

Real Vs. Fake Data (For Teachers)

Most people think that they could produce a convincing fake of random data. However, doing so is surprisingly hard. To illustrate this, have your students flip a coin 200 times, recording each result individually; or, give them the option of merely imagining flipping the coin 200 times, and faking the results. Ensure that students write the results of every flip, in the order in which they were received. You may want to have them fill in a chart like the one below:

Trial Number	Heads	Tails
1		X
2	X	
3	X	
4		X
5		X
6	X	
⋮	⋮	⋮
200		X

Once they have turned in their data, there is a simple (and fairly reliable) test to distinguish real data from fake. Look for blocks of 6 or more flips, where all resulted in heads, or all resulted in tails. Over 200 coin flips, this is extremely likely to occur, but most people intuitively imagine that getting 6 or more heads (or tails) in a row is unlikely. Tables without such blocks represent phony data.