



# Alignment Document

## State of Louisiana And Aventa Learning Pre-Algebra

### Pre-Algebra 2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
0	Number and Number Relations		
1	Compare rational numbers using symbols (i.e., $<$ , less than or equal to, $=$ , greater than or equal to, $>$ ) and position on a number line	Basics	Integer Math
2	Use whole number exponents (0-3) in problem-solving contexts	Basics	Exponents
3	Estimate the answer to an operation involving rational numbers based on the original numbers		
4	Read and write numbers in scientific notation with positive exponents		
5	Simplify expressions involving operations on integers, grouping symbols, and whole number exponents using order of operations	Basics	Integer Math
		Basics	Exponents
6	Identify missing information or suggest a strategy for solving a real-life, rational-number problem	Word Problems	Strategies
7	Use proportional reasoning to model and solve real-life problems		
8	Solve real-life problems involving percentages, including percentages less than 1 or greater than 100	Decimals and Percents	Percents
		Word Problems	Strategies
9	Find unit/cost rates and apply them in real-life problems		



0	Algebra		
10	Write real-life meanings of expressions and equations involving rational numbers and variables		
11	Translate real-life situations that can be modeled by linear or exponential relationships to algebraic expressions, equations, and inequalities	Word Problems	Translating English to Math
		Equations	Linear Equations
12	Solve and graph solutions of multi-step linear equations and inequalities	Equations	Linear Equations
13	Switch between functions represented as tables, equations, graphs, and verbal representations, with and without technology	Equations	Linear Equations
14	Construct a table of x- and y-values satisfying a linear equation and construct a graph of the line on the coordinate plane	Equations	Linear Equations
15	Describe and compare situations with constant or varying rates of change		
16	Explain and formulate generalizations about how a change in one variable results in a change in another variable	Equations	Linear Equations
0	Measurement		
17	Determine the volume and surface area of prisms and cylinders		
18	Apply rate of change in real-life problems, including density, velocity, and international monetary conversions		
19	Demonstrate an intuitive sense of the relative sizes of common units of volume in relation to real-life applications and use this sense when estimating		
20	Identify and select appropriate units for measuring volume		
21	Compare and estimate measurements of volume and capacity within and between the U.S. and metric systems		
22	Convert units of volume/capacity within systems for U.S. and metric units		
0	Geometry		
23	Define and apply the terms measure, distance, midpoint, bisect, bisector, and perpendicular bisector		



24	Demonstrate conceptual and practical understanding of symmetry, similarity, and congruence and identify similar and congruent figures		
25	Predict, draw, and discuss the resulting changes in lengths, orientation, angle measures, and coordinates when figures are translated, reflected across horizontal or vertical lines, and rotated on a grid		
26	Predict, draw, and discuss the resulting changes in lengths, orientation, and angle measures that occur in figures under a similarity transformation (dilation)		
27	Construct polyhedra using 2-dimensional patterns (nets)		
28	Apply concepts, properties, and relationships of adjacent, corresponding, vertical, alternate interior, complementary, and supplementary angles		
29	Solve problems involving lengths of sides of similar triangles		
30	Construct, interpret, and use scale drawings in real-life situations		
31	Use area to justify the Pythagorean theorem and apply the Pythagorean theorem and its converse in real-life problems	Factoring and Geometric Formulas	Geometric Formulas
32	Model and explain the relationship between the dimensions of a rectangular prism and its volume (i.e., how scale change in linear dimension(s) affects volume)		
33	Graph solutions to real-life problems on the coordinate plane	Equations	Linear Equations
0	Data Analysis, Probability, and Discrete Math		
34	Determine what kind of data display is appropriate for a given situation	Probability and Data Analysis	Probability
		Probability and Data Analysis	Data Analysis Projects
35	Match a data set or graph to a described situation, and vice versa	Probability and Data Analysis	Probability
		Probability and Data Analysis	Data Analysis Projects
36	Organize and display data using circle graphs		
37	Collect and organize data using box-and-whisker plots and use the plots to interpret quartiles and range		



38	Sketch and interpret a trend line (i.e., line of best fit) on a scatterplot		
39	Analyze and make predictions from discovered data patterns	Probability and Data Analysis	Probability
		Probability and Data Analysis	Data Analysis Projects
40	Explain factors in a data set that would affect measures of central tendency (e.g., impact of extreme values) and discuss which measure is most appropriate for a given situation		
41	Select random samples that are representative of the population, including sampling with and without replacement, and explain the effect of sampling on bias		
42	Use lists, tree diagrams, and tables to apply the concept of permutations to represent an ordering with and without replacement		
43	Use lists and tables to apply the concept of combinations to represent the number of possible ways a set of objects can be selected from a group		
44	Use experimental data presented in tables and graphs to make outcome predictions of independent events	Probability and Data Analysis	Data Analysis Projects
45	Calculate, illustrate, and apply single- and multiple-event probabilities, including mutually exclusive, independent events and non-mutually exclusive, dependent events		
0	Patterns, Relations, and Functions		
46	Distinguish between and explain when real-life numerical patterns are linear/arithmetic (i.e., grows by addition) or exponential/geometric (i.e., grows by multiplication)		
47	Represent the $n$ th term in a pattern as a formula and test the representation		
48	Illustrate patterns of change in dimension(s) and corresponding changes in volumes of rectangular solids		