

③ The student's method involves flipping seven coins to generate numbers from 0 (0000000) to 127 (1111111), with numbers from 100 to 127 being discarded to generate two digit numbers alone.

Given a fair coin, each flip has an equal probability of resulting in heads or tails, which means that each of the binary digits has an equal chance of being 0 or 1.

This makes the method theoretically random even if we constrain it to two digit numbers too, i.e., each of the  $2^7$  possible outcomes are equally likely.

Since each binary sequence directly translates to a unique decimal number within the range of 0 to 99, each number within the desired range has an equal probability of being generated.

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