Saxon Math 8/7

Class Description:
Saxon mathematics is based on the principle of developing math skills incrementally and reviewing past skills daily. It also incorporates regular and cumulative assessments. Saxon Math for middle grades helps the students transition from manipulatives and worksheets to a textbook approach. The emphasis in the middle grades is on developing algebraic reasoning as well as geometric concepts. Investigations give students a more in-depth treatment of math concepts. Available for middle and upper grades, a Solutions Manual gives step-by-step solutions for all problems in the book. During the Saxon middle school level, previously learned skills are reviewed, while new concepts such as pre-algebra, ratios, probability and statistics are introduced. Saxon 8/7 covers topics such as fractions, graphs, decimals, geometric shapes, ratios, graphing inequalities and much more.

Learning Materials: Main Curriculum:
Math 8/7 with Pre-Algebra - Tests & Worksheets
Saxon Math 8/7 with Pre-Algebra - Homeschool Student Edition
Saxon Math 8/7 with Pre-Algebra - Solutions Manual

Learning Goals/Performance Objectives: 7.1.A Compare and order rational numbers using the number line, lists, and the symbols <, >, or =.
7.1.B Represent addition, subtraction, multiplication, and division of positive and negative integers visually and numerically.
7.1.E Solve two-step linear equations.
7.2.B Solve single- and multi-step problems involving proportional relationships and verify the solutions.

Learning Activities: The student will complete approximately 13-14 lessons each month. Every 10th lesson is an investigation, and after every 5 lessons there is an assessment. The student will also do timed tests and any worksheets/activities that go with the lessons. The student will learn a new aspect of a skill in each lesson and then the rest of the lesson will review previous lessons so that the concepts become solid.

Table of Contents for Saxon 8/7
Lesson 1 Arithmetic with whole numbers and money/Variables and evaluation
Lesson 2 Properties of operations/Sequences
Lesson 3 Missing numbers in addition, subtraction, multiplication, and division
Lesson 4 Number line
Lesson 5 Place value through hundred trillions/Reading and writing whole numbers
Lesson 6 Factors/Divisibility
Lesson 7 Lines and Angles
Lesson 8 Fractions and percents/Inch Ruler
Lesson 9 Adding, subtracting, and multiplying fractions/Reciprocals
Lesson 10 Writing division answers as mixed numbers/Improper fractions
INVESTIGATION 1 Investigating fractions and percents with manipulatives
Lesson 11 Problems about combining/Problems about separating
Lesson 12 Problems about comparing/Elapsed-Time problems
Lesson 13 Problems about equal groups
Lesson 14 Problems about parts of a whole
Lesson 15 Equivalent fractions/Reducing fractions, part 1
Lesson 16 U.S. Customary system
Lesson 17 Measuring angles with a protractor
Lesson 18 Polygons/Similar and congruent
Lesson 19 Perimeter
Lesson 20 Exponents/Rectangular Area, part 1/Square root
INVESTIGATION 2 Using a compass and straightedge, part 1
Lesson 21 Prime and composite numbers/Prime factorization
Lesson 22 Problems about a fraction of a group
Lesson 23 Subtracting mixed numbers with regrouping
Lesson 24 Reducing fractions, part 2
Lesson 25 Dividing fractions
Lesson 26 Multiplying and dividing mixed numbers
Lesson 27 Multiples/Least common multiple/Equivalent division problems
Lesson 28 Two-step word problems/Average, part 1
Lesson 29 Rounding whole numbers/Rounding mixed numbers/Estimating answers
Lesson 30 Common denominators/Adding and subtracting fractions with different denominators
INVESTIGATION 3 Coordinate Plane
Lesson 31 Reading and writing decimal numbers
Lesson 32 Metric system
Lesson 33 Comparing decimal/Rounding decimals
Lesson 34 Decimal numbers on the number line
Lesson 35 Adding, subtracting, multiplying, and dividing decimal numbers
Lesson 36 Ratio/Simple probability
Lesson 37 Area of a triangle/Rectangular area, part 2
Lesson 38 Interpreting graphs
Lesson 39 Proportions
Lesson 40 Sum of the angle measures of a triangle/Angle pairs
INVESTIGATION 4 Stem-and-leaf plots, box-and-whisker plots
Lesson 41 Using formulas/Distributive property
Lesson 42 Repeating decimals
Lesson 43 Converting decimals to fractions, etc.
Lesson 44 Division answers
Lesson 45 Dividing by a decimal number
Lesson 46 Unit price/Rates/Sales tax
Lesson 47 Powers of 10
Lesson 48 Fraction-Decimal-Percent equivalents
Lesson 49 Adding mixed measures
Lesson 50 Unit multipliers and unit conversion
INVESTIGATION 5 Creating graphs
Lesson 51 Scientific notation for large numbers
Lesson 52 Order of operations
Lesson 53 Multiplying rates
Lesson 54 Ratio word problems
Lesson 55 Average, part 2
Lesson 56 Subtracting mixed measures
Lesson 57 Negative exponents
Lesson 58 Line symmetry/Functions, part 1
Lesson 59 Adding integers on the number line
Lesson 60 Fractional part of a number, part 1/Percent of a number, part 1
INVESTIGATION 6 Classifying quadrilaterals
Lesson 61 Area of a parallelogram/Angles of a parallelogram
Lesson 62 Classifying triangles
Lesson 63 Symbols of inclusion
Lesson 64 Adding signed numbers
Lesson 65 Ratio problems involving totals
Lesson 66 Circumference and pi
Lesson 67 Geometric solids
Lesson 68 Algebraic addition
Lesson 69 More on scientific notation
Lesson 70 Volume
INVESTIGATION 7 Balanced equations
Lesson 71 Finding the whole group when a fraction is known
Lesson 72 Implied ratios
Lesson 73 Multiplying and dividing signed numbers
Lesson 74 Fractional part of a number, part 2
Lesson 75 Area of a complex figure/Area of a trapezoid
Lesson 76 Complex fractions
Lesson 77 Percent of a number, part 2
Lesson 78 Graphing inequalities
Lesson 79 Insufficient information/Quantitative comparisons
Lesson 80 Transformations
INVESTIGATIONS 8 Using a compass and straightedge, part 2
Lesson 81 Using proportions to solve percent problems
Lesson 82 Area of a circle
Lesson 83 Multiplying powers of 10/Multiplying numbers in scientific notation
Lesson 84 Algebraic terms
Lesson 85 Order of operations with signed numbers/Functions, part 2
Lesson 86 Number families
Lesson 87 Multiplying algebraic terms
Lesson 88 Multiple unit multipliers/Converting units of area
Lesson 89 Diagonals/Interior angles/Exterior angles
Lesson 90 Mixed-number coefficients/Negative coefficients
INVESTIGATION 9 Graphing functions
Lesson 91 Evaluations with signed numbers/Signed numbers without parentheses
Lesson 92 Percent of a change
Lesson 93 Two-step equations and inequalities
Lesson 94 Compound probability
Lesson 95 Volume of a right solid
Lesson 96 Estimating angle measures/Distributive property with algebraic terms
Lesson 97 Similar triangles/Indirect measure
Lesson 98 Scale/Scale factor
Lesson 99 Pythagorean Theorem
Lesson 100 Estimating square roots/Irrational numbers
INVESTIGATION 10 Probability, chance, and odds
Lesson 101 Translating expressions into equations
Lesson 102 Transversals/Simplifying equations
Lesson 103 Powers of negative numbers/Dividing terms
Lesson 104 Semicircles, arcs, and sectors
Lesson 105 Surface area of a right solid/Surface area of a sphere/More on roots
Lesson 106 Solving literal equations/transforming formulas
Lesson 107 Slope
Lesson 108 Formulas and substitution
Lesson 109 Equations with exponents
Lesson 110 Simple interest and compound interest/Successive discounts
INVESTIGATION 11 Scale factor in surface area and volume
Lesson 111 Dividing in scientific notation
Lesson 112 Applications of the Pythagorean Theorem
Lesson 113 Volume of pyramids, cones, and spheres
Lesson 114 Graphing linear inequalities
Lesson 115 Volume, capacity, and mass in the Metric System
Lesson 116 Factoring algebraic expressions
Lesson 117 Slope-Intercept form of a linear equation
Lesson 118 Copying angles and triangles
Lesson 119 Division by zero
Lesson 120 Graphing nonlinear equations
INVESTIGATION 12 Proof of the Pythagorean Theorem
Appendix Topic A Base 2/Roman numerals

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 – 14
October Complete Lessons 15 – 28
November Complete Lessons 29 – 42
December Complete Lessons 43 – 56
January Complete Lessons 57 – 70
February Complete Lessons 71 – 84
March Complete Lessons 85 – 98
April Complete Lessons 99 – 112
May Complete Lessons 113 – 120
June Review