

# ARITHMETIC

**COURSE DESCRIPTION:** Math 3 is a success-oriented program that enables all children to develop a solid foundation in the language and basic concepts of all areas of mathematics. It utilizes a multisensory approach to teaching and is designed for heterogeneously grouped children.

**TEXTBOOK:** *SAXON Math*

**Goal 1:** To develop number sense and numeration skills.

- 1.1 The student will count by 2's.
- 1.2 The student will count by 3's.
- 1.3 The student will count by 4's.
- 1.4 The student will count by 5's.
- 1.5 The student will count by 6's.
- 1.6 The student will count by 7's.
- 1.7 The student will count by 8's.
- 1.8 The student will count by 9's.
- 1.9 The student will count by 10's.
- 1.10 The student will count by 12's.
- 1.11 The student will count by 25's.
- 1.12 The student will count by 100's.
- 1.13 The student will count by  $\frac{1}{2}$ 's.
- 1.14 The student will count by  $\frac{1}{4}$ 's.
- 1.15 The student will read and write numbers to 100,000.
- 1.16 The student will read and write money amounts to \$99,999.99.
- 1.17 The student will compare numbers to 10,000.
- 1.18 The student will order two, three, and four digit numbers.
- 1.19 The student will round numbers to the nearest ten, hundred, and thousand.
- 1.20 The student will identify place value and numbers to 100,000,000.
- 1.21 The student will represent three and four digit numbers using concrete materials and pictures.
- 1.22 The student will estimate and count large collections.
- 1.23 The student will write numbers in expanded form.
- 1.24 The student will rename numbers using regrouping.
- 1.25 The student will identify ordinal position.
- 1.26 The student will identify even and odd numbers.
- 1.27 The student will identify dozen and half dozen.
- 1.28 The student will write numbers using words.
- 1.29 The student will identify factors of a number.
- 1.30 The student will identify multiples of a number.
- 1.31 The student will prime numbers.
- 1.32 The student will square numbers.
- 1.33 The student will find square roots of perfect squares.
- 1.34 The student will read and write Roman numerals.

**Goal 2: To understand concepts of whole number operations**

- 2.1 The student will act out, draw pictures of, and write number sentences to show addition and subtraction.
- 2.2 The student will identify addends and sums.
- 2.3 The student will write addition and subtraction fact families.
- 2.4 The student will act out, draw pictures of, and write number sentences to show multiplication.
- 2.5 The student will make, label, and write number sentences for an array.
- 2.6 The student will identify factors and products.
- 2.7 The student will identify and use the commutative and associative properties.
- 2.8 The student will identify the properties of zero and one in multiplication and division.
- 2.9 The student will write multiplication and division fact families.
- 2.10 The student will act out, draw pictures of, and write number sentences to show division.
- 2.11 The student will identify quotients.
- 2.12 The student will write division problems in three ways.

**Goal 3: To master whole number addition and subtraction computation**

- 3.1 The student will identify ten more than a number.
- 3.2 The student will master addition facts to 18.
- 3.3 The student will identify missing addends.
- 3.4 The student will identify a missing digit in an addition problem.
- 3.5 The student will estimate a sum.
- 3.6 The student will add using mental computation.
- 3.7 The student will add three or more single-digit numbers.
- 3.8 The student will add two and three digit numbers.
- 3.9 The student will use estimation to check the reasonableness of calculated results.
- 3.10 The student will add whole numbers and money amounts (decimals) to \$99,999.99.
- 3.11 The student will solve problems involving addition.
- 3.12 The student will write story problems for addition number sentences.
- 3.13 The student will master subtraction facts to 18.
- 3.14 The student will identify ten less than a number.
- 3.15 The student will estimate a difference.
- 3.16 The student will subtract using mental computation.
- 3.17 The student will subtract two and three digit numbers.
- 3.18 The student will subtract money amounts (decimals).
- 3.19 The student will check subtraction answers using addition.
- 3.20 The student will solve problems involving subtraction.
- 3.21 The student will write story problems for subtraction number sentences.

**Goal 4: To master whole number multiplication and division computation**

- 4.1 The student will master multiplication facts.
- 4.2 The student will multiply by 10, 100, and 1,000.
- 4.3 The student will multiply using mental computation.
- 4.4 The student will multiply using the multiplication algorithm.
- 4.5 The student will solve problems involving multiplication.
- 4.6 The student will master division facts.
- 4.7 The student will divide by ten.
- 4.8 The student will divide using mental computation.
- 4.9 The student will divide two and three digit multiples of ten by a one digit number.
- 4.10 The student will check division answers using multiplication.
- 4.11 The student will solve problems involving division.

**Goal 5: To comprehend the principles of fractions and decimals**

- 5.1 The student will identify fractional parts of a whole.
- 5.2 The student will write a fraction to show a part of a whole.
- 5.3 The student will identify fractional parts of a set.
- 5.4 The student will write a fraction to show a part of a set.
- 5.5 The student will compare fractions.
- 5.6 The student will order fractions.
- 5.7 The student will identify fractions equivalent to  $\frac{1}{2}$ .
- 5.8 The student will find half of a set of objects.
- 5.9 The student will represent and write mixed numbers.
- 5.10 The student will write tenths using common and decimal fractions.
- 5.11 The student will write hundredths using common and decimal fractions.
- 5.12 The student will write fraction number sentences that equal one.
- 5.13 The student will add and subtract fractions.
- 5.14 The student will add whole numbers and money amounts (decimals).
- 5.15 The student will subtract money amounts (decimals).

**Goal 6: To demonstrate ability in working with money**

- 6.1 The student will count money.
- 6.2 The student will compare the values of sets of coins.
- 6.3 The student will write money amounts using cents and dollars.
- 6.4 The student will select coins for a given amount.
- 6.5 The student will make change from one dollar, five dollars, and ten dollars.
- 6.6 The student will write checks.

**Goal 7: To conceptualize geometry and spatial relationships**

- 7.1 The student will identify, describe, and classify polygons.
- 7.2 The student will identify and draw congruent line segments and shapes.
- 7.3 The student will solve spatial problems.
- 7.4 The student will identify and sort common geometric shapes by attribute.
- 7.5 The student will name line segments.
- 7.6 The student will identify horizontal, vertical, and oblique line segments.
- 7.7 The student will identify and draw a line of symmetry.
- 7.8 The student will identify parallel lines and line segments.
- 7.9 The student will identify intersecting lines.
- 7.10 The student will identify perpendicular lines and line segments.
- 7.11 The student will identify right, acute, and obtuse angles.
- 7.12 The student will name triangles by angle size.
- 7.13 The student will identify and show transformations: translations, rotations, and reflections.
- 7.14 The student will identify, describe, and classify three-dimensional geometric objects.
- 7.15 The student will identify faces, vertices, and edges of a geometric solid.
- 7.16 The student will construct a geometric solid.

**Goal 8: To develop good measurement skills**

- 8.1 The student will tell and show time to the hour, half hour, quarter hour, five minutes, and minute.
- 8.2 The student will find elapsed time.
- 8.3 The student will identify a.m. and p.m.; noon and midnight.
- 8.4 The student will write the date using digits.
- 8.5 The student will identify equivalent units of time.
- 8.6 The student will solve problems using a calendar.
- 8.7 The student will estimate temperature.
- 8.8 The student will read a Fahrenheit or Celsius thermometer.
- 8.9 The student will identify common temperatures.
- 8.10 The student will estimate length and distance.
- 8.11 The student will measure length using nonstandard units.
- 8.12 The student will measure length using customary units (nearest inch, half inch, quarter inch, foot, and yard).
- 8.13 The student will draw line segments using customary units (nearest inch, half inch, and quarter inch).
- 8.14 The student will measure length using metric units (nearest centimeter, millimeter, and meter).
- 8.15 The student will draw line segments using metric units (nearest centimeter and millimeter),
- 8.16 The student will identify equivalent units of linear measure.
- 8.17 The student will use a scale to find distance on a map.
- 8.18 The student will identify units of mass: customary or metric.
- 8.19 The student will estimate mass.
- 8.20 The student will weigh objects using customary or metric units.

- 8.21 The student will estimate capacity.
- 8.22 The student will order containers by capacity.
- 8.23 The student will measure capacity using standard units.
- 8.24 The student will identify equivalent units of capacity.
- 8.25 The student will follow a recipe and measure.
- 8.26 The student will compare and order objects by size (area).
- 8.27 The student will find area using nonstandard units.
- 8.28 The student will estimate area.
- 8.29 The student will find the area of a rectangle.
- 8.30 The student will find the perimeter of a polygon.
- 8.31 The student will find the volume of a rectangular prism.

**Goal 9: To understand data analysis, statistics, and probability**

- 9.1 The student will graph data on a bar graph.
- 9.2 The student will draw and read a bar graph.
- 9.3 The student will draw and read a bar graph with a scale of ten.
- 9.4 The student will draw and read a line graph.
- 9.5 The student will draw and read a pictograph.
- 9.6 The student will record using tally marks.
- 9.7 The student will write observations about a graph.
- 9.8 The student will conduct a survey.
- 9.9 The student will describe the likelihood of an event.
- 9.10 The student will predict the outcome of a probability experiment.
- 9.11 The student will determine the fairness of a game.
- 9.12 The student will conduct a probability experiment.

**Goal 10: To develop skills in working with patterns, algebra, and functions**

- 10.1 The student will use comparison symbols ( $>$ ,  $<$ , and  $=$ ).
- 10.2 The student will construct a number line and locate points on a number line.
- 10.3 The student will show addition, subtraction, and multiplication on a number line.
- 10.4 The student will add positive and negative numbers.
- 10.5 The student will identify the missing number in a sequence.
- 10.6 The student will identify the missing shape or design in a repeating pattern.
- 10.7 The student will identify the missing shape or number in a matrix.
- 10.8 The student will identify a function rule.
- 10.9 The student will make an organized list to solve a problem.
- 10.10 The student will simplify expressions containing parentheses.
- 10.11 The student will simplify expressions containing addition, subtraction, multiplication, and division.
- 10.12 The student will locate and graph points on a coordinate graph.

**TEACHING METHOD:** Discovery, cooperative learning, direct instruction, prediction, drill, discussion