Unit 1 – Exploring One-Variable Data

~14 – 16 Class Periods

15 – 23% Exam Weight

Day	Lesson and Objectives	Assignment

1	Notes 1 – Representing Categorical Variables with Graphs
	   o Vocab: Individuals, variables, categorical, quantitative, discrete, continuous
	   o Creating one-way and two-way tables
	   o Bar graphs
		HW 1

2	Notes 2 – Representing Quantitative Variables with Graphs
	   o Histograms
	   o Stem and Leaf (regular, back to back, and split stem)
	   o Dotplots
	   o Cumulative Relative Frequency Graphs (ogives)	

3	Finish Notes 2	HW 2

4	Notes 3 – Describing and Summarizing Quantitative Variables
	   o SOCS: Shape, outliers, center, spread
	   o Mean, Median, Mode
	   o Range, IQR, Standard Deviation
	   o Percentiles and 5 number summary
	   o Boxplots and modified boxplots	

5	Finish Notes 3	HW 3
6	Activity: Greedy Train Game	

8	Notes 4 – Comparing Distributions
	   o Describe and compare distributions
	   o AP exam question
		HW 4

9	Unit 1 Quiz	

10	Notes 5 – The Empirical Rule and Z-Scores
	   o The Normal Curve
	   o The Empirical Rule
	   o Standardizing with z-scores
		HW 5

11	Notes 6 – The Standard Normal Curve
	    o Standard Normal Probabilities
	    o Raw Data to Percentages
	    o Percentages to Raw Data
		HW 6

12	Unit 1 Circuit • Students work together in class to complete the circuit	Circuit due by the end of class
13	Unit 1 Class Summary • Go through class summary with students • Rest of the class, they will work on the test review • Hand out calculator commands sheet	Unit 1 Test Review
14	Project: Misleading Graphs • I go through the instructions with my students and then give them class time to begin working. • I also give them additional time to work on their test review and ask questions.	Project due a week from now
15	Unit 1 Test	

Prerequisite Knowledge	Extensions
None! This unit was designed as if students have had no previous exposure to statistics.	• Geometric Density Curves • Chebyshev's Inequality

Guided Note Videos
- The videos are listed in a separate document, with links to the YouTube videos. These videos cannot be found though the search bar, students can only access them through the links I have provided you.
- For a flipped classroom model, have students watch the videos (or portions of it) at home and take notes. Then, complete the homework assignments during class and ask any clarifying questions.
- If you do not do a flipped classroom model, you can have the videos posted as extra help too. I have also used them, if I get behind in my pacing, and assigned them to catch the class up, and for students who have been absent and missed the lesson.

Special Notes
- Each "Day" is approximately 50 minutes, so some note sections will take longer than the time I have.
- In my class, I have the HW due the next day in class, the Test Review due the day of the test, and the Unit project due a week from when it was assigned.
- For the beginning of the year, I use two days to get to know the student and to build classroom relationships. There is a folder in this unit called "First Two Days" where you can check out those resources.
- There are additional activities and projects included in this folder as well. If your students need more practice or you would like to spend more time on a topic, please feel free to incorporate!
- If you have any questions on content or pedagogy, please email me at goldiesmathemporium@gmail.com

Student-friendly learning targets:

- 1A: Students will be able to identify and classify variables in a set of data
- 1B Students will be able to represent, describe, and compare categorical data using frequency, relative frequency tables, and bar graphs.
- 1C: Students will be able to represent, describe, and compare quantitative data using histograms, stem and leaf graphs, dotplots, ogives, and box and whisker plots.
- 1D: Students will be able to calculate measures of center (mean, median, mode), variability (standard deviation, IQR, range), and position (percentiles and z-scores) in a distribution.
- 1E: Students will be able to calculate and compare position and percentages in a normal distribution.

Extra Activities

Are Cookie Dangerous?
This was an intro activity I use to do to get students thinking about ridiculous claims based on statistics. It is a fun activity that you can do at the beginning of the unit if you would like, and it works best in groups.

Exploring Chocolate Candies Activity
This is a great activity to do after Notes 1, if you have time. It lets students get a little more hands on with gathering data.

Unit 1 Normal Distribution Circuit
I like to do this after Notes 6 if it seems like my students are struggling with the Normal distribution calculations. Some years they need the extra exposure to the problems and some years they don't! You can also save this for AP exam review too.

Z-Score Matching Activity
This is another activity you can incorporate if your students need more practice on the standard normal curve. I've used this when I've had a substitute teacher shortly after introducing the standard normal curve, and I've used it as AP Exam review at the end of the year. It works great as an individual activity or as a group activity.

What is Normal?
This is an older activity of mine where students explored and discovered the Empirical Rule before we talked about it. I would do this before Notes 5. Determining if a set of data is Normal is no longer part of the AP Exam CED, so I have not used this activity for a while.

First Two Days – Free Recourse
In this folder, I included what I do in the first two days in AP Statistics. You will see the slides I use as well as the activities I give out to students. Feel free to use and modify as you want!