Can't Stop

Game for 1-4 players.

Players take turns. On a players turn, the player rolls a dice as many times as desired.

If one of the rolls was a "1" the player scores zero points, otherwise the player scores the sum of his roles.

The first person to reach 100 wins.

Extensions:

Is there an advantage going first?

Does the best strategy in the game change if more people are playing?

Does the best strategy change between early in the game and later in the game?

If you were playing until someone reached a very very large but unknown number; at what sum should you stop rolling the dice on each turn?

How do things change if the losing number is a '6' instead of a '1'?

What is the probability of reaching 10 without throwing a '1'?

Throw a die a large number of times. What is the typical length of a chain before a '1' appears? What is the longest chain made up entirely of '1's'?

Investigate games with other dice for example a '0 to 9' or a '1and 10' die.

The Math in This Problem:

The most commonly used example in investigating probability theory is rolling dice. Through playing this simple game, students will observe laws of probability, such as each roll being random and independent from any other roll, the consistency of the probability of each value on the die being rolled, and tabulating the complement of an event by figuring out the probability that this event will not occur.

Credits:

This is a simple variant on a commercial game called Can't Stop. Traditionally it was known as "pig".