

CURRICULUM OUTLINE

COURSE: PRE ALGEBRA 123

GRADE LEVEL: 8 - 12

CURRICULUM: STANDARD

ILLINOIS STATE LEARNING STANDARDS ADDRESSED:

1. 6.A. - Demonstrate knowledge and use of numbers and their representations in a broad range of theoretical and practical settings.
2. 6.B. - Investigate, represent and solve problems using number facts, operations (addition, subtraction, multiplication, division) and their properties, algorithms and relationships.
3. 6.C. - Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.
4. 6.D. - Solving problems using comparison of quantities, ratios, proportions and percent.
5. 7.A. - Measure and compare quantities using appropriate units, instruments and methods.
6. 7.C. - Select and use appropriate technology, instruments and formulas to solve problems, interpret results and communicate findings.
7. 8.A. - Describe numerical relationships using variables and patterns.
8. 8.C. - Solve problems using systems of numbers and their properties.
9. 8.D. - Use algebraic concepts and procedures to represent and solve problems.
10. 10.A. - Organize, describe and make predictions from existing data.

ENTRY SKILLS--The student will:

1. write whole numbers in scientific notation.
2. determine prime or composite numbers.
3. find the greatest common factor and the least common multiple.
4. solve simple equations by using all four operations.
5. multiply and divide fractions.
6. find the percent of a number.
7. find the probability of an outcome when the outcomes are ordered pairs.
8. read and interpret various graphs.
9. compute integers using multiplication and division.
10. solve word problems using cumulative computational/graphing skills in all areas.

LEARNING OBJECTIVES--The student will:

1. identify variables, constants, and terms.
2. evaluate an algebraic expression for given values of the variable.
3. identify the properties of addition and multiplication (associative, commutative, identity, and distributive)
4. solve equations involving the four operations and whole numbers.
5. evaluate algebraic expressions using the rules for the order of operations.
6. write English phrases in mathematical form.
7. write formulas describing mathematical relationships.
8. compute the perimeter and area of various shapes, using formulas.
9. locate fractional values on a 1/16 ruler and measure given objects.
10. perform calculations with fractions and solve fractional equations and word problems.
11. evaluate formulas containing Π (pi).
12. use appropriate technology for designing bar graphs, pictographs, and line graphs.
13. perform calculations with decimals and solve decimal equations and word problems.
14. solve problems involving units of length, capacity, weight, and temperature in the metric system.
15. solve the three kinds of percent problems algebraically.
16. solve percent word problems related to business and consumer situations.
17. use spreadsheets to solve problems relating to percents, weekly earnings, metric/English conversions.
18. complete a table containing data and make a circle graph.
19. find the range, mean, median, and mode for a set of data.
20. solve ratio and proportion problems algebraically.
21. add, subtract, multiply, and divide positive and negative integers.

EXIT SKILLS– The student will:

1. solve equations involving the four operations and whole numbers. (6.C., 8.D.)
2. compute the perimeters and areas of various shapes, using formulas. (6.C., 7.A.)
3. perform calculations with fractions and solve fractional equations and word problems. (6.B., 6.D., 8.C., 8.D.)
4. perform calculations with decimals and solve decimal equations and word problems. (6.D., 8.C.)
5. solve problems involving units of length, capacity, weight, and temperature in the metric system. (7.A.)
6. solve the three kinds of percent problems algebraically. (6.B., 6.D., 8.D.)
7. solve percent word problems related to business and consumer situations. (6.D., 8.C.)
8. complete a table containing data and make a circle graph. (10.A.)
9. solve ratio and proportion problems algebraically. (6.C., 6.D.)
10. add, subtract, multiply, and divide positive and negative integers. (8.D.)

MATERIALS:

1. Prentice hall, *Pre Algebra*, 2004
2. Creative Publications, *Middle School Math With Pizzazz* (Books A, B, C, D, E), 1989.

ASSESSMENTS:

<u>Exit Skill</u>	<u>Test Title</u>	<u>Illinois Learning Standard Addressed</u>
1	Solving Equations	6.C. , 8.D.
2	Perimeters and Areas	6.C., 7.A.
3	Fractions	6.B., 6.D., 8.C., 8.D.
4	Decimals	6.D, 8.C.
5	Metric System	7.A.
6	Percent Problems	6.B., 6.D., 8.D.
7	Percents in Business and Consumer Situations	6.D., 8.C.
8	Circle Graphs	10.A.
9	Ratio and Proportion	6.C., 6.D.
10	Positive and Negative Integers	8.D.