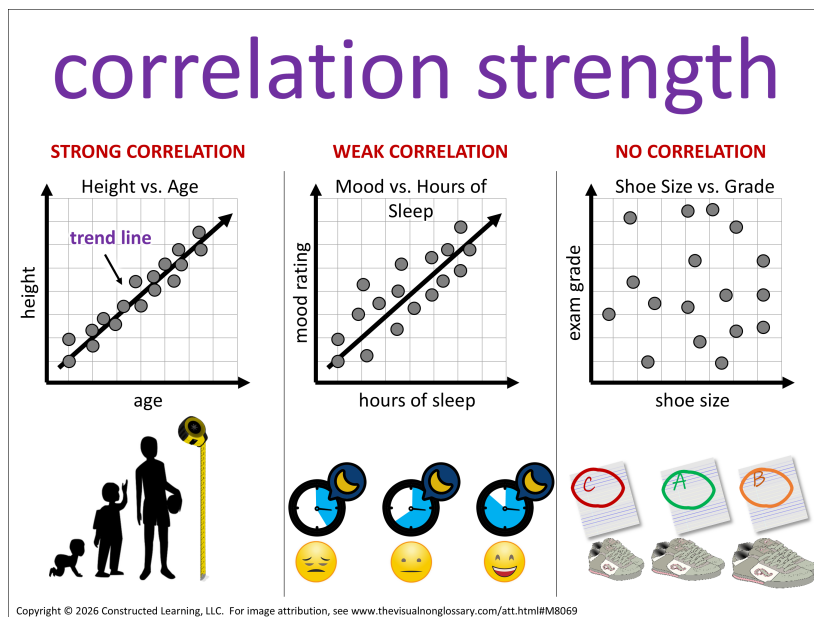


Reading Data, Finding Patterns

The purpose for reading is to learn about correlation strength and what it can tell you about a relationship between two variables.

Look Out For:

- How close the dots are to the trend line
- Whether the pattern is strong, weak, or missing
- Whether the correlation strength could help make a prediction



A science class collected data to study how two variables might be connected. First, they measured students' height at different ages. They plotted the points on a graph. The dots lined up close together along a **trend line**. This showed a clear pattern. The data followed the line closely. Because of this, the class could trust the pattern. They could use it to predict a student's height at a certain age. This close pattern is called a strong **correlation strength**. Next, the class compared hours of sleep to mood ratings. The dots followed the direction of the **trend line**. But many points were far from the line. The pattern was not as steady. The class could only make rough guesses about mood based on sleep. This showed a weaker **correlation strength**. Finally, the class compared shoe size to exam grades. The dots were scattered all over the graph. There was no clear direction. Shoe size could not help predict a grade. This meant there was no **correlation strength** between the two variables.

A group of students wanted to study two new variables. They looked at how many hours people practiced free throws. They also looked at how many shots each player

made in a game. They collected data from ten players. They plotted the results on a graph. Some players practiced a lot and also made many shots. Their points were close together near a rising **trend line**. Other players practiced the same amount but had very different results. Their points were scattered farther from the line. The students knew a strong pattern could help them predict a new player's performance. They wondered what the **correlation strength** of their graph would show. They wondered if it was strong enough to trust.

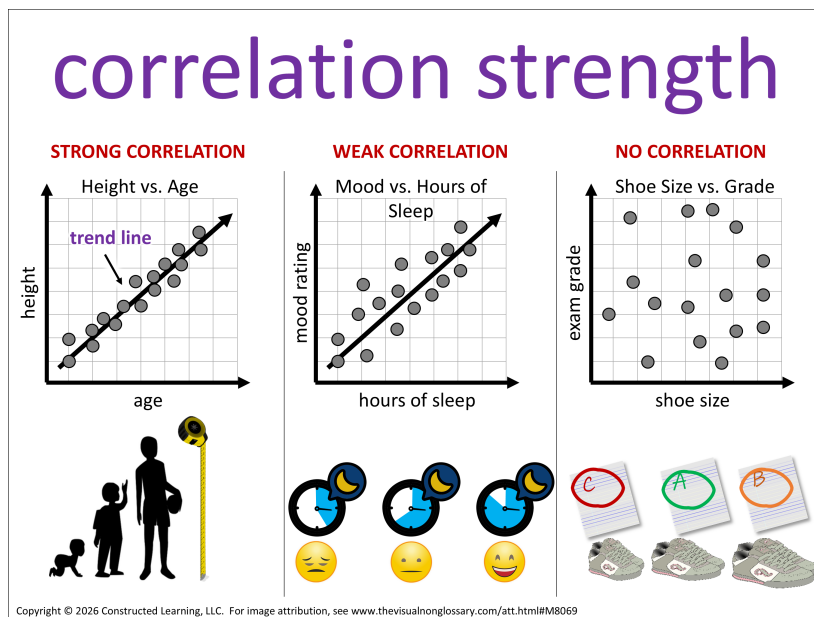


Reading Data, Finding Patterns

The purpose for reading is to learn about correlation strength and what it can tell you about a relationship between two variables.

Look Out For:

- How close the dots are to the trend line
- Whether the pattern is strong, weak, or missing
- Whether the correlation strength could help make a prediction



A science class collected data to study how two variables might be connected. First, they measured students' height at different ages. When they plotted the points on a graph, the dots lined up closely along a **trend line**, showing a clear pattern. Because the data followed the line so closely, the class could trust the pattern and use it to make confident predictions about a student's height at a certain age. This close, reliable pattern is called a strong **correlation strength**. Next, the class compared hours of sleep to mood ratings. The dots followed the **trend line** in a general direction, but many points scattered farther away from it. Since the pattern was less consistent, the class could only make rough guesses about mood based on sleep, showing a weaker **correlation strength**. Finally, when the class compared shoe size to exam grades, the dots were scattered all over the graph with no clear direction at all. Without a pattern to follow, the class realized shoe size could not help them predict a grade at all, meaning there was no **correlation strength** between the two variables.

A group of students later wanted to study two new variables: the number of hours people spent practicing free throws and how many shots they made in a game. They collected data from ten players and plotted the results on a graph. Some players who practiced the most also made the most shots, and their points landed close together near a rising **trend line**. Other players who practiced a similar amount had very different results, with points scattered farther from the line. The students knew that if their data formed a strong pattern, they could use it to predict how practice time might affect a new player's performance. They wondered what the **correlation strength** of their graph would reveal, and whether it was strong enough to trust for making predictions.

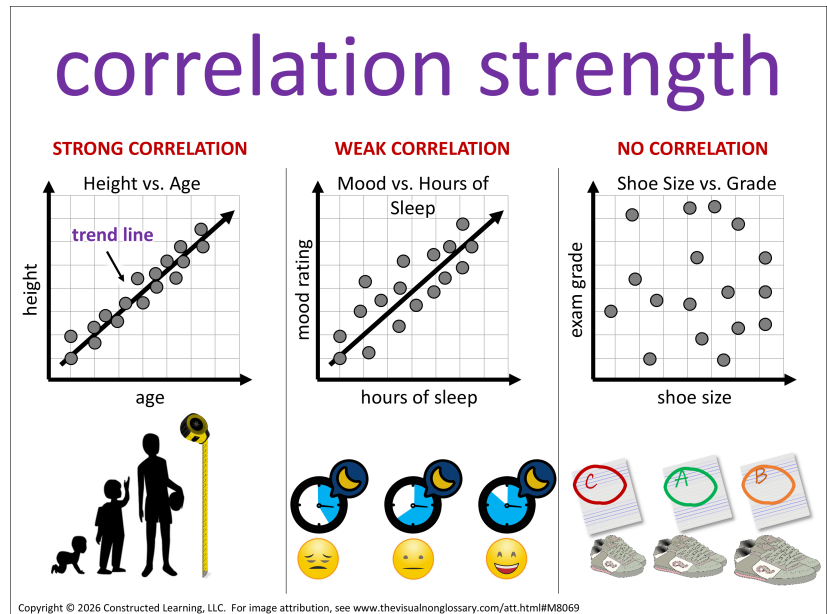


Reading Data, Finding Patterns

The purpose for reading is to learn about correlation strength and what it can tell you about a relationship between two variables.

Look Out For:

- How close the dots are to the trend line
- Whether the pattern is strong, weak, or missing
- Whether the correlation strength could help make a prediction



Hoping to determine whether two variables were connected, a science class collected data on students' height across different ages, plotting the results on a graph where the points aligned closely along a **trend line**. Because the data adhered so tightly to the line, the class recognized they could use this reliable pattern, known as a strong **correlation strength**, to predict a student's height at a given age with real confidence. When the class shifted to comparing hours of sleep with mood ratings, the dots still followed the general direction of the **trend line**, yet scattered more noticeably away from it, leaving the class with only rough estimates rather than dependable predictions, a sign of weaker **correlation strength**. Finally, comparing shoe size to exam grades produced a graph with no discernible direction at all, and lacking any usable pattern, the class understood that shoe size held no value whatsoever for predicting grades, indicating an absence of **correlation strength** between the variables.

Curious whether a similar relationship might exist between two new variables, a group of students investigated the connection between hours spent practicing free throws and shots made during a game, collecting data from ten players and plotting the results. Players who practiced most frequently tended to cluster near a rising **trend line**, while others who practiced comparable amounts produced strikingly different outcomes, their points scattered well beyond it. Recognizing that a strong pattern could inform predictions about a new player's future performance, the students found themselves wondering just how much the **correlation strength** of their graph might reveal, and whether it would prove reliable enough to act on.

