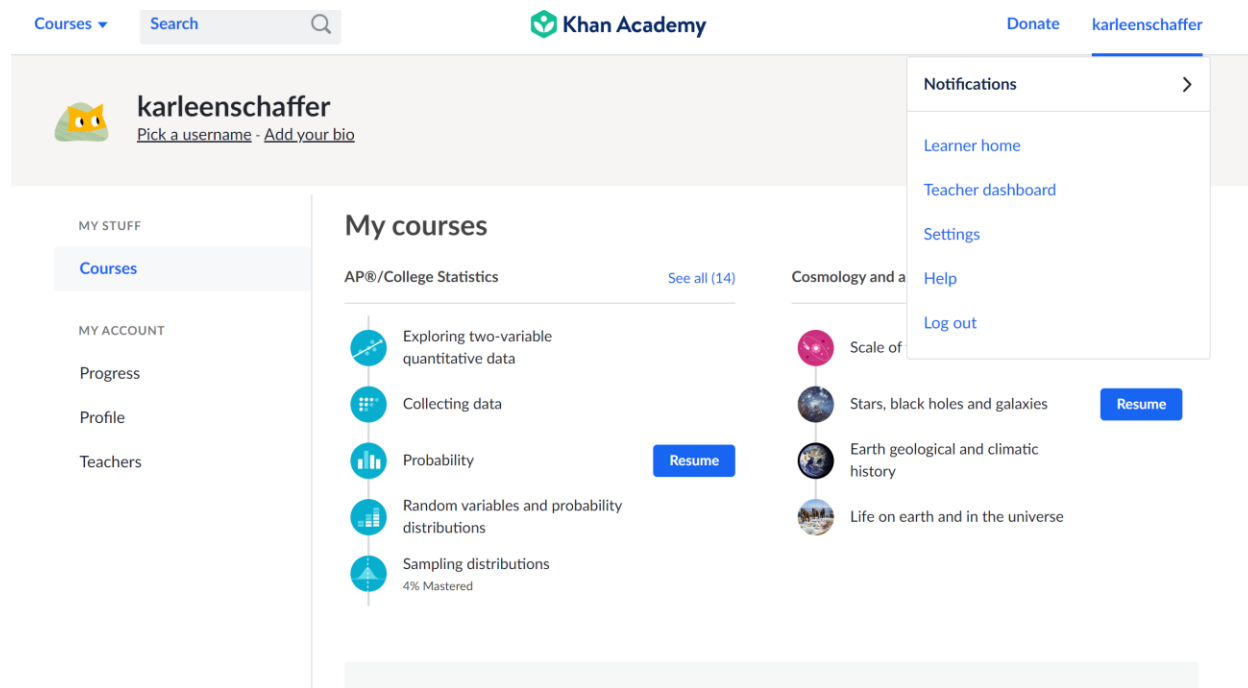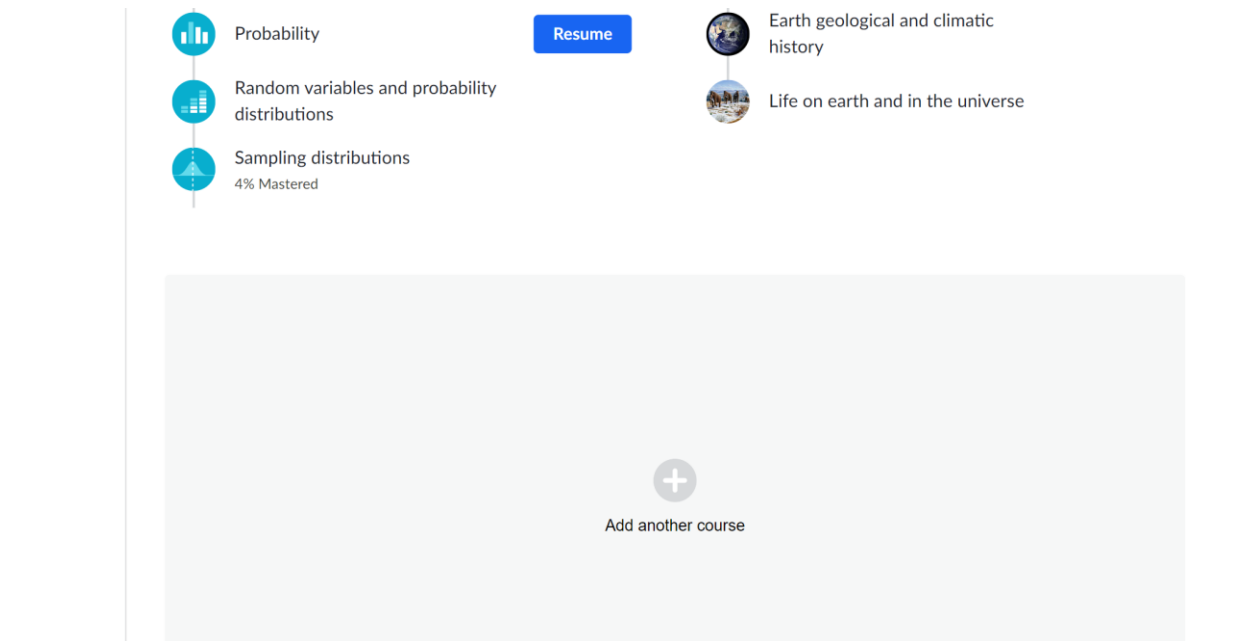# AP Statistics Summer Work

In Khan Academy, create a login using your WILLISTON e-mail address.

If you go to your name in the top right corner of the Website, you can click on Learner Home. You will see something like this:

If you scroll down, you can add course. You should add the AP/College Statistics (**** NOT the getting ready for AP Statistics).

You can then see what you have left to complete.

Any problems or questions, please e-mail kschaffer@williston.com.

Feel free to provide notes on these sections as you watch the videos. You can do them on OneNote if you can access it or on loose-leaf and upload pictures when you receive your Surface. Take all quizzes/tests that go with each section too. These will not be graded on accuracy but on completion.

Make sure that you watch the video completely through. If you skip through it, it will not say that you've completed it at the end.

Overview of Videos and quizzes

Welcome to Stats- Intro to Jeff (2:07)

We are completing the videos and exercises/quizzes/tests in the first three sections. A detailed list is below. Some of the videos might have changed slightly but the topics should be the same.

PART 1: Analyzing Categorical Data

Welcome to AP Statistics

Analyzing One Categorical Variable
- Identifying individuals, variables and categorical variables in a data set (2:40)
- Individuals, variables, and categorical variables in a data set
- Creating a bar graph (1 min)
- Reading a bar chart: Comparing two sets of data (1:30)

Two Way Tables
- Two-way frequency tables and Venn diagrams (6:20)
- Read two-way tables
- Create two-way frequency tables
- Two-way relative frequency tables (4:47)
- Reading two-way relative frequency tables
- Interpreting two-way tables (4:26)
- Interpreting two-way tables

Analyzing Categorical Data: Quiz 1

Distributions in two-way tables
- Marginal distribution and conditional distribution (6:35)
- Identifying marginal and conditional distributions
- Marginal distributions
- Conditional distributions
- Conditional distributions and relationships

Analyzing Categorical Data: Quiz 2

PART 2: Displaying and Describing Quantitative Data

Frequency tables and dot plots
- Frequency tables and dot plots (7:18)
- Creating dot plots
- Reading dot plots and frequency tables

Histograms and stem-and-leaf plots
- Creating a histogram (7:20)
- Interpreting a histogram (4:30)
- Create histograms
- Read histograms
- Stem-and-leaf plots (5:00)
- Reading stem and leaf plots (3:05)
- Reading stem and leaf plot

Displaying and describing quantitative data: Quiz 1
Describing and Comparing Distributions

- Classifying shapes of distributions (4:06)
- Shape of distributions
- Example: Describing a distribution
- Describing distributions
- Example: Comparing distributions
- Comparing distributions

Displaying and describing quantitative data: Quiz 2

Optional but very helpful (particularly the bolded below)

Part 3: Summarizing Quantitative Data

Measuring center in quantitative data
- Statistics intro: mean, median, and mode (8:00)
- Mean, median, and mode examples (3:00)
- Median in a histogram (2:00)
- Calculating the mean
- Calculating the median
- Calculating the mean and median from data displays

More on mean and median
- Mean as a balancing point (Article)
- Missing value given the mean (5:00)
- Missing value given the mean
- Impact on median and mean: increasing an outlier (4:00)
- Impact on median and mean: removing an outlier (5:00)
- Effects of shifting, adding, and removing a data point
- Estimating the median and mean in data displays (4:00)
- Estimating the median and mean in data displays

Summarizing quantitative data: Quiz 1

Measuring spread in quantitative data
- Interquartile Rand (IQR) (6:00)
- Interquartile Rand (IQR
- Sample variance (10:00)
- Sample standard deviation and bias (9:00)
- Sample standard deviation
- **Visually assessing standard deviation (3:00)**
- **Visually assessing standard deviation**
- Mean and Standard deviation versus median and IQR (7:00)

Summarizing quantitative data: Quiz 2

Box and Whisker plots
- Worked example: Creating a box plot (odd number of data points) (3:00)
- Worked example: Creating a box plot (even number of data points) (3:00)
- Creating box plots
- Reading box plots (3:00)
- Reading box plots
- Interpreting box plots (7:00)
- Interpreting quartiles
- Judging outliers in a dataset (8:00)
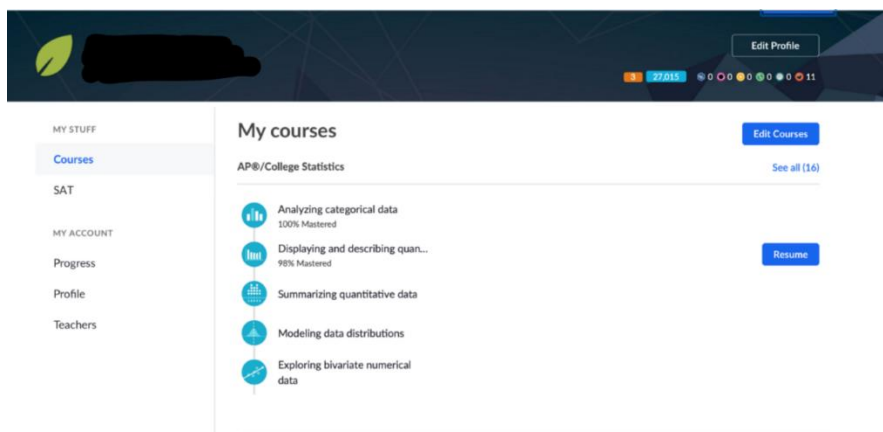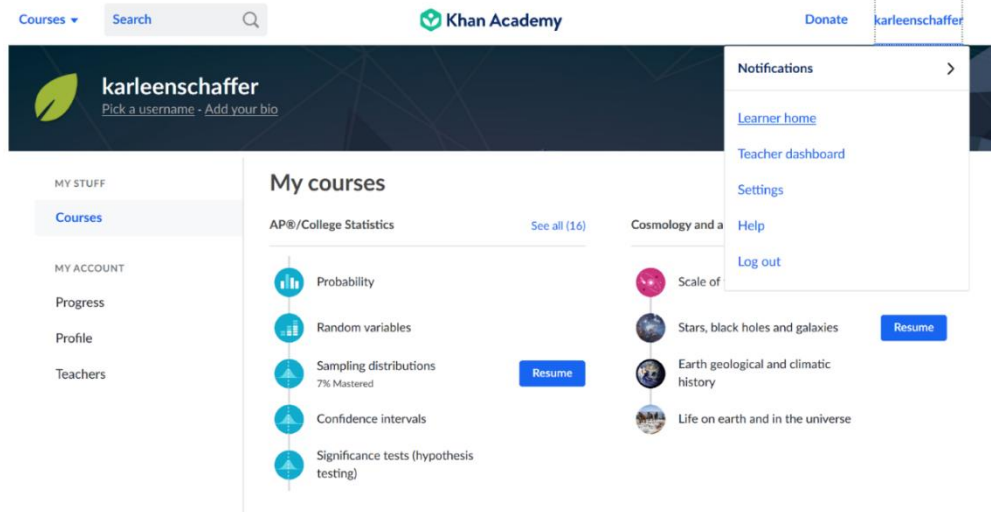- Identifying outliers

Summarizing quantitative data: Quiz 3

You should finish all the work (lessons, quizzes, test, etc.) under Exploring categorical data and exploring one-variable quantitative data: Displaying and describing. The third unit shown below is optional and it is a very good resource for success on the first chapter we will study.

Exploring categorical data	0/1000 Mastery points
The language of variation: Variables	Statistics for two categorical variables
Representing a categorical variable with graphs	
Representing two categorical variables	

Exploring one-variable quantitative data: Displaying and describing	0/700 Mastery points
Representing a quantitative variable with dot plots	Comparing distributions of a quantitative variable
Representing a quantitative variable with histograms and ste...	
Describing the distribution of a quantitative variable	

Exploring one-variable quantitative data: Summary statistics	0/1100 Mastery points
Measuring center in quantitative data	Effects of linear transformations
More on mean and median	More on standard deviation (optional)
Measuring variability in quantitative data	Graphical representations of summary statistics

When you are complete with the work, you can go under your name and click Learner home. You should see your courses and hopefully an overview of your completion. Please take a screenshot of your completion in AP Statistics and e-mail it to the appropriate teacher. <u>Make sure your name and proof of completion (95% or more) is in your screenshot.</u>

Khan Academy is a great resource that you can continue to use throughout the year. We are glad we could show you how it works so early in the course.

We are very excited to see you and to talk about such important concepts! Enjoy the remainder of the summertime. Please reach out if you have questions!

Mrs. Schaffer and Mr. Mailloux