The Mathematical Mean

From **The OpenD6 Project**, Introduction, **The Mathematical Mean**.

In the standard rules, traits are rated by whole and partial increments of six-sided dice. A whole die increment is written as "1D", where the integer denotes a number of dice to be rolled and totaled. Partial die increments are written as "1D+1", where the primary identity denotes a number of dice to be rolled and totaled, and the secondary identity denotes an absolute value to be added to the sum total.

Conflict resolution in OpenD6 is based on a standardized difficulty scale that is adjusted for the mathematical mean of a given trait score.

On this difficulty scale, a "Moderate" difficulty is defined as a number approximating the mean roll of a trait score totaling between 3D and 4D, so that the sum total of a trait roll will equal or exceed the difficulty on approximately 50% of a given set of iterations. Difficulties are then derived mathematically in multiples of 3.5, where the corresponding descriptive value is derived in multiples of 5. Each die code corresponds to a difficulty computed using a fixed value equal to 3.5x the whole die increment, and adding the partial die increments (pips) to the sum total.

The purpose of defining a "Moderate" difficulty with this range of values is to approximate a 50% success ratio for the most common trait totals assigned to protagonists and antagonists within the system, as well as to provide an increasing success ratio to higher trait totals. The 50% success ratio can be adjusted along a sliding scale to correspond to higher trait totals.

The purpose of providing descriptive values for each numerical value allows difficulties to be evaluated quickly relative to a baseline trait score of 3D.

Standardized Difficulty Table			
Description	**Difficulty**	**Die Code**	**Mean Result**
Very Easy	1	1	1
	2	2	2
	3		
	4	1D	3.5
	5	1D+1	4.5
Easy	6	1D+2	5.5
	7	2D	7
	8	2D+1	8
	9	2D+2	9
	10		
Moderate	11	3D	10.5
	12	3D+1	11.5
	13	3D+2	12.5
	14	4D	14
	15	4D+1	15
Difficult	16	4D+2	16
	17		
	18	5D	17.5
	19	5D+1	18.5
	20	5D+2	19.5
Very Difficult	21	6D	21
	22	6D+1	22
	23	6D+2	23
	24		
	25	7D	24
Heroic	26	7D+1	25.5
	27	7D+2	26.5
	28	8D	28
	29	8D+1	29
	30	8D+2	30