TRINITY CHRISTIAN SCHOOL
Curriculum Guide

Course Title: Algebra I
Grade Taught: Eighth
Credit: 1

A. Course goals:

1. To be affluent in solving addition, subtraction, multiplication, and division problems with variables
2. To be able to use Cartesian planes to graph points, lines, and images.
3. To be able to use formulas with variables to solve word problems.

B. Course topics:

Topic	Instructional materials	Measurement	Time
1. Variables in sentences and expressions	T, LMN	CT, F	3-4
2. Patterns and domains	T, LMN	CT, F	2-3
3. Pythagorean theorem	T, LMN	CT	3-4
4. Volume	T, LMN	CT, F	3-4
5. Multiplication with variables and fractions	T, LMN	CT, F	3-4
6. Solving ax=b	T, LMN	CT, F	4-5
7. Solving ax<b	T, LMN	CT, F	3-4
8. Algebraic addition	T, LMN	CT, F	4-5
9. Solving ax+b=c and ax+b<c	T, LMN	CT, F	5-6
10. The distributive property	T, LMN	CT, F	3-4
11. Algebraic subtraction	T, LMN	CT, F	3-4
12. Graphing lines x+y=k and x-y=k	T, LMN	CT, F	4-5
13. Triangle inequality	T, LMN	CT	2-3
14. Linear expressions	T, LMN	CT, F	3-4
15. Solving ax+b=cx+d and ax+b<cx+d	T, LMN	CT, F	3-4
16. Multiplying through and chunking	T, LMN	CT, F	4-5
17. Algebraic division (division as multiplication)	T, LMN	CT, F	4-5

18. Rates and ratios	T, LMN	CT, F	3-4
19. Percent problems (tax, discounts, counting)	T, LMN	CT	3-4
20. Size changes and proportions	T, LMN	CT, F	3-4
21. Slopes and properties of slopes	T, LMN	CT, F	4-5
23. Forms of equations for lines, graphing equations	T, LMN	CT, F	4-5
24. Practical applications of exponential functions	T, LMN	CT, F	4-5
25. Rules for working with exponents	T, LMN	CT, F	4-5
26. Quadratic equations and the quadratic formula	T, LMN	CT, F	3-4
27. Rules for square roots	T, LMN	CT, F	4-5
28. Polynomials	T, LMN	CT, F	2-3
29. Foiling and multiplying other polynomials	T, LMN	CT, F	4-5
30. Solving systems of equations with 2 unknowns using graphs	T, LMN	CT, F	4-5
31. Solving systems with substitution and linear combination	T, LMN	CT, F	4-5
32. Factoring	T, LMN	CT, F	4-5
33. Functions: notation, domain, and range	T, LMN	CT, F	4-5

C. Student Materials

1. *Algebra:* Second Edition, Prentice-Hall, 2002

D. Teacher Materials

1. *Algebra:* Second Edition Teacher's manual
2. Lesson Masters Workbooks
3. Accumulated Notebooks

E. Classical Methodology

1. Students should be able to develop problem solving skills as they are introduced to abstract thinking in mathematics.
2. Students should develop a desire to understand mathematics around us.
3. Students should see the applications of math to life situations.