Unit 7 *for additional curriculum information, please visit the district's resource **High School Pacing Guides** or Georgia's K-12 Standards	**Course Name: Algebra C & C**
Day 1	**Standards:** **A.DSR.10.1: Use statistics appropriate to the shape of the data distribution to compare center (median and mean) and variability (interquartile range, standard deviation) of two or more distributions by hand and using technology.** **A.DSR.10.2: Interpret differences in shape, center, and variability of the distributions in the framework, accounting for possible effects of extreme data points (outliers).** **LT:** I can determine whether to use mean and standard deviation vs. median and IQR to describe center and spread of a distribution based on the shape of the distribution. **SC:** • I can calculate mean, median, range, standard, deviation & IQR. • I can determine shape based on modes (unimodal, bi-modal, multimodal, uniform). • I can determine shape based on symmetry (Symmetric, right skewed, left skewed). • I can decide to use mean & st. dev to describe the distribution when unimodal and symmetric with no outliers • I can decide to use median & IQR to describe the distribution when skewed or outliers are present. **Lesson/Activity:** Students will analyze data by calculating summary stats, describing graphs by using Shape, Center, Spread, & Outliers. **Resources:** **The Basketball Star**
Day 2	**Standards:** **A.DSR.10.1: Use statistics appropriate to the shape of the data distribution to compare center (median and mean) and variability (interquartile range, standard deviation) of two or more distributions by hand and using technology.** **A.DSR.10.2: Interpret differences in shape, center, and variability of the distributions in the framework, accounting for possible effects of extreme data points (outliers).**

	LT: I can determine whether to use mean and standard deviation vs. median and IQR to describe center and spread of a distribution based on the shape of the distribution. **SC:** • I can calculate mean, median, range, standard, deviation & IQR. • I can determine shape based on modes (unimodal, bi-modal, multimodal, uniform). • I can determine shape based on symmetry (Symmetric, right skewed, left skewed). • I can decide to use mean & st. dev to describe the distribution when unimodal and symmetric with no outliers • I can decide to use median & IQR to describe the distribution when skewed or outliers are present. **Lesson/Activity:** Students will analyze data by calculating summary stats, describing graphs by using Shape, Center, Spread, & Outliers. **Resources:** Classroom Mathematics Award
Day 3	**Standards:** **A.DSR.10.1: Use statistics appropriate to the shape of the data distribution to compare center (median and mean) and variability (interquartile range, standard deviation) of two or more distributions by hand and using technology.** **A.DSR.10.2: Interpret differences in shape, center, and variability of the distributions in the framework, accounting for possible effects of extreme data points (outliers).** **LT:** I can determine whether to use mean and standard deviation vs. median and IQR to describe center and spread of a distribution based on the shape of the distribution. **SC:** • I can calculate mean, median, range, standard, deviation & IQR. • I can determine shape based on modes (unimodal, bi-modal, multimodal, uniform). • I can determine shape based on symmetry (Symmetric, right skewed, left skewed). • I can decide to use mean & st. dev to describe the distribution when unimodal and symmetric with no outliers • I can decide to use median & IQR to describe the distribution when skewed or outliers are present.

	Lesson/Activity: Students will analyze data by calculating summary stats, describing graphs by using Shape, Center, Spread, & Outliers. **Resources:**Variation in Math Classes
Day 4	**Standards:** **A.DSR.10.1: Use statistics appropriate to the shape of the data distribution to compare center (median and mean) and variability (interquartile range, standard deviation) of two or more distributions by hand and using technology.** **A.DSR.10.2: Interpret differences in shape, center, and variability of the distributions in the framework, accounting for possible effects of extreme data points (outliers).** **LT:** I can determine whether to use mean and standard deviation vs. median and IQR to describe center and spread of a distribution based on the shape of the distribution. **SC:** • I can calculate mean, median, range, standard, deviation & IQR. • I can determine shape based on modes (unimodal, bi-modal, multimodal, uniform). • I can determine shape based on symmetry (Symmetric, right skewed, left skewed). • I can decide to use mean & st. dev to describe the distribution when unimodal and symmetric with no outliers • I can decide to use median & IQR to describe the distribution when skewed or outliers are present. **Lesson/Activity:** Students will analyze univariate data by calculating summary stats and describing graphs by using Shape, Center, Spread, & Outliers. **Resources:**
Day 5	**Standards:A.DSR.10.3: Represent data on two quantitative variables on a scatter plot and describe how the variables are related.** **LT:** I can represent bivariate quantitative data using a scatter plot. I can describe the relationship between 2 quantitative variables by describing a scatter plot in context. FUDS+ (Form, Unusual Features, Direction, Strength) **SC:**

	• I can decide which variables go on the x and y axes. • I can decide on an appropriate scale to use for both variables. • I can label both axes in context. • I can give the scatter plot an appropriate title. • I can describe its Form. (linear or non-linear) • I can describe any Unusual features. (outliers, clusters, etc.) • I can describe its Direction. (positive or negative) • I can describe its Strength. (weak, moderate, strong, or no association) • I can write a sentence in context that describes the overall relationship. (In general,…) **Lesson/Activity:** Students will analyze bivariate data by graphing scatter plots and describing the relationship between the 2 variables. **Resources:**
Day 6	**Standards:A.DSR.10.3: Represent data on two quantitative variables on a scatter plot and describe how the variables are related.** **LT:** I can represent bivariate quantitative data using a scatter plot. I can describe the relationship between 2 quantitative variables by describing a scatter plot in context. FUDS+ **SC:** • I can decide which variables go on the x and y axes. • I can decide on an appropriate scale to use for both variables. • I can label both axes in context. • I can give the scatter plot an appropriate title. • I can describe its form. (linear or non-linear) • I can describe any unusual features. (outliers, clusters, etc.) • I can describe its direction. (positive or negative) • I can describe its strength. (weak, moderate, strong, or no association) • I can write a sentence in context that describes the overall relationship. (In general,…) **Lesson/Activity:** Students will create scatter plots to develop an understanding of the relationships of bivariate data. With this learning plan, students will investigate the concept of the “goodness-of-fit” and its significance in determining the regression line or best fit line for the data. This includes studying correlations and creating models from which they will predict and make critical judgments.

	Resources: Spaghetti Regression
Day 7	**Standards:A.DSR.10.5: Calculate the line of best fit and interpret the correlation coefficient, r, of a linear fit using technology. Use r to describe the strength of the goodness of fit of the regression. Use the linear function to make predictions and assess how reasonable the prediction is in context.** **LT:** I can calculate and interpret correlation (r) for a LINEAR relationship between 2 quantitative variables. I can create and analyze a linear model (LSRL, line of best fit, equation of a line, etc…) for the LINEAR relationship between 2 quantitative variables. **SC:** • I can use technology to run a linear regression to find r. • I can analyze the quantity of r to decide if the LINEAR relationship is weak, moderate, strong, or no linear association. • Given the raw data, I can use the technology to calculate the slope and y-intercept and then write the linear model in context. • I can interpret the slope in context. • I can interpret the y-intercept in context. • I can interpret r (correlation) in context. • I can calculate a predicted value using the linear model I created. **Lesson/Activity:** Students will collect, analyze and interpret the strength of a correlation, describe how two variables are related, and fit a linear function for a scatter plot that suggests a linear association. **Resources:** Sports Analysis
Day 8	**Standards:A.DSR.10.5: Calculate the line of best fit and interpret the correlation coefficient, r, of a linear fit using technology. Use r to describe the strength of the goodness of fit of the regression. Use the linear function to make predictions and assess how reasonable the prediction is in context.** **LT:**

	I can calculate and interpret correlation (r) for a LINEAR relationship between 2 quantitative variables. I can create and analyze a linear model (LSRL, line of best fit, equation of a line, etc…) for the LINEAR relationship between 2 quantitative variables. **SC:** • I can use technology to run a linear regression to find r. • I can analyze the quantity of r to decide if the LINEAR relationship is weak, moderate, strong, or no linear association. • Given the raw data, I can use the technology to calculate the slope and y-intercept and then write the linear model in context. • I can interpret r (correlation) in context. • I can calculate a predicted value using the linear model I created. **Lesson/Activity:** Students will represent data on a scatter plot, describe how two variables are related, and fit a linear function for a scatter plot that suggests a linear association. **Resources:** Next Generation Stats
Day 9	**Standards:A.DSR.10.4: Interpret the slope (predicted rate of change) and the intercept (constant term) of a linear model in the framework of the data. (NOTE: The problem framework should include contextual situations to apply the mathematical concept.)** **LT:** I can create and analyze a linear model (LSRL, line of best fit, equation of a line, etc…) for the LINEAR relationship between 2 quantitative variables by finding the slope and the y-intercept. **SC:** • I can interpret the slope in context. • I can interpret the y-intercept in context. **Lesson/Activity:** **Resources:**
Day 10	**Standards:A.DSR.10.4: Interpret the slope (predicted rate of change) and the intercept (constant term) of a linear model in the framework of the data. (NOTE: The problem framework should include contextual situations to apply the mathematical concept.)** **LT:**

	I can create and analyze a linear model (LSRL, line of best fit, equation of a line, etc…) for the LINEAR relationship between 2 quantitative variables by finding the slope and the y-intercept. **SC:** • I can interpret the slope in context. • I can interpret the y-intercept in context. **Lesson/Activity:** **Resources:**
Day 11	**Standards:A.DSR.10.6: Decide which type of function is most appropriate by observing graphed data.** **LT:** I can determine whether the relationship between 2 quantitative variables is linear, exponential, or quadratic. **SC:** • I can graph bivariate data on a scatter plot. • I can analyze the shape of the pattern. • I can determine which type of function best models the relationship (linear, exponential, or quadratic). **Lesson/Activity:** Students will represent data on a scatter plot, describe how two variables are related, and fit a linear function for a scatter plot that suggests a linear association. **Resources:** Test Scores and Watching Television
Day 12	**Standards:A.DSR.10.6: Decide which type of function is most appropriate by observing graphed data.** **LT:** I can determine whether the relationship between 2 quantitative variables is linear, exponential, or quadratic. **SC:** • I can graph bivariate data on a scatter plot. • I can analyze the shape of the pattern. • I can determine which type of function best models the relationship (linear, exponential, or quadratic). **Lesson/Activity:** Students will compare additive and multiplicative growth (represented by linear and exponential models) to make predictions and solve problems within the context of salary differences. In this task, students will analyze data sets, create scatter plots, determine the most appropriate mathematical model, and justify their model selection.

	Resources: Equal Salaries for Equal Work
Day 13	**Standards:A.DSR.10.7: Distinguish between correlation and causation.** **LT:** I can understand that ASSOCIATION ≠ CAUSATION!!!!!!!!! **SC:** • I can understand when analyzing the association between 2 quantitative variables there is ALWAYS a possibility of a 3rd lurking variable that could be the cause of the relationship. (As ice cream sales increase, so do shark attacks…eating ice cream does not CAUSE shark attacks! The lurking variable here is weather!) • I can understand that the only way to prove causation is with a controlled randomized experiment! **Lesson/Activity:** Students will be able to determine the difference between correlation and causation through exploration of various real world context problems. **Resources:**
Day 14	**Review**
Day 15	**Test**