comparisons (e.g., largest smallest, most often, least often) · Solves simple problems based on data from pictographs · Reads a simple bar graph - comparisons (e.g., largest, smallest, most often, least often) · Reads a simple bar graph - numbers (e.g., how many) · Solves simple problems based on data from bar graphs · Compares data from simple graphs (e.g., largest, smallest, most often, least often)	· Measures length with customary measures to the half-inch mark · Interprets simple graphs or tables · Reads and interprets data from a pictograph · Solves simple problems based on data from pictographs · Reads a simple bar graph - comparisons (e.g., largest, smallest, most often, least often) · Reads a simple bar graph - numbers (e.g., how many) · Reads and interprets data from a bar graph · Interprets a simple bar graph - calculation required · Solves simple problems based on data from bar graphs · Reads data in a line graph - no calculations

Skills and Concepts to Enhance (73% Probability*) 161 - 170	Skills and Concepts to Develop (50% Probability*) 171 - 180	Skills and Concepts to Introduce (27% Probability*) 181 - 190
New Vocabulary: dollar, longest, shortest	*New Vocabulary:* morning	*New Vocabulary:* changed, clock, estimation, half past, how much time, left over, lowest, millimeter, noon, o'clock, pennies, quarter past, quarter to, what time
New Signs and Symbols: = is equal to, : used with time	*New Signs and Symbols:* a.m., ¢ cent sign, $ dollar sign, p.m.	
		New Signs and Symbols: : used with time, : used with time

Skills and Concepts to Enhance (73% Probability*) 171 - 180	Skills and Concepts to Develop (50% Probability*) 181 - 190	Skills and Concepts to Introduce (27% Probability*) 191 - 200
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
· Identifies the value of a collection of coins to $1.00 (with pictures of coins)	· Identifies the value of a collection of coins to $1.00 (without picture of coins)	· Identifies the value of a collection of coins to $1.00 (without picture of coins)
· Identifies the value of a collection of coins and bills to $10.00 by counting on (with picture of money)	· Adds money with regrouping	· Adds money with regrouping
· Estimates and measures length of an object to the nearest centimeter using a picture of a ruler	· 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 and bills to $10.00 by counting on (without picture of money)
· Measures length with customary measures to the inch mark	· Finds equivalent combinations of coins with the same value	· Finds equivalent combinations of coins with the same value
· Tells time to the nearest hour	· Combines a collection of coins and identifies the correct notation	· Makes change to $1.00 by counting on or subtracting
· Tells time to the nearest half hour	· Makes change to $1.00 by counting on or subtracting	· Solves real-world problems involving decimals (not money) using addition and subtraction
· Tells time to the nearest 5 minutes	· Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only)	· Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only)
· Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour)	· Computes 1 operation on addition or subtraction real-world problems involving money up to $5.00	· Computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)
· Connects money with place value	· Selects and uses the appropriate type and size of unit in customary system (length)	· Computes half price (multiplication/division)
· Determines the area of irregular shapes by counting square units	· Uses a variety of non-standard units to measure the same length	· Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division)
	· Determines more capacity or less capacity	· Computes 1 operation on real-world problems involving money over $5.00 (multiplication/division)
	· Identifies the correct time, given the words, and vice versa	· Selects and uses the appropriate type and size of unit in customary system (length)
	· Determines elapsed clock time	· Computes basic operations with units of weight/mass
	· Determines elapsed time under 1 hour or to the hour	· Converts between cups and pints
	· Determines elapsed time involving whole hours, whole days, whole years	· Converts between cups, pints, and quarts
	· Tells time to the nearest 5 minutes	· Identifies the correct time, given the words, and vice versa
	· Computes simple conversions among units of time (days, weeks)	· Determines elapsed clock time
	· Determines the perimeter of a figure where all sides are labeled	· Tells time to the nearest quarter hour
	· Determines the area of irregular shapes by counting square units	· Determines elapsed time involving whole hours, whole days, whole years
		· Tells time to the nearest 1 minute
		· Computes simple conversions among units of time (minutes, hours)
		· Solves simple problems involving elapsed time, with the conversion of hours
		· Solves simple problems involving miles/kilometers per hour
		· Determines the perimeter of a figure where all sides are labeled
		· Determines the perimeter of a figure where some sides are labeled
		· Solves simple problems involving the perimeter of squares, rectangles, or triangles
		· Estimates the area of rectangles using square units

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.

Skills and Concepts to Enhance (73% Probability*) 171 - 180	Skills and Concepts to Develop (50% Probability*) 181 - 190	Skills and Concepts to Introduce (27% Probability*) 191 - 200
Represent and Interpret Data	Represent and Interpret Data	Represent and Interpret Data
• Reads a chart or table - comparisons • Reads a chart or table - numbers • Interprets simple graphs or tables • Reads a simple pictograph - comparisons (e.g., largest smallest, most often, least often) • Solves simple problems based on data from pictographs • Reads a simple bar graph - comparisons (e.g., largest, smallest, most often, least often) • Reads a simple bar graph - numbers (e.g., how many) • Solves simple problems based on data from bar graphs • Compares data from simple graphs (e.g., largest, smallest, most often, least often)	• Measures length with customary measures to the half-inch mark • Interprets simple graphs or tables • Reads and interprets data from a pictograph • Solves simple problems based on data from pictographs • Reads a simple bar graph - comparisons (e.g., largest, smallest, most often, least often) • Reads a simple bar graph - numbers (e.g., how many) • Reads and interprets data from a bar graph • Interprets a simple bar graph - calculation required • Solves simple problems based on data from bar graphs • Reads data in a line graph - no calculations	• Reads and interprets data from a pictograph • Interprets a pictograph - calculation required • Reads and interprets data from a bar graph • Reads and interprets dual bar graphs • Interprets a simple bar graph - calculation required • Reads data in a line graph - no calculations
New Vocabulary: morning	*New Vocabulary:* changed, clock, estimation, half past, how much time, left over, lowest, millimeter, noon, o'clock, pennies, quarter past, quarter to, what time	*New Vocabulary:* decade, deposit, longer, miles per hour
New Signs and Symbols: a.m., ¢ cent sign, $ dollar sign, p.m.		*New Signs and Symbols:* °F degrees Fahrenheit, ft feet, g gram, in. inch, lb pound, m meter/metre, min minute, yd yard
	New Signs and Symbols: : used with time, : used with time	

Skills and Concepts to Enhance (73% Probability*) 181 - 190	Skills and Concepts to Develop (50% Probability*) 191 - 200	Skills and Concepts to Introduce (27% Probability*) 201 - 210
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
• Identifies the value of a collection of coins to $1.00 (without picture of coins)	• Identifies the value of a collection of coins to $1.00 (without picture of coins)	• Computes the value of multiple bills and coins (addition/subtraction only)
• Adds money with regrouping	• Adds money with regrouping	• Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division)
• 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 and bills to $10.00 by counting on (without picture of money)	• Computes addition and subtraction on multiple-step real-world problems involving money
• Finds equivalent combinations of coins with the same value	• Finds equivalent combinations of coins with the same value	• Computes money problems with multiple operations (addition/subtraction only)
• Combines a collection of coins and identifies the correct notation	• Makes change to $1.00 by counting on or subtracting	• Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money
• Makes change to $1.00 by counting on or subtracting	• Solves real-world problems involving decimals (not money) using addition and subtraction	• Uses the appropriate unit of measure for length
• Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only)	• Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only)	• Knows the approximate size of a yard
• Computes 1 operation on addition or subtraction real-world problems involving money up to $5.00	• Computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)	• Measures length to the nearest centimeter
• Selects and uses the appropriate type and size of unit in customary system (length)	• Computes half price (multiplication/division)	• Converts between inches and feet
• Uses a variety of non-standard units to measure the same length	• Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division)	• Knows the approximate size of a pound
• Determines more capacity or less capacity	• Computes 1 operation on real-world problems involving money over $5.00 (multiplication/division)	• Knows the approximate size of a gram
• Identifies the correct time, given the words, and vice versa	• Selects and uses the appropriate type and size of unit in customary system (length)	• Converts between cups and pints
• Determines elapsed clock time	• Computes basic operations with units of weight/mass	• Converts between cups, pints, and quarts
• Determines elapsed time under 1 hour or to the hour	• Converts between cups and pints	• Computes simple conversions among units of time (hours, days)
• Determines elapsed time involving whole hours, whole days, whole years	• Converts between cups, pints, and quarts	• Computes more difficult conversions among units of time
• Tells time to the nearest 5 minutes	• Identifies the correct time, given the words, and vice versa	• Solves problems involving measurement of time
• Computes simple conversions among units of time (days, weeks)	• Determines elapsed clock time	• Applies dimensional analysis to simple real-world problems (time)
• Determines the perimeter of a figure where all sides are labeled	• Tells time to the nearest quarter hour	• Solves simple problems involving elapsed time, with the conversion of hours
• Determines the area of irregular shapes by counting square units	• Determines elapsed time involving whole hours, whole days, whole years	• Solves simple problems involving miles per gallon
	• Tells time to the nearest 1 minute	• Solves simple problems involving miles/kilometers per hour
	• Computes simple conversions among units of time (minutes, hours)	• Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents
	• Solves simple problems involving elapsed time, with the conversion of hours	• Determines the perimeter of a figure where some sides are labeled
	• Solves simple problems involving miles/kilometers per hour	• Estimates the area of rectangles using square units
	• Determines the perimeter of a figure where all sides are labeled	• Determines the area of irregular shapes with partial square units
	• Determines the perimeter of a figure where some sides are labeled	• Identifies situations where it is appropriate to calculate area
	• Solves simple problems involving the perimeter of squares, rectangles, or triangles	• Estimates and finds volume of a figure using cubic units
	• Estimates the area of rectangles using square units	• Uses basic indirect methods to estimate measurements (grids for area of irregular figures)

Skills and Concepts to Enhance (73% Probability*) 181 - 190	Skills and Concepts to Develop (50% Probability*) 191 - 200	Skills and Concepts to Introduce (27% Probability*) 201 - 210
Represent and Interpret Data	Represent and Interpret Data	Represent and Interpret Data
• Measures length with customary measures to the half-inch mark • Interprets simple graphs or tables • Reads and interprets data from a pictograph • Solves simple problems based on data from pictographs • Reads a simple bar graph - comparisons (e.g., largest, smallest, most often, least often) • Reads a simple bar graph - numbers (e.g., how many) • Reads and interprets data from a bar graph • Interprets a simple bar graph - calculation required • Solves simple problems based on data from bar graphs • Reads data in a line graph - no calculations	• Reads and interprets data from a pictograph • Interprets a pictograph - calculation required • Reads and interprets data from a bar graph • Reads and interprets dual bar graphs • Interprets a simple bar graph - calculation required • Reads data in a line graph - no calculations	• Solves problems using pictographs • Organizes data to create simple bar graphs • Solves problems using bar graphs • Solves problems using dual bar graphs • Draws conclusions from data - bar graphs
New Vocabulary: changed, clock, estimation, half past, how much time, left over, lowest, millimeter, noon, o'clock, pennies, quarter past, quarter to, what time	*New Vocabulary:* decade, deposit, longer, miles per hour	*New Vocabulary:* bar graph, cubic centimeter, cubic unit, larger
New Signs and Symbols: : used with time, : used with time	*New Signs and Symbols:* °F degrees Fahrenheit, ft feet, g gram, in. inch, lb pound, m meter/metre, min minute, yd yard	*New Signs and Symbols:* cm centimeter/centimetre, variable

DesCartes: A Continuum of Learning®

Mathematics
Goal: Measurement and Data

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
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
• Identifies the value of a collection of coins to $1.00 (without picture of coins)	• Computes the value of multiple bills and coins (addition/subtraction only)	• Computes the value of multiple bills and coins (addition/subtraction only)
• Adds money with regrouping	• Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division)	• Analyzes and computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)
• Identifies the value of a collection of coins and bills to $10.00 by counting on (without picture of money)	• Computes addition and subtraction on multiple-step real-world problems involving money	• Analyzes and computes 1 operation on real-world problems involving money over $5.00 (multiplication/division)
• Finds equivalent combinations of coins with the same value	• Computes money problems with multiple operations (addition/subtraction only)	• Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division)
• Makes change to $1.00 by counting on or subtracting	• Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money	• Computes addition and subtraction on multiple-step real-world problems involving money
• Solves real-world problems involving decimals (not money) using addition and subtraction	• Uses the appropriate unit of measure for length	• Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money
• Computes with dollars and cents up to and including $5.00 and converts to decimals (addition/subtraction only)	• Knows the approximate size of a yard	• Uses the appropriate unit of measure for length
• Computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)	• Measures length to the nearest centimeter	• Knows the approximate size of a millimeter
• Computes half price (multiplication/division)	• Converts between inches and feet	• Converts between inches and feet
• Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division)	• Knows the approximate size of a pound	• Converts between inches, feet, and yards
• Computes 1 operation on real-world problems involving money over $5.00 (multiplication/division)	• Knows the approximate size of a gram	• Selects and uses the appropriate type and size of unit in metric system (mass)
• Selects and uses the appropriate type and size of unit in customary system (length)	• Converts between cups and pints	• Converts between cups, pints, quarts, and gallons
• Computes basic operations with units of weight/mass	• Converts between cups, pints, and quarts	• Apply dimensional analysis to simple real-world problems (capacity)
• Converts between cups and pints	• Computes simple conversions among units of time (hours, days)	• Computes more difficult conversions among units of time
• Converts between cups, pints, and quarts	• Computes more difficult conversions among units of time	• Applies dimensional analysis to simple real-world problems (time)
• Identifies the correct time, given the words, and vice versa	• Solves problems involving measurement of time	• Solves difficult problems involving elapsed time, with the conversion of hours
• Determines elapsed clock time	• Applies dimensional analysis to simple real-world problems (time)	• Solves simple problems involving miles per gallon
• Tells time to the nearest quarter hour	• Solves simple problems involving elapsed time, with the conversion of hours	• Solves problems involving rates
• Determines elapsed time involving whole hours, whole days, whole years	• Solves simple problems involving miles per gallon	• Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents
• Tells time to the nearest 1 minute	• Solves simple problems involving miles/kilometers per hour	• Measures angles using a protractor
• Computes simple conversions among units of time (minutes, hours)	• Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents	• Determines the perimeter of a figure using non-standard units
• Solves simple problems involving elapsed time, with the conversion of hours	• Determines the perimeter of a figure where some sides are labeled	• Solves problems involving the perimeter of squares, rectangles, or triangles
• Solves simple problems involving miles/kilometers per hour	• Estimates the area of rectangles using square units	• Finds the perimeter of a polygon using a formula
• Determines the perimeter of a figure where all sides are labeled	• Determines the area of irregular shapes with partial square units	• Describes the change in perimeter when dimensions of an object are altered
• Determines the perimeter of a figure where some sides are labeled	• Identifies situations where it is appropriate to calculate area	• Determines the area of irregular shapes with partial square units
• Solves simple problems involving the perimeter of squares, rectangles, or triangles	• Estimates and finds volume of a figure using cubic units	• Estimates and finds volume of a figure using cubic units
• Estimates the area of rectangles using square units	• Uses basic indirect methods to estimate measurements (grids for area of irregular figures)	• Identifies properties of angles

NWEA
Northwest Evaluation Association
Partnering to help all kids learn

Mathematics
Goal: Measurement and Data

RIT Score Range: 201 - 210
Statements Last Updated: Sep 23, 2013

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
Represent and Interpret Data	Represent and Interpret Data	Represent and Interpret Data
• Reads and interprets data from a pictograph • Interprets a pictograph - calculation required • Reads and interprets data from a bar graph • Reads and interprets dual bar graphs • Interprets a simple bar graph - calculation required • Reads data in a line graph - no calculations	• Solves problems using pictographs • Organizes data to create simple bar graphs • Solves problems using bar graphs • Solves problems using dual bar graphs • Draws conclusions from data - bar graphs	• Solves problems using pictographs • Solves problems using bar graphs • Reads and interprets data in line plots
New Vocabulary: decade, deposit, longer, miles per hour	*New Vocabulary:* bar graph, cubic centimeter, cubic unit, larger	*New Vocabulary:* century, coin, how long
New Signs and Symbols: °F degrees Fahrenheit, ft feet, g gram, in. inch, lb pound, m meter/metre, min minute, yd yard	*New Signs and Symbols:* cm centimeter/centimetre, variable	*New Signs and Symbols:* $ dollar sign, hr hour, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up

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
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
• Computes the value of multiple bills and coins (addition/subtraction only)	• Computes the value of multiple bills and coins (addition/subtraction only)	• Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division)
• Computes with dollars and cents up to and including $5.00 and converts to decimals (multiplication/division)	• Analyzes and computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)	• Computes the value of multiple bills and coins (multiplication/division)
• Computes addition and subtraction on multiple-step real-world problems involving money	• Analyzes and computes 1 operation on real-world problems involving money over $5.00 (multiplication/division)	• Measures length to the nearest millimeter
• Computes money problems with multiple operations (addition/subtraction only)	• Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division)	• Converts between inches, feet, and yards
• Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money	• Computes addition and subtraction on multiple-step real-world problems involving money	• Converts between millimeters, centimeters, meters, and kilometers
• Uses the appropriate unit of measure for length	• Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money	• Solves problems involving length in the customary system and converts to larger or smaller units
• Knows the approximate size of a yard	• Uses the appropriate unit of measure for length	• Converts between ounces and pounds
• Measures length to the nearest centimeter	• Knows the approximate size of a millimeter	• Converts between ounces, pounds, and tons
• Converts between inches and feet	• Converts between inches and feet	• Converts between cups, pints, quarts, and gallons
• Knows the approximate size of a pound	• Converts between inches, feet, and yards	• Converts within the metric system
• Knows the approximate size of a gram	• Selects and uses the appropriate type and size of unit in metric system (mass)	• Apply dimensional analysis to simple real-world problems (capacity)
• Converts between cups and pints	• Converts between cups, pints, quarts, and gallons	• Computes 2-step conversions between units of time
• Converts between cups, pints, and quarts	• Apply dimensional analysis to simple real-world problems (capacity)	• Applies dimensional analysis to simple real-world problems (time)
• Computes simple conversions among units of time (hours, days)	• Computes more difficult conversions among units of time	• Solves difficult problems involving elapsed time, with the conversion of hours
• Computes more difficult conversions among units of time	• Applies dimensional analysis to simple real-world problems (time)	• Solves complex problems involving miles/kilometers per hour
• Solves problems involving measurement of time	• Solves difficult problems involving elapsed time, with the conversion of hours	• Solves problems involving rates
• Applies dimensional analysis to simple real-world problems (time)	• Solves simple problems involving miles per gallon	• Determines the perimeter of a figure using non-standard units
• Solves simple problems involving elapsed time, with the conversion of hours	• Solves problems involving rates	• Solves problems involving the perimeter of squares, rectangles, or triangles
• Solves simple problems involving miles per gallon	• Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents	• Solves problems involving the perimeter of irregular or complex shapes
• Solves simple problems involving miles/kilometers per hour	• Measures angles using a protractor	• Solves problems involving perimeter and converts to larger or smaller units
• Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents	• Determines the perimeter of a figure using non-standard units	• Describes the change in perimeter when dimensions of an object are altered
• Determines the perimeter of a figure where some sides are labeled	• Solves problems involving the perimeter of squares, rectangles, or triangles	• Calculates the area of a rectangle, given labeled sides (customary units)
• Estimates the area of rectangles using square units	• Finds the perimeter of a polygon using a formula	• Determines the length or width of a rectangle, given the area (metric units)
• Determines the area of irregular shapes with partial square units	• Describes the change in perimeter when dimensions of an object are altered	• Determines the area of irregular shapes (customary units)
• Identifies situations where it is appropriate to calculate area	• Determines the area of irregular shapes with partial square units	• Calculates area and perimeter of a rectangle (customary units)
• Estimates and finds volume of a figure using cubic units	• Estimates and finds volume of a figure using cubic units	• Calculates the volume of rectangular solids
• Uses basic indirect methods to estimate measurements (grids for area of irregular figures)	• Identifies properties of angles	

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
Represent and Interpret Data	Represent and Interpret Data	Represent and Interpret Data
・Solves problems using pictographs ・Organizes data to create simple bar graphs ・Solves problems using bar graphs ・Solves problems using dual bar graphs ・Draws conclusions from data - bar graphs	・Solves problems using pictographs ・Solves problems using bar graphs ・Reads and interprets data in line plots	・Determines appropriate intervals and/or scale for a bar graph
New Vocabulary: bar graph, cubic centimeter, cubic unit, larger	*New Vocabulary:* century, coin, how long	*New Vocabulary:* cubic meter
New Signs and Symbols: cm centimeter/centimetre, variable	*New Signs and Symbols:* $ dollar sign, hr hour, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up	*New Signs and Symbols:* h height, l length, mL milliliter/millilitre, mm millimeter/millimetre, V volume, w width

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
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
• Computes the value of multiple bills and coins (addition/subtraction only)	• Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division)	• Measures length to the nearest millimeter
• Analyzes and computes 1 operation on real-world problems involving money over $5.00 (addition/subtraction only)	• Computes the value of multiple bills and coins (multiplication/division)	• Converts between millimeters, centimeters, meters, and kilometers
• Analyzes and computes 1 operation on real-world problems involving money over $5.00 (multiplication/division)	• Measures length to the nearest millimeter	• Apply dimensional analysis to simple real-world problems (length)
• Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division)	• Converts between inches, feet, and yards	• Solves problems involving length in the customary system and converts to larger or smaller units
• Computes addition and subtraction on multiple-step real-world problems involving money	• Converts between millimeters, centimeters, meters, and kilometers	• Converts between grams and kilograms
• Computes addition, subtraction, multiplication, and division on multiple-step, real-world problems involving money	• Solves problems involving length in the customary system and converts to larger or smaller units	• Converts within the metric system
• Uses the appropriate unit of measure for length	• Converts between ounces and pounds	• Apply dimensional analysis to simple real-world problems (capacity)
• Knows the approximate size of a millimeter	• Converts between ounces, pounds, and tons	• Solves problems involving capacity in the metric system and converts to larger or smaller units
• Converts between inches and feet	• Converts between cups, pints, quarts, and gallons	• Solves problems involving rates
• Converts between inches, feet, and yards	• Converts within the metric system	• Solves problems involving the perimeter of irregular or complex shapes
• Selects and uses the appropriate type and size of unit in metric system (mass)	• Apply dimensional analysis to simple real-world problems (capacity)	• Describes the change in perimeter when dimensions of an object are altered
• Converts between cups, pints, quarts, and gallons	• Computes 2-step conversions between units of time	• Identifies the formula for perimeter with a variable
• Apply dimensional analysis to simple real-world problems (capacity)	• Applies dimensional analysis to simple real-world problems (time)	• Determines the area of a triangle drawn on a grid
• Computes more difficult conversions among units of time	• Solves difficult problems involving elapsed time, with the conversion of hours	• Calculates the area of a rectangle, given labeled sides (customary units)
• Applies dimensional analysis to simple real-world problems (time)	• Solves complex problems involving miles/kilometers per hour	• Determines the length or width of a rectangle, given the area (metric units)
• Solves difficult problems involving elapsed time, with the conversion of hours	• Solves problems involving rates	• Determines the area of irregular shapes (customary units)
• Solves simple problems involving miles per gallon	• Determines the perimeter of a figure using non-standard units	• Calculates the volume of rectangular solids
• Solves problems involving rates	• Solves problems involving the perimeter of squares, rectangles, or triangles	• Calculates the length, width, or height of a rectangular prism, given the area (customary units)
• Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents	• Solves problems involving the perimeter of irregular or complex shapes	
• Measures angles using a protractor	• Solves problems involving perimeter and converts to larger or smaller units	
• Determines the perimeter of a figure using non-standard units	• Describes the change in perimeter when dimensions of an object are altered	
• Solves problems involving the perimeter of squares, rectangles, or triangles	• Calculates the area of a rectangle, given labeled sides (customary units)	
• Finds the perimeter of a polygon using a formula	• Determines the length or width of a rectangle, given the area (metric units)	
• Describes the change in perimeter when dimensions of an object are altered	• Determines the area of irregular shapes (customary units)	
• Determines the area of irregular shapes with partial square units	• Calculates area and perimeter of a rectangle (customary units)	
• Estimates and finds volume of a figure using cubic units	• Calculates the volume of rectangular solids	
• Identifies properties of angles		

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 Interpret Data	Represent and Interpret Data	Represent and Interpret Data
• Solves problems using pictographs • Solves problems using bar graphs • Reads and interprets data in line plots	• Determines appropriate intervals and/or scale for a bar graph	• Determines appropriate intervals and/or scale for a bar graph • Interprets data given in horizontal and vertical bar graphs to solve problems
New Vocabulary: century, coin, how long	*New Vocabulary:* cubic meter	*New Vocabulary:* None
New Signs and Symbols: $ dollar sign, hr hour, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up	*New Signs and Symbols:* h height, l length, mL milliliter/millilitre, mm millimeter/millimetre, V volume, w width	*New Signs and Symbols:* ( ) order of operations, + addition, kg kilogram, P perimeter

Skills and Concepts to Enhance (73% Probability*) 221 - 230	Skills and Concepts to Develop (50% Probability*) 231 - 240	Skills and Concepts to Introduce (27% Probability*) 241 - 250
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
· Computes with dollars and cents over $5.00 and converts to decimals (multiplication/division) · Computes the value of multiple bills and coins (multiplication/division) · Measures length to the nearest millimeter · Converts between inches, feet, and yards · Converts between millimeters, centimeters, meters, and kilometers · Solves problems involving length in the customary system and converts to larger or smaller units · Converts between ounces and pounds · Converts between ounces, pounds, and tons · Converts between cups, pints, quarts, and gallons · Converts within the metric system · Apply dimensional analysis to simple real-world problems (capacity) · Computes 2-step conversions between units of time · Applies dimensional analysis to simple real-world problems (time) · Solves difficult problems involving elapsed time, with the conversion of hours · Solves complex problems involving miles/kilometers per hour · Solves problems involving rates · Determines the perimeter of a figure using non-standard units · Solves problems involving the perimeter of squares, rectangles, or triangles · Solves problems involving the perimeter of irregular or complex shapes · Solves problems involving perimeter and converts to larger or smaller units · Describes the change in perimeter when dimensions of an object are altered · Calculates the area of a rectangle, given labeled sides (customary units) · Determines the length or width of a rectangle, given the area (metric units) · Determines the area of irregular shapes (customary units) · Calculates area and perimeter of a rectangle (customary units) · Calculates the volume of rectangular solids	· Measures length to the nearest millimeter · Converts between millimeters, centimeters, meters, and kilometers · Apply dimensional analysis to simple real-world problems (length) · Solves problems involving length in the customary system and converts to larger or smaller units · Converts between grams and kilograms · Converts within the metric system · Apply dimensional analysis to simple real-world problems (capacity) · Solves problems involving capacity in the metric system and converts to larger or smaller units · Solves problems involving rates · Solves problems involving the perimeter of irregular or complex shapes · Describes the change in perimeter when dimensions of an object are altered · Identifies the formula for perimeter with a variable · Determines the area of a triangle drawn on a grid · Calculates the area of a rectangle, given labeled sides (customary units) · Determines the length or width of a rectangle, given the area (metric units) · Determines the area of irregular shapes (customary units) · Calculates the volume of rectangular solids · Calculates the length, width, or height of a rectangular prism, given the area (customary units)	· Apply dimensional analysis to simple real-world problems (length) · Solves problems involving capacity in the metric system and converts to larger or smaller units · Solves problems involving area of a rectangle and converts to larger or smaller units (customary) · Determines the area of irregular shapes (customary units) · Calculates the area of irregular shapes (metric units) · Solves complex problems involving inscribed figures · Uses properties of angles to solve mathematical problems
Represent and Interpret Data	Represent and Interpret Data	Represent and Interpret Data
· Determines appropriate intervals and/or scale for a bar graph	· Determines appropriate intervals and/or scale for a bar graph · Interprets data given in horizontal and vertical bar graphs to solve problems	

Skills and Concepts to Enhance (73% Probability*) 221 - 230	Skills and Concepts to Develop (50% Probability*) 231 - 240	Skills and Concepts to Introduce (27% Probability*) 241 - 250
New Vocabulary: cubic meter	*New Vocabulary:* None	*New Vocabulary:* None
New Signs and Symbols: h height, l length, mL milliliter/millilitre, mm millimeter/millimetre, V volume, w width	*New Signs and Symbols:* ( ) order of operations, + addition, kg kilogram, P perimeter	*New Signs and Symbols:* × multiplication

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.

Generated   10/2/13, 9:41:15 AM

DesCartes: A Continuum of Learning®

Mathematics
Goal: Measurement and Data

Skills and Concepts to Enhance (73% Probability*) 231 - 240	Skills and Concepts to Develop (50% Probability*) 241 - 250	Skills and Concepts to Introduce (27% Probability*) 251 - 260
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
• Measures length to the nearest millimeter • Converts between millimeters, centimeters, meters, and kilometers • Apply dimensional analysis to simple real-world problems (length) • Solves problems involving length in the customary system and converts to larger or smaller units • Converts between grams and kilograms • Converts within the metric system • Apply dimensional analysis to simple real-world problems (capacity) • Solves problems involving capacity in the metric system and converts to larger or smaller units • Solves problems involving rates • Solves problems involving the perimeter of irregular or complex shapes • Describes the change in perimeter when dimensions of an object are altered • Identifies the formula for perimeter with a variable • Determines the area of a triangle drawn on a grid • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units) • Determines the area of irregular shapes (customary units) • Calculates the volume of rectangular solids • Calculates the length, width, or height of a rectangular prism, given the area (customary units)	• Apply dimensional analysis to simple real-world problems (length) • Solves problems involving capacity in the metric system and converts to larger or smaller units • Solves problems involving area of a rectangle and converts to larger or smaller units (customary) • Determines the area of irregular shapes (customary units) • Calculates the area of irregular shapes (metric units) • Solves complex problems involving inscribed figures • Uses properties of angles to solve mathematical problems	• Solves complex problems involving inscribed figures • Calculates the length of one side of a cube, given the volume (customary units) • Uses properties of angles to solve mathematical problems
Represent and Interpret Data	Represent and Interpret Data	Represent and Interpret Data
• Determines appropriate intervals and/or scale for a bar graph • Interprets data given in horizontal and vertical bar graphs to solve problems		
New Vocabulary: None	*New Vocabulary:* None	*New Vocabulary:* None
New Signs and Symbols: ( ) order of operations, + addition, kg kilogram, P perimeter	*New Signs and Symbols:* × multiplication	*New Signs and Symbols:* None

Skills and Concepts to Enhance (73% Probability*) 241 - 250	Skills and Concepts to Develop (50% Probability*) 251 - 260	Skills and Concepts to Introduce (27% Probability*) > 260
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
• Apply dimensional analysis to simple real-world problems (length) • Solves problems involving capacity in the metric system and converts to larger or smaller units • Solves problems involving area of a rectangle and converts to larger or smaller units (customary) • Determines the area of irregular shapes (customary units) • Calculates the area of irregular shapes (metric units) • Solves complex problems involving inscribed figures • Uses properties of angles to solve mathematical problems	• Solves complex problems involving inscribed figures • Calculates the length of one side of a cube, given the volume (customary units) • Uses properties of angles to solve mathematical problems	• Uses properties of angles to solve mathematical problems
Represent and Interpret Data	Represent and Interpret Data	Represent and Interpret Data
New Vocabulary: None	*New Vocabulary:* None	*New Vocabulary:* None
New Signs and Symbols: × multiplication	*New Signs and Symbols:* None	*New Signs and Symbols:* None

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.

Generated   10/2/13, 9:41:15 AM

© 2006-2013 Northwest Evaluation Association. All rights reserved. Please refer to the DesCartes Use Agreement for terms of use.
Educational Standard: Common Core Mathematics K-12: 2010

Page   18   of   19

Skills and Concepts to Enhance (73% Probability*) 251 - 260	Skills and Concepts to Develop (50% Probability*) > 260
Geometric Measurement and Problem Solving	Geometric Measurement and Problem Solving
· Solves complex problems involving inscribed figures · Calculates the length of one side of a cube, given the volume (customary units) · Uses properties of angles to solve mathematical problems	· Uses properties of angles to solve mathematical problems
Represent and Interpret Data	Represent and Interpret Data
New Vocabulary: None	*New Vocabulary:* None
New Signs and Symbols: None	*New Signs and Symbols:* None

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.

Generated   10/2/13, 9:41:15 AM