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| Grade Level 9th Coordinate Algebra A | | **Teacher/Room**: L. Payne/Room 181 Week of: October 26-October 31 | | | |
| **Unit Vocabulary** Unit 4- see attached | | | | | |
| **Instructional Strategies Used: Lecture, whole-group, individual, PowerPoint, Computer Lab, Video Clips, gadoe task,Cornell Note-taking system** | | | | | |
| **Day 1** | **Day 2** | | **Day 3** | **Day 4** | **Day 5** |
| **Common Core Standard(s)**:  MCC9-12.S.ID.1Represent data with plots on the real number line (dot plots, histograms, and box plots).  **L9-10RST7** | **Common Core Standard(s)**:  **MCC9-12.S.ID.1 Represent data with plots on the real number line (… histograms, …).\*MCC9-12.S.ID.5 Summarize categorical data … in … frequency tables. …\* L9-10RST7** | | **Common Core Standard(s)**:  **MCC9-12.S.CP.4 Construct and interpret two-way frequency tables of data when two categories are associated with each object**  **being classified. Use the two-way table … to approximate conditional probabilities.**  **\*L9-10RST7** | **Common Core Standard(s)**:  MCC9-12.S.CP.4 Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table … to approximate conditional probabilities.\* | **Common Core Standard(s)**:  MCC9-12.S.ID.3 Interpret differences in … center, and spread in the context of data sets, accounting for possible effects of extreme data points (outliers).\*  MCC9-12.S.ID.2Interpret differences in … center, and spread in the context of data sets, accounting for possible effects of extreme data points (outliers).\* |
| EQ Question: How can you use various types of graphs to  organize and display data? | EQ Question: How can you organize and display data using stem-and-leaf plots and histograms? | | EQ Question: How can you construct and interpret  two-way frequency tables? | EQ Question: How can you construct and interpret  two-way frequency tables? | **EQ Question**: How can you describe data using measures of central tendency and spread, including displaying data on box-and-whisker plots? |
| **Mini Lesson:** Working with percents  **Activating Strategies:**  M&M circle graph:  **Lesson:**   * 14.1:Organizing and Displaying Data   **Resource/Materials:** Powerpoint, worksheets,M&Ms | **Mini Lesson:** Ordering sets of data  **Activating Strategies:**  dot plot of M&Ms  **Lesson:**   * **14.2: Frequency and historgrams** * **Powerpoint**   **Resource/Materials:**  Powerpoint, Worksheets  Information on M&Ms | | **Mini Lesson:** Simple probablity  **Activating Strategies:** Probability of M&Ms  **Lesson:**   * 14.3 Two way tables * Powerpoint   **Resource/Materials:**  Powerpoint , textbook,  Information on M&Ms | **Mini Lesson:** Check homework  **Activating Strategies:**  **Lesson**:   * 14.3 continued   **Resource/Materials:**  Powerpoint, textbook, worksheets | **Mini Lesson:** Check homework  **Activating Strategies:** Find the class mean, median, mode of M&Ms.  **Lesson:**   * **14.4 Data Distribution** * **Powerpoint**   **Resource/Materials:**  Powerpoint, textbook, worksheets, Information on M&Ms. |
| **Differentiation:**  *Content/Process/Product:* Activating Strategy (Content)  *Grouping Strategy:*  *Assessment:* informal | **Differentiation:**  *Content/Process/Product:* Modified Worksheet  *Grouping Strategy: Assessment:* informal | | **Differentiation:**  *Content/Process/Product: Modeling questions #24*  *Grouping Strategy: Assessment:* | **Differentiation:**  *Content/Process/Product:* Partners  *Grouping Strategy:*  *Assessment:* | **Differentiation:**  *Content/Process/Product:*  *Grouping Strategy: Assessment:* |
| **Assessment :**  *Formative:* thumbs up/down  *Summative:* | **Assessment :**  *formative:* thumbs up/down  *Summative:* | | **Assessment :**  *Formative:* thumbs up/down  *Summative:* | **Assessment :**  *Formative:* thumbs up/down  *Summative:* | **Assessment :**  *Formative:* thumbs up/down  *Summative:* |
| **Homework: pg. 376 17–29, 34–44** | **Homework: pg. 382, 7-11,13-23** | | **Homework: pg. 390, 8–10, 12–23** | **Homework: Practice 14.2a, 14.3a, review for mastery ws** | **Homework: 14–34 even, 36–63** |

* **Unit 4 Vocabulary**
* **Association. A connection between data values.**
* **Bivariate data.** Pairs of linked numerical observations. Example: a list of heights and weights for each player on a football team.
* **Box Plot.** A method of visually displaying a distribution of data values by using the median, quartiles, and extremes of the data set. A box shows the middle 50% of the data.
* **Box-and-Whisker Plot.** A diagram that shows the five-number summary of a distribution. (Five-number summary includes the minimum, lower quartile (25th percentile), median (50th percentile), upper quartile (75th percentile), and the maximum. In a modified box plot, the presence of outliers can also be illustrated.
* **Categorical Variables.** Categorical variables take on values that are names or labels. The color of a ball (e.g., red, green, blue), gender (male or female), year in school (freshmen, sophomore, junior, senior). These are data that cannot be averaged or represented by a scatter plot as they have no numerical meaning.
* **Center.** Measures of center refer to the summary measures used to describe the most “typical” value in a set of data. The two most common measures of center are median and the mean.
* **Conditional Frequencies.** The relative frequencies in the body of a two-way frequency table.
* **Correlation Coefficient.** A measure of the strength of the linear relationship between two variables that is defined in terms of the (sample) covariance of the variables divided by their (sample) standard deviations.
* **Dot plot.** A method of visually displaying a distribution of data values where each data value is shown as a dot or mark above a number line.
* **First Quartile (Q1).** The “middle value” in the *lower* half of the rank-ordered data
* **Five‑Number Summary. Minimum, lower quartile, median, upper quartile, maximum.**
* **Histogram- Graphical display that** subdivides the data into class intervals and uses a rectangle to show the frequency of observations in those intervals—for example you might do intervals of 0-3, 4-7, 8-11, and 12-15
* **Interquartile Range.** A measure of variation in a set of numerical data. The interquartile range is the distance between the first and third quartiles of the data set. Example: For the data set {1, 3, 6, 7, 10, 12, 14, 15, 22, 120}, the interquartile range is 15 – 6 = 9.
* **Joint Frequencies.** Entries in the body of a two-way frequency table.
* **Line of Best Fit (**trend or regression line). A straight line that best represents the data on a scatter plot. This line may pass through some of the points, none of the points, or all of the points. Remind students that an exponential model will produce a curved fit.
* **Marginal Frequencies.** Entries in the "Total" row and "Total" column of a two-way frequency table.
* **Mean Absolute Deviation.** A measure of variation in a set of numerical data, computed by adding the distances between each data value and the mean, then dividing by the number of data values. Example: For the data set {2, 3, 6, 7, 10, 12, 14, 15, 22, 120}, the mean absolute deviation is 20.
* **Outlier.** Sometimes, distributions are characterized by extreme values that differ greatly from the other observations. These extreme values are called outliers. As a rule, an extreme value is considered to be an outlier if it is at least 1.5 interquartile ranges below the lower quartile (Q1), or at least 1.5 interquartile ranges above the upper quartile (Q3).

**OUTLIER if the values lie outside these specific ranges:**

Q1 – 1.5 • IQR

Q3 + 1.5 • IQR

* **Quantitative Variables.** Numerical variables that represent a measurable quantity. For example, when we speak of the population of a city, we are talking about the number of people in the city – a measurable attribute of the city. Therefore, population would be a quantitative variable. Other examples: scores on a set of tests, height and weight, temperature at the top of each hour.
* **Residuals** (error). Represents unexplained (or residual) variation after fitting a regression model. **residual** = observed value – predicted value e = y – ŷ. A **residual plot** is a graph that shows the residual values on the vertical axis and the independent (*x*) variable on the horizontal axis.
* **Scatter plot.** A graph in the coordinate plane representing a set of bivariate data. For example, the heights and weights of a group of people could be displayed on a scatter plot. If you are looking for values that fall within the range of values plotted on the scatter plot, you are interpolating. If you are looking for values that fall beyond the range of those values plotted on the scatter plot, you are extrapolating.
* **Second Quartile (**Q2**).** The *median* value in the data set.
* **Shape**. The shape of a distribution is described by symmetry, number of peaks, direction of skew, or uniformity.
* **Symmetry**- A symmetric distribution can be divided at the center so that each half is a mirror image of the other.
* **Number of Peaks**- Distributions can have few or many peaks. Distributions with one clear peak are called unimodal and distributions with two clear peaks are called bimodal. Unimodal distributions are sometimes called bell-shaped.
* **Direction of Skew**- Some distributions have many more observations on one side of graph than the other. Distributions with a tail on the right toward the higher values are said to be skewed right; and distributions with a tail on the left toward the lower values are said to be skewed left.
* **Uniformity-** When observations in a set of data are equally spread across the range of the distribution, the distribution is called uniform distribution. A uniform distribution has no clear peaks.
* **Spread.** The spread of a distribution refers to the variability of the data. If the data cluster around a single central value, the spread is smaller. The further the observations fall from the center, the greater the spread or variability of the set. (range, interquartile range, Mean Absolute Deviation, and Standard Deviation measure the spread of data)
* **Third quartile.** For a data set with median *M*, the third quartile is the median of the data values greater than M. Example: For the data set {2, 3, 6, 7, 10, 12, 14, 15, 22, 120}, the third quartile is 15.
* **Trend.** A change (either positive, negative or constant) in data values over time.
* **Two-Frequency Table.** A useful tool for examining relationships between categorical variables. The entries in the cells of a two-way table can be frequency counts or relative frequencies.