

## **RightStart G**

Class Description: RightStartmath.com says "Learn intermediate mathematics hands-on and visually through geometry. With a tool set consisting of a drawing board, T-square, triangles, compass, and goniometer, the child explores triangles, area, volume, ratios, Pythagorean theorem, tiling, and other geometry concepts. New concepts are taught while practicing arithmetic, fractions, and decimals."

Students have the option of starting VideoText Interactive pre-algebra halfway through RightStart G. This generally proceeds at the rate of one lesson per week, while still continuing on with the RightStart G lessons.

### **Learning Materials: Main Curriculum:**

RightStart™ Geometry Panels

RightStart™ Geometry Set

RightStart™ Mathematics A Hands-On Geometric Approach Lessons

RightStart™ Mathematics A Hands-On Geometric Approach Solutions

RightStart™ Mathematics A Hands-On Geometric Approach Worksheets

### **Learning Goals/Performance Objectives:** 5.3.A Classify quadrilaterals.

5.3.B Identify, sketch, and measure acute, right, and obtuse angles.

5.3.C Identify, describe, and classify triangles by angle measure and number of congruent sides.

5.3.D Determine the formula for the area of a parallel-ogram by relating it to the area of a rectangle.

5.3.E Determine the formula for the area of a triangle by relating it to the area of a parallelogram.

5.3.F Determine the perimeters and areas of triangles and parallelograms.

5.3.G Draw quadrilaterals and triangles from given information about sides and angles.

5.3.H Determine the number and location of lines of symmetry in triangles and quadrilaterals.

5.3.I Solve single- and multi-step word problems about the perimeters and areas of quadrilaterals and triangles and verify the solutions.

5.4.A Describe and create a rule for numerical and geometric patterns and extend the patterns.

**Learning Activities:** The student will work on approximately 16-20 lessons each month using the panels, geometry set, and so forth. Assessments are built into the curriculum.

### Level G Table of Contents

Lesson 1 Getting Started

Lesson 2 Drawing Diagonals

Lesson 3 Drawing Stars

Lesson 4 Equilateral Triangles into Halves

Lesson 5 Equilateral Triangles into Sixths & Thirds

Lesson 6 Equilateral Triangles into Fourths & Eighths

Lesson 7 Equilateral Triangles into Ninths

Lesson 8 Hexagrams and Solomon's Seal

Lesson 9 Equilateral Triangles into Twelfths  
Lesson 10 Measuring Perimeter in Centimeters  
Lesson 11 Drawing Parallelograms in Centimeters  
Lesson 12 Measuring Perimeter in Inches  
Lesson 13 Drawing Parallelograms in Inches  
Lesson 14 Drawing Rectangles  
Lesson 15 Drawing Rhombuses  
Lesson 16 Drawing Squares  
Lesson 17 Classifying Quadrilaterals  
Lesson 18 The Fraction Chart  
Lesson 19 Patterns in Fractions  
Lesson 20 Measuring With Sixteenths  
Lesson 21 A Fraction of Geometry Figures  
Lesson 22 Making the Whole  
Lesson 23 Ratios and Nested Squares  
Lesson 24 Square Centimeters  
Lesson 25 Square Inches  
Lesson 26 Area of a Rectangle  
Lesson 27 Comparing Areas of Rectangles  
Lesson 28 Product of a Number and Two More  
Lesson 29 Area of Consecutive Squares  
Lesson 30 Perimeter Formula for Rectangles  
Lesson 31 Area of a Parallelogram  
Lesson 32 Comparing Calculated Areas of Parellelograms  
Lesson 33 Area of a Triangle  
Lesson 34 Comparing Calculated Areas of Triangles  
Lesson 35 Converting Inches to Centimeters  
Lesson 36 Name that Figure  
Lesson 37 Finding the Areas of More Triangles  
Lesson 38 Area of Trapezoids  
Lesson 39 Area of Hexagons  
Lesson 40 Area of Octagons  
Lesson 41 Ratios of Areas  
Lesson 42 Measuring Angles  
Lesson 43 Supplementary and Vertical Angles  
Lesson 44 Measure of the Angles in a Polygon  
Lesson 45 Classifying Triangles by Sides and Angles  
Lesson 46 External Angles of a Triangle  
Lesson 47 Angles Formed With Parallel Lines  
Lesson 48 Triangles With Congruent Sides (SSS)

Lesson 49 Other Congruent Triangles (SAS, ASA)  
Lesson 50 Side and Angle Relationships in Triangles  
Lesson 51 Medians in Triangles  
Lesson 52 More About Medians in Triangles  
Lesson 53 Midpoints in a Triangle  
Lesson 54 Rectangles Inscribed in a Triangle  
Lesson 55 Connecting Midpoints in a Quadrilateral  
Lesson 56 Introducing the Pythagorean Theorem  
Lesson 57 Squares on Right Triangles  
Lesson 58 Proofs of the Pythagorean Theorem  
Lesson 59 Finding Square Roots  
Lesson 60 More Right Angle Problems  
Lesson 61 The Square Root Spiral  
Lesson 62 Circle Basics  
Lesson 63 Ratio of Circumference to Diameter  
Lesson 64 Inscribed Polygons  
Lesson 65 Tangents to Circles  
Lesson 66 Circumscribed Polygons  
Lesson 67 Pi, a Special Number  
Lesson 68 Circle Designs  
Lesson 69 Rounding Edges With Tangents  
Lesson 70 Tangent Circles  
Lesson 71 Bisecting Angles  
Lesson 72 Perpendicular Bisectors  
Lesson 73 The Amazing Nine-Point Circle  
Lesson 74 Drawing Arcs  
Lesson 75 Angles 'n Arcs  
Lesson 76 Arc Length  
Lesson 77 Area of a Circle  
Lesson 78 Finding the Area of a Circle  
Lesson 79 Finding More Area  
Lesson 80 Pizza Problems  
Lesson 81 Revisiting Tangrams  
Lesson 82 Aligning Objects  
Lesson 83 Reflecting  
Lesson 84 Rotating  
Lesson 85 Making Wheel Designs  
Lesson 86 Identifying Reflections & Rotations  
Lesson 87 Translations  
Lesson 88 Transformations

Lesson 89 Double Reflections  
Lesson 90 Finding the Line of Reflection  
Lesson 91 Finding the Center of Rotation  
Lesson 92 More Double Reflections  
Lesson 93 Angles of Incidence and Reflection  
Lesson 94 Lines of Symmetry  
Lesson 95 Rotation Symmetry  
Lesson 96 Symmetry Connections  
Lesson 97 Frieze Patterns  
Lesson 98 Introduction to Tessellations  
Lesson 99 Two Pentagon Tessellations  
Lesson 100 Regular Tessellations  
Lesson 101 Semiregular Tessellations  
Lesson 102 Demiregular Tessellations  
Lesson 103 Pattern Units  
Lesson 104 Dual Tessellations  
Lesson 105 Tartan Plaids  
Lesson 106 Tessellating Triangles  
Lesson 107 Tessellating Quadrilaterals  
Lesson 108 Escher Tessellations  
Lesson 109 Tessellation Summary & Mondrian Art  
Lesson 110 Box Fractal  
Lesson 111 Sierpinski Triangle  
Lesson 112 Koch Snowflake  
Lesson 113 Cotter Tens Fractal  
Lesson 114 Similar Triangles  
Lesson 115 Fractions on the Multiplication Table  
Lesson 116 Cross Multiplying on the Multiplication Table  
Lesson 117 Measuring Heights  
Lesson 118 Golden Ratio  
Lesson 120 Fibonacci Sequence  
Lesson 121 Fibonacci Numbers and Phi  
Lesson 122 Golden Ratios and Other Ratios Around Us  
Lesson 123 Napoleon's Theorem  
Lesson 124 Pick's Theorem  
Lesson 125 Pick's Theorem With the Stomachion  
Lesson 126 Pick's Theorem and Pythagorean Theorem  
Lesson 127 Estimating Area With Pick's Theorem  
Lesson 128 Distance Formula  
Lesson 129 Euler Paths

Lesson 130 Using Ratios to Find Sides of Triangles  
Lesson 131 Basic Trigonometry  
Lesson 132 Solving Trig Problems  
Lesson 133 Comparing Calculators  
Lesson 134 Solving Problems With a Scientific Calculator  
Lesson 135 Angle of Elevation  
Lesson 136 More Angle Problems  
Lesson 137 Introduction to Sine Waves  
Lesson 138 Solids and Polyhedrons  
Lesson 139 Nets of Cubes  
Lesson 140 Volume of Cubes  
Lesson 141 Volume of Boxes  
Lesson 142 Volume of Prisms  
Lesson 143 Diagonals in a Rectangular Prism  
Lesson 144 Cylinders  
Lesson 145 Cones  
Lesson 146 Pyramids  
Lesson 147 Polygons 'n Polyhedrons  
Lesson 148 Tetrahedron in a Cube  
Lesson 149 Platonic Solids  
Lesson 150 Views of the Platonic Solids  
Lesson 151 Duals of the Platonic Solids  
Lesson 152 Surface Area and Volume of Spheres  
Lesson 153 Plane Symmetry in Polyhedra  
Lesson 154 Rotating Symmetry in Polyhedra  
Lesson 155 Circumscribed Platonic Solids  
Lesson 156 Cubes in a Dodecahedron  
Lesson 157 Stella Octangula  
Lesson 158 Truncated Tetrahedra  
Lesson 159 Truncated Octahedron  
Lesson 160 Truncated Isocahedron  
Lesson 161 Cuboctahedron  
Lesson 162 Rhombicuboctahedron  
Lesson 163 Icosidodecahedron  
Lesson 164 Snub Polyhedra  
Lesson 165 Archimedean Solids

**Progress Criteria/Methods of Evaluation:** For successful completion of this course, the student will complete at least 70% of the lessons/goals, at a minimum of 70% accuracy.

September Complete lessons 1-21

October Complete lessons 22-42  
November Complete lessons 43-59  
December Complete lessons 60-71 Review  
January Complete lessons 72-92  
February Complete lessons 93-113  
March Complete lessons 114-134  
April Complete lessons 135-149  
May Complete lessons 150-165 Review  
June Review