This activity demonstrates the use of scatterplots to visualize positive and negative relationships.

Positive Correlation

- What does it mean to say that two variables are positively correlated?
  It means that if one variable has a high value, the other variable is also high. If one is low, so is the other.

Negative Correlation

- What does it mean to say that two variables are negatively correlated?
  It means that a person will show high values with one variable and low values with the other.

Uncorrelated Variables

- What does it mean to say that two variables are uncorrelated?
  When a person’s values on one of the variables is as likely to be high or low on the other variable.

Correlation Coefficient

- What is a correlation coefficient?
  Statistic that indicates the strength of the relationship between two variables.

Why Use It?

- What value or benefit would a researcher gain by calculating a correlation coefficient rather than simply describing the relationship as a positive correlation or a negative correlation? It allows the researcher to describe the relationship with more precision—not only can she say it is correlated, but how closely.

Estimating the Relationship

- Look at the scatterplots and try to estimate the direction (positive or negative) and the strength of the relationship. Write in your guess below.

  Scatterplot 1: __________  Scatterplot 2: __________  Scatterplot 3: __________  Scatterplot 4: __________  Scatterplot 5: __________  Scatterplot 6: __________

Causality and Predictability

- The presence of a correlation between two variables doesn’t prove that certain values on one variable cause high or low values on the other. It merely demonstrates that the two variables are associated in some way.

- The relationship between two correlated variables has predictive value. This means that if a strong correlation exists between variables, then knowing a person’s score on one variable allows us to predict a person’s score on the other variable.