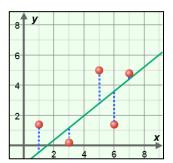
Vocabulary: Correlation

Vocabulary

Gizmos

- <u>Correlation</u> a measure of the relationship between two variables.
 - If the variables vary together (as one goes up, the other tends to go up), they are *positively correlated.*
 - If the variables vary in opposite directions (as one goes up, the other tends to go down), they are *negatively correlated*.
 - o If the variables are unrelated, they have no correlation.
- <u>Correlation coefficient</u> a number between –1 and 1, represented by the letter *r*, that
 indicates how strongly two variables are correlated and the type of correlation.
 - A positive value of *r* indicates a positive correlation, while a negative value of *r* indicates a negative correlation.
 - The closer *r* is to 1, the stronger the positive correlation between the variables.
 - The closer *r* is to -1, the stronger the negative correlation.
 - A value of *r* near 0 indicates little to no correlation between the variables.
- <u>Least-squares fit line</u> the line that best represents the linear relationship between two variables.
 - The least-squares fit line is also called the *least-squares regression line*.
 - The least-squares fit line is the line that minimizes the total sum of the squares of the *residuals*, where the residuals are the vertical distances from the data points to the least-squares fit line, as shown to the right.



- <u>Scatter plot</u> a graph of (x, y) points that shows the general relationship between two variables, x and y.
 - Generally, the variable on the horizontal (x) axis is the *independent variable*, and the variable on the vertical (y) axis is the *dependent variable*.

