

# Inferential Statistics

Inferential statistics is a branch of statistics that deals with drawing conclusions about a larger population (e.g., all students in a school district) based on a smaller sample of data (e.g., a survey of 100 students).

Here's a quick rundown of inferential statistics:

## **Purpose:**

Make generalizations about a population and test hypotheses.

## **How it works:**

- Uses statistical tools and models to analyze sample data and assess how likely those findings apply to the broader population.
1. Hypothesis testing: Formulating a question about the population (hypothesis) and testing it with data to see if it's likely true.
  2. Statistical significance: How strong the evidence is to reject the null hypothesis (i.e., there's no difference between groups).
  3. Confidence intervals: Estimating a population parameter (e.g., average height) with a range of values likely to contain the true value.