Unit 6 – Inference for Categorical Data: Proportions

15 – 20% Exam Weight

Day	Lesson and Objectives	Assignment
1/5	**Activity: Normal Approximation of the Binomial**	Finish Activity as HW
1/6	**Intro to Unit 6 Activity** • Introduction to Confidence Intervals – A Simulation	Finish Activity as HW
1/7	**Notes 1 – Confidence Interval for a Proportion** • UNC-4.A Identify an appropriate confidence interval procedure for a population proportion. • UNC-4.B Verify the conditions for calculating confidence intervals for a population proportion. • UNC-4.D Calculate an appropriate confidence interval for a population proportion. • UNC-4.E Calculate an interval estimate based on a confidence interval for a population proportion. • UNC-4.F Interpret a confidence interval for a population proportion.	HW 1
1/8	**Notes 2 – Margin of Errors** • UNC-4.C Determine the margin of error for a given sample size and an estimate for the sample size that will result in a given margin of error for a population proportion. • UNC-4.H Identify the relationships between sample size, width of a confidence interval, confidence level, and margin of error for a population proportion	HW 2
1/9	**Activity: Confidence Levels with Yellow M&Ms** • Complete this activity in class with students. • Any questions that cannot be done in class are assigned as homework.	
1/12 to 1/14	**Units 1-4: Statistically Squatchy Review Mystery**	
1/14 to 1/20	**Semester 1 Review** *Reminder: Semester 1 Exam will cover Unit 1-5 (Unit 6 will be on the Semester 2 Exam) *Various Exam Review Materials will be given out. Any worksheets will be due the day of the final exam.	

1/21 to 1/23	**Semester Finals**	
1/27 and 1/28	**Notes 3 – Introduction to Significance Tests** • VAR-6.D Identify the null and alternative hypotheses for a population proportion. • VAR-6.E Identify an appropriate testing method for a population proportion. • VAR-6.F Verify the conditions for making statistical inferences when testing a population proportion.	HW 3
1/29	**Notes 4 – Conducting a Significance Test for Proportions** • VAR-6.G Calculate an appropriate test statistic and p-value for a population proportion. • DAT-3.A Interpret the p-value of a significance test for a population proportion. • DAT-3.B Justify a claim about the population based on the results of a significance test for a population proportion.	HW 4
1/30	**Confidence Intervals & Significance Tests Matching Activity** • Students complete a matching activity for various inference problems **In Class Multiple Choice Practice** • Multiple choice practice problems for confidence intervals and significance tests for proportions	Finish multiple choice practice problems
2/2	**Unit 6 Quiz**	
2/3	**Notes 5 – Errors and Power** • UNC-5.A Identify Type I and Type II errors • UNC-5.B Calculate the probability of a Type I and Type II errors • UNC-5.C Identify factors that affect the probability of errors in significance testing. • UNC-5.D Interpret Type I and Type II errors.	HW 5
2/4	**Notes 6 – Relationship between Confidence Intervals and Significance Tests** • UNC-4.G Justify a claim based on a confidence interval for a population proportion.	HW 6
2/5	**Activity: Exploring P-Value and Type I Error with M&Ms** • Complete this activity in class with students. • Any questions that cannot be done in class are assigned as homework.	

2/6	**Notes 7 – Confidence Intervals for a Difference in Proportions** • UNC-4.I Identify an appropriate confidence interval procedure for a comparison of population proportions. • UNC-4.J Verify the conditions for calculating confidence intervals for a difference between population proportions. • UNC-4.K Calculate an appropriate confidence interval for a comparison of population proportions. • UNC-4.L Calculate an interval estimate based on a confidence interval for a difference of proportions. • UNC-4.M Interpret a confidence interval for a difference of proportions. • UNC-4.N Justify a claim based on a confidence interval for a difference of proportions.	HW 7
2/9	**Notes 8 – Significance Tests for a Difference in Proportions** • VAR-6.H Identify the null and alternative hypotheses for a difference of two population proportions. • VAR-6.I Identify an appropriate testing method for the difference of two population proportions. • VAR-6.J Verify the conditions for making statistical inferences when testing a difference of two population proportions • VAR-6.K Calculate an appropriate test statistic for the difference of two population proportions. • DAT-3.C Interpret the p-value of a significance test for a difference of population proportions • DAT-3.D Justify a claim about the population based on the results of a significance test for a difference of population proportions	HW 8
2/10	**Unit 6 Circuit Activity** • Complete the circuit activity in class	
2/11	**Unit 6 Summary** • Unit 6 Summary Slides with Student Handout • Work on Test Review for the rest of class	Test Review due the day of the test
2/12	**Introduce Project** • Go over project requirements at the start of class **Unit 6 Trivia Game** • Students will practice multiple choice problems in teams in a trivia game	Project Due Friday 2/20
2/13	**Unit 6 Test**	*All Unit 6 Assignments Due Today!