

## REPLACING THE D20 WITH MULTIPLE DICE IN AD&D

### Metagame Analysis: The Bell Curve

In general, rolling either 3d6 or 2d10 leads to a grittier game, because there will be far fewer very good or very bad rolls.

*Example: When rolling 3d6 you can no longer roll 1, 2, 19 or 20, and most rolls will be clustered around the average of 10.5. With a d20, every result is equally likely; you have a 5% chance of rolling an 18 and a 5% chance of rolling a 10.*

*With 3d6, there's only one possible combination of dice that results in an 18 (three sixes, obviously), but there are twenty-four combinations that result in a 10.*

Players used to the thrill of rolling high and the agony of a natural 1 will get that feeling less often — but it may be more meaningful when it does happen. Good die rolls are a fundamental reward of the game, and it changes the character of the game when the rewards are somewhat stronger but less frequent.



Game balance shifts subtly when you use multiple dice instead of a single d20. Rolling multiple dice gives you more average rolls, which favors the stronger side in combat. In the AD&D game, that's almost always the PCs. Many monsters, especially low-Hit Dice monsters encountered in groups, rely heavily on a lucky shot to damage PCs. When rolling multiple dice, those lucky shots are fewer and farther between. In a fair fight when everyone rolls a 10, the PCs should win almost every time. Using multiple dice means that results adhere more tightly to that average.

Another subtle change to the game is that rolling either 3d6 or 2d10 instead of 1d20 awards bonuses relatively more and the die roll relatively less, simply because the die roll is almost always within a few points of 10. A character's ability score modifiers, proficiency and common ability bonuses, attack bonuses, and magical adjustments have a much bigger impact on success and failure than they do in the standard d20 rules.

The following charts illustrate the probabilities of each result when rolling a single d20, 3d6, or 2d10:

#### 1d20 Results (Average Roll = 10.5)

Result	Percentage	Result	Percentage
1	5.00	11	5.00
2	5.00	12	5.00
3	5.00	13	5.00
4	5.00	14	5.00
5	5.00	15	5.00
6	5.00	16	5.00
7	5.00	17	5.00
8	5.00	18	5.00
9	5.00	19	5.00
10	5.00	20	5.00

#### 3d6 Results (Average Roll = 10.5)

Result	Percentage
3	0.46
4	1.39
5	2.78
6	4.63
7	6.94
8	9.72
9	11.57
10	12.50
11	12.50
12	11.57
13	9.72
14	6.94
15	4.63
16	2.78
17	1.39
18	0.46

#### 2d10 Results (Average Roll = 11.0)

Result	Percentage
2	1.00
3	2.00
4	3.00
5	4.00
6	5.00
7	6.00
8	7.00
9	8.00
10	9.00
11	10.00
12	9.00
13	8.00
14	7.00
15	6.00
16	5.00
17	4.00
18	3.00
19	2.00
20	1.00

### Automatic Successes and Failures

Automatic successes and automatic failures occur as follows:

**3d6:** Automatic successes occur on a natural 18 and automatic failures on a natural 3. Neither occurs as often as in standard d20 die roll (less than 1/2% of the time as opposed to 5% of the time).

**2d10:** Automatic successes occur on a natural 20 and automatic failures on a natural 2. Neither occurs as often as in standard d20 die roll (less than 1% of the time as opposed to 5% of the time).

### Critical Hits and Fumbles

The rules for automatic successes and failures given above could apply for attack rolls as well. This, however, would make critical hits and fumbles rare in combat; and would undermine the effectiveness of magical weapons such as a *dagger of venom* or *vorpal sword*.

Rather than use the rules given for automatic successes and failures above, the following rules may be used so that both critical hits and fumbles factor into combat with greater frequency:

**3d6:** Critical hits occur on a natural 16-18 and fumbles on a natural 3-5. Both would occur as often as in standard d20 die roll (4.63% of the time as opposed to 5% of the time).

**2d10:** Critical hits occur on a natural 19-20 and fumbles on a natural 2-3. Neither occurs as often as in standard d20 die roll (3% of the time as opposed to 5% of the time).