

Unit 2 – Exploring Two-Variable Data

~10 – 11 Class Periods

5 – 7% Exam Weight

Day	Lesson and Objectives	Assignment
1	Notes 1 – Two Categorical Variables <ul style="list-style-type: none">○ Compare numerical and graphical representations for two categorical variables.○ Calculate and compare statistics for two categorical variables.	HW 1
2	Activity: Vitruvian Man Part 1	Vitruvian Man Part II
3	Notes 2 – Scatterplots and Correlation <ul style="list-style-type: none">○ Represent bivariate quantitative data using scatterplots○ Describe the characteristics of a scatterplot.○ Determine the correlation for a linear relationship.○ Interpret the correlation for a linear relationship.	HW 2
4	Activity: Are We Compatible?	
5	Unit 2 Quiz	
6	Notes 3 – Linear Regression <ul style="list-style-type: none">○ Calculate a predicted response value using a linear regression model.○ Estimate parameters for the least-squares regression line model.○ Interpret coefficients for the least-squares regression line model.○ Represent differences between measured and predicted responses using residuals plots.○ Describe the form of association of bivariate data using residual plots.	
7	Finish Notes 3	HW 3
8	Notes 4 – Influential Points and Departure from Linearity <ul style="list-style-type: none">○ Identify influential points in regression.○ Calculate a predicted response using a least-squares regression line for a transformed data set.	HW 4
9	Unit 2 Circuit <ul style="list-style-type: none">○ Students work together in class to complete the circuit	Circuit due by the end of class

10	Unit 2 Class Summary <ul style="list-style-type: none"> ○ Go through class summary with students ○ Rest of the class, they will work on the test review 	Unit 2 Test Review
11	Unit 2 – COVID Vaccinations Project <ul style="list-style-type: none"> ○ Hand out project and discuss Unit 2 Trivia Review Game	Finish project
12	Unit 2 Test	Finish Unit 2 project

Prerequisite Knowledge	Extensions
<ul style="list-style-type: none"> • Students should have been exposed to scatterplots and slope-intercept form from previous math courses. • Students should be comfortable with lists and graphing on their calculator. 	<ul style="list-style-type: none"> • Exponential and Power Regression

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
- Blank days usually involve me finishing up the notes from the day before and then giving them time to start the assignment for that day.
- My pacing is usually under the recommended days from the College Board to allow for me to insert extra days in the unit where I need them (more time on notes; another day to go over homework; extra activities, etc.)
- 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.
- If you have any questions on content or pedagogy, please email me at goldiesmathemporium@gmail.com

Student-friendly learning targets:

- 2A: Students will create, calculate, and compare numerical and graphical representations for two categorical variables.
- 2B: Students will represent and describe (direction, form, strength, unusual features) bivariate quantitative data using scatterplots
- 2C: Students will calculate and interpret the correlation for a linear relationship.
- 2D: Students will calculate a predicted response value using a linear regression model.
- 2E: Students will estimate and interpret parameters for the least-squares regression line model.
- 2F: Students will represent and interpret differences between measured and predicted responses using residual plots.
- 2G: Students will identify and interpret influential points in regression.
- 2H: Students will calculate a predicted response using a least squares regression line for a transformed data set.

Extra Activities

Handspan vs Chocolate Grab

This is a great activity to use after Notes 3, when you want a fun day to review most of the linear regression content. You will have enough time to gather all the data during class and then you can have students work in groups to complete the rest of the questions. Any questions they don't finish in class, I have them complete as homework.