

The Normal Distribution

10th Grade

The bell curve, and the rule that covers almost everything.

Many measurements cluster symmetrically around the mean. The empirical rule says how tightly.

1 68% WITHIN ONE SD

Roughly two thirds of the data sits within one standard deviation of the mean.

2 95% WITHIN TWO

Almost everything.

3 99.7% WITHIN THREE

Beyond three is genuinely unusual.

4 Z-SCORE

$z = (x - \text{mean}) / \text{sd}$. How many standard deviations from the mean.

A z-score of 2 means the value is in the top 2.5% — because 95% sits within two either side.