

Is It Random?

Fool the Instructor Activity

- Divide the class into two halves
- **Send the instructor out of the room**
- Half the class: Go down the row and flip a coin
- Other half the class: Wait until it's your turn, and then call out heads or tails
- Another instructor will keep track of heads or tails
- Bring instructor back in to the room and see if she can guess which set of data was the real coin flip and which was the simulated coin flip.

Coin Flip Results

Click [here](#) to go to a data table in Sheets

Examples of when random doesn't seem random

- In this article, [Spotify Made Random Shuffle Less Random on Purpose – Here's Why](#), it explains how Spotify's new random shuffle algorithm actually isn't random.
 - Users complained that the random buttons wasn't working because they were getting two songs in a row by the same artist.
 - Knowing what you know now, what is wrong with this argument?
- What are some other examples of when something is random, but humans assign meaning or a pattern that doesn't exist?

What can we do to avoid identifying patterns that don't exist?

- Knowing truly is half the battle
- Statistical analysis
 - Chi-squared - Is there correlation between two variable?
 - P-value - Is the correlation random?