Learning Goals

Data

		1. I can identify categorical and quantitative variables.
		2. I can distinguish between a sample and a population.
		3. I can distinguish between an observational study and a randomized experiment.
		4. I can understand that not every association implies causation, and can identify potential confounding variables.
		5. I can analyze one categorical variable using tables or graphs.
		6. I can analyze two categorical variables using two-way table.
		7. I can analyze one quantitative variable using dotplots and histograms, finding mean and median, and explaining outliers and skewness.
		8. I can use technology to find summary statistics and compute z-scores, interpret 5-number summary, and use the range and standard deviation as measures of spread.
		9. I can analyze one quantitative variable and one categorical using boxplots and comparative summary statistics.
		10. I can use technology to find correlation and interpret a correlation.
		11. I can use technology to find the regression line for two quantitative variables and make interpretation and predictions.

Understanding Inference

		12. I can distinguish between a population parameter and a sample statistic.
		13. I can construct a confidence interval for a parameter based on a sample statistic and a margin of error.
		14. I can interpret (in context) what a confidence interval says about a population parameter.
		15. I can use technology to create a bootstrap distribution and construct a 95% confidence interval based on a sample statistic and the standard error from bootstrap distribution.
		16. I can construct a confidence interval based on the percentiles of a bootstrap distribution.
		17. I can specify null and alternative hypotheses based on a question of interest, defining relevant parameters.
		18. I can use technology to create a randomization distribution, find a p-value, and interpret the p-value.
		19. I can make a formal decision in a hypothesis test by comparing a p-value to a given significance level and state the conclusion to a hypothesis test in context.
		20. I can interpret Type I and Type II errors in hypothesis tests in context.
		21. I can determine the decision for a two-tailed hypothesis test from an appropriately constructed confidence interval.

Inference with Normal and t-Distributions

		22. I can find area in a normal distribution.
		23. I can compute a standardized test statistic and compute a p-value using a normal distribution.
		24. I can compute a confidence interval using a normal distribution.
		25. I can use a normal distribution to compute a confidence interval for a population proportion from standard error.
		26. I can use a normal distribution to test a hypothesis about a population proportion from standard error.
		27. I can use a t-distribution to compute a confidence interval for a population mean from standard error.
		28. I can use a t-distribution to test a hypothesis about a population mean from standard error.
		29. I can use a normal distribution to compute a confidence interval for a difference in proportions between two groups from standard error.
		30. I can use a normal distribution to test a hypothesis about a difference in proportions between two groups from standard error.
		31. I can use a t-distribution to compute a confidence interval for the difference in means between two groups from standard error.
		32. I can use a t-distribution to test a hypothesis about a difference in means between two groups from standard error.
		33. I can use a t-distribution to compute a confidence interval for a difference in means based on paired data.
		34. I can use a t-distribution to test a hypothesis about a difference in means based on paired data.