

## 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 Corodinate 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