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|   | **Math 8** **Unit 6 Linear Models and Tables** |
| Volume 1 Issue 6 |  |
| **References**Georgia Math Grade 8 Volume 2:Chapter 8Pages 572 – 670**Georgia Math Online:**[www.connectED.mcgraw-hill.com](http://www.connectED.mcgraw-hill.com) Links: <http://regentsprep.org/REgents/math/ALGEBRA/AD1/qualquant.htm><http://onlinestatbook.com/chapter4/intro.html> | Dear ParentsBelow you will find a list of concepts that your child will use and understand while completing Unit 6 Linear Functions. Also included are references, vocabulary and examples that will help you assist your child at home.Concepts Students will Use and Understand* identify the rate of change and the initial value from tables, graphs, equations, or verbal descriptions
* write a model for a linear function
* sketch a graph when given a verbal description of a situation
* analyze scatter plots
* informally develop a line of best fit
* use bivariate data to create graphs and linear models
* recognize patterns and interpret bivariate data

Vocabulary* **Model:** A mathematical representation of a process, device, or concept by means of a number of variables.
* **Interpret**: To establish or explain the meaning or significance of something.
* **Initial Value:** *y*-intercept.
* **Qualitative Variables:** A variable whose values are not numerical. Examples include gender (male, female), paint color (red, black, blue), type of bird (cardinal, blue bird, owl), and etc.
* **Linear:** A relationship or function that can be represented by a straight line.
* **Non-linear:** A relationship which does not create a straight line.
* **Slope:** The measure of steepness of a line.
* **Rate of Change:** The ratio of the change in the output value and change in the input value of a function.
* **Bivariate Data:** Two different response variables that are from the same population. This website has a good powerpoint (the 2nd one) that may help with the explanation.

<http://www.sophia.org/packets/bivariate-data-two-variables--2>* **Quantitative Variables:** A variable whose values are numerical. Examples include height, temperature, weight, grades, and etc.
* **Scatter Plot:** The graph of a collection of ordered pairs that allows an exploration of the relationship between the points.
* **Line of Best Fit:** A straight line drawn through the center of a group of [data](http://www.investopedia.com/terms/l/line-of-best-fit.asp) points plotted on a scatter plot.
* **Clustering:** The partitioning of a data set into subsets (clusters), so that the data in each subset (ideally) share some common trait - often similarity or proximity for some defined distance measure.
* **Outlier:** An element of a data set that distinctly stands out from the rest of the data.
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|   | **Math 8 Unit 6 Practice Problems** |
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| Formulas**Slope** (m)m= **Slope-Intercept Form**y = mx+b**Y-intercept** (b); (0,b) | Example 1The table shows the balance of a bank account on different days of the month. Find the rate of change during each time interval. Example 2Megan rolls a number cube and tosses a coin 200 times as part of an experiment. From her experiment, she records that a five was rolled 37 times and the coin landed on tails 107 times. On 88 occasions, neither a five was rolled nor did the coin land on heads. Complete the table.

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|  | Five  | Not a Five | **Total** |
| Head |  |  |  |
| Tail |  |  |  |
| **Total** |  |  |  |

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|  | **Answer Key****Example 1** Rate of changes: (results in a non-linear graph)Day 1-6 = -53Day 6-16 = -7.5Day 16-22 = 0Day 22-30 = -4.375**Example 2**

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| --- | --- | --- | --- |
|  | Five | Not a Five | Total |
| Head | 18 | 75 | 93 |
| Tail | 19 | 88 | 107 |
| Total | 37 | 163 | 200 |

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