

Drop Dead:

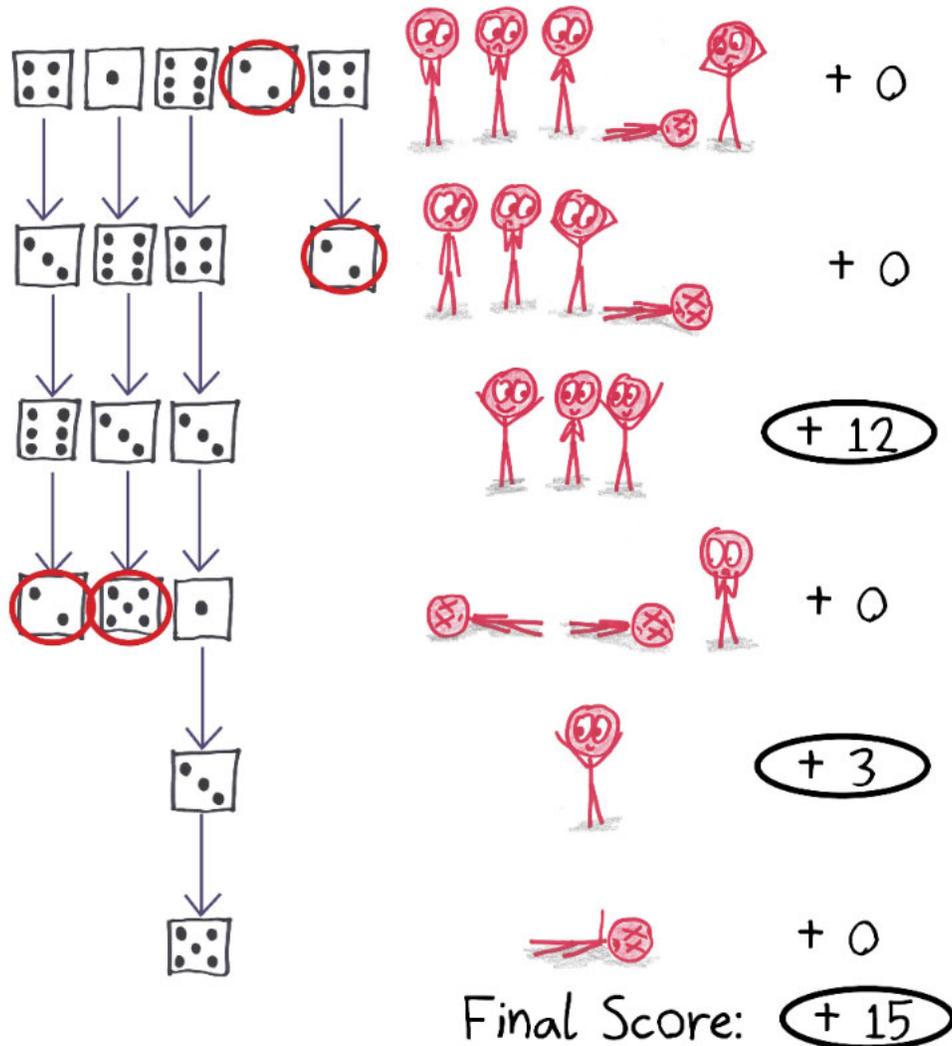
A Dice Game of Avoiding 2's and 5's

I waffled about including this game. It has two strikes against it: first, a lack of decision-making (it's a game of pure chance), and second, a lousy name, fit for nothing except a vicious hip-hop dis track. Yet here it is. Why?

Because the game teaches a startling lesson about the mathematics of risk.

To begin, you roll five dice. **If you roll any 2's or 5's, they "drop dead" and are removed; you score no points.** However, **if there are no 2's and no 5's, then you score the sum of the dice.**

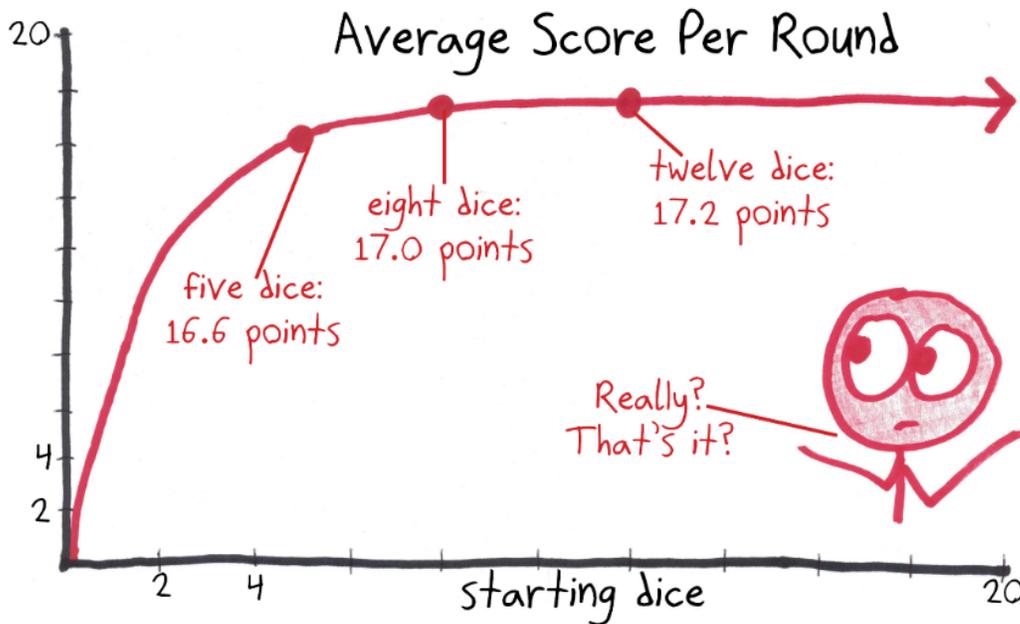
Either way, you roll all remaining dice again, and continue to do so until all have dropped dead.



Play a set number of rounds (I suggest five), after which the highest total score wins.

First, a mild surprise: you'll score on your opening roll just 13% of the time. That's because a single 2 or 5 suffices to spoil the party, and with five potential party spoilers, few parties remain unspoiled. You wind up scoring most of your points with just one or two dice remaining, because smaller "parties" are less likely to be spoiled.

This brings up a larger theme: Starting with extra dice barely helps. In fact, there's little benefit past your eighth die, and almost none past your twelfth.



What if you begin with some outlandish number—say, 5 quadrillion dice, enough to blanket the state of West Virginia? It won't help. You'll just lose a third of them each roll, a hundred times in succession, your score stuck on zero, until finally, with a few dice remaining, you begin to score points—about 17, on average.

A 1-in-3 risk, compounded many times, becomes a virtual guarantee. With just twenty dice, the probability of your first roll entirely avoiding 2's and 5's is just 0.03%. That's roughly your lifetime chance of being struck by lightning.

I see two takeaways.

Moral #1: Overambition can be a trap. Low-probability stabs at huge prizes can waste energy that's better invested in more modest ventures.

Moral #2: As interdependent systems grow larger, they grow more vulnerable. If one broken part can doom the whole machine, then design simple machines.