DesCartes
(Combined)

Subject: Mathematics
Goal: Measurement

Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: Below 161

Skills and Concepts to Develop Below 161	Skills and Concepts to Introduce 161 - 170
Measurable Attributes	**Measurable Attributes**
• Compares objects (wider, narrower)* • Compares objects (taller, shorter)* • Identifies time of day (e.g., morning, afternoon)*	• Compares objects (shorter, longer) • Orders periods of time (days of the week)*
Direct Measurement	**Direct Measurement**
	• Measures length with customary measures to the inch mark* • Measures length with metric measures to the centimeter mark • Tells time to the nearest hour* • Tells time to the nearest half hour • Reads a calendar - no computation required
Indirect Measurement	**Indirect Measurement**
	• Estimates and measures length of an object to the nearest inch using a picture of a ruler*
New Vocabulary: tallest	*New Vocabulary:* centimeter, longest, shortest, tall, time
New Signs and Symbols: **:** used with time	*New Signs and Symbols:* cm centimeter/centimetre, ft feet, • point

Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 161 - 170

Skills and Concepts to Enhance Below 161	Skills and Concepts to Develop 161 - 170	Skills and Concepts to Introduce 171 - 180
Measurable Attributes	**Measurable Attributes**	**Measurable Attributes**
• Compares objects (wider, narrower)* • Compares objects (taller, shorter)* • Identifies time of day (e.g., morning, afternoon)*	• Compares objects (shorter, longer) • Orders periods of time (days of the week)*	• Orders periods of time (months of the year, seasons)* • Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour)
Direct Measurement	**Direct Measurement**	**Direct Measurement**
	• Measures length with customary measures to the inch mark* • Measures length with metric measures to the centimeter mark • Tells time to the nearest hour* • Tells time to the nearest half hour • Reads a calendar - no computation required	• 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 • Reads Fahrenheit thermometers to the nearest degree* • Determines the area of irregular shapes by counting square units*
Indirect Measurement	**Indirect Measurement**	**Indirect Measurement**
	• Estimates and measures length of an object to the nearest inch using a picture of a ruler*	• Estimates and measures length of an object to the nearest centimeter using a picture of a ruler* • Knows the approximate weight of familiar objects
New Vocabulary: tallest	*New Vocabulary:* centimeter, longest, shortest, tall, time	*New Vocabulary:* gram, line segment, metric, morning, quart, quarter, second
New Signs and Symbols: : used with time	*New Signs and Symbols:* cm centimeter/centimetre, ft feet, • point	*New Signs and Symbols:* a.m., °F degrees Fahrenheit, g gram, = is equal to, p.m.

Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 171 - 180

Skills and Concepts to Enhance 161 - 170	Skills and Concepts to Develop 171 - 180	Skills and Concepts to Introduce 181 - 190
Measurable Attributes	**Measurable Attributes**	**Measurable Attributes**
• Compares objects (shorter, longer) • Orders periods of time (days of the week)*	• Orders periods of time (months of the year, seasons)* • Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour)	• Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Selects and uses the appropriate type and size of unit in customary system (weight)* • Determines more capacity or less capacity • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Identifies the correct time, given the words, and vice versa • Selects and uses the appropriate type and size of unit in customary system (time)* • Computes simple conversions among units of time (days, weeks)*
Direct Measurement	**Direct Measurement**	**Direct Measurement**
• Measures length with customary measures to the inch mark* • Measures length with metric measures to the centimeter mark • Tells time to the nearest hour* • Tells time to the nearest half hour • Reads a calendar - no computation required	• 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 • Reads Fahrenheit thermometers to the nearest degree* • Determines the area of irregular shapes by counting square units*	• Identifies the appropriate instrument used to measure length* • Measures length with non-standard units • Measures length with customary measures to the half-inch mark • 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 • Interprets a calendar - some computation required • Reads Fahrenheit thermometers to the nearest degree* • Determines the area of irregular shapes by counting square units*
Indirect Measurement	**Indirect Measurement**	**Indirect Measurement**
• Estimates and measures length of an object to the nearest inch using a picture of a ruler*	• Estimates and measures length of an object to the nearest centimeter using a picture of a ruler* • Knows the approximate weight of familiar objects	• Knows the approximate size of an inch • Knows the approximate length of familiar objects* • Determines the perimeter of a figure where all sides are labeled

WI 3.2.1
* 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.

		• Compares squares (larger, smaller)
New Vocabulary: centimeter, longest, shortest, tall, time	*New Vocabulary:* gram, line segment, metric, morning, quart, quarter, second	*New Vocabulary:* clock, cup, distance, estimation, foot, fourth, gallon, half past, how much time, kilometer, liter, measurement, millimeter, noon, o'clock, pint, quarter past, quarter to, rod, tablespoon, teaspoon, ton, unit, what time, yard
New Signs and Symbols: cm centimeter/centimetre, ft feet, • point	*New Signs and Symbols:* a.m., °F degrees Fahrenheit, g gram, = is equal to, p.m.	*New Signs and Symbols:* : used with time, c cup, gal gallon, in. inch, m meter/metre, pt pint, qt quart, tsp teaspoon

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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 181 - 190

Skills and Concepts to Enhance 171 - 180	Skills and Concepts to Develop 181 - 190	Skills and Concepts to Introduce 191 - 200
Measurable Attributes	**Measurable Attributes**	**Measurable Attributes**
• Orders periods of time (months of the year, seasons)* • Computes simple conversions among units of time (minutes in an hour, half hour, quarter hour)	• Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Selects and uses the appropriate type and size of unit in customary system (weight)* • Determines more capacity or less capacity • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Identifies the correct time, given the words, and vice versa • Selects and uses the appropriate type and size of unit in customary system (time)* • Computes simple conversions among units of time (days, weeks)*	• Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Selects and uses the appropriate type and size of unit in customary system (weight)* • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Converts between cups and pints* • Converts between cups, pints, and quarts* • Identifies the correct time, given the words, and vice versa • Orders years* • Selects and uses the appropriate type and size of unit in customary system (time)* • Computes simple conversions among units of time (minutes, hours) • Computes simple conversions among units of time (hours, days)*
Direct Measurement	**Direct Measurement**	**Direct Measurement**
• 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 • Reads Fahrenheit thermometers to the nearest degree* • Determines the area of irregular shapes by counting square units*	• Identifies the appropriate instrument used to measure length* • Measures length with non-standard units • Measures length with customary measures to the half-inch mark • 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 • Interprets a calendar - some computation required • Reads Fahrenheit thermometers to the nearest degree* • Determines the area of irregular shapes by counting square units*	• Measures length with non-standard units • Uses balance scale to measure weight of an unknown object* • Determines elapsed clock time • Tells time to the nearest quarter hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 1 minute • Reads Celsius thermometers to the nearest degree

Indirect Measurement	Indirect Measurement	Indirect Measurement
• Estimates and measures length of an object to the nearest centimeter using a picture of a ruler* • Knows the approximate weight of familiar objects	• Knows the approximate size of an inch • Knows the approximate length of familiar objects* • Determines the perimeter of a figure where all sides are labeled • Compares squares (larger, smaller)	• Knows the approximate size of a foot • Knows the approximate size of a mile* • Knows the approximate size of an ounce* • Knows the approximate size of a pint* • Solves simple problems involving elapsed time, with the conversion of hours • Solves problems involving measurement of temperature • 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
New Vocabulary: gram, line segment, metric, morning, quart, quarter, second	*New Vocabulary:* clock, cup, distance, estimation, foot, fourth, gallon, half past, how much time, kilometer, liter, measurement, millimeter, noon, o'clock, pint, quarter past, quarter to, rod, tablespoon, teaspoon, ton, unit, what time, yard	*New Vocabulary:* approximate, decade, latest, miles per hour, rise, speed, square inch
New Signs and Symbols: a.m., °F degrees Fahrenheit, g gram, = is equal to, p.m.	*New Signs and Symbols:* : used with time, c cup, gal gallon, in. inch, m meter/metre, pt pint, qt quart, tsp teaspoon	*New Signs and Symbols:* °C degrees Celsius, $ dollar sign, " inches, kg kilogram, mph miles per hour, yd yard

Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 191 - 200

Skills and Concepts to Enhance 181 - 190	Skills and Concepts to Develop 191 - 200	Skills and Concepts to Introduce 201 - 210
Measurable Attributes	**Measurable Attributes**	**Measurable Attributes**
• Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Selects and uses the appropriate type and size of unit in customary system (weight)* • Determines more capacity or less capacity • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Identifies the correct time, given the words, and vice versa • Selects and uses the appropriate type and size of unit in customary system (time)* • Computes simple conversions among units of time (days, weeks)*	• Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Selects and uses the appropriate type and size of unit in customary system (weight)* • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Converts between cups and pints* • Converts between cups, pints, and quarts* • Identifies the correct time, given the words, and vice versa • Orders years* • Selects and uses the appropriate type and size of unit in customary system (time)* • Computes simple conversions among units of time (minutes, hours) • Computes simple conversions among units of time (hours, days)*	• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Converts between inches and feet • Solves simple problems involving measurement of length • Estimates simple conversions involving length between the customary and metric system • Converts between milligrams and grams* • Converts between cups and pints* • Converts between cups, pints, and quarts* • Computes simple conversions among units of time (hours, days)* • Computes more difficult conversions among units of time • Solves problems involving measurement of time • Knows common referents (boiling or freezing point, room temperature)*
Direct Measurement	**Direct Measurement**	**Direct Measurement**
• Identifies the appropriate instrument used to measure length* • Measures length with non-standard units • Measures length with customary measures to the half-inch mark • 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 • Interprets a calendar - some computation required • Reads Fahrenheit thermometers to the nearest degree* • Determines the area of irregular shapes by counting square units*	• Measures length with non-standard units • Uses balance scale to measure weight of an unknown object* • Determines elapsed clock time • Tells time to the nearest quarter hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 1 minute • Reads Celsius thermometers to the nearest degree	• Measures length to the nearest centimeter* • Selects and uses balances for measuring weight or mass* • Determines the area of irregular shapes with partial square units • Estimates and finds volume of a figure using cubic units

WI 3.2.1
* 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.

Indirect Measurement	Indirect Measurement	Indirect Measurement
• Knows the approximate size of an inch • Knows the approximate length of familiar objects* • Determines the perimeter of a figure where all sides are labeled • Compares squares (larger, smaller)	• Knows the approximate size of a foot • Knows the approximate size of a mile* • Knows the approximate size of an ounce* • Knows the approximate size of a pint* • Solves simple problems involving elapsed time, with the conversion of hours • Solves problems involving measurement of temperature • 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	• Knows the approximate size of a yard • Knows the approximate size of a centimeter • Knows the approximate size of a pound • Knows the approximate size of a gram • Applies dimensional analysis to simple real-world problems (time)* • Solves problems using a calendar* • Solves simple problems involving elapsed time, with the conversion of hours • Solves simple problems involving miles per gallon • Solves simple problems involving miles/kilometers per hour • Determines unit price* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Determines the perimeter of a figure where some sides are labeled • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Estimates the area of rectangles using square units • Solves simple problems comparing area and perimeter (customary units)* • Identifies situations where it is appropriate to calculate area • Uses basic indirect methods to estimate measurements (grids for area of irregular figures)*
New Vocabulary: clock, cup, distance, estimation, foot, fourth, gallon, half past, how much time, kilometer, liter, measurement, millimeter, noon, o'clock, pint, quarter past, quarter to, rod, tablespoon, teaspoon, ton, unit, what time, yard	*New Vocabulary:* approximate, decade, latest, miles per hour, rise, speed, square inch	*New Vocabulary:* circumference, cubic unit, decameter, decimeter, larger, miles per gallon, milligram, milliliter, square centimeter, wide
New Signs and Symbols: **:** used with time, c cup, gal gallon, in. inch, m meter/metre, pt pint, qt quart, tsp teaspoon	*New Signs and Symbols:* °C degrees Celsius, $ dollar sign, **"** inches, kg kilogram, mph miles per hour, yd yard	*New Signs and Symbols:* ∠ angle, ¢ cent sign, ° degrees, **'** feet, m measure of angle, min minute, mm millimeter/millimetre, mpg miles per gallon, right angle marker, ☐ variable

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 201 - 210

Skills and Concepts to Enhance 191 - 200	Skills and Concepts to Develop 201 - 210	Skills and Concepts to Introduce 211 - 220
Measurable Attributes	**Measurable Attributes**	**Measurable Attributes**
• Selects and uses the appropriate type and size of unit in customary system (length) • Selects and uses the appropriate type and size of unit in customary system (height)* • Selects and uses the appropriate type and size of unit in customary system (weight)* • Selects and uses the appropriate type and size of unit in customary system (capacity)* • Converts between cups and pints* • Converts between cups, pints, and quarts* • Identifies the correct time, given the words, and vice versa • Orders years* • Selects and uses the appropriate type and size of unit in customary system (time)* • Computes simple conversions among units of time (minutes, hours) • Computes simple conversions among units of time (hours, days)*	• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Converts between inches and feet • Solves simple problems involving measurement of length • Estimates simple conversions involving length between the customary and metric system • Converts between milligrams and grams* • Converts between cups and pints* • Converts between cups, pints, and quarts* • Computes simple conversions among units of time (hours, days)* • Computes more difficult conversions among units of time • Solves problems involving measurement of time • Knows common referents (boiling or freezing point, room temperature)*	• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Converts between inches and feet • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Solves simple problems involving measurement of length • Converts between the customary and metric system given conversion ratios (1-step, length) • Selects and uses the appropriate type and size of unit in metric system (mass)* • Converts between cups, pints, quarts, and gallons • Estimates conversions between customary and metric system • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums
Direct Measurement	**Direct Measurement**	**Direct Measurement**
• Measures length with non-standard units • Uses balance scale to measure weight of an unknown object* • Determines elapsed clock time • Tells time to the nearest quarter hour • Determines elapsed time involving whole hours, whole days, whole years • Tells time to the nearest 1 minute • Reads Celsius thermometers to the nearest degree	• Measures length to the nearest centimeter* • Selects and uses balances for measuring weight or mass* • Determines the area of irregular shapes with partial square units • Estimates and finds volume of a figure using cubic units	• Measures length to the nearest half inch* • Measures length to the nearest quarter of an inch • Measures length to the nearest eighth of an inch • Reads Celsius thermometers to 0.1 degrees* • Selects and uses protractors for measuring angles* • Determines the perimeter of a figure using non-standard units* • Determines the area of irregular shapes with partial square units • Counts squares to determine surface area of a cube* • Estimates and finds volume of a figure using cubic units • Selects and uses the appropriate units depending on degree of accuracy required to solve problems*

WI 3.2.1

* 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.

Indirect Measurement	Indirect Measurement	Indirect Measurement
• Knows the approximate size of a foot • Knows the approximate size of a mile* • Knows the approximate size of an ounce* • Knows the approximate size of a pint* • Solves simple problems involving elapsed time, with the conversion of hours • Solves problems involving measurement of temperature • 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	• Knows the approximate size of a yard • Knows the approximate size of a centimeter • Knows the approximate size of a pound • Knows the approximate size of a gram • Applies dimensional analysis to simple real-world problems (time)* • Solves problems using a calendar* • Solves simple problems involving elapsed time, with the conversion of hours • Solves simple problems involving miles per gallon • Solves simple problems involving miles/kilometers per hour • Determines unit price* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Determines the perimeter of a figure where some sides are labeled • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Estimates the area of rectangles using square units • Solves simple problems comparing area and perimeter (customary units)* • Identifies situations where it is appropriate to calculate area • Uses basic indirect methods to estimate measurements (grids for area of irregular figures)*	• Knows the approximate size of a millimeter* • Knows the approximate size of a kilometer* • Apply dimensional analysis to simple real-world problems (length)* • Solves simple problems involving measurement of weight* • Apply dimensional analysis to simple real-world problems (weight/mass)* • Knows the approximate size of an ounce* • Knows the approximate size of a gallon* • Apply dimensional analysis to simple real-world problems (capacity)* • Solves simple problems involving capacity* • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with the conversion of hours • Solves simple problems involving miles per gallon • Determines unit price* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter of a polygon using a formula • Determines the process for calculating perimeter • Determines the diameter, given the radius, and vice versa* • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Solves simple problems comparing area and perimeter (customary units)*
New Vocabulary: approximate, decade, latest, miles per hour, rise, speed, square inch	*New Vocabulary:* circumference, cubic unit, decameter, decimeter, larger, miles per gallon, milligram, milliliter, square centimeter, wide	*New Vocabulary:* century, how long, micrometer, protractor
New Signs and Symbols: °C degrees Celsius, $ dollar sign, " inches, kg kilogram, mph miles per hour, yd yard	*New Signs and Symbols:* ∠ angle, ¢ cent sign, ° degrees, ' feet, m measure of angle, min minute, mm millimeter/millimetre, mpg miles per gallon, right angle marker, □ variable	*New Signs and Symbols:* + addition, ÷ division, fl oz fluid ounce, hr hour, lb pound, l length, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, × multiplication, oz ounce, P perimeter, sec second, s side, – subtraction, w width

* 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.

Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 211 - 220

Skills and Concepts to Enhance 201 - 210	Skills and Concepts to Develop 211 - 220	Skills and Concepts to Introduce 221 - 230
Measurable Attributes	**Measurable Attributes**	**Measurable Attributes**
• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Converts between inches and feet • Solves simple problems involving measurement of length • Estimates simple conversions involving length between the customary and metric system • Converts between milligrams and grams* • Converts between cups and pints* • Converts between cups, pints, and quarts* • Computes simple conversions among units of time (hours, days)* • Computes more difficult conversions among units of time • Solves problems involving measurement of time • Knows common referents (boiling or freezing point, room temperature)*	• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Converts between inches and feet • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Solves simple problems involving measurement of length • Converts between the customary and metric system given conversion ratios (1-step, length) • Selects and uses the appropriate type and size of unit in metric system (mass)* • Converts between cups, pints, quarts, and gallons • Estimates conversions between customary and metric system • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums	• Uses the appropriate unit of measure for length* • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Converts between ounces and pounds • Converts between ounces, pounds, and tons* • Computes basic operations with units of weight/mass* • Converts between cups, pints, quarts, and gallons • Converts within the metric system • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Computes 2-step conversions between units of time
Direct Measurement	**Direct Measurement**	**Direct Measurement**
• Measures length to the nearest centimeter* • Selects and uses balances for measuring weight or mass* • Determines the area of irregular shapes with partial square units • Estimates and finds volume of a figure using cubic units	• Measures length to the nearest half inch* • Measures length to the nearest quarter of an inch • Measures length to the nearest eighth of an inch • Reads Celsius thermometers to 0.1 degrees* • Selects and uses protractors for measuring angles* • Determines the perimeter of a figure using non-standard units* • Determines the area of irregular shapes with partial square units • Counts squares to determine surface area of a cube* • Estimates and finds volume of a figure using cubic units • Selects and uses the appropriate units depending on degree of accuracy required to solve problems*	• Measures length to the nearest millimeter

Indirect Measurement	Indirect Measurement	Indirect Measurement
• Knows the approximate size of a yard • Knows the approximate size of a centimeter • Knows the approximate size of a pound • Knows the approximate size of a gram • Applies dimensional analysis to simple real-world problems (time)* • Solves problems using a calendar* • Solves simple problems involving elapsed time, with the conversion of hours • Solves simple problems involving miles per gallon • Solves simple problems involving miles/kilometers per hour • Determines unit price* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Determines the perimeter of a figure where some sides are labeled • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Estimates the area of rectangles using square units • Solves simple problems comparing area and perimeter (customary units)* • Identifies situations where it is appropriate to calculate area • Uses basic indirect methods to estimate measurements (grids for area of irregular figures)*	• Knows the approximate size of a millimeter* • Knows the approximate size of a kilometer* • Apply dimensional analysis to simple real-world problems (length)* • Solves simple problems involving measurement of weight* • Apply dimensional analysis to simple real-world problems (weight/mass)* • Knows the approximate size of an ounce* • Knows the approximate size of a gallon* • Apply dimensional analysis to simple real-world problems (capacity)* • Solves simple problems involving capacity* • Applies dimensional analysis to simple real-world problems (time)* • Solves difficult problems involving elapsed time, with the conversion of hours • Solves simple problems involving miles per gallon • Determines unit price* • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter of a polygon using a formula • Determines the process for calculating perimeter • Determines the diameter, given the radius, and vice versa* • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Solves simple problems comparing area and perimeter (customary units)*	• Knows the approximate size of a meter • Apply dimensional analysis to simple real-world problems (length)* • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving capacity in the customary system and converts to larger or smaller units* • 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 per gallon • Solves complex problems involving miles/kilometers per hour* • Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter using the formula with a variable* • Solves problems involving the perimeter of irregular or complex shapes • Solves problems involving perimeter and converts to larger or smaller units • Determines the diameter, given the radius, and vice versa* • Defines pi and knows common estimates (3.14 and 22/7)* • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Uses models to develop the relationship between the total number of square units contained in a rectangle and the length and width of the figure* • Solves simple problems involving the area of a square or rectangle • Calculates the base or height of a parallelogram, given the area and formula (metric)* • Determines the area of a trapezoid, given the formula (metric units)* • Calculates area and perimeter of a rectangle (customary units) • Uses the appropriate unit of measure for area*

* 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.

		• Calculates the volume of rectangular solids • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*
New Vocabulary: circumference, cubic unit, decameter, decimeter, larger, miles per gallon, milligram, milliliter, square centimeter, wide	*New Vocabulary:* century, how long, micrometer, protractor	*New Vocabulary:* cord, cubic inch, cubic meter, cubic millimeter, cubic yard, equilateral, pi, rectangular shape
New Signs and Symbols: ∠ angle, ¢ cent sign, ° degrees, ' feet, m measure of angle, min minute, mm millimeter/millimetre, mpg miles per gallon, right angle marker, □ variable	*New Signs and Symbols:* + addition, ÷ division, fl oz fluid ounce, hr hour, lb pound, l length, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, × multiplication, oz ounce, P perimeter, sec second, s side, − subtraction, w width	*New Signs and Symbols:* dm decimeter/decimetre, h height, km kilometer/kilometre, ↔ line symbol, mL milliliter/millilitre, π pi, segment overbar, V volume

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 221 - 230

Skills and Concepts to Enhance 211 - 220	Skills and Concepts to Develop 221 - 230	Skills and Concepts to Introduce 231 - 240
Measurable Attributes	**Measurable Attributes**	**Measurable Attributes**
• Selects and uses the appropriate type and size of unit in metric system (length) • Selects and uses the appropriate type and size of unit in metric system (height)* • Converts between inches and feet • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Solves simple problems involving measurement of length • Converts between the customary and metric system given conversion ratios (1-step, length) • Selects and uses the appropriate type and size of unit in metric system (mass)* • Converts between cups, pints, quarts, and gallons • Estimates conversions between customary and metric system • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums	• Uses the appropriate unit of measure for length* • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Converts between ounces and pounds • Converts between ounces, pounds, and tons* • Computes basic operations with units of weight/mass* • Converts between cups, pints, quarts, and gallons • Converts within the metric system • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Computes 2-step conversions between units of time	• Converts between feet, yards, and miles* • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Uses dimensional analysis for unit conversions (length)* • Estimates difficult conversions involving length between the customary and metric system • Converts between the customary and metric system given conversion ratios (2-step, length)* • Converts between grams and kilograms* • Computes basic operations with units of capacity • Converts within the metric system • Converts from Celsius to Fahrenheit, given conversion ratios
Direct Measurement	**Direct Measurement**	**Direct Measurement**
• Measures length to the nearest half inch* • Measures length to the nearest quarter of an inch • Measures length to the nearest eighth of an inch • Reads Celsius thermometers to 0.1 degrees* • Selects and uses protractors for measuring angles* • Determines the perimeter of a figure using non-standard units* • Determines the area of irregular shapes with partial square units • Counts squares to determine surface area of a cube* • Estimates and finds volume of a figure using cubic units • Selects and uses the appropriate units depending on degree of accuracy required to solve problems*	• Measures length to the nearest millimeter	• Measures length to the nearest millimeter • Determines the area of a triangle drawn on a grid*

Indirect Measurement	Indirect Measurement	Indirect Measurement
• Knows the approximate size of a millimeter*	• Knows the approximate size of a meter	• Solves problems involving length in the customary system and converts to larger or smaller units
• Knows the approximate size of a kilometer*	• Apply dimensional analysis to simple real-world problems (length)*	• Solves problems involving length in the metric system and converts to larger or smaller units*
• Apply dimensional analysis to simple real-world problems (length)*	• Solves problems involving length in the customary system and converts to larger or smaller units	• Solves problems involving weight in the customary system and converts to larger or smaller units
• Solves simple problems involving measurement of weight*	• Solves problems involving capacity in the customary system and converts to larger or smaller units*	• Solves problems involving capacity in the customary system and converts to larger or smaller units*
• Apply dimensional analysis to simple real-world problems (weight/mass)*	• Applies dimensional analysis to simple real-world problems (time)*	• Solves complex problems involving miles per gallon
• Knows the approximate size of an ounce*	• Solves difficult problems involving elapsed time, with the conversion of hours	• Solves problems comparing unit prices
• Knows the approximate size of a gallon*	• Solves complex problems involving miles per gallon	• Solves problems involving the perimeter of irregular or complex shapes
• Apply dimensional analysis to simple real-world problems (capacity)*	• Solves complex problems involving miles/kilometers per hour*	• Solves perimeter problems comparing width and length
• Solves simple problems involving capacity*	• Solves problems involving the perimeter of squares, rectangles, or triangles	• Describes the change in perimeter when dimensions of an object are altered*
• Applies dimensional analysis to simple real-world problems (time)*	• Finds the perimeter using the formula with a variable*	• Identifies the formula for perimeter with a variable
• Solves difficult problems involving elapsed time, with the conversion of hours	• Solves problems involving the perimeter of irregular or complex shapes	• Determines the circumference when given the diameter or radius (or vice versa)
• Solves simple problems involving miles per gallon	• Solves problems involving perimeter and converts to larger or smaller units	• Determines the circumference when given the area of a circle (or vice versa)*
• Determines unit price*	• Determines the diameter, given the radius, and vice versa*	• Identifies the formula for circumference of a circle*
• Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents	• Defines pi and knows common estimates (3.14 and 22/7)*	• Knows the relationship between radius, diameter, and circumference
• Solves problems involving the perimeter of squares, rectangles, or triangles	• Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)*	• Compares area of numerous triangles*
• Finds the perimeter of a polygon using a formula	• Calculates the area of a rectangle, given labeled sides (customary units)	• Determines the area of a triangle, given the formula
• Determines the process for calculating perimeter	• Determines the length or width of a rectangle, given the area (metric units)*	• Calculates the area of a rectangle, given labeled sides (customary units)
• Determines the diameter, given the radius, and vice versa*	• Uses models to develop the relationship between the total number of square units contained in a rectangle and the length and width of the figure*	• Determines the length or width of a rectangle, given the area (metric units)*
• Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)*	• Solves simple problems involving the area of a square or rectangle	• Determines area, length, or width, given the formula with variables*
• Solves simple problems comparing area and perimeter (customary units)*	• Calculates the base or height of a parallelogram, given the area and formula (metric)*	• Describes the change in area of a rectangle when dimensions of an object are altered*
	• Determines the area of a trapezoid, given the formula (metric units)*	• Solves simple problems involving the area of a square or rectangle
	• Calculates area and perimeter of a rectangle (customary units)	• Calculates the base or height of a parallelogram, given the area and formula (metric)*
	• Uses the appropriate unit of measure for area*	• Determines the area of a trapezoid, given the formula (metric units)*
		• Solves problems comparing areas of different polygons*
		• Identifies the formula for area of circle*

* 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.

	• Calculates the volume of rectangular solids • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*	• Understands the procedure for finding the area and surface area of figures • Calculates the volume of rectangular solids • Calculates the length, width, or height of a rectangular prism, given the area (customary units)* • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume* • Uses basic indirect methods to estimate measurements* • Identifies the components of the Pythagorean theorem*
New Vocabulary: century, how long, micrometer, protractor	*New Vocabulary:* cord, cubic inch, cubic meter, cubic millimeter, cubic yard, equilateral, pi, rectangular shape	*New Vocabulary:* minus, tripled
New Signs and Symbols: + addition, ÷ division, fl oz fluid ounce, hr hour, lb pound, l length, ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, × multiplication, oz ounce, P perimeter, sec second, s side, − subtraction, w width	*New Signs and Symbols:* dm decimeter/decimetre, h height, km kilometer/kilometre, ↔ line symbol, mL milliliter/millilitre, π pi, ‾ segment overbar, V volume	*New Signs and Symbols:* ( ) order of operations, A area, C circumference, d diameter, > greater than, ≥ greater than or equal to, < less than, ≤ less than or equal to, − negative number, / per, r radius, π pi, t time

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 231 - 240

Skills and Concepts to Enhance 221 - 230	Skills and Concepts to Develop 231 - 240	Skills and Concepts to Introduce 241 - 250
Measurable Attributes	**Measurable Attributes**	**Measurable Attributes**
• Uses the appropriate unit of measure for length* • Converts between inches, feet, and yards • Converts between feet, yards, and miles* • Computes basic addition with units of length • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Converts between ounces and pounds • Converts between ounces, pounds, and tons* • Computes basic operations with units of weight/mass* • Converts between cups, pints, quarts, and gallons • Converts within the metric system • Computes basic operations with units of time • Relates years, decades, centuries, and millenniums • Computes 2-step conversions between units of time	• Converts between feet, yards, and miles* • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Uses dimensional analysis for unit conversions (length)* • Estimates difficult conversions involving length between the customary and metric system • Converts between the customary and metric system given conversion ratios (2-step, length)* • Converts between grams and kilograms* • Computes basic operations with units of capacity • Converts within the metric system • Converts from Celsius to Fahrenheit, given conversion ratios	• Uses dimensional analysis for unit conversions (time) • Converts from Celsius to Fahrenheit, given conversion ratios
Direct Measurement	**Direct Measurement**	**Direct Measurement**
• Measures length to the nearest millimeter	• Measures length to the nearest millimeter • Determines the area of a triangle drawn on a grid*	• Uses significant digits appropriately as they relate to precision*
Indirect Measurement	**Indirect Measurement**	**Indirect Measurement**
• Knows the approximate size of a meter • Apply dimensional analysis to simple real-world problems (length)* • Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving capacity in the customary system and converts to larger or smaller units* • 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 per gallon • Solves complex problems involving miles/kilometers per hour*	• Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Solves complex problems involving miles per gallon • Solves problems comparing unit prices • Solves problems involving the perimeter of irregular or complex shapes • Solves perimeter problems comparing width and length	• Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves problems involving capacity in the metric system and converts to larger or smaller units* • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)* • Solves problems involving measurement of angles* • Solves complex problems involving the measurement of angles* • Solves problems involving the perimeter of squares, rectangles, or triangles (analysis) • Determines the perimeter of a figure when plotting ordered pairs*

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* 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.

• Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter using the formula with a variable* • Solves problems involving the perimeter of irregular or complex shapes • Solves problems involving perimeter and converts to larger or smaller units • Determines the diameter, given the radius, and vice versa* • Defines pi and knows common estimates (3.14 and 22/7)* • Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)* • Calculates the area of a rectangle, given labeled sides (customary units) • Determines the length or width of a rectangle, given the area (metric units)* • Uses models to develop the relationship between the total number of square units contained in a rectangle and the length and width of the figure* • Solves simple problems involving the area of a square or rectangle • Calculates the base or height of a parallelogram, given the area and formula (metric)* • Determines the area of a trapezoid, given the formula (metric units)* • Calculates area and perimeter of a rectangle (customary units) • Uses the appropriate unit of measure for area* • Calculates the volume of rectangular solids • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume*	• Describes the change in perimeter when dimensions of an object are altered* • Identifies the formula for perimeter with a variable • Determines the circumference when given the diameter or radius (or vice versa) • Determines the circumference when given the area of a circle (or vice versa)* • Identifies the formula for circumference of a circle* • Knows the relationship between radius, diameter, and circumference • Compares area of numerous triangles* • Determines the area of a triangle, given the formula • 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 area, length, or width, given the formula with variables* • Describes the change in area of a rectangle when dimensions of an object are altered* • Solves simple problems involving the area of a square or rectangle • Calculates the base or height of a parallelogram, given the area and formula (metric)* • Determines the area of a trapezoid, given the formula (metric units)* • Solves problems comparing areas of different polygons* • Identifies the formula for area of circle* • Understands the procedure for finding the area and surface area of figures • Calculates the volume of rectangular solids • Calculates the length, width, or height of a rectangular prism, given the area (customary units)* • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)* • Uses the appropriate unit of measure for volume* • Uses basic indirect methods to estimate measurements* • Identifies the components of the Pythagorean theorem*	• Solves perimeter problems comparing width and length • Determines the circumference when given the diameter or radius (or vice versa) • Determines the circumference when given the area of a circle (or vice versa)* • Determines the area of a triangle without the formula • Solves problems involving area of a rectangle and converts to larger or smaller units (customary) • Describes the change in area of a rectangle when dimensions of an object are altered* • Determines the area of a parallelogram, given a labeled diagram* • Solves problems involving area of a circle • Determines the diameter or radius when given the area of a circle (metric units)* • Solves problems comparing areas of different polygons* • Determines the area of irregular shapes (customary units)* • Calculates the area of irregular shapes (metric units)* • Solves complex problems involving inscribed figures • Uses dimensional analysis for unit conversions (area) • Determines the surface area of rectangular solids • Determines the surface area of a cylinder, given a formula (customary units)* • Calculates the length of one side of a cube, given the volume (customary units)* • Determines the effects of changing dimensions on volume (no units) • Uses an indirect method to measure the height of an inaccessible object* • Uses the Pythagorean theorem to solve problems
New Vocabulary: cord, cubic inch, cubic meter, cubic millimeter, cubic yard, equilateral, pi, rectangular shape	*New Vocabulary:* minus, tripled	*New Vocabulary:* feet per second, incline, inscribe, linear foot, Pythagorean theorem, quadrupled, rectangular area,

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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		semicircle, square kilometer, square yard
New Signs and Symbols: dm decimeter/decimetre, h height, km kilometer/kilometre, ↔ line symbol, mL milliliter/millilitre, π pi, segment overbar, V volume	*New Signs and Symbols:* ( ) order of operations, A area, C circumference, d diameter, > greater than, ≥ greater than or equal to, < less than, ≤ less than or equal to, – negative number, / per, r radius, π pi, t time	*New Signs and Symbols:* ≈ approximately equal to, b base, cubic centimeter/centimetre, L liter/litre, s second (SI metric), sq in. square inch, sq square, square centimeter/centimetre, square meter/metre, square root symbol, Δ triangle

* Both data from test items and review by NWEA curriculum specialists are used to place learning continuum statements into appropriate RIT ranges.
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Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 241 - 250

Skills and Concepts to Enhance 231 - 240	Skills and Concepts to Develop 241 - 250	Skills and Concepts to Introduce 251 - 260
Measurable Attributes	**Measurable Attributes**	**Measurable Attributes**
• Converts between feet, yards, and miles* • Computes basic subtraction and multiplication with units of length • Converts between millimeters, centimeters, meters, and kilometers • Uses dimensional analysis for unit conversions (length)* • Estimates difficult conversions involving length between the customary and metric system • Converts between the customary and metric system given conversion ratios (2-step, length)* • Converts between grams and kilograms* • Computes basic operations with units of capacity • Converts within the metric system • Converts from Celsius to Fahrenheit, given conversion ratios	• Uses dimensional analysis for unit conversions (time) • Converts from Celsius to Fahrenheit, given conversion ratios	• Uses dimensional analysis for unit conversions (time)
Direct Measurement	**Direct Measurement**	**Direct Measurement**
• Measures length to the nearest millimeter • Determines the area of a triangle drawn on a grid*	• Uses significant digits appropriately as they relate to precision*	• Determines the area of a figure when plotting ordered pairs without a grid* • Uses fractional units appropriately as they relate to precision*
Indirect Measurement	**Indirect Measurement**	**Indirect Measurement**
• Solves problems involving length in the customary system and converts to larger or smaller units • Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves problems involving capacity in the customary system and converts to larger or smaller units* • Solves complex problems involving miles per gallon • Solves problems comparing unit prices • Solves problems involving the perimeter of irregular or complex shapes • Solves perimeter problems comparing width and	• Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves problems involving capacity in the metric system and converts to larger or smaller units* • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)* • Solves problems involving measurement of angles* • Solves complex problems involving the measurement of angles* • Solves problems involving the perimeter of squares, rectangles, or triangles (analysis)	• Solves complex real-world problems involving capacity* • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)* • Solves complex problems involving the measurement of angles* • Determines the length of the side of a square, given the area* • Determines the area of a parallelogram, given a labeled diagram* • Calculate the height of a trapezoid, given the area, without the formula given (metric)* • Determines the diameter or radius when given the area

- length
- Describes the change in perimeter when dimensions of an object are altered*
- Identifies the formula for perimeter with a variable
- Determines the circumference when given the diameter or radius (or vice versa)
- Determines the circumference when given the area of a circle (or vice versa)*
- Identifies the formula for circumference of a circle*
- Knows the relationship between radius, diameter, and circumference
- Compares area of numerous triangles*
- Determines the area of a triangle, given the formula
- 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 area, length, or width, given the formula with variables*
- Describes the change in area of a rectangle when dimensions of an object are altered*
- Solves simple problems involving the area of a square or rectangle
- Calculates the base or height of a parallelogram, given the area and formula (metric)*
- Determines the area of a trapezoid, given the formula (metric units)*
- Solves problems comparing areas of different polygons*
- Identifies the formula for area of circle*
- Understands the procedure for finding the area and surface area of figures
- Calculates the volume of rectangular solids
- Calculates the length, width, or height of a rectangular prism, given the area (customary units)*
- Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)*
- Uses the appropriate unit of measure for volume*
- Uses basic indirect methods to estimate measurements*
- Identifies the components of the Pythagorean theorem*

- Determines the perimeter of a figure when plotting ordered pairs*
- Solves perimeter problems comparing width and length
- Determines the circumference when given the diameter or radius (or vice versa)
- Determines the circumference when given the area of a circle (or vice versa)*
- Determines the area of a triangle without the formula
- Solves problems involving area of a rectangle and converts to larger or smaller units (customary)
- Describes the change in area of a rectangle when dimensions of an object are altered*
- Determines the area of a parallelogram, given a labeled diagram*
- Solves problems involving area of a circle
- Determines the diameter or radius when given the area of a circle (metric units)*
- Solves problems comparing areas of different polygons*
- Determines the area of irregular shapes (customary units)*
- Calculates the area of irregular shapes (metric units)*
- Solves complex problems involving inscribed figures
- Uses dimensional analysis for unit conversions (area)
- Determines the surface area of rectangular solids
- Determines the surface area of a cylinder, given a formula (customary units)*
- Calculates the length of one side of a cube, given the volume (customary units)*
- Determines the effects of changing dimensions on volume (no units)
- Uses an indirect method to measure the height of an inaccessible object*
- Uses the Pythagorean theorem to solve problems

- of a circle (metric units)*
- Solves problems involving complex figures (e.g., triangle, parallelogram)*
- Solves complex problems involving inscribed figures
- Solves problems comparing area to perimeter (analysis)
- Solves real-world problems involving surface area*
- Determines the surface area of a pyramid (customary units)*
- Calculates the length of one side of a cube, given the volume (customary units)*
- Determines the volume of a cylinder
- Calculates the radius of a sphere, given the volume and formula (metric units)*
- Solves real-world problems comparing volumes of figures
- Uses the Pythagorean theorem to solve problems

New Vocabulary: minus, tripled	*New Vocabulary:* feet per second, incline, inscribe, linear	*New Vocabulary:* cross-section area, right cylinder, right

	foot, Pythagorean theorem, quadrupled, rectangular area, semicircle, square kilometer, square yard	pyramid, slant height
New Signs and Symbols: ( ) order of operations, A area, C circumference, d diameter, > greater than, ≥ greater than or equal to, < less than, ≤ less than or equal to, − negative number, / per, r radius, π pi, t time	*New Signs and Symbols:* ≈ approximately equal to, b base, cubic centimeter/centimetre, L liter/litre, s second (SI metric), sq in. square inch, sq square, square centimeter/centimetre, square meter/metre, square root symbol, Δ triangle	*New Signs and Symbols:* ( ) ordered pair

Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: 251 - 260

Skills and Concepts to Enhance 241 - 250	Skills and Concepts to Develop 251 - 260	Skills and Concepts to Introduce Above 260
Measurable Attributes	**Measurable Attributes**	**Measurable Attributes**
• Uses dimensional analysis for unit conversions (time) • Converts from Celsius to Fahrenheit, given conversion ratios	• Uses dimensional analysis for unit conversions (time)	
Direct Measurement	**Direct Measurement**	**Direct Measurement**
• Uses significant digits appropriately as they relate to precision*	• Determines the area of a figure when plotting ordered pairs without a grid* • Uses fractional units appropriately as they relate to precision*	
Indirect Measurement	**Indirect Measurement**	**Indirect Measurement**
• Solves problems involving length in the metric system and converts to larger or smaller units* • Solves problems involving weight in the customary system and converts to larger or smaller units • Solves problems involving capacity in the metric system and converts to larger or smaller units* • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)* • Solves problems involving measurement of angles* • Solves complex problems involving the measurement of angles* • Solves problems involving the perimeter of squares, rectangles, or triangles (analysis) • Determines the perimeter of a figure when plotting ordered pairs* • Solves perimeter problems comparing width and length • Determines the circumference when given the diameter or radius (or vice versa) • Determines the circumference when given the area of a circle (or vice versa)* • Determines the area of a triangle without the formula • Solves problems involving area of a rectangle and converts to larger or smaller units (customary) • Describes the change in area of a rectangle when dimensions of an object are altered*	• Solves complex real-world problems involving capacity* • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)* • Solves complex problems involving the measurement of angles* • Determines the length of the side of a square, given the area* • Determines the area of a parallelogram, given a labeled diagram* • Calculate the height of a trapezoid, given the area, without the formula given (metric)* • Determines the diameter or radius when given the area of a circle (metric units)* • Solves problems involving complex figures (e.g., triangle, parallelogram)* • Solves complex problems involving inscribed figures • Solves problems comparing area to perimeter (analysis) • Solves real-world problems involving surface area* • Determines the surface area of a pyramid (customary units)* • Calculates the length of one side of a cube, given the volume (customary units)* • Determines the volume of a cylinder • Calculates the radius of a sphere, given the volume and	• Solves problems involving rate conversions (e.g., mi/hr to ft/sec)* • Solves problems involving rates* • Solves complex problems comparing the areas of circles • Solves real-world problems involving surface area* • Analyzes a problem solving situation to determine the surface area of a cylinder (customary)* • Uses the properties of 30-60-90 triangles to solve problems*

- Determines the area of a parallelogram, given a labeled diagram* - Solves problems involving area of a circle - Determines the diameter or radius when given the area of a circle (metric units)* - Solves problems comparing areas of different polygons* - Determines the area of irregular shapes (customary units)* - Calculates the area of irregular shapes (metric units)* - Solves complex problems involving inscribed figures - Uses dimensional analysis for unit conversions (area) - Determines the surface area of rectangular solids - Determines the surface area of a cylinder, given a formula (customary units)* - Calculates the length of one side of a cube, given the volume (customary units)* - Determines the effects of changing dimensions on volume (no units) - Uses an indirect method to measure the height of an inaccessible object* - Uses the Pythagorean theorem to solve problems	- formula (metric units)* - Solves real-world problems comparing volumes of figures - Uses the Pythagorean theorem to solve problems	
New Vocabulary: feet per second, incline, inscribe, linear foot, Pythagorean theorem, quadrupled, rectangular area, semicircle, square kilometer, square yard	*New Vocabulary:* cross-section area, right cylinder, right pyramid, slant height	*New Vocabulary:* none
New Signs and Symbols: ≈ approximately equal to, b base, cubic centimeter/centimetre, L liter/litre, s second (SI metric), sq in. square inch, sq square, square centimeter/centimetre, square meter/metre, square root symbol, Δ triangle	*New Signs and Symbols:* ( ) ordered pair	*New Signs and Symbols:* none

Subject: Mathematics
Goal Strand: Measurement
RIT Score Range: Above 260

Skills and Concepts to Enhance 251 - 260	Skills and Concepts to Develop Above 260
Measurable Attributes	**Measurable Attributes**
• Uses dimensional analysis for unit conversions (time)	
Direct Measurement	**Direct Measurement**
• Determines the area of a figure when plotting ordered pairs without a grid* • Uses fractional units appropriately as they relate to precision*	
Indirect Measurement	**Indirect Measurement**
• Solves complex real-world problems involving capacity* • Solves problems involving rate conversions (e.g., mi/hr to ft/sec)* • Solves complex problems involving the measurement of angles* • Determines the length of the side of a square, given the area* • Determines the area of a parallelogram, given a labeled diagram* • Calculate the height of a trapezoid, given the area, without the formula given (metric)* • Determines the diameter or radius when given the area of a circle (metric units)* • Solves problems involving complex figures (e.g., triangle, parallelogram)* • Solves complex problems involving inscribed figures • Solves problems comparing area to perimeter (analysis) • Solves real-world problems involving surface area* • Determines the surface area of a pyramid (customary units)* • Calculates the length of one side of a cube, given the volume (customary units)* • Determines the volume of a cylinder • Calculates the radius of a sphere, given the volume and formula (metric units)* • Solves real-world problems comparing volumes of	• Solves problems involving rate conversions (e.g., mi/hr to ft/sec)* • Solves problems involving rates* • Solves complex problems comparing the areas of circles • Solves real-world problems involving surface area* • Analyzes a problem solving situation to determine the surface area of a cylinder (customary)* • Uses the properties of 30-60-90 triangles to solve problems*

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* 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.

figures • Uses the Pythagorean theorem to solve problems	
New Vocabulary: cross-section area, right cylinder, right pyramid, slant height	*New Vocabulary:* none
New Signs and Symbols: ( ) ordered pair	*New Signs and Symbols:* none

* 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.