

Curriculum Units and Learning Outcomes

Content Area: Foundations Algebra I	Grade Level: 9
Unit 3: Statistics	
Unit Summary: Students will deepen their understanding of measures of central tendency by analyzing shape / spread of data, presence of outliers / clusters, etc. in order to make choices about using the best descriptive statistic to model data. Students will also organize single variable and bivariate data with different displays in order to answer analyze information.	
Massachusetts Standards: S.ID.1, 2, 3, 5 Summarize, represent, and interpret data on a single count or measurement variable. Use calculators, spreadsheets, and other technology as appropriate. 1. Represent data with plots on the real number line (dot plots, histograms, and box plots). 2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets. 3. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers). Summarize, represent, and interpret data on two categorical and quantitative variables. 5. 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. N.Q.1 Reason quantitatively and use units to solve problems. 1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.	
Enduring Understandings: - Statistics measure the central tendencies and the spread of data. - There are many graphic and tabular methods of representing data. - Outliers and clusters influence the spread of data changing which measure of central tendency best represents the data set.	

Essential Questions:

- What are measures of central tendency and measures of dispersion?
- How do I statistically represent one variable and two variable data graphically and numerically?
- How do I interpret statistical representations of data?

Students will demonstrate KNOWLEDGE of:

- The definitions of mean, median, mode, range, quartiles, interquartile range and outlier (how outlier impacts measure of center)
- Constructing box and whisker and pie charts (completed using values, percents or degrees).
- Using proportions to set up and solve a percentage problem.
- Bivariate Data: Two-Way Tables
- Simple probability (event divided by population)

Students will be SKILLED at:

- Finding mean, median, mode, and range for a given data set.
- Interpreting box-and-whisker graphs, histograms, dotplots, stem and leaf, dot plots, circle graphs
- calculating percentages based on statistical graph
- Completing a two-way frequency table

Estimated Duration: 2 weeks