

STATISTICS

Data & Statistics:

- a) **Data:** Observations that have been collected.
 - b) **Statistics:** Obtaining data, organizing, summarizing, analyzing, making interpretation, and drawing conclusions based on data.
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Population & Sample:

- a) **Population:** Complete collection of all elements under study.
Ex. All high school teachers
 - b) **Sample:** Randomly selected elements from the population.
Ex. 25 randomly selected high school teachers.
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Parameter & Statistic:

- a) **Parameter:** Numerical measurement related to a population.
Ex. Average monthly salary of all high school teachers is \$_____.
 - b) **Statistic:** Numerical measurement related to a population.
Ex. Average monthly salary of 25 randomly selected high school teachers was \$_____.
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Census:

Collection of data from every member of the population.

Qualitative & quantitative:

- a) **Quantitative: Data representing counts or measurements.**
Ex. The weights of football players.
 - b) **Qualitative: Data can be separated into nonnumeric categories.**
Ex. The genders of students taking math classes.
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Discrete & Continuous:

- a) **Discrete: Number of values is either a finite or a countable.**
Ex. The number of problems you did for homework.
 - b) **Continuous: Number of values is from infinitely many possible values.**
Ex. The length of time you spent studying for a test.
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Measurement:

Level	Definition	Example
Nominal	Categories that cannot be arranged in order.	1. Yes/No responses. 2. Set of colors.
Ordinal	Categories that are ordered.	1. Final Grades A, B, and so on. 2. Size: Small, medium, large.
Interval	Differences are meaningful but no natural zero starting point.	1. Temperatures. 2. Time/Years
Ratio	Ratios are meaningful with a natural zero starting point.	1. Prices. 2. Distances. 3. weights.