

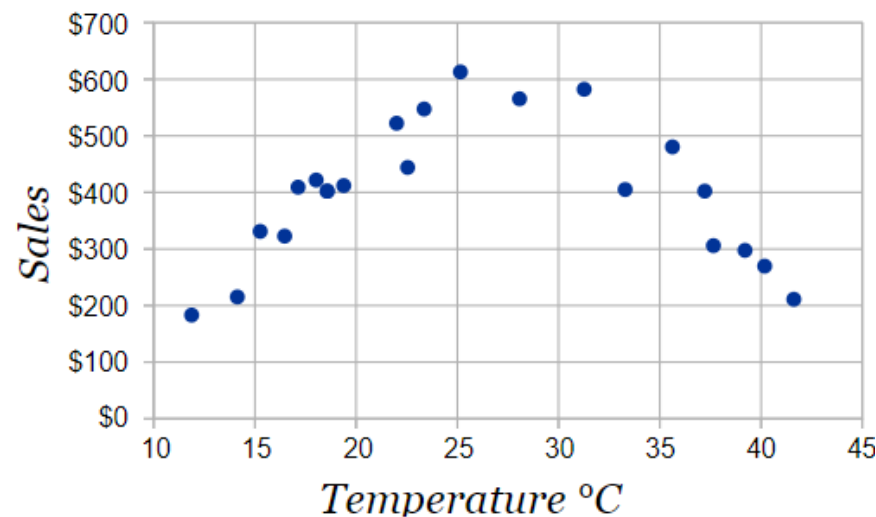
Exploring Bivariate Numerical Data: Part 1

- Topics: Scatter Plots and Associations
- Objective: Students will be able to create and interpret data on scatter plots.
- Standards: CCSS Math: 8.SP.A.1

Bivariate Numerical Data

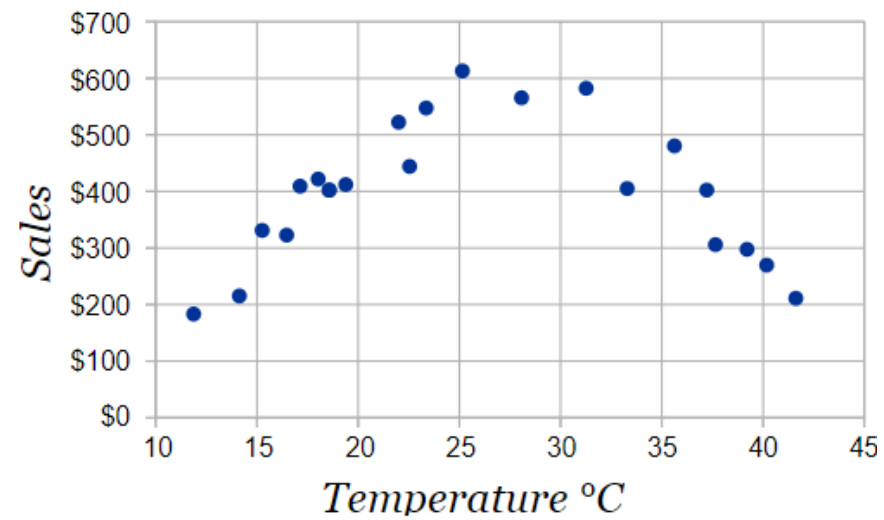
Definition: Bivariate Numerical Data is data on each of two variables, where each value of one of the variables is paired with a value of the other variable. Typically it would be of interest to investigate the possible association between the two variables.

Example: Ice Cream sales compared to outdoor temperatures.



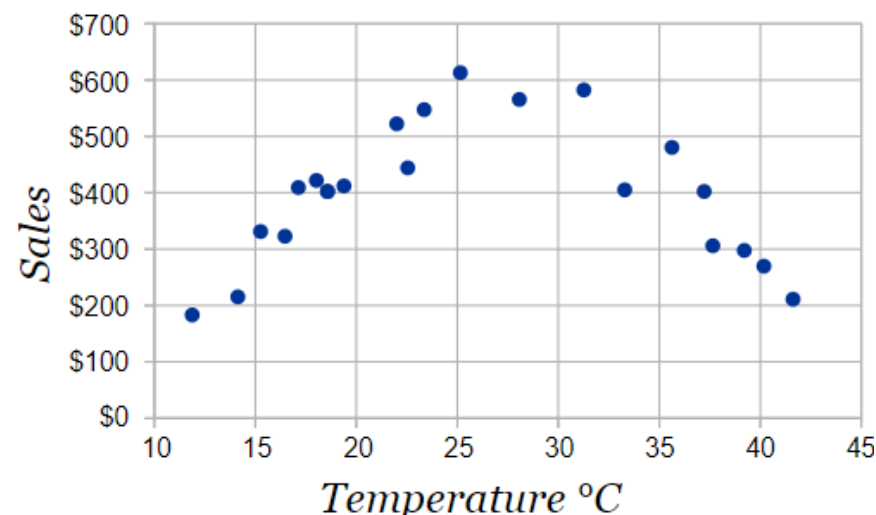
Scatter Plots

Example: Ice Cream sales compared to outdoor temperatures.



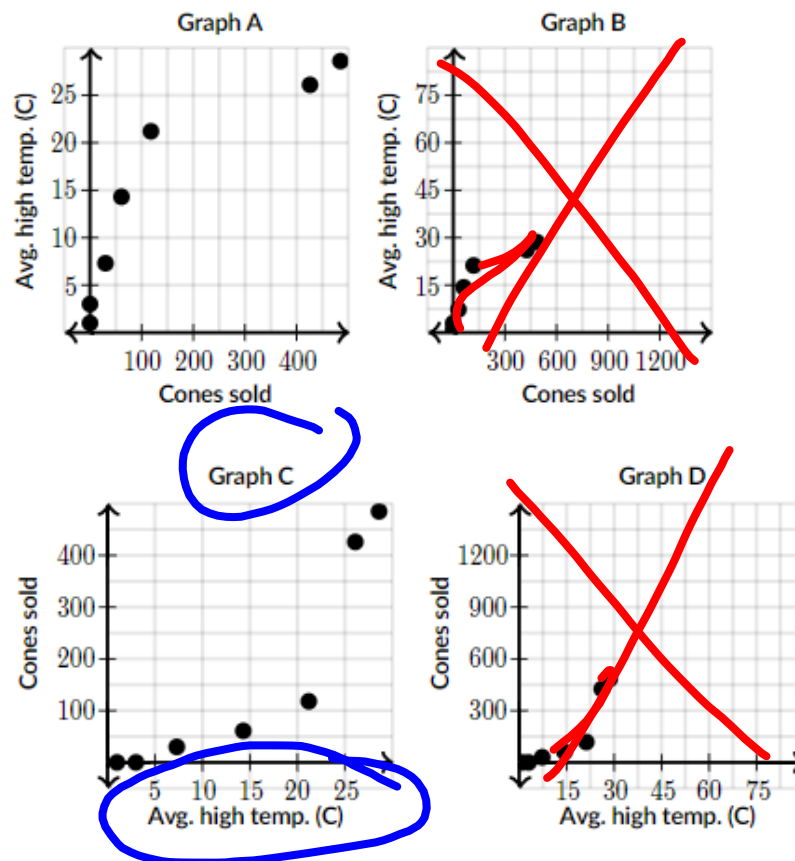
Making Appropriate Scatter Plots

- Independent Variable: a variable (often denoted by x) whose variation does not depend on that of another.
- Dependent Variable: a variable (often denoted by y) whose value depends on that of another.



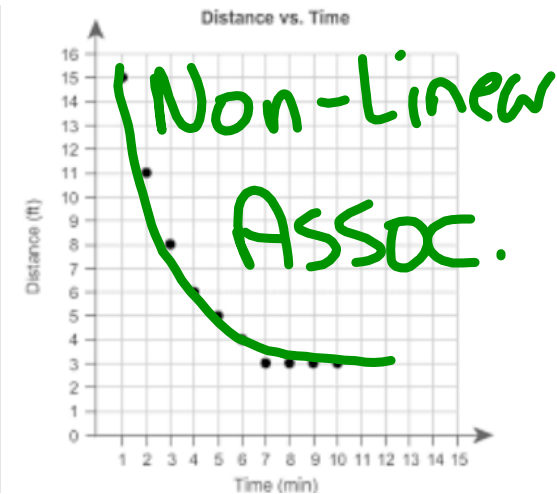
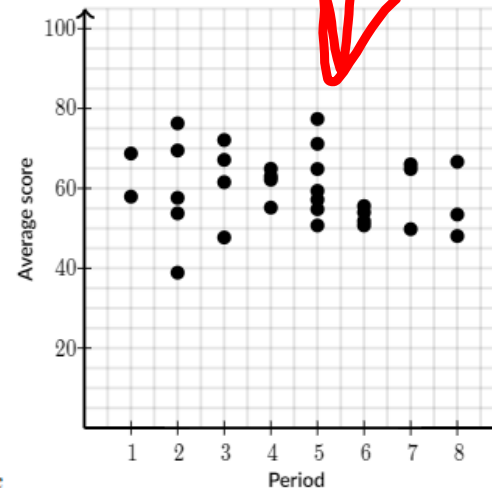
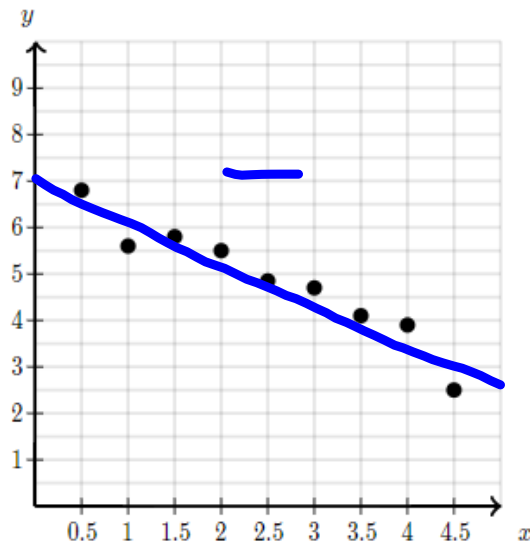
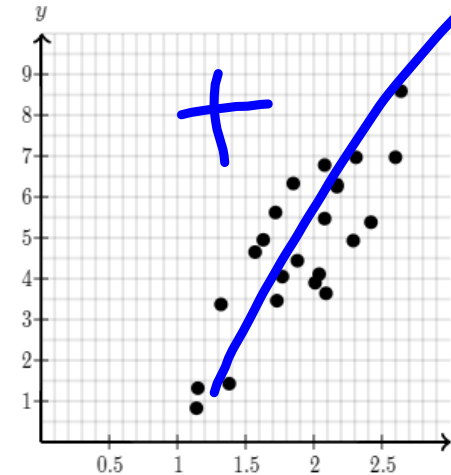
Making Appropriate Scatter Plots

Example: Carley owns an ice cream stand. She wants to predict how many ice cream cones she will sell as a function of the average daily high temperature each month. The data for the past 7 months is shown in the table below.



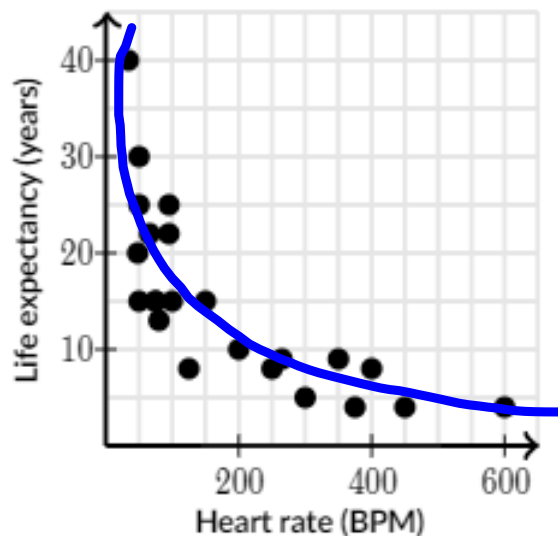
Positive and Negative Linear Associations from Scatter Plots

Examples: Positive Linear Correlation
Negative Linear Correlation
Non-linear Correlation
No Association



Describing Trends in Scatter Plots

- You will need to interpret what the data in the scatter plot describes about the data.
- Example: The graph below shows the relationship between average heart rate (in beats per minute) of several mammal species and their life expectancy (in years).



As BPM increases,
Life-expectancy
decreases.

Displaying and Comparing Quantitative Data

You should be working on the following skills:

1. Constructing Scatter Plots
2. Making Appropriate Scatter Plots
3. Positive and Negative Linear Associations from a Scatter Plot
4. Describing Trends in Scatter Plots

Attachments

Ztable.pdf