1. Data - Any observations that have been collected.

2. Statistics - Collecting, analyze, summarize, interpret and draw conclusions from data.

3. Population - The complete set of elements being studied.

4. Sample - Some subset of a population.
↳ e.g. not asking everyone about their opinion on a presedential poll.

5. Census - Collecting from every member of a population.

6. Random - I can't pick out who I want to be in my sample. There could be bias. Hence the sample should be random.

Types of data:-

Parameter - A characteristic of Population.

statistic - A characteristic of a sample. (sample statistics)

→ Qualitative / Categorical / Non-numeric - color, gender, occupation etc.
Zipcode - has a number but we can't apply mathematical operations on it; phone numbers etc.
* Mathematical operations are meaningless.

→ Quantitative / Numerical - height / weight, wages, temperature
* Mathematical operations are meaningful.

Types of Quantitative data.

1. Discrete data - Countable or finite — Usually a count.
e.g. number of kids, numbers on a dice. If the die had numbers like 1.5, 2.4 etc. It still would be discrete because the choices are finite.

2. Continous data - Infinite number of possible values (non-countable) — Usually a measurement.
- temperature.
"between" every number, there are infinite numbers.

FOUR LEVELS of measurement.

① Nominal - Categories not ordered.
eg. religion, race, gender etc.

② Ordinal - Can be ordered e.g. rank., colors (spectral scale)
* Differences are meaningless.

→ cars running in a race are ranked. But it doesn't tell you about how they drove, speed etc.

③ Interval - can be ordered
* Differences are meaningful.
* No "Natural zero" - no quantity present.
eg. Temperature - if its value is zero, it doesn't mean there is no presence of temperature.

④ Ratio - same as interval but with a natural zero.
eg:- money in a bank acc't.

⑤ Ordinal: