Welcome to:

AP Statistics

Mr. Cedarlund

Let me know if
I pronounce your name
incorrectly.

Agenda

1. Overview in Pictures of Ap Stats
2. Smell some shirts
3. Get to know each other
4. Boring stuff

Agenda

1. Overview in Pictures of Ap Stats
2. Smell some shirts
3. Get to know each other
4. Boring stuff

Roll first

Per. 1
Get textbook
at 9:25

Agenda

Roll first

① Overview in Pictures of Ap Stats

② Smell some shirts

③ Get to know each other   3:00 Pm
Get your textbook

④ Boring stuff

From Data Analysis to Inference

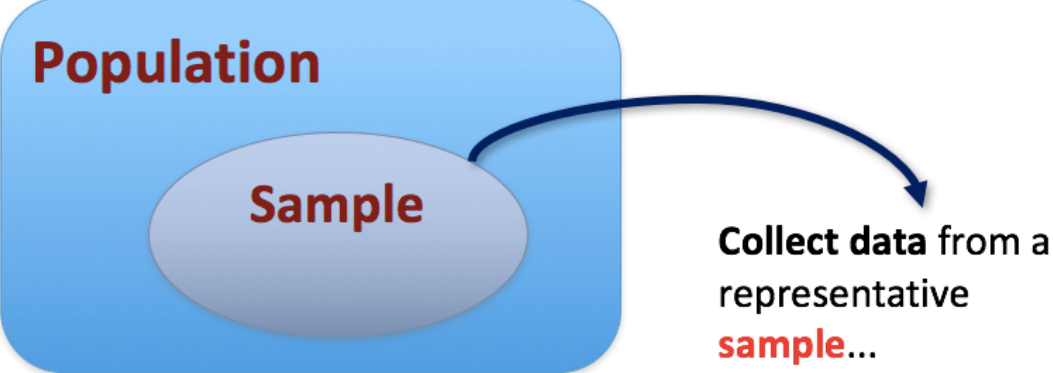**Population**

From Data Analysis to Inference

Population

Sample

From Data Analysis to Inference
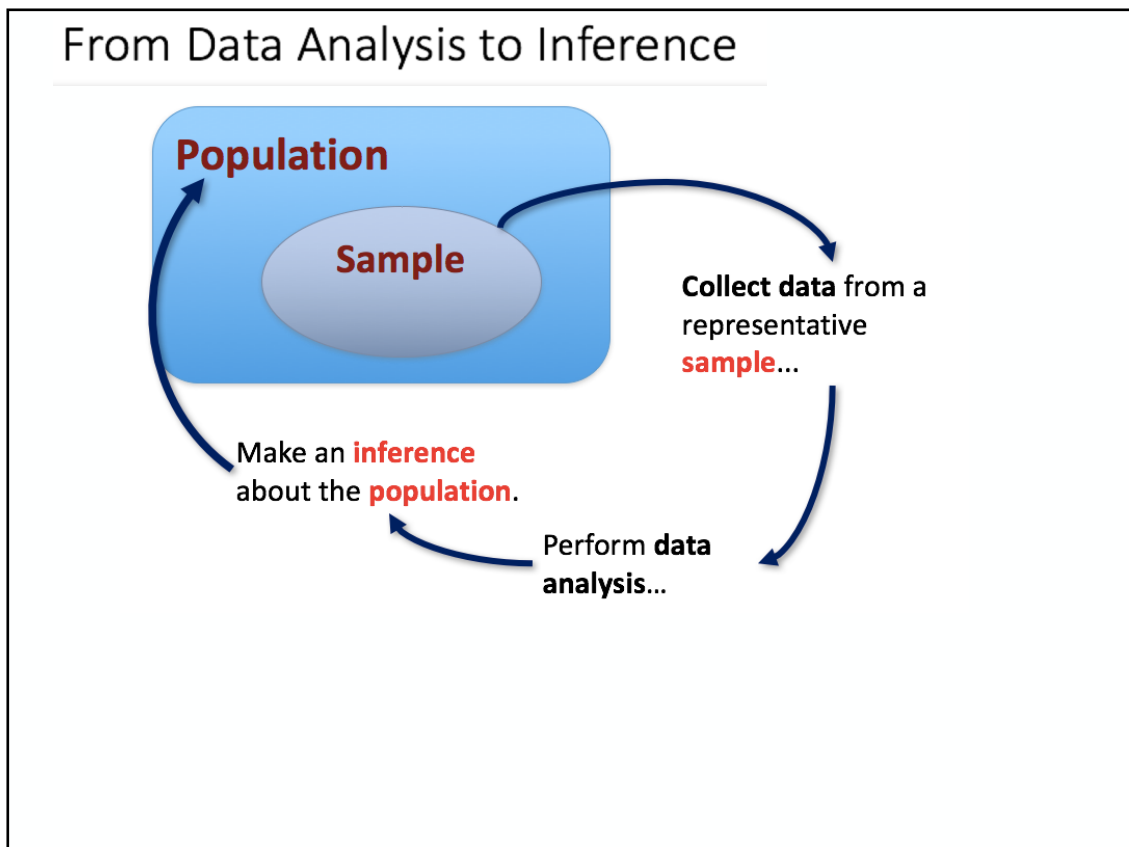
Population

Sample

Collect data from a
representative
sample...

From Data Analysis to Inference

Population

Parameter

Sample

Collect data from a representative **sample**...

Make an **inference** about the **population**.

Perform **data analysis**...

Inferential Statistics

Statistic

Descriptive Statistics
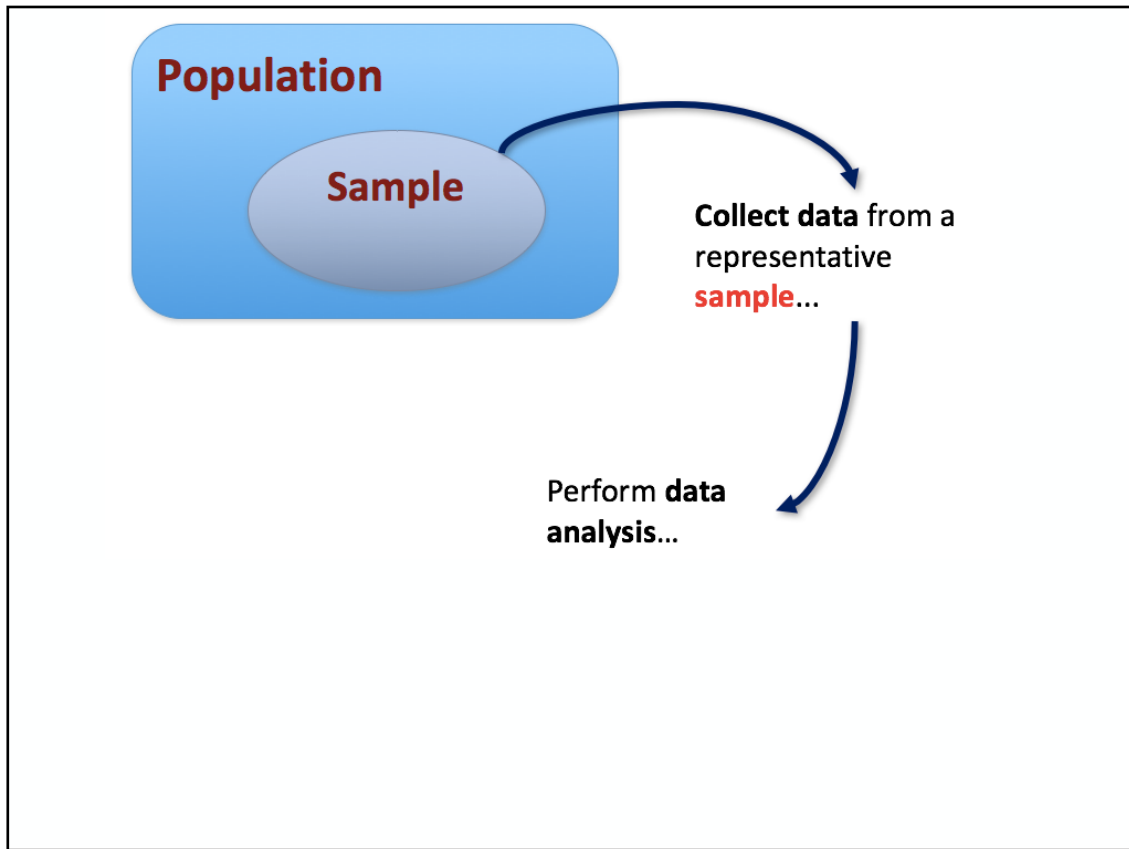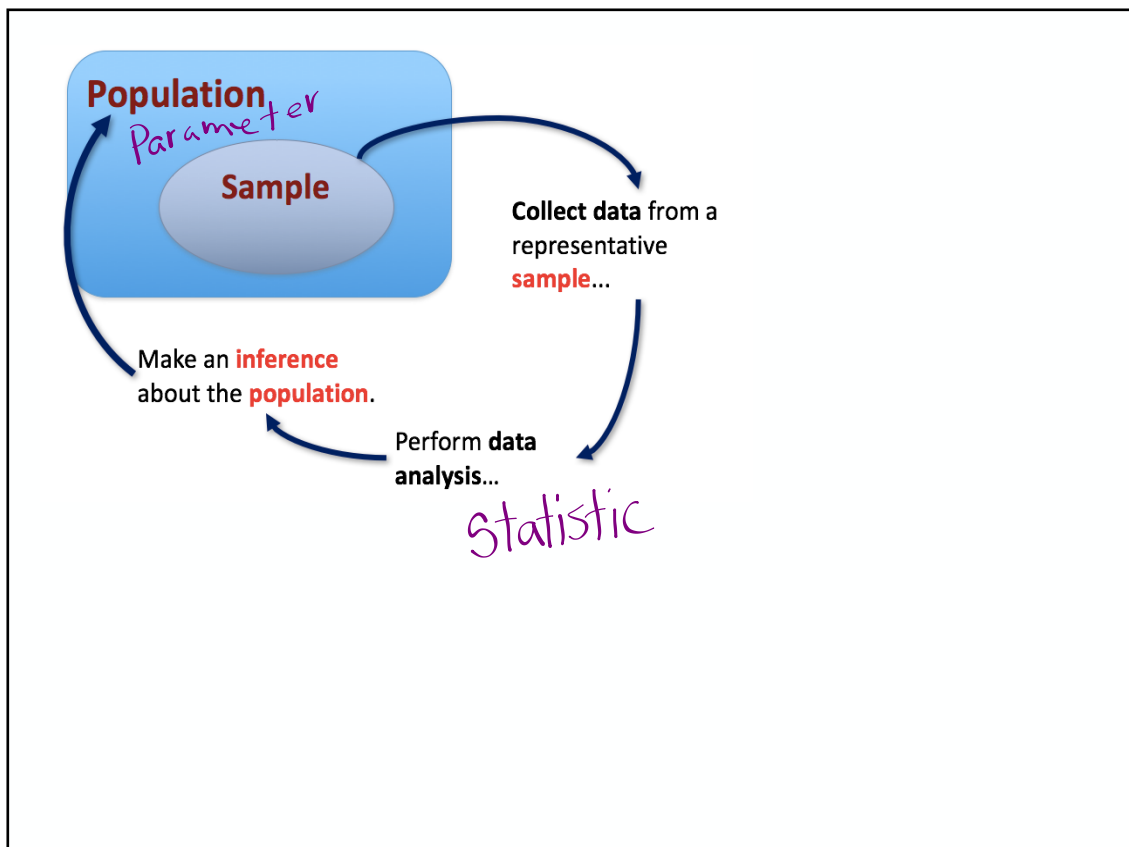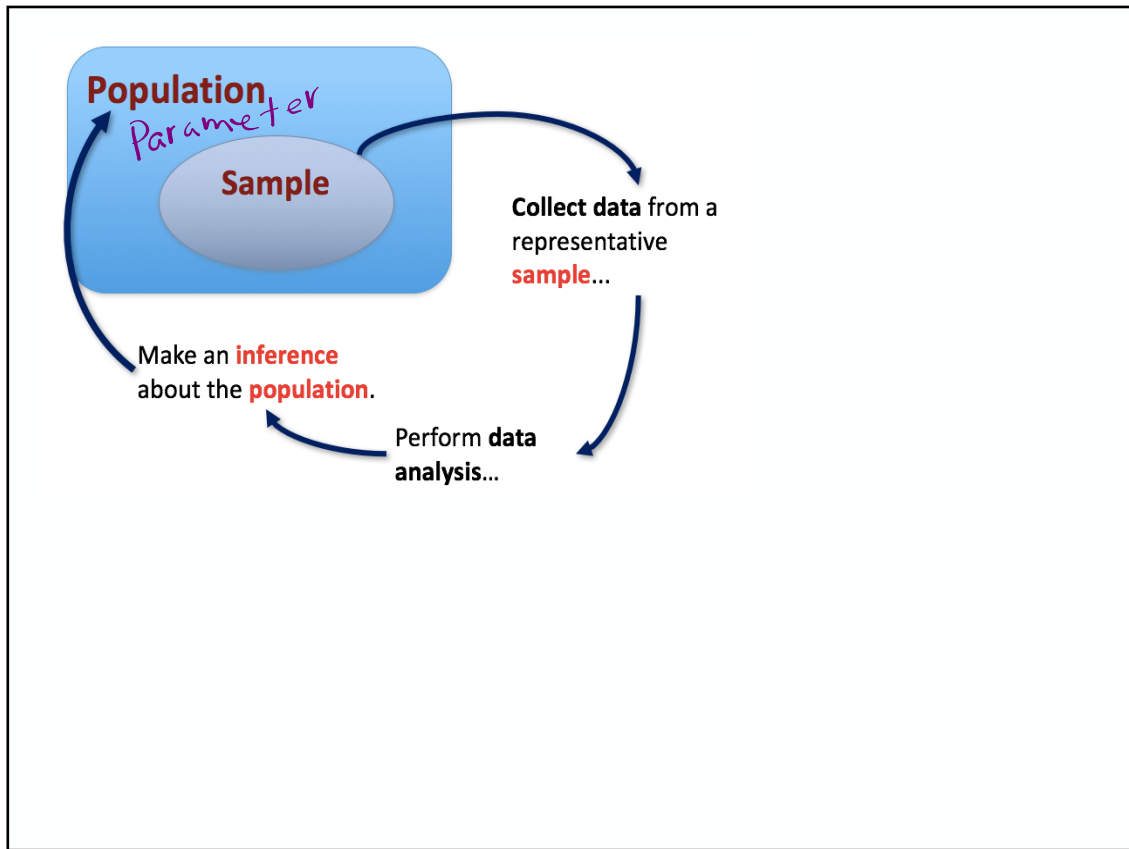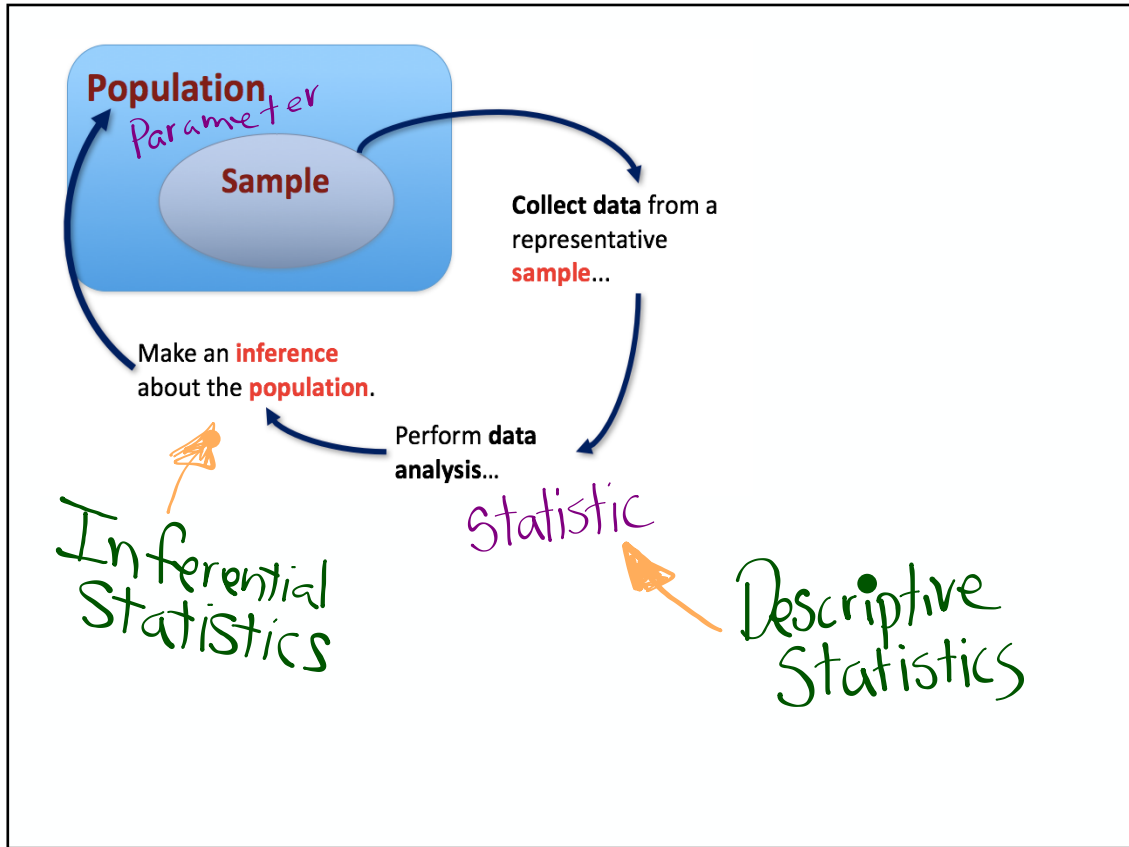
SMELLING PARKINSON'S DISEASE

what if a lady walked into a medical facility and said she can smell if someone has this disease ?

1. Why would it be important to know that someone can smell Parkinson's disease?

2. How many correct decisions (out of 12) would you expect Joy make if she couldn't really smell Parkinson's and was just guessing?

3. How many correct decisions (out of 12) would it take to *convince* you that Joy really could smell Parkinson's?

4. Mr. Wilcox will hand you 12 cards (shirts) that have been shuffled into a random order. Don't turn them over yet! On the back of some of them is "Parkinson's" and on the back of others is "No Parkinson's." For each card, guess Parkinson's or No Parkinson's. Once you have made your guess, turn the card over and see if you were correct. Repeat this for each card and record the number of correct identifications (out of 12) below.

Tally of correct identifications	Number of correct identifications	Proportion of correct identifications
III	IHN II	3/12

5. Create a dot plot of the number of correct identifications with the rest of the class. Record the results below.

$\frac{46}{26} \approx 15\%$

$\frac{0}{26} = 0\%$
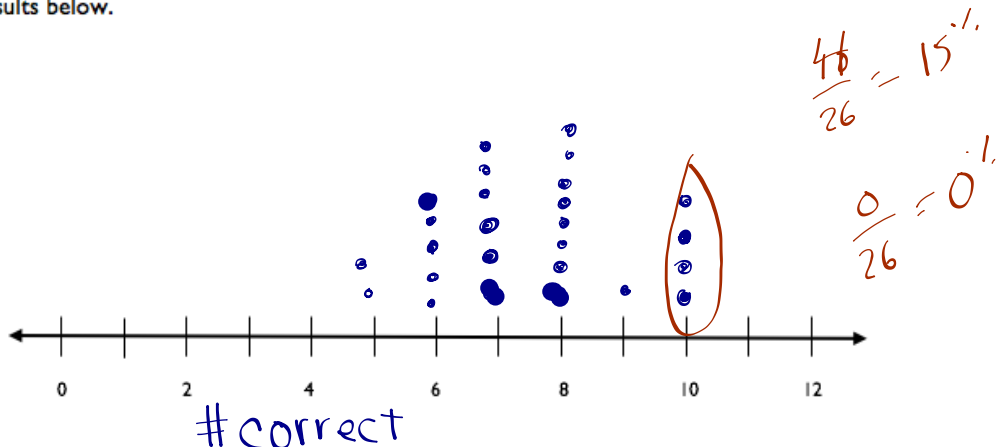
\# correct

6. In the actual experiment, Joy identified 11 of the 12 shirts correctly. Based on the very small-scale simulation by you and your classmates, what proportion of the simulations resulted in 11 or more shirts correctly identified, assuming that the person was guessing?

$\frac{0}{26} \approx 0\%$

http://mrtysonstats.com/apstats/SmellParkVid1.mp4

http://mrtysonstats.com/apstats/SmellParkVid2.mp4

Who am I ?

Who ~~am~~ are ~~I~~ we ?

- Groups of 3 to 4
- What is common?
- I will hang up your finished product

About
AP Stats

What is AP Statistics?

AP Stats is a college level introductory course in statistics. You'll learn how to collect, organize, analyze, and interpret data.

It is the fasting growing of all of the 37 AP subject areas with now over 108,000 students taking the exam.

Why should I take it?

Statistics is the most widely applicable branch of mathematics. It is used by more people than any other kind of math.

College Majors Requiring Statistics

Statistics is specifically required in some majors, while it is a quantitative methods requirement in others.

ASA

AGRICULTURAL SCIENCES
Agricultural and Environmental Plant Sciences
Agricultural Business
Agricultural Communication
Agricultural Education
Agricultural Mechanization and Business
Agricultural Systems Management
Agronomy
Animal and Veterinary Sciences
 • Animal Agribusiness
 • Equine Business
 • Preveterinary and Science
Crop Science
Culinary Science
Dairy Science
Fisheries and Aquatic Sciences
Food Science
 • Food Science and Technology
Nutrition and Dietetics
Forest Resource Management
Forestry and Natural Resources
Horticulture
Plant and Environmental Sciences
Plant Genetics
Plant Science
Soil and Water Sciences
Wildlife and Fisheries Biology
Wine and Viticulture

ALLIED MEDICAL PROFESSIONS
Exercise Studies

Kinesiology
Movement and Sport Sciences
Nursing
Nutrition
Occupational Health
Occupational Therapy
Pharmaceutical Sciences
Physical Therapy
Pre-Pharmacy
Pre-Rehabilitation Sciences
Respiratory Care
Speech Language Hearing

BUSINESS
Accounting
Actuarial Science
Advertising
Aviation Management
Business
Business Administration
Construction Management
Finance
Financial Management
Game Studies
Information Science
Management
Marketing
Operations Research
Public Administration
Recreation, Parks, and Tourism Administration

ENGINEERING
Aerospace Engineering

Chemical Engineering
Civil Engineering
Computer Information Systems
Computer Science
Computer Software Engineering
Construction Science and Management
Electrical Engineering
Engineering Management and Protection
Environmental and Natural Resources
Environmental Engineering
Industrial Design
Industrial Engineering
Industrial Management
Industrial Technology and Packaging
Landscape Architecture
Materials Science and Engineering
Mechanical Engineering
Packaging Science
Robotics

MATHEMATICS AND SCIENCE
Animal Behavior
Animal Science
Applied Mathematics
Applied Meteorology and Climatology
Applied Physics
Astronomy
Atmospheric Science
Biological Sciences
Brain and Behavioral Science

Genetics
Geology
Geophysics
Hydrogeology
Marine Sciences
Mathematical Sciences
Mathematics
Meteorology
Microbiology
Neuroscience
Physics
Planetary Science
Pre-Health
Pre-Veterinary Medicine
Statistics

SOCIAL STUDIES AND THE HUMANITIES
Anthropology
Archaeology
Child Development
City and Regional Planning
Communication Studies
Comparative Ethnic Studies
Criminal Justice
Criminology
Developmental and Family Science
Economics
Education
Environmental Studies
Film and Video Studies
Geography
Graphic Communications

How hard is AP Stats?

It's a college course, so the expectations are <u>high</u>. You will need to think hard about the concepts. You'll write – a lot. You won't get a good grade just for showing up. You <u>must</u> have a strong work ethic.

Do you have to be a top rate mathematician?

No. The course does not depend heavily on abstract mathematical concepts, but you DO need a <u>strong background (usually A's and B's)in Algebra II</u> – Our calculators will help us with much of the numeric drudgery inherent in statistics.

Can I take Stats in college?

Yes. Statistics is required for many majors, and strongly recommended for others. However, we hope our students receive AP grades high enough to get credit for the introductory course. If not, you will have strong background before you start.

Would it be my only math course ?

It could be. Many students could also enroll in a Pre Calc or Calculus course and find the combination very 'do-able'. It can be taken any time after Algebra 2. In any case, stats is not really a 'math' course – it's a whole different animal.

Syllabus

Some of the
Syllabus

finish later on your own

Supplies:
✓ **Textbook** (The Practice of Statistics, AP Edition, 6th Edition, Starnes, Yates, & Moore, 2019)

✓ *Strive for 5 which is a* softcover review book. DO NOT write in this book.

✓ **Calculator** – MANDATORY, no exceptions - with statistical functions (TI-83 or 84)

✓ **Three-ring binder** (1.5 inch) with dividers labeled as follows:

▢ **Statistical Tools:** Tables, Formulas, and Calculator Instructions

▣ **Notes:** On most days, you write on Prepared Notes which will be provided for you. Keep these organized the entire year in your 3-ring binder. You will be using them to review throughout the course and for the AP Exam as well. You may even want to have labels for each of the 12 chapters in your 3-ring binder.

to "note" or
"not to note"

to "note" or
"not to "note

↰
• It would make more sense to
add your own notes to the structured
notes after you have read the textbook.

✓ **Three-ring binder** (1.5 inch) with dividers labeled as follows:

- **Statistical Tools:** Tables, Formulas, and Calculator Instructions *← speaking of which*

- **Notes:** On most days, you write on Prepared Notes which will be provided for you. Keep these organized the entire year in your 3-ring binder. You will be using them to review throughout the course and for the AP Exam as well. You may even want to have labels for each of the 12 chapters in your 3-ring binder.

✓ **Pens and pencils, ruler, and occasional pieces of lined paper.** *You may use either pen or pencil. I expect to be able to easily read your writing.*

Strive for small, but neat, writing

Overview

LEARNING TARGETS

By the end of this section, you should be able to:
- ✓ IDENTIFY the individuals and variables in a set of data.
- ✓ CLASSIFY variables as categorical or quantitative.

I'll post L.T. on side board.

Organizing Data

Statistics is the science and art of *collecting, analyzing,* and *drawing conclusions* from data.

Normally there will be a variety of experiments, simulations, examples, discussions, activities to help you accomplish learning targets.

- but today you are on your own.
- take notes as needed, from the textbook.

Organizing Data

Statistics is the science and art of *collecting, analyzing,* and *drawing conclusions* from data.

An **individual** is an object described in a set of data. Individuals can be people, animals, or things.

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Variable - an attribute that can take different values for different individuals

---

Variable - an attribute that can take different values for different individuals

Categorical Variable assigns labels that place each individual into a particular group, called a category.

Quantitative Variable takes number values that are quantities—counts or measurements.

You will need to know terms and definitions in context, but most questions generally won't require you to write definitions.

Categorical Variable
assigns labels that place each individual into a particular group, called a category.

Quantitative Variable
takes number values that are quantities—counts or measurements.

Values are usually
   words
    (but not
      always)

zipcodes 94563
         37214

area codes 541
          503

---

category.

Values are usually
   words
    (but not
      always)

zipcodes 94563
         37214

area codes 541
          503

quantitative variables
  like age, weight, etc
con be divided into
   categories

it depends on how you want to use the variable

Analyzing Data

Variables

Province	Gender	Number of languages spoken	Handedness	Height (cm)	Wrist circum- ference (mm)	Preferred communication
Saskatchewan	Male	1	Right	175.0	180	In person
Ontario	Female	1	Right	162.5	160	In person
Alberta	Male	1	Right	178.0	174	Facebook
Ontario	Male	2	Right	169.0	160	Cell phone
Ontario	Female	2	Right	166.0	65	In person
Nunavut	Male	1	Right	168.5	160	Text messaging
Ontario	Female	1	Right	166.0	165	Cell phone
Ontario	Male	4	Left	157.5	147	Text messaging
Ontario	Female	2	Right	150.5	187	Text messaging
Ontario	Female	1	Right	171.0	180	Text messaging

Categorical variable
"Preferred communication method"

Analyzing Data

Variables

Province	Gender	Number of languages spoken	Handedness	Height (cm)	Wrist circum- ference (mm)	Preferred communication
Saskatchewan	Male	1	Right	175.0	180	In person
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Alberta	Male	1	Right	178.0	174	Facebook
Ontario	Male	2	Right	169.0	160	Cell phone
Ontario	Female	2	Right	166.0	65	In person
Nunavut	Male	1	Right	168.5	160	Text messaging
Ontario	Female	1	Right	166.0	165	Cell phone
Ontario	Male	4	Left	157.5	147	Text messaging
Ontario	Female	2	Right	150.5	187	Text messaging
Ontario	Female	1	Right	171.0	180	Text messaging

Categorical variable
"Preferred communication method"

individuals are the rows.

Assignment:

1. Getting to know your textbook.
   (hand out)

2. Read p. 2-5
   [1.1] 1, 5, 7, 9, 10
   ↳ Page 7

Daily Assignments

Algebra 2A Assignments
Algebra 2B Assignments
AP Statistics Assignments
IB-Math Studies Assignments
Uncategorized

AP Statistics

AP Statistics Information
AP Stats Extra Help Videos
AP Stats Exam Preparation

AP Statistics Information
Edit

Textbook Support Links
Statistical Applets

Worked Exercise Videos to help understanding homework

Index for All resources

Study Flashcards For Each Chapter

AP Stats Study Guide Tips

AP Central
My AP

AP Statistics Formula Sheet and Tables

Look Up what score on the AP Statistics exam you will need to earn college credit? *(depends on the college you attend)*:
https://apstudent.collegeboard.org/creditandplacement/search-credit-policies

Course Information
AP Statistics Syllabus_2019_20
AP Stat Course and Exam Description (starting Fall 2019)

AP Statistics - Period 1 AP Stats

Teacher: Vern Cedarlund

SECTION JOIN CODE

GW2ZAR

To enroll in this section online, sign into https://myap.collegeboard.org and enter the section join code

AP Statistics - Period 5 AP Stats

Teacher: Vern Cedarlund

SECTION JOIN CODE

34V2PQ

To enroll in this section online, sign into https://myap.collegeboard.org and enter the section join code