

Scope & Sequence Comparison

Shormann Pre-Algebra vs Saxon 8/7

This scope and sequence lists all the topics taught in Shormann Pre-Algebra compared to Saxon 8/7 Third Edition. As you can see below, Shormann Math teaches all the concepts taught in Saxon 8/7, Third Edition as well as an additional 74 topics that provide excellent preparation for Algebra 1.

	Shormann PreAlgebra	Saxon 8/7, Third Edition
What is Mathematics?		
Comparing abstract and concrete	•	
Describing mathematics as “the language of science”	•	
Using the Bible to understand mathematics	•	
God’s attribute of unity and diversity, and connection to mathematics	•	
Discuss math history and founders of modern mathematics	•	
Numbers and Operations		
Numeration		
Digits	•	•
Reading and writing numbers	•	•
Ordinal Numbers	•	•
Place value	•	•
Number line	•	•
Expanded notation	•	•
Operations		
Addition		
Addends and sum	•	•
Adding whole numbers	•	•

Regrouping	•	•
Adding decimals	•	•
Adding fractions and mixed numbers	•	•
Adding signed numbers	•	•
Subtraction		
Difference, subtrahend, and minuend	•	•
Subtracting whole numbers	•	•
Regrouping (borrowing)	•	•
Subtracting decimals	•	•
Subtracting fractions and mixed numbers	•	•
Subtracting signed numbers	•	•
Mental subtraction strategies	•	•
Multiplication		
Multiplication as repeated addition	•	•
Factors and product	•	•
Multiplication table	•	•
Regrouping	•	•
Multiplication notations: $a \times b$, $a \cdot b$, and $a(b)$	•	•
Multiplying whole numbers	•	•
Multiplying decimals	•	•
Multiplying fractions and mixed numbers	•	•
Multiplying signed numbers	•	•
Mental multiplication strategies	•	•
Using “Invisible ones” as factors	•	
Division		
Dividend, divisor, and quotient	•	•
Dividing with whole numbers	•	•
Remainders	•	•

Dividing with decimals	•	•
Dividing with fractions and mixed numbers	•	•
Dividing with signed numbers	•	•
Mental division strategies	•	•
Division notations: division box, division sign, and division bar	•	•
Using “Invisible ones” in the denominator to create a fraction	•	
Powers		
Powers as repeated multiplication	•	•
Base and exponent	•	•
Powers of whole numbers	•	•
Powers of decimals	•	•
Powers of fractions	•	•
Negative exponents	•	•
Scientific notation	•	•
Relationship of place value to powers of 10	•	•
Using “Invisible ones” as exponents	•	
Roots		
Square roots	•	•
Cube roots	•	•
Index	•	•
Using a calculator to find roots	•	•
Mastering basic facts	•	•
Order of operations	•	•
Inverse operations	•	•
Fraction Concepts		
Fractions and Mixed Numbers		
Reading and writing fractions and mixed numbers	•	•

Numerator and denominator	•	•
Fractional part of a whole, group, set, or number	•	•
Comparing and ordering fractions	•	•
Equivalent fractions	•	•
Reducing	•	•
Improper fractions	•	•
Least common denominator	•	•
Converting fractions to decimals and percents	•	•
Reciprocals	•	•
Complex fractions	•	•
Decimals		
Reading and writing decimals	•	•
Comparing and ordering decimals	•	•
Converting decimals to fractions and percents	•	•
Percents		
Reading and writing percents	•	•
Identify/find percent of a whole, group, set, or number	•	•
Converting percents to fractions and decimals	•	•
Percents greater than 100%	•	•
Percent of change	•	•
Other Fraction Concepts		
Ratios and proportions	•	•
Rates	•	•
Estimation		
Rounding whole numbers	•	•
Rounding decimals	•	•
Rounding mixed numbers	•	•
Estimating sums	•	•

Estimating differences	•	•
Estimating products	•	•
Estimating quotients	•	•
Estimating roots	•	•
Using estimation to verify reasonableness of calculations	•	•
Number Theory		
Fact families	•	•
Even and odd	•	•
Factors, multiples, and divisibility	•	•
Prime and composite numbers	•	•
Greatest common factor (GCF)	•	•
Least common multiple (LCM)	•	•
Divisibility tests	•	•
Prime factorization	•	•
Infinity	•	
Infinitesimals	•	
Number Sets and Number Systems		
Counting numbers (natural numbers)	•	•
Whole numbers	•	•
Decimal number system	•	•
Negative numbers	•	•
Integers	•	•
Rational numbers	•	•
Irrational numbers	•	•
Real numbers	•	•
Roman numerals	•	•
Base 2	•	•
Measurement		

Units		
U.S. Customary		
Length (inch, foot, yard, mile)	•	•
Capacity (cup, pint, quart, gallon)	•	•
Weight (ounce, pound, ton)	•	•
Metric		
Prefixes (milli-, centi-, deci-, deka-, hecto-, kilo-)	•	•
Length (meter)	•	•
Capacity (liter)	•	•
Mass (kilogram)	•	•
Temperature		
Fahrenheit scale	•	•
Celsius scale	•	•
Time		
Seconds, minutes, and hours	•	•
Time Value of Money		
Interest rate, savings and debt	•	
Simple interest	•	
What the Bible says about savings and debt	•	
Other Measurement Concepts		
Square units	•	•
Cubic units	•	•
Degrees of arc	•	•
Magnetic compass heading	•	
Standard abbreviations	•	•
Nonstandard units	•	•
Unit Conversion		
Conversion in the U.S. Customary System	•	•

Conversion in the metric system	•	•
Conversion between systems	•	•
Simplifying mixed measures	•	•
Unit multipliers	•	•
Conversion between temperature scales	•	•
Using rate as a conversion factor	•	•
Currency (money) exchange rates	•	
Measuring		
Length	•	•
Angles	•	•
Benchmarks for measurements	•	•
Measurement activities	•	•
Estimating activities	•	•
Selecting appropriate units	•	•
Using metric scales to reinforce decimal concepts	•	•
Determining whether measures are reasonable	•	•
Determining the precision of a measuring tool	•	•
Indirect Measure		
Scale factor	•	•
Using similar triangles	•	•
Transversals and proportions	•	
Scale drawings (two-dimensional)	•	•
Scale models (three-dimensional)	R*	•
Tools		
Ruler (U.S. Customary and metric)	•	•
Protractor	•	•
Compass (drawing)	•	•
Compass (magnetic)	•	

Thermometer	•	•
What the Bible says about correct use of measurement tools	•	
The idea that mathematics is a God-given tool for us to use	•	
Geometry		
Basic Terms		
Points	•	•
Segments	•	•
Rays	•	•
Lines	•	•
Angles	•	•
Planes	•	•
Lines		
Parallel, perpendicular, and intersecting	•	•
Horizontal, vertical, and oblique	•	•
Slope	•	•
Angles		
Acute, obtuse, right, and straight	•	•
Complementary and supplementary	•	•
Angles formed by transversals	•	•
Calculate to find unknown angle measures	•	•
Angle bisectors	•	•
Vertical	•	•
Adjacent angles	•	•
Polygons		
Describing and classifying	•	•
Drawing	•	•
Sides and vertices	•	•

Perimeter	•	•
Area	•	•
Regular	•	•
Similarity and congruence	•	•
Complex figures	•	•
Interior and exterior angles	•	•
Sum of angle measures	•	•
Diagonals	•	•
Triangles		
Perimeter and area	•	•
Acute, obtuse, and right	•	•
Equilateral, isosceles, and scalene	•	•
Proportional triangles	•	•
Pythagorean theorem	•	•
Quadrilaterals		
Parallelograms	R*	•
Squares	•	•
Rhombuses	R*	•
Rectangles	•	•
Trapezoids	R*	•
Trapeziums	R*	•
Kites	N*	•
Circles		
Center	•	•
Radius and diameter	•	•
Circumference	•	•
Pi	•	•
Area	•	•

Arcs	•	•
Sectors	R*	•
Concentric circles	R*	•
Solids		
Describing and classifying	•	•
Faces, edges, and vertices	•	•
Drawing	•	•
Volume	•	•
Surface area	•	•
Polyhedrons	•	•
Nets (maps)	•	•
Perimeter		
Polygons	•	•
Circles	•	•
Complex figures	•	•
Area		
Triangles	•	•
Rectangles	•	•
Parallelograms	•	•
Trapezoids	•	•
Circles	•	•
Semicircles and sectors	•	•
Complex figures	•	•
Volume		
Prisms	•	•
Cylinders	•	•
Pyramids	•	•
Cones	•	•

Spheres	•	•
Estimating volume	•	•
Coordinate Geometry		
Naming and graphing ordered pairs	•	•
Origin	•	•
Intercepts of a line	•	•
Slope of a line	•	•
Creating straight-line drawings	•	•
Solving a system of linear equations	•	
Patterns		
Line symmetry (reflective symmetry)	R*	•
Point symmetry	N*	•
Defining mathematics as a God-given tool for measuring pattern and shape	•	
Constructions		
Circles	•	•
Congruent segments	•	•
Congruent angles	•	•
Angle bisectors	•	•
Perpendicular bisectors	•	•
Inscribed polygons	N*	•
Congruent triangles	N*	•
Using technology (geometry apps) to do constructions	•	
Transformational Geometry		
Rotation	•	•
Reflection	•	•
Translation	•	•
Graphing transformations on the coordinate plane	•	•
Geometry in Art		

Vanishing point	•	
One-point perspective	•	
Divine proportion	•	
Euclidean Geometry		
Euclid and foundations of modern geometry	•	
Axioms	•	
Postulates	•	
Deductive reasoning and Logic		
Aristotle and foundations of logic	•	
Comparing inductive and deductive reasoning	•	
Proof	•	
Converse/inverse/contrapositive	•	
Syllogism	•	
Comparing logic and truth	•	
Trigonometry		
Basic trigonometry ratios (sine, cosine, tangent)	•	
Connection of trigonometry to right triangles	•	
Connection of trigonometry to proportion	•	
hypotenuse	•	
Using trigonometry buttons on a calculator	•	
Trigonometry applications (measure height)	•	
Algebra		
Patterns		
Numeric patterns	•	•
Geometric patterns	•	•
Story-problem patterns	•	•
Triangular numbers	1	•
Palindromes	2	•

Sequences and Series		
Terms	•	•
Arithmetic sequences	•	•
Geometric sequences	•	•
Pictorial sequences	$\mathbb{R}^*$	•
Fibonacci sequence	$\mathbb{R}^*$	•
Relationship between sequences and series	•	
Arithmetic series	•	
Geometric series	•	
Sums		
Summation Notation	•	
Working with Sums	•	
Integers		
Adding and subtracting integers/signed numbers	•	•
Multiplying and dividing integers/signed numbers	•	•
Absolute value	•	•
Algebraic Concepts and Procedures		
Variables	•	•
Symbols of inclusion	•	•
Evaluating	•	•
Substitution	•	•
Constants	•	•
Coefficients	•	•
Polynomials	•	•
Simplifying	•	•
Factoring	•	•
Combining like terms	•	•
Equations		

Solving for an unknown	•	•
Solving multi-step equations	•	•
Writing an equation for a given word problem	•	•
Writing a word problem for a given equation	•	•
Transforming equations (using the addition rule and the multiplication rule)	•	•
Balance scale as a model for solving equations	R*	•
"= means equal," $x=a$ and $a=x$ are the same	•	
Nonlinear equations	•	•
Solving simple quadratic equations	•	•
Literal equations	•	•
Creating and solving a system of equations	•	
Inequalities		
Solving	•	•
Graphing on a number line	•	•
Graphing on a coordinate plane	•	•
Functions		
Formulas	•	•
Input-output tables	•	•
Function rules	•	•
Graphs	•	•
Linear functions	•	•
Creating a linear function to solve a problem	•	
Nonlinear functions	•	•
Connecting symbolic forms to their graphical shapes	•	
Analyzing functional relationships	•	•
Rates	•	•
Comparing functions and relations	•	
Properties		

Associative property of addition	•	•
Commutative property of addition	•	•
Associative property of multiplication	•	•
Commutative property of multiplication	•	•
Identity property of multiplication	•	•
Distributive property	•	•
Zero property of multiplication	•	•
Graphing		
Number line	•	•
Coordinate plane	•	•
Origin	•	•
Quadrants	•	•
Graphing points	•	•
Graphing lines	•	•
Graphing parabolas	•	•
Graphing hyperbolas	•	•
Graphing absolute value functions	•	
Graphing square root functions	•	
Graphing cubic functions	•	
Graphing exponential functions	•	
Graphing inequalities	•	•
Slope-intercept form	•	•
Writing linear equations from graphs	•	
Writing linear inequalities from graphs	•	
Writing and graphing vertical and horizontal lines	•	
Statistics, Data Analysis, and Probability		
Statistics and Data Analysis		
Collecting Data		

Tallies	R*	•
Organizing and Analyzing Data		
Tables	•	•
Frequency tables	•	•
Average	•	•
Mean, median, mode, and range	•	•
Selecting the best measure of central tendency for a given situation	•	•
Identifying misleading graphs	•	•
Outliers	R*	•
Quartiles	N*	•
Making predictions based on statistics	•	•
Linear regression and best fit	•	
Representing Data		
Legend (key)	•	•
Bar graph	•	•
Comparative bar graphs (double-bar graphs)	•	•
Histograms	•	•
Line graphs	•	•
Double-line graphs	•	•
Circle graphs (pie graphs)	•	•
Pictographs	•	•
Stem-and-leaf plots	R*	•
Box-and-whisker plots	N*	•
Venn diagrams	•	•
Coordinate planes	•	•
Scatterplots and estimating rate of change	•	
Probability		
Notations for expressing probability	•	•

Theoretical Probability		
Simple probability	•	•
Chance	•	•
Odds	•	•
Outcomes	•	•
Independent events	•	•
Dependent events	•	•
Sample spaces	R*	•
Tree diagrams	R*	•
Permutations	R*	•
Combinations	R*	•
Experimental Probability		
Performing probability experiments	•	•
Accuracy of predictions as affected by number of trials	•	•
Compound experiments	•	•
Experiment tables	•	•
Computer Mathematics Basics		
Connection to binary numbers (base 2)	•	
Pixels	•	
Matrices	•	
Connection of computers to idea of continuity and discreteness	•	
Computer memory calculations	•	
Sequences and Series	•	
Sums	•	
Calculus Basics (using prealgebra concepts)		
Limits		
Understanding Limits	•	

Connecting limits and infinitesimals	•	
Limits of discontinuous functions	•	
Derivatives		
Derivative means slope of a line	•	
Notation for derivatives	•	
Connecting derivatives and limits	•	
Derivatives and tangent lines	•	
Calculus and the study of speed (rate of change)	•	
Integrals		
Integrals and counting squares on a graph	•	
Connecting integrals and infinitesimals	•	
Problem-Solving Strategies		
Break a problem into simpler parts	•	•
Act out the problem	•	•
Use logical reasoning	•	•
Draw a diagram	•	•
Draw a picture	•	•
Find a pattern	•	•
Work backward	•	•
Make a chart, graph, or list	•	•
Guess and check (trial and error)	•	•
Making an educated guess (hypothesis)	•	
Distinguish between relevant and irrelevant information	•	•
Find missing information	•	•
Extend patterns	•	•
Apply solution strategies for simple problems to complex problems	•	•
Use an algorithm	•	•
Importance of using your imagination in problem solving	•	

Importance of “invisible ones” in problem solving	•	
Totals	Shormann	Saxon
Total number of concepts taught out of 417 concepts	391	338
% of total concepts taught	94%	81%

*A few of the topics taught in Saxon 8/7 are not taught in Shormann Pre-Algebra because they are either redundant review from previous textbooks or they were only included to meet a state standard that is no longer used. A reason code is listed for each concept .

R = Taught in previous levels - redundant review

N = (not in previous) not needed