Adventures in Algebra - Road 4

Course Overview
Adventures in Algebra – Road 4 is for the student who mostly ready for Algebra. Topics include: Linear equations, Functions, Geometry (rigid transformations) and Statistics and Probability (investigations of association in bivariate data).

Course Description
Adventures in Algebra – Road 4 is a rigorous course covering concepts listed above in a variety of formats. The class will include guided instruction and activities that support the Algebra 1 Common Core State Standards.

Course Goals and Objectives
Correlates with the Common Core State Math Standards

8.EE Expressions and Equations
Understand the connections between proportional relationships, lines, and linear equations.
5. Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways.
6. Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation y = mx for a line through the origin and the equation y = mx + b for a line intercepting the vertical axis at b.

8.F Functions
Compare and construct functions to model relationships
2. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).
Use functions to model relationships between quantities.
4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.

8.SP Statistics and Probability
Investigate patterns of association in bivariate data.
1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.
2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.
3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept.

8.G Geometry
Understand congruence and similarity using physical models, transparencies, or geometry software.
4. Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them.

Course Outline
Week One
Greetings, Introduction, and Diagnostic Test
Proportional & Nonproportional Relationships
Multiple Representations / Graphs, Tables, Equations, Context
  - Rate of change, Slope
  - Initial value, y intercept

Week Two
Functions
Multiple Representations / Graphs, Tables, Equations, Context
  - Rate of change, Slope
  - Initial value, y intercept

Week Three
Investigate patterns of association in bivariate data
  - Scatter plots
  - Lines of best fit
  - Interpreting slope and intercept within context

Weeks Four & Five
Geometry - Rigid Transformations and Dilations
  - Translations, reflections, rotations and congruence
  - Dilations and similarity

Course Supplies
1. Pencils
2. Composition book or Spiral notebook
3. Calculator
Course Grading

Student work will be evaluated based on the following criteria:

- Quality of written work.
- Work completion (all classwork must be completed as homework)
- Contributions to the class environment.

Classroom Behavior:
The student is expected to demonstrate mature, polite behavior and extend courtesy to everyone at all times:

1. Actively participate, and respectful verbal and non-verbal interaction with all opinions must be shown at all times.
2. Since differing views will be expressed, the teacher and the student(s) will mutually maintain a safe environment for courteous dialogue.
3. Respect is to be shown for all CSUN property.
4. No food or beverages will be permitted in the classroom. Snacks must be eaten outside between the designated breaks.
5. Warnings for behavior / discipline problems will be given once. Any further problems will result in a phone call to the parent(s) or guardian(s) and possible dismissal from the program.

SAEP Electronics Policy

Cell phones, music players and headphones are not permitted to be used during class hours.

a. Please put your cell phone on silent (NOT vibrate).
b. No texting is allowed during class.

You will be given one verbal warning if the above is not followed. Should a second warning be necessary, your cell phone, music player and/or headphones will be confiscated and held by the teacher until after class. If a third time occurs, your cell phone, music player and/or headphones will be confiscated and held in the SAEP office and MUST BE PICKED UP BY A PARENT.
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After reading through the syllabus, please sign and date and have your student return it to class. The signature constitutes your commitment to the class as we partner to make the next five weeks a life-long educational experience for your student.

Student/Parent Agreement:
Please bring this signed and dated Adventures in Algebra - Road 4 syllabus agreement to class tomorrow.

If you do not understand any portion of this syllabus, or if you have any questions regarding this class, please do not hesitate to email the teacher.

We have read and understand the contents of this syllabus.

Student name ______________________________________________________

Student signature____________________________________________________

Date__________________

Parent/Guardian name _______________________________________________

Parent/Guardian signature_____________________________________________

Date_________________

Cell Phone _______________________________ Accept texts? (circle one) Y / N

E-mail______________________________________________________________