Unit Plan Template

UNIT 2: Modeling with Linear Functions, Linear Systems, & Exponential Functions

TIME FRAME: 3 months **TEACHER: Meghan Miller**

Unit Summary and Rationale: (Outlines the components of the unit and the reasoning for their inclusion):

. Solve linear systems of equations
· Create equations that describe numbers or relationships
· Interpret the structure of expressions
· Represent and solve equations and inequalities graphically
· Construct & compare linear & exponential models
· Interpret expressions for functions in terms of the situation
· Build a function that models a relationship between two quantities
· Understand the concept of a function and use function notation
· Interpret functions that arise in applications in terms of the context
· Analyze functions using different representations

Unit Standards: Teachers should list the standards to be addressed within the unit.

HSF-IF.A.1, HAS-CED.A.2, HAS-REI.D.10, HSF-IF.B.5, HSF-IF.C.7a, HSF-LE.A.1b, HSF-IF.C.9, HAS-CED.A.3, HAS-REI.C.6, HAS-REI.C.5, HAS-REI.D.11, HAS-REI.D.12

Learning Tasks: Teachers list the various tasks students will engage in throughout the unit. (Content) – Should be separated by Reading Tasks, Writing Tasks, Discussion Tasks, and Language/Vocabulary Tasks.	**Skills:** These are what the students need to be able to do in relation to the tasks. These skills are translated statements from the standards and represent measurable verbs, instructional targets, and descriptors for the sake of consistency across teachers in the same content area and grade level.
Practice Worksheet A and B Puzzle Worksheets Whiteboard review activity Basic Skills Review WS	● identify and define variables representing essential features for the model. ● model real world situations by creating a system of linear equations. ● solve systems of linear equations using the elimination or substitution method. ●

	solve systems of linear equations by graphing. ● interpret the solution(s) in context. ● model real world situations by creating a system of linear inequalities given a context. ● interpret the solution(s) in context. ● use the definition of a function to determine whether a relationship is a function. ● use function notation once a relation is determined to be a function. ● evaluate functions for given inputs in the domain. ● explain statements involving function notation in the context of the problem ● create arithmetic and geometric sequences from verbal descriptions ● create arithmetic sequences from linear functions. ● create geometric sequences from exponential functions ● identify recursively defined sequences as functions. ● create linear and exponential functions given a graph, a description of a relationship, or a table of values. ● given a context, write an explicit expressions, a recursive process or steps for calculation for linear and exponential relationships ● interpret parts of linear and exponential functions in context ● given a verbal description of a relationship, sketch linear and exponential functions. ● identify intercepts and intervals where the function is positive/negative. ● interpret parameters in context. ● determine the practical domain of a function. ● compare key features of two linear functions represented in different ways. ● compare key features of two exponential functions represented in different ways.

Key Terms / Vocabulary:

Relation, function, domain, range, independent variable, dependent variable, linear equation in two variables, linear function, nonlinear functions, solution of a linear equation in two variables, discrete domain, function notation, standard form, x-intercept, y-intercept, slope, rise, run, slope-intercept form, constant function, vertex, linear model, parallel lines, point-slope form, perpendicular lines, scatter plot, correlation, line of best fit, term, arithmetic sequence, common difference, piecewise function, system of linear equations, solution of the linear equation, linear inequality in two variables, solutions of linear inequality in two variables, graph of a linear inequality, half-plane

Assessments: List types of assessments that will be used throughout the course of the unit. *If you do not have assessments for this unit, they should be created before moving on to the lesson design* (Label Assessments as Diagnostic, Formative, or Summative)

3.1-3.3 Quiz
Chapter 3 Test
4.1-4.3 Quiz
Chapter 4 Test
5.1-5.4 Quiz
Chapter 5 Test

Learning Activities: Any agreed upon activities/lesson plans can be listed here.	**Resources / Text Selections:** (generated by both teacher and student?) Teachers will list the titles/genres for study:
Group Work White Board Activity Math Battleship	Kahn academy Kuta worksheets Big ideas worksheets and online assignments

Additional Notes: