

Section 1: From assigned reading

What is Statistics ?	
What is data ?	
What is data analysis ?	
What is variation ?	
What is the difference between numbers and data?	

Section 2: *Enrichment ideas*: Complete in class

What is the difference between **Quantitative** and **Qualitative** data?

Quantitative	
Qualitative	

What are the four **levels of measurement**?

Nominal	
Ordinal	
Interval	
Ratio	

Section 2: From assigned reading

What is a variable ?	
Describe the difference between a variable in algebra and a variable in statistics.	
What is a data set ?	
What is a sample ?	
What does it mean to have the population ?	
What are numerical variables ?	
What are categorical variables ?	
Are there times when a number can represent categorical data? If yes, give examples.	
What is coding in statistics and why is it used?	
Describe stacked data versus unstacked data .	

Section 3–4: From assigned reading

What is a Data Cycle ?	
What are the stages of a data cycle and what happens at each stage?	
What is a good statistical question?	
What is a frequency ?	
What is a relative frequency ?	
What is a two way frequency table?	
What is a rate per unit and why do we use them?	
What is the first step to analyzing data?	
What is meant by interpreting the data?	

Enrichment ideas: Complete in class

What are the **five sampling techniques** used in statistics?

Convenience	
Systematic	
Cluster	
Stratified	
Random	

Big Concepts: What is the difference between **sampling error** and **nonsampling error**?

sampling error	
nonsampling error	

What is the difference between an **observational study** and an **experiment**?

observational study	
experiment	

What are the two branches of statistics and how are each used?

Descriptive Statistics	
Inferential Statistics	

* Populations have fixed results while samples will fluctuate due to natural variations found within the sample.

Section 4-5: From assigned reading

What is a representative sample ?	
What does it mean to be biased ?	
What does it mean to be unbiased ?	
Why is it important to use samples ?	
When is it better or more practical to use a population ?	
What is the law of large numbers and how does it relate to the error found in samples?	

Section 5: Define each term from the reading

What is the difference between association and causation ?	
When can causation be inferred?	
What qualities are considered the “gold standard” for experiments.	
treatment variable	
treatment group	
response variable	
control group	
anecdote	
placebo effect	
confounding or lurking variable	
Random assignment	
Quasi Experimental design	
blinding	
double blinding	

Please note that the course is designed with a “flipped” classroom pedagogy, meaning that students are expected to complete reading and written assignments outside of the dedicated classroom time. Come to class prepared and ready to put this learning into action.

Also, remember that not everything will be found in the book. Use the resources available to understand the vocabulary and concepts outlined in this document. The objective of the course is to make each student statistically literate and to be able to function as an educated adult in real world scenarios, applying critical thinking, and using discerning judgment to the influx of information presented on a daily basis.