Unit 2b-Investigate Bivariate Data

Content Area: **Math**
Course(s): **Math 8 Gen Ed**
Time Period: **Marking Period 2**
Length: **Wk 5-7 Envisions Mathematics Topic 4**
Status: **Published**

Essential Questions

- How can you represent the relationship between paired data and use the representation to make predictions?

Big Ideas

- Investigate patterns of association in bivariate data.

Diversity Integration

Objective: Students will be able to describe patterns associated between two quantities

Activity:

Students will work in groups to come up with an association between two quantities from scatter plots they have researched. Students will describe the patterns that they see. Teacher will model how to describe the data based on the gender wage gap.

https://studentwork.prattsi.org/infovis/visualization/gender-wage-gap-exist-providing-statistical-graphs-showing-positive-results-2/

Enduring Understandings

Statistics and Probability

8.SP.1 Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. Students may investigate patterns of association in bivariate data involving the amount of greenhouse gas in the atmosphere and its effect on temperature.

8.SP.2 Know that straight lines are widely used to model relationships between two quantitative

variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line.

8.SP.3 Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height. Students may use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept involving the physical properties of the principle gasses that cause climate change.

8.SP.4 Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores?

CSDT Technology Connection

8.1.8.DA.1: Organize and transform data collected using computational tools to make it usable for a specific purpose

Mathematical Practices Focus

1. Make sense of problems and persevere in solving them. Lesson 2, 3, 4, 5, and page 251
2. Reason abstractly and quantitatively. Lesson 1, 3, 5, and page 251
3. Construct viable arguments and critique the reasoning of others. Lesson 1, 2, 5, and page 251
4. Model with mathematics. Lesson 1, 3, 4, and page 251
7. Look for and make use of structure. Lesson 1, 2, 4, 5, and page 251
8. Look for and express regularity in repeated reasoning. Lesson 1, and page 251