



Fifth Grade Mathematics Mathematics Course Outline

<i>Unit & Content Objectives</i>	<i>Time</i>	<i>Activities & Methods</i>	<i>Books & Materials</i>	<i>Evaluation Techniques</i>
<p>Place Value, Adding, Subtracting, Multiplying, and Dividing</p> <ul style="list-style-type: none"> • Students will read and write whole numbers and decimals. • Students will add, subtract, multiply, and divide integers and decimal numbers. • Students will add, subtract, multiply, and divide decimal numbers. • Students will add, subtract, multiply, and divide fractions and mixed numbers. • Students will write the standard, word, and expanded forms of whole numbers to billions. • Students will identify the values of digits in whole numbers. • Students will compare and order numbers through trillions. • Students will write decimals in standard, word, and expanded form through the thousandths. • Students will identify the values of digits in decimal numbers. • Students will name equivalent decimals. • Students will compare and order decimals through thousandths. • Students will compute sums and differences mentally using the Commutative, Associative, and Identify Properties of Addition. • Students will compute sums and differences mentally using compensation and compatible numbers. • Students will round whole numbers through millions and decimals through thousandths. • Students will use rounding, front-end estimation, and front-end estimation with adjusting to estimate sums and differences of whole numbers and decimals. • Students will compute sums and differences of whole numbers greater than 10,000. • Students will compute sums and differences of decimals involving tenths, hundredths, and thousandths. • Students will compare and order rational numbers using comparison symbols. • Students will use a number line to locate integers and fractions. 	<p>5 days/wk 45 min/day 2 semesters</p>	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Power Up Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes/Tests

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<p>Properties of Numbers and Operations</p> <ul style="list-style-type: none"> • Students will identify even and odd numbers. • Students will apply finding factors, multiples, and rules of divisibility to solve problems. • Students will identify prime and composite numbers. • Students will find the greatest common factor and the least common multiple for pairs of numbers. • Students will identify estimates as overestimates or underestimates. • Students will use the distributive property. • Students will use the standard algorithm to multiply numbers by one- and two- digit numbers. • Students will for a variety of problems, state the computation method to be used and multiply using that method. • Students will use organized list to solve word problems. • Students will mentally multiply any decimal by a power of ten. • Students will use partial products and the standard algorithm to multiply whole numbers by decimals. • Students will use division notations: division box, division sign, and division bar. • Students will use division with remainders. • Students will find the prime factorization of whole numbers. • Students will apply positive exponents of whole numbers, decimals, and fractions. • Students will find the squares and squares roots of numbers. • Students will apply inverse operations to solve problems. • Students will round whole numbers, decimals, and mixed numbers. 	<p>5 days/wk 45 min/day 2 semesters</p>	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Power Up Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes/Tests

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<p>Introduction to Algebra</p> <ul style="list-style-type: none"> • Students will identify patterns and find a rule for the pattern. • Students will solve equations using mental mathematics and by guessing and testing values for the variable. • Students will evaluate expressions with three or more numbers and two or more operations. • Students will identify fractional parts of a whole, group, set, or number. • Students will identify equivalent fractions. • Students will convert between fractions, terminating decimals, and percents. • Students will find reciprocals of numbers. • Students will find percents greater than 100%. • Students will solve proportions with an unknown in one term. • Students will find unit rates and ratios in proportional relationships. • Students will apply proportional relationships such as similarity, scaling, and rates. • Students will estimate and solve applications problems involving percent. • Students will use, describe, and extend arithmetic sequences with a constant rate of change. • Students will on a coordinate grid, plot points for ordered pairs. • Students will identify the ordered pairs for plotted points. • Students will create a table of values for a rule and a graph based on the table, and use the table or graph to give the output for the input. • Students will solve equations using concrete and pictorial models • Students will formulate an equation with one unknown variable given a problem situation. • Students will solve one-and two-step equations with whole numbers. 	<p>5 days/wk 45 min/day 2 semesters</p>	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Power Up Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes/Tests

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Dividing with One-Digit Divisors <ul style="list-style-type: none"> • Students will find the quotient of a division problem whose dividend is a multiple of 10. • Students will use rounding, compatible numbers, and multiplication to estimate quotients of whole numbers and decimals. • Students will give missing numbers or figures in a pattern. • Students will find quotients using the model of sharing money. • Students will divide four-digit whole numbers by one-digit divisors. • Students will divide with zeros in the quotient. • Students will find quotients of money amounts divided by one-digit divisors. • Students will determine if numbers are divisible by 2, 3, 4, 5, 6, 9, and 10. • Students will identify numbers as prime or composite. • Students will interpret remainders by giving total amounts needed to include remainders and amounts left over. 	45 min/day 5 days/wk 2 semesters	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes

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<p>Dividing with Two-Digit Divisors</p> <ul style="list-style-type: none"> • Students will find the quotients of division problems whose dividends and divisors are multiples of 10. • Students will estimate quotients with whole numbers, decimals, and money divided by 2-digit whole numbers. • Students will use the standard algorithm to divide three-digit and four-digit whole numbers by two-digit divisors. • Students will for a variety of problems, state the computation method to be used and divide using that method. • Students will divide numbers whose quotients include zeros. • Students will solve multiple-step word problems. • Students will divide decimal numbers by 10, 100, and 1,000. • Students will use the standard algorithm to find quotients of money amounts divided by two-digit divisors. • Students will use the standard algorithm to find the quotient of two- and three-digit decimal numbers divided by two-digit divisors. 	<p>45 min/day 5 days/wk 2 semesters</p>	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Power Up Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes/Tests

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Data, Graphs, and Probability <ul style="list-style-type: none"> • Students will write and conduct a survey. • Students will interpret and create a line plot and frequency table. • Students will make double bar graphs to represent data. • Students will make line graphs to represent data, and read and interpret line graphs. • Students will complete, make, and interpret stem-and-leaf plots. • Students will make a line plot and a double bar graph to solve problems. • Students will find the mean, median, mode and range of a set of data, and choose the measure that best represents a given set of data. • Students will complete circle graphs based on data given, and interpret given circle graphs. • Students will choose the most appropriate type of graph to represent a given set of data. • Students will identify events and favorable outcomes, and determine if an outcome is equally likely, impossible, less likely, more likely, or certain. • Students will find all possible outcomes of an event by making a tree diagram or by multiplying. 	45 min/day 5 days/wk 2 semesters	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Power Up Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes/Tests

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Fraction Concepts <ul style="list-style-type: none"> • Students will identify and show fractional parts of regions and sets and locations on a numbers line. • Students will understand that fractions are also division problems. • Students will express fractions greater than 1 as mixed numbers or improper fractions. • Students will estimate fractions parts of regions. Identify and locate fractions and mixed numbers on a number line. • Students will solve problems involving too much information by using only the information needed, and decide when there is not enough information to solve a problem. • Students will identify and write equivalent fractions. Identify fractions that are equivalent and find fractions equivalent to a given fractions using models and a computational procedure. • Students will determine common factors and the greatest common factor of numbers. • Students will identify fractions that are in simplest form and find the simplest form of a fraction. • Students will compare and order fractions and mixed numbers. • Students will represent decimals as fractions and simple fractions as decimals. • Students will label a point on a number line using a fraction and a decimal, write a fraction and decimal for a point on a number line. 	45 min/day 5 days/wk 2 semesters	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Power Up Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes/Tests

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Fraction Operations <ul style="list-style-type: none"> • Students will add and subtract fractions with like denominators. • Students will find common denominators for two fractions with fraction strips. • Students will find a common denominator for two fractions. • Students will add and subtract fractions with unlike denominators. • Students will add and subtract mixed numbers. • Students will estimate sums and differences of mixed numbers. • Students will solve problems that require finding the original times, measurements, or quantities that led to a result that is given. • Students will use models or mental math to find fractions of whole numbers. • Students will use compatible numbers and mental math to estimate the product of a whole number and a fraction. • Students will multiply and divide fractions • Students will multiply and divide mixed numbers • Students will apply mental math strategies to solve problems. • Students will use models or mental math to divide fractions. 	45 min/day 5 days/wk 2 semesters	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Power Up Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes/Tests

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Geometry <ul style="list-style-type: none"> • Students will identify important geometric terms relating to line, parts of a line, angles, and planes. • Students will measure and draw angles. • Students will classify angles according to their measurement. • Students will identify relationships between parts of a circle such as center, radius, diameter, chord, and central angle. • Students will use a compass to draw angles of a given measure. • Students will identify complementary and supplementary angles. • Students will identify angles formed by transversals. • Students will bisect angles. • Students will identify and classify polygons. • Students will identify and classify triangles. • Students will identify and classify quadrilaterals. • Students will construct different kinds of triangles. • Students will identify congruent and similar figures. • Students will identify and make symmetrical figures and draw a line or lines of symmetry. • Students will graph reflections across the horizontal or vertical axes. 	45 min/day 5 days/wk 2 semesters	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Power Up Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes/Tests

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<p>Measurement</p> <ul style="list-style-type: none"> • Students will change between one customary unit of length and another. • Students will use customary units of length, area, volume, weight, and capacity. • Students will add and subtract customary units of length. • Students will measure and draw lengths to the nearest inch, quarter inch, and eight inch. • Students will choose the most appropriate metric unit of length. • Students will measure lengths to the nearest centimeter and millimeter. • Students will change among measurement in metric units of length. • Students will find the perimeter of polygons, circles, and complex figures. • Students will find the circumference of a circle by using a model and the formula. • Students will find the areas of irregular shapes by counting square units. • Students will find the areas of a rectangle and a square by using a formula. • Students will find the areas of a triangle by using a formula. • Students will find the area of circles and complex figures. • Students will draw pictures that represent the information given in problems. • Students will change from one unit of time to another. • Students will be given any two of these times, elapsed time, starting time, or ending time find the third. • Students will read temperatures in degrees Fahrenheit and in Celsius on a thermometer with both scales. • Students will give changes in temperature indicating the amount of increase or decrease. • Students will use appropriate measurement instruments such as rulers, compasses, protractors, and thermometers. 	<p>45 min/day 5 days/wk 2 semesters</p>	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Power Up Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes/Tests

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Measuring Solids <ul style="list-style-type: none"> • Students will describe the number of faces, edges, and vertices for a polyhedron. • Students will use features to identify polyhedras and other solids. • Students will identify solids from their nets. • Students will draw front, top, and side views of solids. • Students will use a formula to find the surface area of rectangular prisms. • Students will use cubes and a formula to find the volume of rectangular prism. • Students will change among the customary units of capacity. • Students will add and subtract customary units of capacity. • Students will estimate and measure capacity using metric measures. • Students will change millimeters to liters and vice versa. • Students will change between customary units of weight. • Students will add and subtract customary units of weight. • Students will estimate and measure mass using metric measures. • Students will give an exact answer or an estimate depending on what the problem asks. 	45 min/day 5 days/wk 2 semesters	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Power Up Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes/Tests

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<p>Ratio, Proportion, and Percent</p> <ul style="list-style-type: none"> • Students will read and write ratios for various kinds of comparisons, and tell which situation represents a ratio that is a fraction and which represents a ratio that is not a fraction. • Students will find unit rates and ratios in proportional relationships. • Students will use a table to generate equal ratios. • Students will write equal ratios. • Students will tell if two ratios form a proportion. • Students will generate a table of equal ratios and graph the ordered pair. • Students will read and write rates. • Students will change a rate to a unit rate. • Students will make tables and use them to solve word problems. • Students will create a scale drawing. • Students will write a percent for a given situation on a 100-grid. • Students will create a 100-grid that shows various percents. • Students will estimate a percent of a whole number using benchmark percents. 	<p>45 min/day 5 days/wk 2 semesters</p>	<ul style="list-style-type: none"> • Student discussions • Hands-on learning activities • Games • Cooperative learning groups 	<ul style="list-style-type: none"> • Textbook: Saxon Math Course 1 • A Variety of Teacher Workbooks • Student Power Up Workbooks 	<ul style="list-style-type: none"> • Daily Homework • Weekly Quizzes/Tests