

## **CURRICULUM OUTLINE**

**COURSE: PRE ALGEBRA 124**

**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.C. - Compute and estimate using mental mathematics, paper-and-pencil methods, calculators and computers.
3. 6.D. - Solving problems using comparison of quantities, ratios, proportions and percent.
4. 7.A. - Measure and compare quantities using appropriate units, instruments and methods.
5. 8.A. - Describe numerical relationships using variables and patterns.
6. 8.B. - Interpret and describe numerical relationships using tables, graphs and symbols.
7. 8.C. - Solve problems using systems of numbers and their properties.
8. 8.D. - Use algebraic concepts and procedures to represent and solve problems.
9. 10.A. - Organize, describe and make predictions from existing data.
10. 10.C. - Determine, describe and apply the probabilities of events.

### **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. use variables to evaluate algebraic expressions.
2. identify and apply the properties of addition and multiplication.
3. use inverse operations to solve equations.
4. evaluate inequalities.

5. add, subtract, multiply, and divide positive and negative integers.
6. solve equations and word problems involving positive and negative integers.
7. find the perimeter and area of squares, rectangles, and triangles.
8. evaluate expressions containing exponents.
9. write fractions, decimals, and percentages in equivalent forms.
10. solve equations and word problems involving computations with fractions and decimals.
11. solve percent problems by translating them into equations.
12. find the circumference and area of circles.
13. solve problems involving metric units.
14. use proportions to solve word problems.
15. use percents to solve problems related to commission, discount, interest, and sales tax.
16. find the mean, median, and mode of a set of data.
17. make a stem-and-leaf plot of data and draw conclusions based on the data displayed.
18. use the measure of variation to compare data.
19. make a circle graph based on given data.
20. find the volume of a rectangular prism and circular cylinder
21. use a tree diagram or the fundamental counting principle to count outcomes.
22. find the probability of a simple event.

**EXIT SKILLS– The student will:**

1. use variables to evaluate algebraic expressions. (8.A.)
2. use inverse operations to solve equations. (8.C.)
3. add, subtract, multiply, and divide positive and negative integers. (8.D.)
4. find the perimeter and area of squares, rectangles, and triangles. (7.A.)
5. evaluate expressions containing exponents. (6.A.)
6. solve percent problems by translating them into equations. (8.D.)
7. solve problems involving metric units. (7.A.)
8. use proportions to solve word problems. (6.D.)
9. find the mean median, and mode of a set of data. (10.A.)
10. make a circle graph based on given data. (10.A.)

**MATERIALS:**

1. Merrill, *Pre-Algebra, A Transition to Algebra*, 1995.
2. Creative Publications, *Algebra with Pizzazz*. (Books A, B, C, and D) 1983.

**ASSESSMENT TOOLS:**

<u>Exit Skill</u>	<u>Test Title</u>	<u>Illinois Learning Standard Addressed</u>
1	Evaluating Algebraic Expressions	8.A.
2.	Solving Equations	8.C.
3.	Positive and Negative Integers	8.D
4.	Perimeter and Area	7.A.
5.	Exponents	6.A.
6.	Percent Problems	8.D.
7.	Metric System	7.A.
8.	Word Problems (Proportions)	6.D.
9.	Mean, Median, and Mode	10.A
10.	Circle Graph	10.A