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STAT-365
Dr. Robinson

Project Proposal

Research Question: Is there a significant difference in muffin bake height between baking on the bottom versus top rack?

Variables: Rack level is the explanatory variable (binary categorical, 2 levels (top rack vs. bottom), ordinal.) Muffin height is the quantitative response variable (thinking about measuring in either mm or cm.)

Other details: My sample size will be 48 muffins (I am baking in 3x4 racks, so for 4 reps, I will be at 48.) I plan to use two of the most well-known brands of muffin mixes (Krusteaz and Betty Crocker are what I am thinking so far, but I might change it.) I want to account for different brands in this study because if I only used one brand, I could only generalize that brand. This way, I can run two trials: one with a particular brand on top rack, the other on the bottom, and then switch order for the next trial.) I plan to use two 3x4 racks, both about the same size (might be the same brand, still need to figure it out if I want to get *that* detailed.) I plan to use a common recipe for both brands, so as not to have that be a source of extraneous variation, (still working on which recipe to use.) Other than that, everything else will be practically identical between the two trials (e.g. time spent in the oven, same amount of muffin mix in every muffin, following the *same* recipe to the letter, etc.)