sampling
The process of creating a sample. A sample is chosen in such a way that it resembles the distribution of a given measurable characteristic of a population as closely as possible. The most common method of sampling is “random sampling”, where the specimens are chosen from the population randomly, for example by presenting a survey to students on a campus or by taking random numbers from a phone register.

Another approach is “systematic sampling”, where the samples are chosen using some fixed pattern, like taking every 13th piece from an assembly line. Another systematic approach is to perform a fixed number $n$ of experiments and gather the outcomes in a sample. In this case the population is an infinite number of possible trials, and the sample is created by collecting the first $n$ outcomes.

When some characteristics of the population are known in advance, “stratified sampling” can help to create a sample that reflects the population better than a pure random sample. For example, if a population is known to consist of 60% females and 40% males, the sample can be chosen from separate “female” and “male” strata, making sure that the sample contains the same proportion of males to females as the population.