Unit 3c-Writing Linear Equations

Content Area: **Math**
Course(s): **Math 7 Pre-Algebra Honors**
Time Period: **Marking Period 3**
Length: **Wk 3-4 Go Math! Advanced 2 Module 13**
Status: **Published**

Essential Questions

- How do you write an equation to model a linear relationship given a description, graph or table?
- How can you contrast linear and nonlinear sets of bivariate data?

Big Ideas

Linear equations can be written from descriptions, graphs and tables.

Cross-Curricular Integration

Integration Area: Language Arts

LA.W.AW.8.2.A Introduce a topic and organize ideas, concepts, and information, using text structures (e.g., definition, classification, comparison/contrast, cause/effect, etc.) and text features (e.g., headings, graphics, and multimedia) when useful to aid in comprehension.

LA.W.AW.8.2.B Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.

LA.W.AW.8.2.C Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.

LA.W.AW.8.2.D Use precise language and domain-specific vocabulary to inform about or explain the topic.

LA.W.AW.8.2.E Establish and maintain a formal style/academic style, approach, and form.

LA.W.AW.8.2.F Provide a concluding statement or section (e.g. sentence, part of a paragraph, paragraph, or multiple paragraphs) that follows from the flow of ideas, reflects back on the topic, and supports the information or explanation presented.

LA.W.WP.8.4 With some guidance and support from peers and adults, develop and strengthen writing as needed by planning flexibly making editing and revision choices and sustaining effort to complete complex writing tasks; and focusing on how well the purpose and audience have been addressed.

LA.W.WR.8.5 Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple

avenues of exploration.

LA.W.SE.8.6 Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation. Students may determine the credibility of multiple digital and print data sources that can be used as supporting evidence in constructing a model for describing the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.

LA.W.RW.8.7 Write routinely over extended time frames (time for research, reflection, metacognition/self correction, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline specific tasks, purposes, and audiences.

A.REI.C.6 Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.

Activity: Slope/College/Savings project. Students will research various colleges and their tuition costs. Students will search for a job that will be able to assist in paying for a portion of the college tuition. Students will create tables and linear representations of the collected data and then discuss the data in an explanatory essay.

CSDT Technology Integration

8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose.

8.1.8.AP.2: Create clearly named variables that represent different data types and perform operations on their values.

8.1.8.AP.6: Refine a solution that meets users' needs by incorporating feedback from team members and users.

Activity: The Algebra College Slope Project encourages students to learn about college choices and decisions. Students have the opportunity to research colleges and universities, and select one based on possible majors they would be interested in, as well as a budget. Students then research possible high school jobs in an effort to earn money to use for college tuition. Students create electronic descriptions of their research, spreadsheets on the computer, and develop linear functions electronically.

Enduring Understandings

Functions

8.F.B.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.

Statistics and Probability

8.SP.a.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.

Mathematical Practices Focus

2. Reason abstractly and quantitatively. Lesson 13.1, 13.2, 13.3
3. Construct viable arguments and critique the reasoning of others. Lesson 13.1, 13.2, 13.3
4. Model with mathematics. Lesson 13.1, 13.2, 13.3
6. Attend to precision. Lesson 13.1, 13.2, 13.3
7. Look for and make use of structure. Lesson 13.3