

ARITHMETIC

COURSE DESCRIPTION: This course is designed for students to learn and remember the foundational skills of mathematics, in the form of the four processes of mathematics, fractions, decimals, introduction to geometry, graphs, U.S. Customary and metric measures, percents, ratios, probability and chance, and averages.

TEXTBOOK:

Saxon Math 6/5

GOALS AND OBJECTIVES:

Goal 1: To identify counting sequences and place value through hundred millions.

- 1.1 The student will demonstrate counting sequences.
- 1.2 The student will identify even and odd numbers.
- 1.3 The student will use money to illustrate place value.
- 1.4 The student will name whole numbers through hundred millions.
- 1.5 The student will practice the addition algorithm.
- 1.6 The student will demonstrate place value.
- 1.7 The student will name numbers through hundred millions.

Goal 2: To become proficient with all addition functions

- 2.1 The student will add one-digit whole numbers.
- 2.2 The student will practice the addition algorithm.
- 2.3 The student will find missing numbers in addition.
- 2.4 The student will work addition story problems.
- 2.5 The student will add columns of one digit numbers

Goal 3: To become proficient with all subtraction functions

- 3.1 The student will work subtraction facts.
- 3.2 The student will recite the subtraction math fact families.
- 3.3 The student will practice the subtraction algorithm.
- 3.4 The student will find missing numbers in subtraction.
- 3.5 The student will calculate subtraction story problems.
- 3.6 The student will calculate difference story problems.
- 3.7 The student will fill empty places with zero.

Goal 4: To become proficient with all multiplication functions

- 4.1 The student will multiply to perform repeated addition.
- 4.2 The student will make a multiplication table.

- 4.3 The student will understand and practice the multiplication algorithm.
- 4.4 The student will multiply three factors.
- 4.5 The student will multiply by one-digit numbers.
- 4.6 The student will multiply by two-digit numbers.
- 4.7 The student will multiply by three-digit numbers.
- 4.8 The student will find missing numbers in multiplication.
- 4.9 The student will multiply by multiples of 10 and 100.

Goal 5: To become proficient in all division functions

- 5.1 The student will recite division facts.
- 5.2 The student will show division in three ways.
- 5.3 The student will calculate "equal groups" stories.
- 5.4 The student will divide and write a remainder.
- 5.5 The student will practice the division algorithm.
- 5.6 The student will divide with zeros in the quotient.
- 5.7 The student will divide remainders.
- 5.8 The student will perform short division.
- 5.9 The student will divide by multiples of 10.
- 5.10 The student will learn the terms *divisor*, *dividend*, and *quotient*.
- 5.11 The student will divide and write quotients with fractions.
- 5.12 The student will divide by one-digit numbers.
- 5.13 The student will divide by two-digit numbers.

Goal 6: To become proficient with number lines

- 6.1 The student will read and draw number lines.
- 6.2 The student will round numbers using a number line.
- 6.3 The student will read and place fractions on a number line.
- 6.4 The student will name points on a number line with decimal numbers.

Goal 7: To become proficient using a clock, compass, and tally marks

- 7.1 The student will read and write time from a clock.
- 7.2 The student will solve problems about the division of time.
- 7.3 The student will read directions using a compass.
- 7.4 The student will read and write tally marks.

Goal 8: To become proficient in whole numbers

- 8.1 The student will compare whole numbers.
- 8.2 The student will read and write whole numbers in expanded notation.
- 8.3 The student will find the greatest common factor of two whole numbers.
- 8.4 The student will add whole numbers and decimal numbers.
- 8.5 The student will round mixed numbers to the nearest whole number.
- 8.6 The student will find the greatest common multiple of two whole numbers.

Goal 9: To become proficient in all fraction functions

- 9.1 The student will identify and use halves, fourths and tenths.
- 9.2 The student will picture fractions.
- 9.3 The student will use fraction manipulatives.
- 9.4 The student will find half of an odd number.
- 9.5 The student will compare fractions by drawing pictures.
- 9.6 The student will add and subtract fractions with common denominators
- 9.7 The student will add and subtract fractions and whole numbers.
- 9.8 The student will illustrate fraction stories.
- 9.9 The student will understand fractions that are equal to 1.
- 9.10 The student will subtract a fraction from 1.
- 9.11 The student will find a fraction to complete a whole.
- 9.12 The student will subtract a fraction from a whole number greater than 1.
- 9.13 The student will recognize the difference between proper fractions and improper fractions.
- 9.14 The student will change improper fractions to whole or mixed numbers.
- 9.15 The student will multiply fractions.
- 9.16 The student will identify equivalent fractions.
- 9.17 The student will find equivalent fractions by multiplying by 1.
- 9.18 The student will find equivalent fractions by dividing by 1.
- 9.19 The student will multiply fractions and whole numbers.
- 9.20 The student will divide fractions.
- 9.21 The student will reduce fraction answers.
- 9.22 The student will reduce fractions to lowest terms.
- 9.23 The student will convert and reduce improper fractions.
- 9.24 The student will write the reciprocal of a fraction.

Goal 10: To become proficient in all functions with mixed numbers

- 10.1 The student will understand pictures of mixed numbers.
- 10.2 The student will add and subtract mixed numbers.
- 10.3 The student will change improper mixed numbers to whole or mixed numbers.
- 10.4 The student will reduce mixed numbers.
- 10.5 The student will write mixed numbers as improper fractions.
- 10.6 The student will multiply mixed numbers.

Goal 11: To become proficient in all decimal functions

- 11.1 The student will understand decimal place value through tenths, hundredths, and thousandths.
- 11.2 The student will write tenths, hundredths, and thousandths in decimal form.
- 11.3 The student will identify decimal place value through thousandths.

- 11.4 The student will read and write fractions of a second.
- 11.5 The student will compare decimal numbers.
- 11.6 The student will count decimal places.
- 11.7 The student will write equivalent decimal numbers.
- 11.8 The student will add and subtract decimal numbers.
- 11.9 The student will simplify decimal numbers.
- 11.10 The student will pin the decimal point on whole numbers when subtracting.
- 11.11 The student will round decimal numbers to the nearest whole number.
- 11.12 The student will multiply decimal numbers.
- 11.13 The student will multiply decimal numbers by filling empty places with zero.
- 11.14 The student will multiply decimal numbers by 10, 100, and 1000.
- 11.15 The student will divide decimal numbers by filling empty places with zero.
- 11.16 The student will divide decimal numbers to the second and third decimal places by adding zeros.
- 11.17 The student will divide decimal numbers by 10, 100, and 1000.
- 11.18 The student will divide by a decimal number.

Goal 12: To become proficient in measures and measurements

- 12.1 The student will read lengths on a metric scale.
- 12.2 The student will read an inch ruler to the nearest fourth of an inch.
- 12.3 The student will simplify mixed measures.
- 12.4 The student will identify the measures of circles.
- 12.5 The student will read a centimeter scale to the nearest tenth.
- 12.6 The student will convert units of length.
- 12.7 The student will convert units of weight and mass.
- 12.8 The student will convert units of liquid measure.

Goal 13: To become proficient in functions with dollars and cents

- 13.1 The student will read and write dollars and cents.
- 13.2 The student will add and subtract dollars and cents.
- 13.3 The student will write dollars with or without a decimal point.
- 13.4 The student will compare cents and percents.
- 13.5 The student will write money in two forms: as cents and as dollars.
- 13.6 The student will round dollars and cents to the nearest dollar.

Goal 14: To become proficient in multi-step problems

- 14.1 The student will find information to solve problems.
- 14.2 The student will solve two-step problems.

Goal 15: To become proficient in the functions of averaging

- 15.1 The student will make equal groups to find an average.
- 15.2 The student will find the average of two or more numbers.

Goal 16: To become proficient in functions dealing with percent.

- 16.1 The student will use percent to name a part of a group.
- 16.2 The student will write a percent as a fraction.

Goal 17: To become proficient in working with lines, polygons, angles, and geometric solids

- 17.1 The student will identify and draw horizontal, vertical, and oblique lines.
- 17.2 The student will draw pairs of lines: parallel, intersecting, and perpendicular.
- 17.3 The student will draw angles.
- 17.4 The student will draw segments to close in an area.
- 17.5 The student will identify and draw polygons.
- 17.6 The student will calculate the perimeter of polygons.
- 17.7 The student will name and label line segments.
- 17.8 The student will recognize and name geometric solids.
- 17.9 The student will use letters to name angles.
- 17.10 The student will calculate areas of rectangles.

Goal 18: To become proficient in estimating an answer

- 18.1 The student will estimate to get close to an exact answer.

Goal 19: To become proficient in prime numbers

- 19.1 The student will understand and identify prime numbers.

Goal 20: To become proficient in ratios

- 20.1 The student will use ratios as a way of describing a relationship between two numbers.

Goal 21: To become proficient in probability and chance

- 21.1 The student will name a simple probability.
- 21.2 The student will identify and use probability and chance.

Goal 22: To become proficient in a coordinate graph, with positive and negative numbers

- 22.1 The student will locate and place points on a coordinate graph.

22.2 The student will recognize and use positive and negative numbers.

TEACHING METHODS: Traditional explanation, demonstration, recitation, practice and drill are used. Games, contests, and speed drills are used to promote mastery and speed.