

Unit 9 – Inference for Quantitative Data: Slopes

~7 – 8 Class Periods
2 – 5% Exam Weight

Day	Lesson and Objectives	Assignment
1	Notes 1 – Sampling Distributions and Confidence Intervals for Slopes <ul style="list-style-type: none"> ○ Sampling Distribution of b ○ Conditions for Regression Inference ○ Confidence Interval for b ○ Computer Output 	
2		HW 1
3	Notes 2 – Hypothesis Testing for Slope <ul style="list-style-type: none"> ○ Significance Test for b ○ Regression Analysis 	HW 2
4	M&M Activity: Height vs Chocolate Grab	
5	Unit 9 Summary <ul style="list-style-type: none"> • Unit 9 Summary Slides with Student Handout • Work on Test Review for the rest of class 	Unit 9 Test Review
6	Unit 9 Test	

Prerequisite Knowledge

Students will build off of their two variable statistical knowledge from Unit 2 – Two Variable Analysis. I've included an introduction activity (Vitruvian Man) that I do in Unit 2. This is a modified activity (my Unit 2 one is much longer) so that students remember that the data we gather is just a sample, and to build a sampling distribution, we have to take many samples.

It is also assumed that students have knowledge of confidence intervals, significance tests, and sampling distributions. These concepts are not reviewed in detail, but are discussed as they apply to slope inference.

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.
- In the previous AP Statistics curriculums, most teachers (myself included) taught inference AND linear transformations in this unit. Per the new AP Statistics CED, I have moved the linear transformations information to my Unit 2 – Two Variable Analysis.
- If you have any questions on content or pedagogy, please email me at goldiesmathemporium@gmail.com

Student-friendly learning targets:

- 9A: Students will identify an appropriate confidence interval procedure and verify the conditions to calculate a confidence interval for a slope of a regression model
- 9B: Students will determine the given margin of error for the slope of a regression model and identify the effects of sample size on the width of a confidence interval for the slope of a regression model.
- 9C: Students will calculate an appropriate confidence interval for the slope of a regression model and interpret and justify a claim from a confidence interval for the slope of a regression model.
- 9D: Students will identify the null and alternative hypotheses for a slope of a regression model and identify an appropriate testing method for a slope of a regression model while verifying the conditions for making statistical inferences.
- 9E: Students will calculate the test statistic and p-value, interpret the p-value, and justify a claim about the population based on the results of a significance test for a slope of a regression model.