Written Student Learning Plan

STUDENT NAME: _____John Doe_____

COURSE TITLE: Algebra 1A/1B

CEDARS designator: MTH 004/ MTH 204

CERTIFICATED TEACHER: Ms. Math

STARTING DATE: September 6, 2011_____   ENDING DATE: __ June 18, 2012 _____

AMOUNT OF CREDIT POSSIBLE ___.5____   This course meets Washington State and District graduation requirements.

☒ This course meets one or more of the Washington State Essential Academic Learning Requirements for Mathematics.

Prerequisite: STAR Math assessment and finished Pre-algebra with a C or better

Course Description:

This course is designed for the freshman math student, but is open to all grades. The main emphasis is on basic terminology and definitions, the properties and methods of solving linear and quadratic equations, the four basic operations with polynomials, factoring, apply skills through story problems, graphing linear equations, and solving systems of equations.

Instructional Materials:

All instructional materials are provided to the student by check out for the term at no fee.

- Algebra book – Glencoe Algebra Concepts and Applications
- Weekly packets provided during weekly direct personal contact time and shall be returned by student prior to receipt of next packet.
- Student is expected to provide own supplies consistent with district supply list.

Timeline:

This course is expected to be completed in <u>1A (14) or 1B (15)</u> weeks and the student will be engaged in learning activities for a minimum of <u>6.25</u> hours each week for a total of <u>1A(87.5) /1B (93.75)</u> hours (with a minimum of 75 hours) to complete the course of study. These hours will include weekly direct teacher/ student contact; one-on-one, by phone, or email. The purpose of this contact is to assist the student in meeting the course completion date, goals, and objectives.

Academic progress and course completion progress will be evaluated on a weekly basis by the certificated teacher stated above and successful progress will be determined on a monthly basis as stated in the Evaluation section of this Learning Plan.

Learning Goals and Performance Objectives:

The student will:
- solve algebraic expressions
- write and compare numbers, expressions and use mathematical operations
- understand the characteristics of functions
- understand linear functions, equations, inequalities, and quadratic functions
- interpret data and distributions
- work with basic arithmetic and geometric sequences
- reason**,** problem solve, and communicate solutions

Washington State K-12 Algebra Learning Standards that the student will be working toward by completion of required assignments.
Algebra Performance Objectives:

A1.1 Solving Problems:
- A1.1.A Select and justify functions and equations to model and solve problems.

- A1.1.B Solve problems that can be represented by linear functions, equations, and inequalities.

- A1.1.C Solve the problems that can be represented by a system of two linear equations or inequalities.

- A1.1.D Solve the problems that can be represented by quadratic functions and equations.

- A1.1.E Solve the problems that can be represented by exponential functions and equations.

A1.2 Numbers, Expressions, and Operations:
- A1.2.A Know the relationship between real numbers and the number line, and compare and order real numbers with and without the number line.

- A1.2.B Recognize the multiple uses of variables, determine all possible values of variables that satisfy prescribed conditions, and evaluate algebraic expressions that involve variables.

- A1.1.C Interpret and use integer exponents and square and cube roots, and apply the laws and properties of exponents to simplify and evaluate exponential expressions.

- A1.1.D Determine whether approximations or exact values of real numbers are appropriate, depending on the content, and justify the selection.

- A1.1.E Use algebraic properties to factor and combine like terms in polynomials.

- A1.1.F Add, subtract, multiply, and divide polynomials.

<u>A1.3 Characteristics and Behaviors of Functions</u>:
- A1.3.A Determine whether a relationship is a function and identify the domain. Range, roots, and independent variables.

- A1.3 B Represent a function with a symbolic expression, as a graph, in a table, and using words, and make connections among these representations.

- A1.3.C Evaluate *f(x)* at *a* (i.e., *f (a)*) and solve for x in the equation *f(x)* = b.

<u>A1.4   Linear Functions, Equations, and Inequalities</u>
- A1.4.A Write and solve linear equations and inequalities in one variable.

- A1.4.B Write and graph an equation for a line given the slope and the y-intercept, the slope and a point on the line, or two points on the line, and translate between forms of linear equations.

- A1.4.C Identify and interpret the slope and intercepts of a linear function, including equations for parallel and perpendicular lines.

- A1.4.D Write and solve systems of two linear equations and inequalities in one variable.

- A1.4.E Describe how changes in the parameters of linear functions and functions containing an absolute value of a liner expression affect their graphs and the relationships they represent.

<u>A1.5 Quadratic Functions and Equations</u>
- A1.5.A Represent a quadratic function with a symbolic expression, as a graph, in a table and with a description, and make connections among the representations.

- A1.5.B Sketch the graph of a quadratic function, describe the effects that changes in the parameters have on the graph, and interpret the x-intercepts as solutions to a quadratic equation.

- A1.5.C Solve quadratic equations that can be factored as (ax = b) (cx + d) where a, b, c, and d are integers.

- A1.5.D Solve quadratic equations that have real roots by completing the square and by using the quadratic formula.

<u>A1.6   Data and Distributions</u>
- A1.6.A Use and evaluate the accuracy of summary statistics to describe and compare data sets.

- A1.6.B Make valid inferences and draw conclusions based on data.

- A1.6.C Describe how linear transformations affect the center and spread of univariate data.

- A1.6.D Find the equation of a linear function that best fits bivariate data that are linearly related, interpret the slope and y-intercept of a line, and use the equation to make predictions.

- A1.6.E Describe the correlation of data in scatterplots in terms of strong or weak and positive or negative.

A1.7 Additional Key Content

- A1.7.A Sketch the graph for an exponential function of the form $y = ab^n$ where n is an integer, describe the effects that changes in the parameters a and b have on the graph, and answer questions that arise in situations modeled by exponential functions.

- A1.7.BFind and approximate solutions to exponential equations.

- A1.7.C Express arithmetic and geometric sequences in both explicit and recursive forms, translate between the two forms, explain how rate of change is represented in each form, and use the forms to find specific terms in the sequence.

- A1.7.D Solve an equation involving several variables by expressing one variable in terms of the others.

A1.8 Reasoning, Problem Solving, and Communication

- A1.8.A Analyze a problem situation and represent it mathematically.

- A1.8.B Select and apply strategies to solve problems.

- A1.8.C Evaluate a solution for reasonableness, verify its accuracy, and interpret the solutions in the context of the original problem.

- A1.8.D Generalize a solution strategy for a single problem to a class of related problems, and apply a strategy for a class of related problems to solve specific problems.

- A1.8.E Read and interpret diagrams, graphs, and text containing the symbols, language, and conventions of mathematics.

- A1.8.F Summarize mathematical ideas with precision and efficiency for a given audience and purpose.

- A1.8.G Synthesize information to draw conclusions, and evaluate the arguments and conclusions of others.

- A1.8.H Use inductive reasoning about algebra and the properties of numbers to make conjectures, and use deductive reasoning to prove or disprove conjectures.

Learning Activities: (see specific assignments on syllabus sheet, included below)
To meet the objectives for this course, the student will:
- Read chapters and complete the assigned problems outlined on syllabus sheet and additional problems provided in weekly packets.
- Take notes on main concepts.
- Complete a test with at least 70% correct on each chapter.

NOTE: The syllabus sheet will be updated on the WSLP and communicated directly to the student during the previous month evaluation meeting or during weekly direct personal contact based on when student completes the outlined activities for the evaluation period.

Syllabus sheet

Assignments added September 1, 2011

Week 1: Chapter 1   The Language of Algebra
1-1   pages 6-7 questions # 14-41 all
1-2   pages 11-13 questions #19-52 all
1-3   pages 17-18 questions #10-25 all
1-4   pages 22-23 questions # 5-39 all

Week 2: Chapter 2
1-5   pages 27-28 questions #3-12 all
1-6   pages 34-36 questions #3-16 all
1-7   pages 42-43 questions #7-21 all
Study Guide and Assessment   pages 44-46 questions #1-45 all

Take test on Chapter 1 now
Week 3: Chapter 2   Integers
2-1   pages 55-57 questions #3-49 odd
2-2   pages 61-63 questions #5-39 odd
2-3   pages 68-69 questions #5-71 odd

Week 4: Chapter 2
2-4   pages 73-74 questions #3-55 odd
2-5   pages 78-79 questions #3-61 odd
2-6   pages 84-85 questions #3-57 odd
Study Guide/Assessment   pages 86-88 questions #1-61 all

Take test on Chapter 2 prior to scheduled monthly evaluation meeting

Assignments to be added the last week of September during monthly evaluation meeting or as student completes outlined learning activities (whichever is sooner).

- o   Chapter 3   Addition/Subtraction Equations
- o   Chapter 4   Multiplication/Division Equations (end of 1st month)
- o   Chapter 5   Proportional Reasoning and Probability
- o   Chapter 6   Functions and Graphs
- o   Chapter 7   Linear Equations
- o   Chapter 8   Powers and Roots (end of 2nd month)
- o   Chapter 9   Polynomials
- o   Chapter 10   Factoring
- o   Chapter 11   Quadratic and Exponential Functions
- o   Chapter 12   Inequalities (end of 3rd month)
- o   Chapter 13   Systems of Equations and Inequalities
- o   Chapter 14   Radical Expressions

Evaluation:
Student will be evaluated as follows:

The student's work will be evaluated by the teacher. The teacher will determine whether there has been "satisfactory" or "unsatisfactory" progress based in part by the following two areas:

1. Weekly evaluation is based on student successfully meeting with teacher and completing all work required for this course each week according to the learning activities syllabus, and successfully passing the tests.
2. Monthly evaluation will be based upon thoroughness of weekly work, notes, and unit test scores.
   - All assignments will be collected, scored, and represent 30% of the overall grade. They need to be organized, neat, complete, and, include critical concepts and formulas.
   - Notes must be taken and may be used when testing.
   - Test scores account for 70% of the overall grade. All tests must score 70% or better to receive class credit. (Tests may be retaken if needed.)

   Unsatisfactory Progress
   In the event that the student has not made substantial success during the month, within five days the student will be placed on a written Plan For Improvement for the following month. Failure to complete the Plan for Improvement may jeopardize the student's enrollment at the teacher's discretion.

_____

Instructor's Signature   Date

_____   _____

Student's signature   Date