DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: < 161
Statements Last Updated: Aug 4, 2014

Skills and Concepts to Develop (50% Probability*) < 161	Skills and Concepts to Introduce (27% Probability*) 161 - 170
Geometric Measurement and Relationships	Geometric Measurement and Relationships
• Identifies and names a circle • Identifies spatial sense concepts (e.g., outside, inside, between, over, under, above, below, behind, in front, middle)	• 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 and names a triangle • Identifies and names a square • Identifies and names a rectangle • Identifies sides and vertices of polygons • Identifies and names a cone • Compares open and closed figures • Sorts solid figures and objects according to attributes • Identifies position of shapes (e.g., inside, outside, between)
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
• Identifies figures that are the same size and shape	• Identifies figures that are the same size and shape
New Vocabulary: None	*New Vocabulary:* corner, flat
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.

DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 161 - 170
Statements Last Updated: Aug 4, 2014

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 Relationships	Geometric Measurement and Relationships	Geometric Measurement and Relationships
• Identifies and names a circle • Identifies spatial sense concepts (e.g., outside, inside, between, over, under, above, below, behind, in front, middle)	• 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 and names a triangle • Identifies and names a square • Identifies and names a rectangle • Identifies sides and vertices of polygons • Identifies and names a cone • Compares open and closed figures • Sorts solid figures and objects according to attributes • Identifies position of shapes (e.g., inside, outside, between)	• 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 • Determines the area of irregular shapes by counting square units • Identifies and names a triangle • Identifies and names a square • Identifies and names a cube • Recognizes geometric shapes in real-world objects
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
• Identifies figures that are the same size and shape	• Identifies figures that are the same size and shape	• Identifies figures that are similar
New Vocabulary: None	*New Vocabulary:* corner, flat	*New Vocabulary:* geometric figure, similar
New Signs and Symbols: None	*New Signs and Symbols:* None	*New Signs and Symbols:* None

Explanatory Notes
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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 171 - 180
Statements Last Updated: Aug 4, 2014

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 Relationships	Geometric Measurement and Relationships	Geometric Measurement and Relationships
• 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 and names a triangle • Identifies and names a square • Identifies and names a rectangle • Identifies sides and vertices of polygons • Identifies and names a cone • Compares open and closed figures • Sorts solid figures and objects according to attributes • Identifies position of shapes (e.g., inside, outside, between)	• 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 • Determines the area of irregular shapes by counting square units • Identifies and names a triangle • Identifies and names a square • Identifies and names a cube • Recognizes geometric shapes in real-world objects	• Selects and uses the appropriate type and size of unit in customary system (length) • Measures length with customary measures to the half-inch mark • Uses a variety of non-standard units to measure the same length • Determines more capacity or less capacity • Determines the perimeter of a figure where all sides are labeled • Determines the area of irregular shapes by counting square units • Classifies polygons by sides and vertices • Identifies and names a cube • Identifies and names a sphere
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
• Identifies figures that are the same size and shape	• Identifies figures that are similar	• Identifies congruent figures • Identifies figures that are similar • Identifies plane figures with line symmetry • Identifies transformations of plane figures (rotations/turns)
New Vocabulary: corner, flat	*New Vocabulary:* geometric figure, similar	*New Vocabulary:* estimation, millimeter, symmetry
New Signs and Symbols: None	*New Signs and Symbols:* None	*New Signs and Symbols:* None

Explanatory Notes
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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 181 - 190
Statements Last Updated: Aug 4, 2014

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 Relationships	Geometric Measurement and Relationships	Geometric Measurement and Relationships
• 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 • Determines the area of irregular shapes by counting square units • Identifies and names a triangle • Identifies and names a square • Identifies and names a cube • Recognizes geometric shapes in real-world objects	• Selects and uses the appropriate type and size of unit in customary system (length) • Measures length with customary measures to the half-inch mark • Uses a variety of non-standard units to measure the same length • Determines more capacity or less capacity • Determines the perimeter of a figure where all sides are labeled • Determines the area of irregular shapes by counting square units • Classifies polygons by sides and vertices • Identifies and names a cube • Identifies and names a sphere	• Selects and uses the appropriate type and size of unit in customary system (length) • 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 • Identifies lines • Identifies parallel lines • Uses models to compare angles relative to right angles • Identifies right angles • Identifies corners (vertices) of cubes • Identifies the number of faces on rectangular prisms • Identifies and names a cylinder • Identifies and names a sphere • Sorts 2-D shapes and objects according to their attributes • Creates a new shape by combining different shapes, or identifies the different shapes that were used to make the original shape • Explores maps and relates them to measurements of real distances, using the scale
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
• Identifies figures that are similar	• Identifies congruent figures • Identifies figures that are similar • Identifies plane figures with line symmetry • Identifies transformations of plane figures (rotations/turns)	• Identifies congruent figures • Identifies congruent polygons and their corresponding sides and angles • Identifies plane figures with line symmetry • Identifies the number of lines of symmetry in plane figures • Identifies transformations of plane figures (reflections/flips)
New Vocabulary: geometric figure, similar	*New Vocabulary:* estimation, millimeter, symmetry	*New Vocabulary:* face, intersect, large, parallel, vertical line
New Signs and Symbols: None	*New Signs and Symbols:* None	*New Signs and Symbols:* $ dollar sign, ft feet, in. inch, m meter/metre, yd yard

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.

DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 191 - 200
Statements Last Updated: Aug 4, 2014

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 Relationships	**Geometric Measurement and Relationships**	**Geometric Measurement and Relationships**
• Selects and uses the appropriate type and size of unit in customary system (length) • Measures length with customary measures to the half-inch mark • Uses a variety of non-standard units to measure the same length • Determines more capacity or less capacity • Determines the perimeter of a figure where all sides are labeled • Determines the area of irregular shapes by counting square units • Classifies polygons by sides and vertices • Identifies and names a cube • Identifies and names a sphere	• Selects and uses the appropriate type and size of unit in customary system (length) • 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 • Identifies lines • Identifies parallel lines • Uses models to compare angles relative to right angles • Identifies right angles • Identifies corners (vertices) of cubes • Identifies the number of faces on rectangular prisms • Identifies and names a cylinder • Identifies and names a sphere • Sorts 2-D shapes and objects according to their attributes • Creates a new shape by combining different shapes, or identifies the different shapes that were used to make the original shape • Explores maps and relates them to measurements of real distances, using the scale	• Uses the appropriate unit of measure for length • Knows the approximate size of a yard • Measures length to the nearest centimeter • Knows the approximate size of a pound • Knows the approximate size of a gram • 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 • Determines the area of irregular shapes with partial square units • Identifies situations where it is appropriate to calculate area • Estimates and finds volume of a figure using cubic units • Uses basic indirect methods to estimate measurements (grids for area of irregular figures) • Identifies parallel lines • Uses models to compare angles relative to right angles • Identifies and names a parallelogram • Identifies and names a trapezoid • Identifies and names a hexagon • Classifies polygons by number of sides • Classifies polygons by sides and angles • Identifies corners (vertices) of cubes • Classifies cubes by their properties (e.g., edges with equal lengths, faces with equal areas and congruent shapes, right angle corners) • Identifies a cube from a net • Identifies and names a cylinder
Congruence, Similarity, Right Triangles, & Trig	**Congruence, Similarity, Right Triangles, & Trig**	**Congruence, Similarity, Right Triangles, & Trig**
• Identifies congruent figures • Identifies figures that are similar • Identifies plane figures with line symmetry • Identifies transformations of plane figures (rotations/turns)	• Identifies congruent figures • Identifies congruent polygons and their corresponding sides and angles • Identifies plane figures with line symmetry • Identifies the number of lines of symmetry in plane figures • Identifies transformations of plane figures (reflections/flips)	• Identifies congruent polygons and their corresponding sides and angles • Classifies plane figures by the number of lines of symmetry
New Vocabulary: estimation, millimeter, symmetry	*New Vocabulary:* face, intersect, large, parallel, vertical line	*New Vocabulary:* cubic centimeter, cubic unit, edge, larger, parallel line, regular polygon, trapezoid
New Signs and Symbols: None	*New Signs and Symbols:* $ dollar sign, ft feet, in. inch, m meter/metre, yd yard	*New Signs and Symbols:* cm centimeter/centimetre, ° degrees, g gram

Explanatory Notes
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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 201 - 210
Statements Last Updated: Aug 4, 2014

Skills and Concepts to Enhance (73% Probability*) 191 - 200	Skills and Concepts to Develop (50% Probability*) 201 - 210	Skills and Concepts to Introduce (27% Probability*) 211 - 220
Geometric Measurement and Relationships	**Geometric Measurement and Relationships**	**Geometric Measurement and Relationships**
• Selects and uses the appropriate type and size of unit in customary system (length) • 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 • Identifies lines • Identifies parallel lines • Uses models to compare angles relative to right angles • Identifies right angles • Identifies corners (vertices) of cubes • Identifies the number of faces on rectangular prisms • Identifies and names a cylinder • Identifies and names a sphere • Sorts 2-D shapes and objects according to their attributes • Creates a new shape by combining different shapes, or identifies the different shapes that were used to make the original shape • Explores maps and relates them to measurements of real distances, using the scale	• Uses the appropriate unit of measure for length • Knows the approximate size of a yard • Measures length to the nearest centimeter • Knows the approximate size of a pound • Knows the approximate size of a gram • 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 • Determines the area of irregular shapes with partial square units • Identifies situations where it is appropriate to calculate area • Estimates and finds volume of a figure using cubic units • Uses basic indirect methods to estimate measurements (grids for area of irregular figures) • Identifies parallel lines • Uses models to compare angles relative to right angles • Identifies and names a parallelogram • Identifies and names a trapezoid • Identifies and names a hexagon • Classifies polygons by number of sides • Classifies polygons by sides and angles • Identifies corners (vertices) of cubes • Classifies cubes by their properties (e.g., edges with equal lengths, faces with equal areas and congruent shapes, right angle corners) • Identifies a cube from a net • Identifies and names a cylinder	• Uses the appropriate unit of measure for length • Knows the approximate size of a millimeter • Selects and uses the appropriate type and size of unit in metric system (mass) • Solves simple problems involving capacity • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Measures angles using a protractor • Determines the perimeter of a figure using non-standard units • Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter of a polygon using a formula • Describes the change in perimeter when dimensions of an object are altered • 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) • Determines the area of irregular shapes with partial square units • Estimates and finds volume of a figure using cubic units • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units) • Identifies rays • Identifies properties of angles • Identifies acute angles • Identifies obtuse angles • Identifies and names a trapezoid • Identifies and names a rhombus • Identifies and names a quadrilateral • Classifies polygons by type of angle • Identifies corners (vertices) of cubes • Identifies the net which makes a cube-like (open box) figure • Identifies the number of edges on rectangular prisms • Predicts and verifies the effects of combining or subdividing basic shapes • Determines an appropriate scale for representing a distance on a map
Congruence, Similarity, Right Triangles, & Trig	**Congruence, Similarity, Right Triangles, & Trig**	**Congruence, Similarity, Right Triangles, & Trig**
• Identifies congruent figures • Identifies congruent polygons and their corresponding sides and angles • Identifies plane figures with line symmetry	• Identifies congruent polygons and their corresponding sides and angles • Classifies plane figures by the number of lines of symmetry	• Identifies similar and congruent triangles • Uses similar figures to construct ratios and solve for a missing side • Identifies geometric transformations (rotations)

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.

DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 201 - 210
Statements Last Updated: Aug 4, 2014

Skills and Concepts to Enhance (73% Probability*) 191 - 200	Skills and Concepts to Develop (50% Probability*) 201 - 210	Skills and Concepts to Introduce (27% Probability*) 211 - 220
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
• Identifies the number of lines of symmetry in plane figures • Identifies transformations of plane figures (reflections/flips)		• Identifies geometric transformations (translations)
New Vocabulary: face, intersect, large, parallel, vertical line	*New Vocabulary:* cubic centimeter, cubic unit, edge, larger, parallel line, regular polygon, trapezoid	*New Vocabulary:* acute angle, congruent angle, cord, dilation, obtuse angle, straight angle, transformation
New Signs and Symbols: $ dollar sign, ft feet, in. inch, m meter/metre, yd yard	*New Signs and Symbols:* cm centimeter/centimetre, ° degrees, g gram	*New Signs and Symbols:* ∠ angle, angle marker (arc), ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, mm millimeter/millimetre, • point, right angle marker, : used with time

Explanatory Notes
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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 211 - 220
Statements Last Updated: Aug 4, 2014

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 Relationships	**Geometric Measurement and Relationships**	**Geometric Measurement and Relationships**
• Uses the appropriate unit of measure for length • Knows the approximate size of a yard • Measures length to the nearest centimeter • Knows the approximate size of a pound • Knows the approximate size of a gram • 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 • Determines the area of irregular shapes with partial square units • Identifies situations where it is appropriate to calculate area • Estimates and finds volume of a figure using cubic units • Uses basic indirect methods to estimate measurements (grids for area of irregular figures) • Identifies parallel lines • Uses models to compare angles relative to right angles • Identifies and names a parallelogram • Identifies and names a trapezoid • Identifies and names a hexagon • Classifies polygons by number of sides • Classifies polygons by sides and angles • Identifies corners (vertices) of cubes • Classifies cubes by their properties (e.g., edges with equal lengths, faces with equal areas and congruent shapes, right angle corners) • Identifies a cube from a net • Identifies and names a cylinder	• Uses the appropriate unit of measure for length • Knows the approximate size of a millimeter • Selects and uses the appropriate type and size of unit in metric system (mass) • Solves simple problems involving capacity • Estimates the measure of acute, right, and obtuse angles using 45 and 90 degrees as referents • Measures angles using a protractor • Determines the perimeter of a figure using non-standard units • Solves problems involving the perimeter of squares, rectangles, or triangles • Finds the perimeter of a polygon using a formula • Describes the change in perimeter when dimensions of an object are altered • 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) • Determines the area of irregular shapes with partial square units • Estimates and finds volume of a figure using cubic units • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units) • Identifies rays • Identifies properties of angles • Identifies acute angles • Identifies obtuse angles • Identifies and names a trapezoid • Identifies and names a rhombus • Identifies and names a quadrilateral • Classifies polygons by type of angle • Identifies corners (vertices) of cubes • Identifies the net which makes a cube-like (open box) figure • Identifies the number of edges on rectangular prisms • Predicts and verifies the effects of combining or subdividing basic shapes • Determines an appropriate scale for representing a distance on a map	• Determines coordinates of geometric figures in the first quadrant • Measures length to the nearest millimeter • 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 • Describes the change in perimeter when dimensions of an object are altered • 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) • 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 irregular shapes (customary units) • Calculates area and perimeter of a rectangle (customary units) • Calculates the volume of rectangular solids • Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units) • Identifies rays • Determines which lines are perpendicular (analysis) • Identifies and determines missing angle measures for supplementary angles • Identifies acute angles • Classifies equilateral triangles • Identifies and names a rhombus • Identifies and names a quadrilateral • Compares polygons by properties • Identifies properties of quadrilaterals • Classifies polygons by type of angle • Identifies the number of edges on rectangular prisms • Uses similarity to solve problems using scale drawings • Determines an appropriate scale for representing an object in a scale drawing
Congruence, Similarity, Right Triangles, & Trig	**Congruence, Similarity, Right Triangles, & Trig**	**Congruence, Similarity, Right Triangles, & Trig**
• Identifies congruent polygons and their corresponding sides and angles • Classifies plane figures by the number of lines of symmetry	• Identifies similar and congruent triangles • Uses similar figures to construct ratios and solve for a missing side	• Identifies properties of parallel and perpendicular lines • Recognizes the interior angle relationships of triangles

Explanatory Notes
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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 211 - 220
Statements Last Updated: Aug 4, 2014

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
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
	• Identifies geometric transformations (rotations) • Identifies geometric transformations (translations)	• Uses similar figures to construct ratios and solve for a missing side • Uses similar triangles to construct ratios and solve for a missing side • Identifies geometric transformations (rotations) • Identifies geometric transformations (translations) • Identifies geometric transformations (reflections)
New Vocabulary: cubic centimeter, cubic unit, edge, larger, parallel line, regular polygon, trapezoid	*New Vocabulary:* acute angle, congruent angle, cord, dilation, obtuse angle, straight angle, transformation	*New Vocabulary:* cubic meter, interior angle, long, scale factor
New Signs and Symbols: cm centimeter/centimetre, ° degrees, g gram	*New Signs and Symbols:* ∠ angle, angle marker (arc), ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, mm millimeter/millimetre, • point, right angle marker, : used with time	*New Signs and Symbols:* ( ) ordered pair, ′ feet, h height, ″ inches, = is equal to, = is equal to, l length, × multiplication, : ratio, V volume, w width

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.

DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 221 - 230
Statements Last Updated: Aug 4, 2014

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 Relationships	Geometric Measurement and Relationships	Geometric Measurement and Relationships
• Uses the appropriate unit of measure for length	• Determines coordinates of geometric figures in the first quadrant	• Measures length to the nearest millimeter
• Knows the approximate size of a millimeter	• Measures length to the nearest millimeter	• Solves problems involving the perimeter of irregular or complex shapes
• Selects and uses the appropriate type and size of unit in metric system (mass)	• Determines the perimeter of a figure using non-standard units	• Describes the change in perimeter when dimensions of an object are altered
• Solves simple problems involving capacity	• Solves problems involving the perimeter of squares, rectangles, or triangles	• Identifies the formula for perimeter with a variable
• 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	• Determines the circumference when given the diameter or radius (or vice versa)
• Measures angles using a protractor	• Describes the change in perimeter when dimensions of an object are altered	• Determines the circumference when given the area of a circle (or vice versa)
• Determines the perimeter of a figure using non-standard units	• Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)	• Knows the relationship between radius, diameter, and circumference
• Solves problems involving the perimeter of squares, rectangles, or triangles	• Calculates the area of a rectangle, given labeled sides (customary units)	• Compares area of numerous triangles
• 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 a triangle drawn on a grid
• Describes the change in perimeter when dimensions of an object are altered	• Solves simple problems involving the area of a square or rectangle	• Determines the area of a triangle, given the formula
• Determines the diameter, given the radius, and vice versa	• Calculates the base or height of a parallelogram, given the area and formula (metric)	• Calculates the area of a rectangle, given labeled sides (customary units)
• Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)	• Determines the area of irregular shapes (customary units)	• Determines the length or width of a rectangle, given the area (metric units)
• Determines the area of irregular shapes with partial square units	• Calculates area and perimeter of a rectangle (customary units)	• Describes the change in area of a rectangle when dimensions of an object are altered
• Estimates and finds volume of a figure using cubic units	• Calculates the volume of rectangular solids	• Solves simple problems involving the area of a square or rectangle
• Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)	• Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)	• Determines the area of a parallelogram, given a labeled diagram
• Identifies rays	• Identifies rays	• Calculates the base or height of a parallelogram, given the area and formula (metric)
• Identifies properties of angles	• Determines which lines are perpendicular (analysis)	• Determines the area of a trapezoid, given the formula (metric units)
• Identifies acute angles	• Identifies and determines missing angle measures for supplementary angles	• Solves problems comparing areas of different polygons
• Identifies obtuse angles	• Identifies acute angles	• Determines the area of irregular shapes (customary units)
• Identifies and names a trapezoid	• Classifies equilateral triangles	• Understands the procedure for finding the area and surface area of figures
• Identifies and names a rhombus	• Identifies and names a rhombus	• Calculates the volume of rectangular solids
• Identifies and names a quadrilateral	• Identifies and names a quadrilateral	• Calculates the length, width, or height of a rectangular prism, given the area (customary units)
• Classifies polygons by type of angle	• Compares polygons by properties	• Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)
• Identifies corners (vertices) of cubes	• Identifies properties of quadrilaterals	• Determines which lines are perpendicular (analysis)
• Identifies the net which makes a cube-like (open box) figure	• Classifies polygons by type of angle	• Classifies isosceles triangles
• Identifies the number of edges on rectangular prisms	• Identifies the number of edges on rectangular prisms	• Classifies scalene triangles
• Predicts and verifies the effects of combining or subdividing basic shapes	• Uses similarity to solve problems using scale drawings	• Identifies properties of circles
• Determines an appropriate scale for representing a distance on a map	• Determines an appropriate scale for representing an object in a scale drawing	• Compares polygons by properties
		• Identifies properties of quadrilaterals
		• Uses similarity to solve problems using scale drawings

Explanatory Notes

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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 221 - 230
Statements Last Updated: Aug 4, 2014

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 Relationships	Geometric Measurement and Relationships	Geometric Measurement and Relationships
		• Explores maps and relates them to measurements of real distances, using proportional reasoning • Determines an appropriate scale for representing an object in a scale drawing
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
• Identifies similar and congruent triangles • Uses similar figures to construct ratios and solve for a missing side • Identifies geometric transformations (rotations) • Identifies geometric transformations (translations)	• Identifies properties of parallel and perpendicular lines • Recognizes the interior angle relationships of triangles • Uses similar figures to construct ratios and solve for a missing side • Uses similar triangles to construct ratios and solve for a missing side • Identifies geometric transformations (rotations) • Identifies geometric transformations (translations) • Identifies geometric transformations (reflections)	• Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles • Recognizes the interior angle relationships of triangles • Identifies properties of congruent triangles • Solves problems involving properties of congruent triangles • Uses similar triangles to construct ratios and solve for a missing side • Identifies geometric transformations (dilations) • Identifies geometric transformations (reflections) • Determines whether a given pair of figures on a coordinate plane represents a translation, reflection, rotation, or dilation
New Vocabulary: acute angle, congruent angle, cord, dilation, obtuse angle, straight angle, transformation	*New Vocabulary:* cubic meter, interior angle, long, scale factor	*New Vocabulary:* None
New Signs and Symbols: ∠ angle, angle marker (arc), ↓ measurement span down, ← measurement span left, → measurement span right, ↑ measurement span up, mm millimeter/millimetre, • point, right angle marker, : used with time	*New Signs and Symbols:* ( ) ordered pair, ′ feet, h height, ″ inches, = is equal to, = is equal to, l length, × multiplication, : ratio, V volume, w width	*New Signs and Symbols:* ( ) order of operations, + addition, C circumference, congruent segment symbol, d diameter, × multiplication, P perimeter, π pi, r radius

Explanatory Notes
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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 231 - 240
Statements Last Updated: Aug 4, 2014

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 Relationships	Geometric Measurement and Relationships	Geometric Measurement and Relationships
• Determines coordinates of geometric figures in the first quadrant	• Measures length to the nearest millimeter	• Determines slope from an equation (analysis)
• Measures length to the nearest millimeter	• Solves problems involving the perimeter of irregular or complex shapes	• Determines the midpoint of a line on a coordinate grid
• Determines the perimeter of a figure using non-standard units	• Describes the change in perimeter when dimensions of an object are altered	• Determines the figure when plotting ordered pairs
• Solves problems involving the perimeter of squares, rectangles, or triangles	• Identifies the formula for perimeter with a variable	• Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines)
• Solves problems involving the perimeter of irregular or complex shapes	• Determines the circumference when given the diameter or radius (or vice versa)	• Determines the circumference when given the diameter or radius (or vice versa)
• Describes the change in perimeter when dimensions of an object are altered	• Determines the circumference when given the area of a circle (or vice versa)	• Determines the circumference when given the area of a circle (or vice versa)
• Describes the change in area of a triangle when 1 dimension of an object is altered (metric units)	• Knows the relationship between radius, diameter, and circumference	• Determines the area of a triangle without the formula
• Calculates the area of a rectangle, given labeled sides (customary units)	• Compares area of numerous triangles	• Determines the area of a figure when plotting ordered pairs without a grid
• Determines the length or width of a rectangle, given the area (metric units)	• Determines the area of a triangle drawn on a grid	• Solves problems involving area of a rectangle and converts to larger or smaller units (customary)
• Solves simple problems involving the area of a square or rectangle	• Determines the area of a triangle, given the formula	• Describes the change in area of a rectangle when dimensions of an object are altered
• Calculates the base or height of a parallelogram, given the area and formula (metric)	• Calculates the area of a rectangle, given labeled sides (customary units)	• Determines the area of a parallelogram, given a labeled diagram
• Determines the area of irregular shapes (customary units)	• Determines the length or width of a rectangle, given the area (metric units)	• Solves problems involving area of a circle
• Calculates area and perimeter of a rectangle (customary units)	• Describes the change in area of a rectangle when dimensions of an object are altered	• Determines the diameter or radius when given the area of a circle (metric units)
• Calculates the volume of rectangular solids	• Solves simple problems involving the area of a square or rectangle	• Solves problems comparing areas of different polygons
• Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)	• Determines the area of a parallelogram, given a labeled diagram	• Determines the area of irregular shapes (customary units)
• Identifies rays	• Calculates the base or height of a parallelogram, given the area and formula (metric)	• Calculates the area of irregular shapes (metric units)
• Determines which lines are perpendicular (analysis)	• Determines the area of a trapezoid, given the formula (metric units)	• Solves complex problems involving inscribed figures
• Identifies and determines missing angle measures for supplementary angles	• Solves problems comparing areas of different polygons	• Determines the surface area of rectangular solids
• Identifies acute angles	• Determines the area of irregular shapes (customary units)	• Determines the effects of changing dimensions on volume (no units)
• Classifies equilateral triangles	• Understands the procedure for finding the area and surface area of figures	• Identifies and determines missing angle measures for complementary angles
• Identifies and names a rhombus	• Calculates the volume of rectangular solids	• Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side
• Identifies and names a quadrilateral	• Calculates the length, width, or height of a rectangular prism, given the area (customary units)	
• Compares polygons by properties	• Calculates the volume of a rectangular prism, and converts to a different measurement scale (customary units)	
• Identifies properties of quadrilaterals	• Determines which lines are perpendicular (analysis)	
• Classifies polygons by type of angle	• Classifies isosceles triangles	
• Identifies the number of edges on rectangular prisms	• Classifies scalene triangles	
• Uses similarity to solve problems using scale drawings	• Identifies properties of circles	
• Determines an appropriate scale for representing an object in a scale drawing	• Compares polygons by properties	
	• Identifies properties of quadrilaterals	
	• Uses similarity to solve problems using scale drawings	

Explanatory Notes
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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 231 - 240
Statements Last Updated: Aug 4, 2014

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 Relationships	Geometric Measurement and Relationships	Geometric Measurement and Relationships
	• Explores maps and relates them to measurements of real distances, using proportional reasoning • Determines an appropriate scale for representing an object in a scale drawing	
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
• Identifies properties of parallel and perpendicular lines • Recognizes the interior angle relationships of triangles • Uses similar figures to construct ratios and solve for a missing side • Uses similar triangles to construct ratios and solve for a missing side • Identifies geometric transformations (rotations) • Identifies geometric transformations (translations) • Identifies geometric transformations (reflections)	• Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles • Recognizes the interior angle relationships of triangles • Identifies properties of congruent triangles • Solves problems involving properties of congruent triangles • Uses similar triangles to construct ratios and solve for a missing side • Identifies geometric transformations (dilations) • Identifies geometric transformations (reflections) • Determines whether a given pair of figures on a coordinate plane represents a translation, reflection, rotation, or dilation	• Uses an indirect method to measure the height of an inaccessible object • Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles • Identifies corresponding and alternate exterior/interior angles • Uses properties of angles to solve mathematical problems • Recognizes the exterior angle relationships of triangles • Uses the Pythagorean theorem to solve problems • Uses Pythagorean triplets to solve problems • Determines whether a given pair of figures on a coordinate plane represents a translation, reflection, rotation, or dilation • Determines the coordinates of the dilation of a figure on a coordinate graph • Determines the new coordinates of a transformed geometric figure
New Vocabulary: cubic meter, interior angle, long, scale factor	*New Vocabulary:* None	*New Vocabulary:* y-axis
New Signs and Symbols: ( ) ordered pair, ′ feet, h height, ″ inches, = is equal to, = is equal to, l length, × multiplication, : ratio, V volume, w width	*New Signs and Symbols:* ( ) order of operations, + addition, C circumference, congruent segment symbol, d diameter, × multiplication, P perimeter, π pi, r radius	*New Signs and Symbols:* A area, b base, km kilometer/kilometre, ↔ line symbol, - negative number, parallel symbol, segment overbar, sq square, △ triangle

Explanatory Notes
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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 241 - 250
Statements Last Updated: Aug 4, 2014

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 Relationships	Geometric Measurement and Relationships	Geometric Measurement and Relationships
• Measures length to the nearest millimeter	• Determines slope from an equation (analysis)	• Determines slope from an equation (analysis)
• Solves problems involving the perimeter of irregular or complex shapes	• Determines the midpoint of a line on a coordinate grid	• Using the slope of an equation, identifies parallel and perpendicular lines
• Describes the change in perimeter when dimensions of an object are altered	• Determines the figure when plotting ordered pairs	• Determines the slope of perpendicular lines
• Identifies the formula for perimeter with a variable	• Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines)	• Determines the midpoint of a line on a coordinate grid
• Determines the circumference when given the diameter or radius (or vice versa)	• Determines the circumference when given the diameter or radius (or vice versa)	• Determines an endpoint of a line segment on a coordinate grid, given the midpoint and the other endpoint
• Determines the circumference when given the area of a circle (or vice versa)	• Determines the circumference when given the area of a circle (or vice versa)	• Determines the circumference when given the area of a circle (or vice versa)
• Knows the relationship between radius, diameter, and circumference	• Determines the area of a triangle without the formula	• Determines the area of a figure when plotting ordered pairs without a grid
• Compares area of numerous triangles	• Determines the area of a figure when plotting ordered pairs without a grid	• Determines the area of a parallelogram, given a labeled diagram
• Determines the area of a triangle drawn on a grid	• Solves problems involving area of a rectangle and converts to larger or smaller units (customary)	• Calculate the height of a trapezoid, given the area, without the formula given (metric)
• Determines the area of a triangle, given the formula	• Describes the change in area of a rectangle when dimensions of an object are altered	• Determines the diameter or radius when given the area of a circle (metric units)
• Calculates the area of a rectangle, given labeled sides (customary units)	• Determines the area of a parallelogram, given a labeled diagram	• Solves problems involving complex figures (e.g., triangle, parallelogram)
• Determines the length or width of a rectangle, given the area (metric units)	• Solves problems involving area of a circle	• Solves complex problems involving inscribed figures
• Describes the change in area of a rectangle when dimensions of an object are altered	• Determines the diameter or radius when given the area of a circle (metric units)	• Solves real-world problems involving surface area
• Solves simple problems involving the area of a square or rectangle	• Solves problems comparing areas of different polygons	• Calculates the length of one side of a cube, given the volume (customary units)
• Determines the area of a parallelogram, given a labeled diagram	• Determines the area of irregular shapes (customary units)	• Determines the volume of a cylinder
• Calculates the base or height of a parallelogram, given the area and formula (metric)	• Calculates the area of irregular shapes (metric units)	• Calculates the radius of a sphere, given the volume and formula (metric units)
• Determines the area of a trapezoid, given the formula (metric units)	• Solves complex problems involving inscribed figures	• Solves real-world problems comparing volumes of figures
• Solves problems comparing areas of different polygons	• Determines the surface area of rectangular solids	• Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side
• Determines the area of irregular shapes (customary units)	• Determines the effects of changing dimensions on volume (no units)	• Classifies polygons by properties
• Understands the procedure for finding the area and surface area of figures	• Identifies and determines missing angle measures for complementary angles	
• Calculates the volume of rectangular solids	• Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side	
• 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)		
• Determines which lines are perpendicular (analysis)		
• Classifies isosceles triangles		
• Classifies scalene triangles		
• Identifies properties of circles		
• Compares polygons by properties		
• Identifies properties of quadrilaterals		
• Uses similarity to solve problems using scale drawings		

Explanatory Notes
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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 241 - 250
Statements Last Updated: Aug 4, 2014

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 Relationships	Geometric Measurement and Relationships	Geometric Measurement and Relationships
• Explores maps and relates them to measurements of real distances, using proportional reasoning • Determines an appropriate scale for representing an object in a scale drawing		
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
• Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles • Recognizes the interior angle relationships of triangles • Identifies properties of congruent triangles • Solves problems involving properties of congruent triangles • Uses similar triangles to construct ratios and solve for a missing side • Identifies geometric transformations (dilations) • Identifies geometric transformations (reflections) • Determines whether a given pair of figures on a coordinate plane represents a translation, reflection, rotation, or dilation	• Uses an indirect method to measure the height of an inaccessible object • Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles • Identifies corresponding and alternate exterior/interior angles • Uses properties of angles to solve mathematical problems • Recognizes the exterior angle relationships of triangles • Uses the Pythagorean theorem to solve problems • Uses Pythagorean triplets to solve problems • Determines whether a given pair of figures on a coordinate plane represents a translation, reflection, rotation, or dilation • Determines the coordinates of the dilation of a figure on a coordinate graph • Determines the new coordinates of a transformed geometric figure	• Determines the distance between two points • Uses reasoning to verify properties of parallel and perpendicular lines • Identifies corresponding and alternate exterior/interior angles • Uses properties of angles to solve mathematical problems • Recognizes the exterior angle relationships of triangles • Solves problems involving properties of triangles • Uses the Pythagorean theorem to solve problems • Uses Pythagorean triplets to solve problems • Verifies congruency of triangles using ASA, SAS, SSS, or AAS • Solves problems involving similar polygons (not triangles) • Solves problems involving properties of similar triangles (e.g., using geometric mean, Triangle Proportionality Theorem) • Uses picture representations to identify symmetry of plane figures with respect to a point or line • Determines the coordinates of the dilation of a figure on a coordinate graph
New Vocabulary: None	*New Vocabulary:* y-axis	*New Vocabulary:* rotational symmetry
New Signs and Symbols: ( ) order of operations, + addition, C circumference, congruent segment symbol, d diameter, × multiplication, P perimeter, π pi, r radius	*New Signs and Symbols:* A area, b base, km kilometer/kilometre, ↔ line symbol, - negative number, parallel symbol, segment overbar, sq square, △ triangle	*New Signs and Symbols:* AAS angle angle side, ASA angle side angle, ° degrees, ≅ is congruent to, perpendicular to, SAS side angle side, square root symbol, SSA side side angle, SSS side side side, - subtraction

Explanatory Notes
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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 251 - 260
Statements Last Updated: Aug 4, 2014

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*) 261 - 270
Geometric Measurement and Relationships	**Geometric Measurement and Relationships**	**Geometric Measurement and Relationships**
• Determines slope from an equation (analysis) • Determines the midpoint of a line on a coordinate grid • Determines the figure when plotting ordered pairs • Computes and interprets the midpoint, given a set of ordered pairs (horizontal and vertical lines) • 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 • Determines the area of a figure when plotting ordered pairs without a grid • 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 • Determines the surface area of rectangular solids • Determines the effects of changing dimensions on volume (no units) • Identifies and determines missing angle measures for complementary angles • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side	• Determines slope from an equation (analysis) • Using the slope of an equation, identifies parallel and perpendicular lines • Determines the slope of perpendicular lines • Determines the midpoint of a line on a coordinate grid • Determines an endpoint of a line segment on a coordinate grid, given the midpoint and the other endpoint • Determines the circumference when given the area of a circle (or vice versa) • Determines the area of a figure when plotting ordered pairs without a grid • 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 real-world problems involving surface area • 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 • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side • Classifies polygons by properties	• Determines slope from an equation (analysis) • Using the slope of an equation, identifies parallel and perpendicular lines • Determines the slope of perpendicular lines • Defines pi and knows common estimates (3.14 and 22/7) • Solves problems involving complex figures (e.g., triangle, parallelogram) • Solves real-world problems involving surface area
Congruence, Similarity, Right Triangles, & Trig	**Congruence, Similarity, Right Triangles, & Trig**	**Congruence, Similarity, Right Triangles, & Trig**
• Uses an indirect method to measure the height of an inaccessible object • Identifies and determines a missing angle measure in corresponding, vertical, and alternate exterior/interior angles • Identifies corresponding and alternate exterior/interior angles • Uses properties of angles to solve mathematical problems • Recognizes the exterior angle relationships of triangles • Uses the Pythagorean theorem to solve problems • Uses Pythagorean triplets to solve problems	• Determines the distance between two points • Uses reasoning to verify properties of parallel and perpendicular lines • Identifies corresponding and alternate exterior/interior angles • Uses properties of angles to solve mathematical problems • Recognizes the exterior angle relationships of triangles • Solves problems involving properties of triangles • Uses the Pythagorean theorem to solve problems • Uses Pythagorean triplets to solve problems • Verifies congruency of triangles using ASA, SAS, SSS, or AAS	• Determines sine of an angle in a given right triangle • Determines cosine of an angle in a given right triangle • Determines tangent of an angle in a given triangle • Uses trigonometric methods to solve mathematical problems involving triangles • Uses properties of angles to solve mathematical problems • Uses the properties of 30-60-90 triangles to solve problems

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.

DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 251 - 260
Statements Last Updated: Aug 4, 2014

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*) 261 - 270
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
• Determines whether a given pair of figures on a coordinate plane represents a translation, reflection, rotation, or dilation • Determines the coordinates of the dilation of a figure on a coordinate graph • Determines the new coordinates of a transformed geometric figure	• Solves problems involving similar polygons (not triangles) • Solves problems involving properties of similar triangles (e.g., using geometric mean, Triangle Proportionality Theorem) • Uses picture representations to identify symmetry of plane figures with respect to a point or line • Determines the coordinates of the dilation of a figure on a coordinate graph	
New Vocabulary: y-axis	*New Vocabulary:* rotational symmetry	*New Vocabulary:* trigonometric relationship
New Signs and Symbols: A area, b base, km kilometer/kilometre, ↔ line symbol, - negative number, parallel symbol, segment overbar, sq square, △ triangle	*New Signs and Symbols:* AAS angle angle side, ASA angle side angle, ° degrees, ≅ is congruent to, perpendicular to, SAS side angle side, square root symbol, SSA side side angle, SSS side side side, - subtraction	*New Signs and Symbols:* cos cosine, sin sine, tan tangent

Explanatory Notes
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DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 261 - 270
Statements Last Updated: Aug 4, 2014

Skills and Concepts to Enhance (73% Probability*) 251 - 260	Skills and Concepts to Develop (50% Probability*) 261 - 270	Skills and Concepts to Introduce (27% Probability*) > 270
Geometric Measurement and Relationships	**Geometric Measurement and Relationships**	**Geometric Measurement and Relationships**
• Determines slope from an equation (analysis) • Using the slope of an equation, identifies parallel and perpendicular lines • Determines the slope of perpendicular lines • Determines the midpoint of a line on a coordinate grid • Determines an endpoint of a line segment on a coordinate grid, given the midpoint and the other endpoint • Determines the circumference when given the area of a circle (or vice versa) • Determines the area of a figure when plotting ordered pairs without a grid • 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 real-world problems involving surface area • 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 • Recognizes that the sum of the measures of two sides of a triangle must be greater than the measure of the third side • Classifies polygons by properties	• Determines slope from an equation (analysis) • Using the slope of an equation, identifies parallel and perpendicular lines • Determines the slope of perpendicular lines • Defines pi and knows common estimates (3.14 and 22/7) • Solves problems involving complex figures (e.g., triangle, parallelogram) • Solves real-world problems involving surface area	
Congruence, Similarity, Right Triangles, & Trig	**Congruence, Similarity, Right Triangles, & Trig**	**Congruence, Similarity, Right Triangles, & Trig**
• Determines the distance between two points • Uses reasoning to verify properties of parallel and perpendicular lines • Identifies corresponding and alternate exterior/interior angles • Uses properties of angles to solve mathematical problems • Recognizes the exterior angle relationships of triangles • Solves problems involving properties of triangles • Uses the Pythagorean theorem to solve problems • Uses Pythagorean triplets to solve problems • Verifies congruency of triangles using ASA, SAS, SSS, or AAS • Solves problems involving similar polygons (not triangles)	• Determines sine of an angle in a given right triangle • Determines cosine of an angle in a given right triangle • Determines tangent of an angle in a given triangle • Uses trigonometric methods to solve mathematical problems involving triangles • Uses properties of angles to solve mathematical problems • Uses the properties of 30-60-90 triangles to solve problems	• Uses trigonometric methods to solve mathematical problems involving triangles

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.

DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: 261 - 270
Statements Last Updated: Aug 4, 2014

Skills and Concepts to Enhance (73% Probability*) 251 - 260	Skills and Concepts to Develop (50% Probability*) 261 - 270	Skills and Concepts to Introduce (27% Probability*) > 270
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
• Solves problems involving properties of similar triangles (e.g., using geometric mean, Triangle Proportionality Theorem) • Uses picture representations to identify symmetry of plane figures with respect to a point or line • Determines the coordinates of the dilation of a figure on a coordinate graph		
New Vocabulary: rotational symmetry	*New Vocabulary:* trigonometric relationship	*New Vocabulary:* None
New Signs and Symbols: AAS angle angle side, ASA angle side angle, ° degrees, ≅ is congruent to, ⊥ perpendicular to, SAS side angle side, √ square root symbol, SSA side side angle, SSS side side side, - subtraction	*New Signs and Symbols:* cos cosine, sin sine, tan tangent	*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.

DesCartes: A Continuum of Learning®

Mathematics

Goal: Geometry

RIT Score Range: > 270
Statements Last Updated: Aug 4, 2014

Skills and Concepts to Enhance (73% Probability*) 261 - 270	Skills and Concepts to Develop (50% Probability*) > 270
Geometric Measurement and Relationships	Geometric Measurement and Relationships
• Determines slope from an equation (analysis) • Using the slope of an equation, identifies parallel and perpendicular lines • Determines the slope of perpendicular lines • Defines pi and knows common estimates (3.14 and 22/7) • Solves problems involving complex figures (e.g., triangle, parallelogram) • Solves real-world problems involving surface area	
Congruence, Similarity, Right Triangles, & Trig	Congruence, Similarity, Right Triangles, & Trig
• Determines sine of an angle in a given right triangle • Determines cosine of an angle in a given right triangle • Determines tangent of an angle in a given triangle • Uses trigonometric methods to solve mathematical problems involving triangles • Uses properties of angles to solve mathematical problems • Uses the properties of 30-60-90 triangles to solve problems	• Uses trigonometric methods to solve mathematical problems involving triangles
New Vocabulary: trigonometric relationship	*New Vocabulary:* None
New Signs and Symbols: cos cosine, sin sine, tan tangent	*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.