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| **Standards-Based Lesson** | | | | **Wednesday, September 11 – Thursday, October 3** | | |
| **Coordinate Algebra/ Analytic Geometry A** | | | | | | |
| Teacher: Elliott | | Unit 4: Describing Data | | | | |
| **STANDARDS – CCGPS** | | | | | | |
| Interpreting Categorical and Quantitative Data **Summarize, represent, and interpret data on a single count or measurement variable.**   * MCC9-12.S.ID.1Represent data with plots on the real number line (dot plots, histograms, and box plots).Choose appropriate graphs to be consistent with numerical data: dot plots, histograms, and box plots. * MCC9-12.S.ID.2Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread(interquartile range, Mean Absolute Deviation) of two or more different data sets. * MCC9-12.S.ID.3Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers). Students will examine graphical representations to determine if data are symmetric, skewed left, or skewed right and how the shape of the data affects descriptive statistics.  Summarize, represent, and interpret data on two categorical and quantitative variables.  * MCC9-12.S.ID.5Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data. * MCC9-12.S.ID.6Represent data on two quantitative variables on a scatter plot, and describe how the variables are related. * MCC9-12.S.ID.6aFit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models. * MCC9-12.S.ID.6bInformally assess the fit of a function by plotting and analyzing residuals.MCC9-12.S.ID.6cFit a linear function for a scatter plot that suggests a linear association.  Interpret linear models  * MCC9-12.S.ID.7Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. * MCC912.S.ID.8Compute (using technology) and interpret the correlation coefficient of a linear fit. * MCC9-12.S.ID.9Distinguish between correlation and causation | | | | | | |
| **OBJECTIVES: Students will know… or Students will be able to…** | | | | | | |
| * Assess how a model fits data * Choose a summary statistic appropriate to the characteristics of the data distribution, such as the shape of the distribution or the existence of extreme data points * Use regression techniques to describe approximately linear relationships between quantities. * Use graphical representations and knowledge of the context to make judgments about the appropriateness of linear models * Look at residuals to analyze the goodness of fit. * Students take a more sophisticated look at using a linear function to model the relationship between two numerical variables. | | | | | | |
| **VOCABULARY** | | | | | | |
| * Association * Bivariate data * Box plot * Box and whisker plot * Categorical data * Center conditional frequencies * Correlation coefficient * Dot plot * Histogram * Interquartile range * Joint frequencies * Line of best fi * Marginal frequencies * Mean absolute deviation * Outlier * Quantitative variables * Quartiles * Residual * Scatter plot * Shape * Spread * Trend * Two-frequency table | | | | | | |
| **ESSENTIAL QUESTIONS** | | | | | | |
| **Summarize, represent, and interpret data on a single count or measurement variable.**   * How do you represent data with plots on the real number line (dot plots, histograms, and box plots)? * How do you choose appropriate graphs to be consistent with numerical data: dot plots, histograms, and box plots? * How do you use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread(interquartile range, Mean Absolute Deviation) of two or more different data sets? * How do you interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers)? * How do you determine if data are symmetric, skewed left, or skewed right and how the shape of the data affects descriptive statistics?  Summarize, represent, and interpret data on two categorical and quantitative variables.  * How do you summarize categorical data for two categories in two-way frequency tables? * Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data? * How do you represent data on two quantitative variables on a scatter plot, and describe how the variables are related? * How do you fit a function to the data; use functions fitted to data to solve problems in the context of the data? * How do you Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models? * How do you informally assess the fit of a function by plotting and analyzing residuals? * How do you fit a linear function for a scatter plot that suggests a linear association?  Interpret linear models  * How do you interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data? * How do you compute (using technology) and interpret the correlation coefficient of a linear fit? * How do you distinguish between correlation and causation? | | | | | | |
| **PRE-ASSESSMENT** | | | | | | |
| * Unit 1 Pre-Assessment | | | | | | |
| **PRIOR TO ACTIVATION (CRCT/EOCT PRACTICE)** | | | | | | |
| **Bell Ringer -**   * Students complete questions independently * Have students compare answers and work with their table buddies. * Assist students as needed. * Review Bell Ringer   **Sources:**   * [Holt (7th Grade) CRCT Countdown](file:///C:\Users\noreen.elliott\Documents\2013-2014%20Coordinate%20Algebra\Math%207\countdown_to_crct.doc) * Wach (7th Grade) Warm-ups * [Holt (](file:///C:\Users\noreen.elliott\Documents\2013-2014%20Coordinate%20Algebra\Math%207\countdown_to_crct.doc)8[th Grade) CRCT Countdown](file:///C:\Users\noreen.elliott\Documents\2013-2014%20Coordinate%20Algebra\Math%207\countdown_to_crct.doc) * Wach (8th Grade Warm-ups) | | | | | | |
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|  | **Activate (front screen)** | | **Instruction** | | **Practice/Application** | **Assignment** |
| **Mon 9/2** |  | |  | |  |  |
| **Tues 9/3** |  | |  | |  |  |
| **Wed 9/4** |  | |  | |  |  |
| **Thu 9/5** |  | |  | |  |  |
| **Fri 9/6** |  | |  | |  |  |
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| **Mon 9/9** |  | |  | |  | Finish DOE tasks and problem based tasks from Unit 1  Review for Unit 1 test |
| **Tue 9/10** |  | |  | | Unit 1 Test  PreAssessment Unit 4 |  |
| **Wed 9/11** | Walch Warm-up 4.1.1 | | Walch 4.1.1 | | Walch Guided Practice 4.1.1 | Walch 4.1.1 Practice and Problem based Instruction |
| **Thu 9/12** | Review homework from Wednesday  Walch Warm-up 4.1.2 | | Walch 4.1.2 | | Walch Guided Practice 4.1.2 | Walch 4.1.2 Practice and Problem based Instruction |
| **Fri 9/13** | Review homework from Thursday  Walch Warm-up 4.1.3 | | Walch Instruction 4.1.3 | | Walch Guided Practice 4.1.3 | Walch Practice 4.1.3  Walch Problem-Based Task 4.1.3 |
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| **Mon 9/16** | Teacher Work Day | |  | |  |  |
| **Tue 9/17** | Review homework from Friday  Walch Warm-up 4.1.4 | | Walch Instruction 4.1.4 | | Walch Guided Practice 4.1.4 | Walch Practice 4.1.4  Walch Problem-Based Task 4.1.4 |
| **Wed 9/18** | Review homework from Tuesday  PresAssessment 4.2 | |  | |  | GaDOE: If the Shoe Fits! |
| **Thu 9/19** | Review homework from Wednesday  Assessment 4.1  Walch Warm-up 4.2.1 | | Walch Instruction 4.2.1 | | Walch Guided Practice 4.2.1 | Walch Practice 4.2.1  Walch Problem-Based Task 4.2.1 |
| **Fri 9/20** | Review homework from Thursday  Walch Warm-up 4.2.2 | | Walch Instruction 4.2.2 | | Walch Guided Practice 4.2.2 | Walch Practice 4.2.2  Walch Problem-Based Task 4.2.2 |
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| **Mon 9/23** | Review homework from Friday  Walch Warm-up 4.2.3 | | Walch Instruction 4.2.3 | | Walch Guided Practice 4.2.3 | Walch Practice 4.2.3  Walch Problem-Based Task 4.2.3 |
| **Tue 9/24** | Review homework from Monday  Walch Warm-up 4.2.4 | | Walch Instruction 4.2.4 | | Walch Guided Practice 4.2.4 | Walch Practice 4.2.4  Walch Problem-Based Task 4.2.4 |
| **Wed 9/25** | Review homework from Tuesday  PreAssessment 4.3 | |  | |  | GaDOE:  Public Opinions  Spaghetti Regression |
| **Thu 9/26** | Review homework from Wednesday  Assessment 4.2  Walch Warm-up 4.3.1 | | Walch Instruction 4.3.1 | | Walch Guided Practice 4.3.1 | Walch Practice 4.3.1  Walch Problem-Based Task 4.3.1 |
| **Fri 9/27** | Review homework from Thursday  Walch Warm-up 4.3.2 | | Walch Instruction 4.3.2 | | Walch Guided Practice 4.3.2 | Walch Practice 4.3.2  Walch Problem-Based Task 4.3.2 |
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| **Mon 9/30** | Review homework from Friday  Walch Warm-up 4.3.3 | | Walch Instruction 4.3.2 | | Walch Guided Practice 4.3.2 | Walch Practice 4.3.2  Walch Problem-Based Task 4.3.2 |
| **Tue 10/1** | Review homework from Monday | |  | |  | GaDOE:  Public OpinionsTV/Test Grades  Equal Salaries for Equal Work |
| **Wed 10/2** | Assessment 4.3 | |  | |  | Review for Unit 4 test |
| **Thu 10/3** |  | |  | | Unit 4 Assessment  Unit 2 PreAssessment |  |
| **Fri 10/4** |  | |  | |  |  |
| **DIFFERENTIATED INSTRUCTION** | | | | | | |  |  | Unit 4 Assessment  Unit 2 PreAssessment |  |
| Specific accommodations: (as specified in IEPs).  All periods:  Students with 90+ averages and demonstration of excellent work habits and motivation have the option of being in a “blended” segment of this class. All presentations, practice problems, etc. are on the web site. They may go to the media center or computer lab to work on the course. Students may also stay in class when they need additional support. This enables the instructor to work more closely with the other students and enables the “blended” students to be more challenged than they would be in the regular classroom. Current students taking the option: | | | | | | |
| **ASSESSMENT/EVALUATION** | | | | | | |
| * Observation, questioning of students while they are working * Completion of guided practice activity * Homework quizzes | | | | | | |
| **CLOSURE** | | | | | | |
| * Review day’s concepts and vocabulary * Remind students to review their unit notes | | | | | | |