Section 1.3

The Process of Statistical Analysis

1. Identify the research question.
   → Understand the context of the problem.
   → Ask a question that's answerable through data.
   Ex: Math Bridge Program: Math + Counseling
   Q: Do Math bridge students do better than other math students?

2. Decide what to measure.
   → Quantities
     Ex: Grades
     4 pt. Scale
   → Categorical Data
     Ex: Pass/Fail events.

3. Gather Data.
   → Describing Populations?
   → Describe Treatment Effect?
   → Gather Representative Samples.
   → Divide Sample into Similar groups.
   → Random samples.
   → Random Assignment.

4. Summarize Data.
   → Quantities: Averages
   → Dot plots
     Grade Bridge
     Non Bridge
   → Categorical: Proportions
     Bridge
     Non Bridge
     Pie Chart
     Pie Chart

5. Make an Inference.
   → About a population
     If the sample represents the population.
   → About a treatment
     If the sample is divided into similar groups.