

ARITHMETIC

COURSE DESCRIPTION: Main emphasis on the facts of addition, subtraction, multiplication, and division along with practical application of each one. Also included is working with fractions, simple geometry, time periods, scales, graphs, standard and metric measurements, place value, sequence, as well as reading and writing numbers to a hundred million.

TEXTBOOKS:

Math 54 - Saxon

GOALS AND OBJECTIVES:

Goal 1: To expand the student's knowledge of addition

- 1.1 The student will recite addition facts to eighteen.
- 1.2 The student will complete one hundred addition facts accurately in five minutes.
- 1.3 The student will find a missing number in an addition problem.
- 1.4 The student will add money without regrouping.
- 1.5 The student will add money with regrouping.
- 1.6 The student will solve word problems using the some and some more pattern.
- 1.7 The student will add several numbers in a column.
- 1.8 The student will add three digit numbers using regrouping.

Goal 2: To expand the student's knowledge of subtraction

- 2.1 The student will continue recite the subtraction facts to eighteen.
- 2.2 The student will complete one hundred subtraction facts in five minutes.
- 2.3 The student will find a missing number in a subtraction problem.
- 2.4 The student will calculate subtraction problems without regrouping.
- 2.5 The student will use subtraction in word problems using the some, some went away pattern.
- 2.6 The student will use subtraction to do word problems using comparison.
- 2.7 The student will do three digit subtraction problems going across zero.

Goal 3: To expand the student's knowledge of multiplication

- 3.1 The student will review repeated addition problems.
- 3.2 The student will continue to memorize the multiplication facts.
- 3.3 The student will accurately complete one hundred multiplication facts in five minutes.
- 3.4 The student will use patterns to review multiplication facts.
- 3.5 The student will use squares to review facts.

- 3.6 The student will multiply by multiples of ten and one hundred.
- 3.7 The student will multiply two-digit numbers.
- 3.8 The student will do equal group word problems using multiplication.
- 3.9 The student will do rate problems using multiplication.
- 3.9 The student will multiply using three digit numbers.
- 3.10 The student will multiply using three factors.
- 3.11 The student will multiply by tens, hundreds and thousands.
- 3.12 The student will multiply rounded numbers mentally.
- 3.13 The student will multiply two-digit numbers.
- 3.14 The student will multiply a two-digit number by a three-digit number.

Goal 4: To develop the student's knowledge of division

- 4.1 The student will recognize the signs that indicate division.
- 4.2 The student will memorize the division facts.
- 4.3 The student will successfully complete one hundred division facts in five minutes.
- 4.4 The student will work one-digit division with a remainder.
- 4.5 The student will work division with two-digit answers.
- 4.6 The student will work division with a two-digit answer and a remainder.
- 4.7 The student will work division problems with answers ending in zero.
- 4.8 The student will work division problems with three digit answers.
- 4.9 The student will work division problems with zeros in three digit answers.
- 4.10 The student will work division word problems with remainders.
- 4.11 The student will work division problems dividing by ten.
- 4.12 The student will work division problems dividing by a two-digit number.

Goal 5: To develop the student's knowledge of the use of fractions

- 5.1 The student will name fractions by looking at pictures.
- 5.2 The student will read fractions and mixed numbers from a number line.
- 5.3 The student will use pictures to compare fractions.
- 5.4 The student will work with a fraction of a number.
- 5.5 The student will do fractions of group word problems.
- 5.6 The student will find a fraction of a set.
- 5.7 The student will identify fractions equal to one.
- 5.8 The student will add fractions with like denominators.
- 5.9 The student will subtract fractions with like denominators.
- 5.10 The student will identify equivalent fractions.
- 5.11 The student will reduce fractions.
- 5.12 The student will add and subtract mixed numbers.
- 5.13 The student will simplify fractions.
- 5.14 The student will rename fractions.

Goal 6: To understand the use of the decimal system

- 6.1 The student will identify tenths of a number by looking at a picture.
- 6.2 The student will identify and write mixed numbers as a decimal.
- 6.3 The student will name the place value of each number and name decimal numbers.
- 6.4 The student will write amounts of money using the decimal.
- 6.5 The student will use a number line to identify tenths.
- 6.6 The student will add decimal numbers.
- 6.7 The student will subtract decimal numbers.
- 6.8 The student will identify and write hundredths of a number by looking at a picture.
- 6.9 The student will write decimal numbers in word form.

Goal 7: To understand the units of measurement in the standard and metric system

- 7.1 The student measure using the centimeter scale.
- 7.2 The student will recite that one hundred centimeters equal one meter.
- 7.3 The student will explain that one thousand meters equal one kilometer.
- 7.4 The student will identify objects in the classroom that are one meter long.
- 7.5 The student will measure to the nearest fourth of an inch.
- 7.6 The student will explain that twelve inches equal one foot.
- 7.7 The student will explain that one yard equals thirty-six inches.
- 7.8 The student will explain that one mile is five thousand, two hundred eighty feet.
- 7.9 The student will memorize the standard units of length.
- 7.10 The student will memorize the metric units of length.
- 7.11 The student will recognize that there are one thousand millimeters in one meter.
- 7.12 The student will know that there are ten millimeters in one centimeter.
- 7.13 The student will memorize the standard units of liquid measurements.
- 7.14 The student will memorize the metric liquid units of measurement.
- 7.15 The student will know that sixteen ounces equal one pound.
- 7.16 The student will know that two thousand pounds equal one ton.
- 7.17 The student will know that one thousand grams equal one kilogram.

Goal 8: To introduce simple geometry

- 8.1 The student will recognize and be able draw triangles, rectangles, squares and triangles.
- 8.2 The student will identify a right angle.
- 8.3 The student will identify parallel and perpendicular lines.
- 8.4 The student will find the perimeter of a given shape.
- 8.5 The student will identify and draw polygons.
- 8.6 The student will find the area of a given shape using squares.
- 8.7 The student will find the radius and the diameter of a circle.
- 8.8 The student will recognize geometric solids.

- 8.9 The student will find the area of a shape using multiplication.
- 8.10 The student will estimate the area of a shape other than a rectangle.

Goal 9: To know how to use scales of various types

- 9.1 The student will count by twos when reading a thermometer.
- 9.2 The student will read a speedometer counting by fives.

Goal 10: To understand periods of time

- 10.1 The student will memorize the months of the year.
- 10.2 The student will memorize the number of days in each month.
- 10.3 The student will give the ordinal number for each month.
- 10.4. The student will tell time by the half hour and quarter hour.
- 10.5 The student will tell if the time is a.m. or p.m.
- 10.6 The student will give the elapsed time going ahead or back.
- 10.7 The student will tell how many days in a common and leap year.
- 10.8 The student will know there are ten years in a decade.
- 10.9 The student will know there are a hundred years in a century.
- 10.10 The student will read a calendar by the day, date and year.

Goal 11: To recognize and write numbers to one million

- 11.1 The student will recognize and write numbers from one to one hundred.
- 11.2 The student will read and write numbers to the hundred thousands.
- 11.3 The student will name and write numbers to the hundred millions.

Goal 12: To understand various types of graphs

- 12.1 The student will recognize and read a line graph.
- 12.2 The student will recognize and read a pictograph.
- 12.3. The student will recognize and read a bar graph.
- 12.4 The student will recognize and read a circle or pie graph.
- 12.5 The student will gather information from a pie chart to answer questions.

Goal 13: To know how to recognize Roman Numerals

- 13.1 The student will recognize the Roman Numerals to one thousand.
- 13.2 The student will write the Roman Numerals to one thousand.

Goal 14: To understand how to average a group of numbers

- 14.1 The student will add a group of numbers and divide to get the average.

Goal 15: To understand the difference between odd and even numbers

- 15.1 The student will know that an even number ends with an even number.
- 15.2 The student will identify an even number as one that can be divided by two.

Goal 16: To understand how to compare two numbers

- 16.1 The student will solve comparison problems by using the greater, less than or equal symbols.

Goal 17: To introduce the writing of numbers in the expanded form

- 17.1 The student will write numbers in expanded form to the hundreds.
- 17.2 The student will write numbers in expanded form to the hundred thousands.

Goal 18: To know how to write numbers in sequence

- 18.1 The student will recognize the counting pattern of a sequence of numbers.
- 18.2 The student will identify numbers in a sequence on a number line.

Goal 19: To introduce rounding numbers to the nearest ten, hundred and thousand

- 19.1 The student will identify the rounded number by using a number line.

TEACHING METHODS: Drills (addition, subtraction, multiplication, division), Flashcards, Games, Demonstrations, Direct Instruction, Discussion, modeling, cooperative learning groups, discovery