CED UNIT 1: EXPLORING ONE-VARIABLE DATA

Chapter 1: Data Analysis

Day	Stats Medic	CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Digital Resources	Digital Resources	Digital Resources	Digital Resources
1	Can Joy Smell Parkinson's Disease?					Shirt Cards	Stats Medic applet	Bob Lochel Desmos Activity	Bob Lochel Desmos Activity (v2) - slightly faster	Google slides
2	Intros & Syllabus					Books				
3	Displaying Categorical Data	TOPICS 1.1 - 1.4	Chapter 1 Introduction, Organizing Data, From Data Analysis to Inference	· Identify the individuals and variables in a set of data. · Classify variables as categorical or quantitative.	1, 3, 5, 7, **9, 10**	None	One Categorical Variable, Multiple Group applet	Desmos activity with introduction to data and get to know you (feel free to modify for your school)	Desmos Activity	Google Slides
			1.1 Displaying Categorical Data: Bar Graphs and Pie Charts, Graphs: Good and Bad, Analyzing Data on Two Categorical Variables; 1.1 Relationships Between Two Categorical Variables	· Make and interpret bar graphs for categorical data. · Identify what makes some graphs of categorical data misleading. · Calculate marginal and joint relative frequencies from a two-way table.	13, 15, 17, 19, 21, 23	None				
				· Calculate conditional relative frequencies from a two-way table. · Use bar graphs to compare distributions of categorical data. · Describe the nature of the association between two categorical variables.						
4	Mosaic Plots	TOPICS 2.2 - 2.3	1.1 Mosaic Plots	· Classify variables as categorical or quantitative. · Make and interpret bar graphs for categorical data. · Use bar graphs to compare distributions of categorical data. · Describe the nature of the association between two categorical variables.	27, 29, 33, 35, **40–43**	Modify lesson to include your high school	One Categorical Variable, Multiple Group applet		Desmos Activity	
5	Displaying Quantitative Data	TOPICS 1.5 - 1.6	1.2 Dotplots, Stemplots, Histograms, Describing Shape	· Make and interpret dotplots, stemplots, and histograms of quantitative data. · Identify the shape of a distribution from a graph.	45, 49, 51, 59, 63	None	One Quantitative Variable, Single Group applet	One Quantitative Variable, Single Group applet (COLLABORATIVE)	Desmos Activity	Google Slides
			1.2 Describing Distributions, Comparing Distributions, Using Histograms Wisely	· Describe the overall pattern (shape, center, and variability) of a distribution and identify any major departures from the pattern (outliers). · Compare distributions of quantitative data using dotplots, stemplots, and histograms.	55, 65, 69, 77, **80–85**	None	One Quantitative Variable, Multiple Group applet			
6	Quiz 1.1-1.2									
7	Describing Quantitative Data Day 1	TOPIC 1.7	1.3 Measuring Center: Mean and Median, Comparing the Mean and the Median, Measuring Variability: Range, Standard Deviation and IQR, Numerical Summaries with Technology	· Calculate measures of center (mean, median) for a distribution of quantitative data. · Calculate and interpret measures of variability (range, standard deviation, IQR) for a distribution of quantitative data. · Explain how outliers and skewness affect measures of center and variability.	87, 89, 91, 95, 97, 101, 103, 105, 121	None	One Quantitative Variable, Single Group applet	One Quantitative Variable, Single Group applet (COLLABORATIVE)	Desmos Activity	Google Slides
8	Describing Quantitative Data Day 2	TOPICS 1.8 - 1.9	1.3 Identifying Outliers, Making and Interpreting Boxplots, Comparing Distributions with Boxplots	· Identify outliers using the 1.5×IQR rule. · Make and interpret boxplots of quantitative data. · Use boxplots and numerical summaries to compare distributions of quantitative data.	109, 111, 113, 115, **123–126**	None	One Quantitative Variable, Multiple Group applet		Desmos Activity	Google Slides
9	Quiz 1.3				Chapter 1 Review Exercises	None				
10	Chapter 1 Review		Chapter 1 Review	Practice Test MC + FRAPPY!	Study	None				
11	Chapter 1 Test		Chapter 1 Test							

Chapter 2: Modeling Distributions of Data

Day	Stats Medic	CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Resources for teaching online	Resources for teaching online		
1	Percentiles	TOPIC 1.7	Chapter 2 Introduction, 2.1 Measuring Location: Percentiles, Cumulative Relative Frequency Graphs, Measuring Location: Standardized Scores	· Find and interpret the percentile of an individual value within a distribution of data. · Estimate percentiles and individual values using a cumulative relative frequency graph. · Find and interpret the standardized score (z-score) of an individual value within a distribution of data.	1, 3, 7, 9, 11, 13, 15, 19	None	One Quantitative Variable, Single Group applet	One Quantitative Variable, Single Group applet (COLLABORATIVE)	Desmos Activity	Google Slides
2	z-Scores and Transforming Data	TOPIC 1.10	2.1 Transforming Data	· Describe the effect of adding, subtracting, multiplying by, or dividing by a constant on the shape, center, and variability of a distribution of data.	21, 25, 29, 31, **33–38**	None	One Quantitative Variable, Single Group applet	One Quantitative Variable, Single Group applet (COLLABORATIVE)	Desmos Activity	Google Slides
3	Quiz 2.1					None				
4	Density Curves, 68-95-99.7 Rule	TOPIC 1.10	2.2 Density Curves, Describing Density Curves, Normal Distributions, The Empirical Rule	· Use a density curve to model distributions of quantitative data. · Identify the relative locations of the mean and median of a distribution from a density curve. · Use the empirical rule to estimate (i) the proportion of values in a specified interval, or (ii) the value that corresponds to a given percentile in a Normal distribution.	41, 45, 47, 49, 51	Dice, Pennies, Stop Watches, Meter stick/Tape measure. Copies of Normal Curve flipbook (optional)			Desmos Activity	Google Slides

5	Normal Distribution Calculations	TOPIC 1.10	2.2 Finding Areas in a Normal Distribution, Working Backward: Finding Values from Areas	· Find the proportion of values in a specified interval in a Normal distribution using Table A or technology. · Find the value that corresponds to a given percentile in a Normal distribution using Table A or technology.	53, 55, 57, 59, 61, 63	Table A or technology	Normal Density Curve applet		Desmos Activity	Google Slides	
6	Assessing Normality	TOPIC 1.10	2.2 Assessing Normality	· Determine whether a distribution of data is approximately Normal from graphical and numerical evidence.	73, 75, 77, 79, 81, **85–90**	Optional worskeet to be modified to include your names.	One Quantitative Variable, Single Group applet		Desmos Activity		
7	Quiz 2.2				Chapter 2 Review Exercises	None					
8	Chapter 2 Review		Chapter 2 Review/FRAPPY!		Study	None					
9	Chapter 2 Test		Chapter 2 Test								

CED UNIT 2: EXPLORING TWO-VARIABLE DATA

Chapter 3: Describing Relationships

Day	Stats Medic	CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Digital Resources	Digital Resources		
1	Scatterplots	TOPIC 2.4	Chapter 3 Introduction, 3.1 Explanatory and Response Variables, Displaying Relationships: Scatterplots, Describing a Scatterplot	· Distinguish between explanatory and response variables for quantitative data. · Make a scatterplot to display the relationship between two quantitative variables. · Describe the direction, form, and strength of a relationship displayed in a scatterplot and identify unusual features.	1, 3, 5, 9, 11	Barbies, Rubber Bands	Two Quantitative Variables applet	Two Quantitatibve Variables applet (COLLABORATIVE)	Desmos Activity	Leaving Part 1-3 Google Slides
2	Correlation	TOPIC 2.5	3.1 Measuring Linear Association: Correlation, Cautions about Correlation, Calculating Correlation, Additional Facts about Correlation	· Interpret the correlation. · Understand the basic properties of correlation, including how the correlation is influenced by unusual points. · Distinguish correlation from causation.	13, 15, 17, 19, 23, **29–34**	None	Correlation Guessing Game	Spurious Correlations	Desmos Activity	
3	Quiz 3.1									
4	Regression Line, Predictions & Residuals	TOPIC 2.6 - 2.8	3.2 Prediction, Residuals, Interpreting a Regression Line	· Make predictions using regression lines, keeping in mind the dangers of extrapolation. · Calculate and interpret a residual. · Interpret the slope and y intercept of a least-squares regression line.	37, 39, 41, 43, 45	None	Two Quantitative Variables applet	Two Quantitatibve Variables applet (COLLABORATIVE)	Desmos Activity	
5	Least Squares Regression & Residual Plots	TOPIC 2.7	3.2 The Least-Squares Regression Line, Determining if a Linear Model is Appropriate: Residual Plots	· Determine the equation of a least-squares regression line using technology or computer output. · Construct and interpret residual plots to assess whether a regression model is appropriate.	47, 49, 51, 53	None	Desmos eTool		Desmos Activity	Google Slides
6	Standard Deviation of Residuals & r-squared	TOPIC 2.8	3.2 How Well the Line Fits the Data: The Role of s and r2 in Regression, Interpreting Computer Regression Output	· Interpret the standard deviation of the residuals and r-sq and use these values to assess how well a least-squares regression line models the relationship between two variables. · Describe how the least-squares regression line, standard deviation of the residuals, and r-sq are influenced by unusual points.	55, 57, 59, 67	None	Two Quantitative Variables applet	Two Quantitatibve Variables applet (COLLABORATIVE)	Desmos Activity	Google Slides
7	Outliers for Scatterplots	TOPIC 2.9	3.2 Regression to the Mean, Correlation and Regression Wisdom	· Find the slope and y intercept of the least-squares regression line from the means and standard deviations of x and y and their correlation.	63, 65, **71–78**	None	Correlation and Regression applet		Desmos Activity	
8	Quiz 3.2									
9	Transforming Non-linear Data	TOPIC 2.9	3.3 Transforming with Powers and Roots; Transforming with Logarithms: Power Models	· Use transformations involving powers, roots, or logarithms to create a linear model that describes the relationship between two quantitative variables, and use the model to make predictions.	81, 83, 85, 87	None	Two Quantitative Variables applet	Two Quantitatibve Variables applet (COLLABORATIVE)		
10	Choosing the Best Regression	TOPIC 2.9	3.3 Transforming with Logarithms: Exponential Models; Putting it all Together: Which Transformation Should We Choose?	· Determine which of several models does a better job of describing the relationship between two quantitative variables.	89, 91, 93, 95-96	Pull back cars	Two Quantitative Variables applet	Two Quantitatibve Variables applet (COLLABORATIVE)		
11	Quiz 3.3					None				
12	Barbie Bungee Finale				Chapter 3 Review Exercises	None				
13	Chapter 3 Review		Chapter 3 Review/FRAPPY!		Study					
14	Chapter 3 Test									

CED UNIT 3: COLLECTING DATA

Chapter 4: Collecting Data

Day	Stats Medic	CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Digital Resources	Digital Resources					
1	Sampling Methods	TOPIC 3.1 and 3.4	Chapter 4 Introduction, 4.1 The Idea of a Sample Survey, How to Sample Badly, How to Sample Well: Random Sampling	· Identify the population and sample in a statistical study. · Identify voluntary response sampling and convenience sampling and explain how these sampling methods can lead to bias. · Describe how to select a simple random sample using slips of paper, technology, or a table of random digits.	1, 3, 5, 7, 11, 13	Crazy in Love lyrics, poster paper, dot stickers	Stats Medic Beyonce applet	Beyonce Desmos	Google Slides				
2	More Sampling Methods Day 1	TOPIC 3.3	4.1 Other Random Sampling Methods	· Describe how to select a sample using stratified random sampling, cluster sampling, and systematic random sampling, and explain whether a particular sampling method is appropriate in a given situation.	15, 17, 19, 21, 22, 23	Poster paper, dot stickers	JT applet 1	Beginning Song	Ending Song	Desmos JT 1	Desmos Activity 2	Desmos Activity CED	
3	More Sampling Methods Day 2	TOPIC 3.3	4.1 Other Random Sampling Methods	· Describe how to select a sample using stratified random sampling, cluster sampling, and systematic random sampling, and explain whether a particular sampling method is appropriate in a given situation.		Poster paper, dot stickers	JT applet 2	Beginning Song	Ending Song	Desmos JT 2			
4	Problems with Sample Surveys	TOPIC 3.4	4.1 Sample Surveys: What Else Can Go Wrong?	· Explain how undercoverage, nonresponse, question wording, and other aspects of a sample survey can lead to bias.	25, 27, 29, 31, 33, **35–40**	Poster paper, dot stickers	One Quantitative Variable, Multiple Group applet	Desmos Activity	Google Slides				
5	Quiz 4.1												
6	Observational Studies vs. Experiments	TOPIC 3.2	4.2 Observational Studies Versus Experiments, The Language of Experiments	· Explain the concept of confounding and how it limits the ability to make cause-and-effect conclusions. · Distinguish between an observational study and an experiment, and identify the explanatory and response variables in each type of study. · Identify the experimental units and treatments in an experiment.	43, 45, 47, 49, 51, 53	None				Google Slides			
7	Designing Experiments	TOPIC 3.5	4.2 Designing Experiments: Blinding and the Placebo Effect, Random Assignment, Comparison, Control, Replication, and Putting It All Together; Completely Randomized Designs	· Describe the placebo effect and the purpose of blinding in an experiment. · Describe how to randomly assign treatments in an experiment using slips of paper, technology, or a table of random digits. · Explain the purpose of comparison, random assignment, control, and replication in an experiment.	55, 57, 59, 61, 63, 65, 67, 69	None	Leading Video	Desmos Activity	Desmos Activity	Google Slides			
8	Randomized Block Design	TOPICS 3.5 - 3.6	4.2 Randomized Block Designs	· Describe a completely randomized design for an experiment. · Describe a randomized block design and a matched pairs design for an experiment and explain the purpose of blocking in an experiment.	71, 75, 77, 79, **83–90**	None		Desmos Activity		Google Slides			
9	Quiz 4.2												
10	Inference for Sampling and Inference of Experiments	TOPIC 3.7	4.3 Inference for Sampling, Inference for Experiments	· Explain the concept of sampling variability when making an inference about a population and how sample size affects sampling variability. · Explain the meaning of statistically significant in the context of an experiment and use simulation to determine if the results of an experiment are statistically significant.	93, 95, 97, 99	20 Index Cards	One Quantitative Variable, Single Group applet	One Quantitative Variable, Single Group applet (COLLABORATIVE)	Desmos Activity	Google Slides	Desmos for SM/STS Collab		
11	The Scope of Inference	TOPIC 3.2 and 3.7	4.3 The Scope of Inference: Putting it All Together, The Challenges of Establishing Causation, Data Ethics (optional)	· Identify when it is appropriate to make an inference about a population and when it is appropriate to make an inference about cause and effect. · Evaluate if a statistical study has been carried out in an ethical manner.	103, 105, 107, **117–118** (109, 111, 113, 115 optional)	None	Desmos Card Sort	Desmos Activity	Desmos Activity	Google Slides			
12	Quiz 4.3				Chapter 4 Review Exercises								
13	Chapter 4 Review		Chapter 4 Review/FRAPPY!		Study	Coke, Caffeine Free Coke, 3 oz cups	One Quantitative Variable, Multiple Group applet						
14	Chapter 4 Test		Chapter 4 Test										

CED UNIT 4: PROBABILITY, RANDOM VARIABLES, AND PROBABILITY DISTRIBUTIONS

Chapter 5: Probability

Day	Stats Medic		CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Digital Resources	Digital Resources					
1	Randomness and Probability		TOPIC 4.3	Chapter 5 Introduction, 5.1 The Idea of Probability	· Interpret probability as a long-run relative frequency.	1, 3, 5, 7	None	Free Throw Shooter applet	Desmos Activity	Google Slide				
2	Simulation		TOPIC 4.2	5.1 Simulation	· Use simulation to model a random process.	9, 11, 15, 21, **23–28**	Die, poster paper, dot stickers	One Quantitative Variable, Single Group applet	Desmos Activity	Desmos Activity 2	Google Slide	Soda Activity		
3	Probability Rules		TOPIC 4.3 - 4.5	5.2 Probability Models, Basic Probability Rules	· Give a probability model for a random process with equally likely outcomes and use it to find the probability of an event. · Use basic probability rules, including the complement rule and the addition rule for mutually exclusive events.	31, 33, 35, 37, 39	Pair of Dice		Desmos Activity	Desmos Activity The Last Banana Desmos Activity The Last Banana	Google Slide	The Last Banana		
4	General Addition Rule	Combine content from "General Addi	TOPIC 4.6	5.2 Two-Way Tables, Probability, and the General Addition Rule, Venn Diagrams and Probability	· Use a two-way table or Venn diagram to model a random process and calculate probabilities involving two events. · Apply the general addition rule to calculate probabilities.	41, 47, 49, 51, 53, **55–58**	None	Two Categorical Variables	Desmos Taco Tongue		Google Slide (Part 1 & Part 2)			
5	Quiz 5.1 and 5.2													
6	Independent and Dependent Events	Combine content from "Independent	TOPIC 4.6	5.3 What Is Conditional Probability?, Conditional Probability and Independence, The General Multiplication Rule	· Use a two-way table or Venn diagram to model a random process and calculate probabilities involving two events (from Lesson 5.2). · Calculate and interpret conditional probabilities. · Determine whether two events are independent.	61, 63, 65, 67, 69, 71, 77, 79	None	Two Categorical Variables	Desmos Taco Tongue					
7	Conditional Probability and Tree Diagrams		TOPIC 4.5	5.3 Tree Diagrams and Conditional Probability, The Multiplication Rule for Independent Events	· Use the general multiplication rule to calculate probabilities. · Use a tree diagram to model a random process involving a sequence of outcomes and to calculate probabilities. · When appropriate, use the multiplication rule for independent events to calculate probabilities.	81, 83, 87, 89, 91, 93, 99, **103–106**	5 cards		Desmos Activity	GeoGebra simulator	Google Slides	Code created by a student		
8	Quiz 5.3					Chapter 5 Review Exercises								
9	Chapter 5 Review			Chapter 5 Review/FRAPPY!		Study	None				Google Slides			
10	Chapter 5 Test			Chapter 5 Test							Probability Strategies Google Slides	"Or" versus "And" Google Slides	Mutally Exclusive versus Independent Events Google Slides	

Chapter 6: Random Variables

Day	Stats Medic		CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Resources for teaching online	Resources for teaching online	Resources for teaching online				
1	Discrete Random Variables		TOPIC 4.8	Chapter 6 Introduction, 6.1 Discrete Random Variables, Analyzing Discrete Random Variables: Describing Shape, Measuring Center: The Mean (Expected Value) of a Discrete Random Variable	· Use the probability distribution of a discrete random variable to calculate the probability of an event. · Make a histogram to display the probability distribution of a discrete random variable and describe its shape. · Calculate and interpret the mean (expected value) of a discrete random variable.	1, 3, 5, 7, 9, 11	None	One Quantitative Variable, Single Group applet	Discrete Random Variables	One Quantitative Variable, Single Group applet (COLLABORATIVE)	Google Slides	Desmos Activity		
2	Continuous Random Variables		TOPIC 4.8	6.1 Measuring Variability: The Standard Deviation (and Variance) of a Discrete Random Variable, Continuous Random Variables	· Calculate and interpret the standard deviation of a discrete random variable. · Use the probability distribution of a continuous random variable (uniform or Normal) to calculate the probability of an event.	13, 19, 21, 23, 27, 29, **31–34**	Wage Cards	Discrete Random Variables	Normal Distributions		Google Slides	Desmos Activity		
3	Transforming Random Variables		TOPIC 4.9	6.2 Transforming a Random Variable	· Describe the effect of adding or subtracting a constant or multiplying or dividing by a constant on the probability distribution of a random variable.	37, 39, 41, 43, 47					Google Slides	Desmos Activity		
4	Combining Random Variables		TOPIC 4.9 and 5.2	6.2 Combining Random Variables, Standard Deviation of the Sum or Difference of Two Random Variables, Combining Normal Random Variables	· Calculate the mean and standard deviation of the sum or difference of random variables · Find probabilities involving the sum or difference of independent Normal random variables.	49, 51, 55, 57, 59, 65, 67, **73–74**					Google Slides Desmos Activity			
5	Quiz 6.1 - 6.2													
6	Binomial Distributions Day 1		TOPIC 4.10 - 4.11	6.3 Binomial Settings and Binomial Random Variables, Calculating Binomial Probabilities	· Determine whether the conditions for a binomial setting are met. · Calculate and interpret probabilities involving binomial distributions.	77, 79, 81, 83, 85, 89		YouTube clip	Desmos		Google Slides	Desmos Activity		
7	Binomial Distributions Day 2		TOPIC 4.11	6.3 Describing a Binomial Distribution: Shape, Center, and Variability	· Determine whether the conditions for a binomial setting are met. · Calculate the mean and standard deviation of a binomial random variable. Interpret these values.	91, 93, 95, 99, 101, 103, 105, 106, 117		Binomial Distributions	Counting Methods		Google Slides	Desmos Activity		
8	Binomial Distributions Day 3		TOPIC 4.11	6.3 Binomial Distributions in Statistical Sampling, The Normal Approximation to Binomial Distributions	· Calculate and interpret probabilities involving binomial distributions. · When appropriate, use the Normal approximation to the binomial distribution to calculate probabilities.		Skittles	Binomial Distributions	Normal Distributions	Normal Approximation to Binomial Distributions	Google Slides	Desmos Activity		
9	Geometric Distributions		TOPIC 4.12	6.3 Geometric Random Variables	· Calculate and interpret probabilities involving geometric random variables. · Calculate the mean and standard deviation of a geometric distribution. Interpret these values.	107, 109, 111, 113, **115–119**	Water bottles, die	YouTube clip	Desmos Activity		Google Slides			
10	Quiz 6.3					Chapter 6 Review Exercises								
11	Chapter 6 Review			Chapter 6 Review/FRAPPY!		Study								
12	Chapter 6 Test			Chapter 6 Test										

CED UNIT 5: SAMPLING DISTRIBUTIONS

Chapter 7: Sampling Distributions

Day	Stats Medic	CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Digital Resources	Digital Resources	
1	What is a Sampling Distribution Day 1	TOPIC 5.1 and 5.4	Chapter 7 Introduction, 7.1 Parameters and Statistics, The Idea of a Sampling Distribution	· Distinguish between a parameter and a statistic. · Create a sampling distribution using all possible samples from a small population. · Distinguish among the distribution of a population, the distribution of a sample, and the sampling distribution of a statistic.	1, 3, 5, 7, 9			Google Slides	
2	What is a Sampling Distribution Day 2	TOPIC 5.4	7.1 The Idea of a Sampling Distribution, Describing Sampling Distributions	· Use the sampling distribution of a statistic to evaluate a claim about a parameter. · Determine if a statistic is an unbiased estimator of a population parameter. · Describe the relationship between sample size and the variability of a statistic.	11, 13, 15, 19, 21, 25, **26–30**	Ch 6 test scores cards, poster paper, dot stickers		Google Slides	
3	Quiz 7.1								
4	Sampling Distribution of a Sample Proportion	TOPIC 5.5	7.2 The Sampling Distribution of p-hat , Using the Normal Approximation for p-hat	· Calculate the mean and standard deviation of the sampling distribution of a sample proportion and interpret the standard deviation. · Determine if the sampling distribution of a sample proportion is approximately Normal. · If appropriate, use a Normal distribution to calculate probabilities involving a sample proportion.	35, 37, 41, 43	Reese's pieces	Reese's Pieces applet	Desmos Google Slides	Desmos Activity
5	Sampling Distribution of a Difference between Two Proportions	TOPIC 5.6	7.2 The Sampling Distribution of a Difference Between Two Proportions	· Calculate the mean and the standard deviation of the sampling distribution of a difference between sample proportions, and interpret the standard deviation. · Determine if the sampling distribution of a difference between sample proportions is approximately Normal. · If appropriate, use a Normal distribution to calculate probabilities involving a sample proportion or of a difference between sample proportions.	49, 51, **53–56**	Skittles & MMs		Google Slides	Desmos Activity
6	Quiz 7.2								
7	Sampling Distribution of a Sample Mean	TOPIC 5.7	7.3 The Sampling Distribution of x-bar, Sampling from a Normal Population, The Central Limit Theorem	· Calculate the mean and standard deviation of the sampling distribution of a sample mean and interpret the standard deviation. · If appropriate, use a Normal distribution to calculate probabilities involving sample means.	59, 61, 63, 65, 69, 71, 73	Height Data Handout		Google Slides	Desmos Activity
8	The Central Limit Theorem	TOPIC 5.3	7.3 The Sampling Distribution of a Difference Between Two Means	· Explain how the shape of the sampling distribution of a sample mean is affected by the shape of the population distribution and the sample size. · If appropriate, use a Normal distribution to calculate probabilities involving sample means.	75, 77, 83, 85, **87–90**		Sampling Distributions and the Central Limit Theorem	Google Slides	
9	Sampling Distribution of a Difference between Two Means	TOPIC 5.8	7.3 The Sampling Distribution of a Difference Between Two Means					Google Slides	
10	Quiz 7.3				Chapter 7 Review Exercises				
11	Chapter 7 Review		Chapter 7 Review/FRAPPY!		Study			Google Slides	
12	Chapter 7 Test		Chapter 7 Test						

CED UNIT 6: INFERENCE FOR CATEGORICAL DATA: PROPORTIONS

Chapter 8: Estimating Proportions with Confidence

Day	Stats Medic	CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Digital Resources	Digital Resources			
1	What is a Confidence Interval?	TOPIC 6.2	Chapter 8 Introduction, 8.1 The Idea of a Confidence Interval	· Identify an appropriate point estimator and calculate the value of a point estimate. · Interpret a confidence interval in context. · Determine the point estimate and margin of error from a confidence interval. · Use a confidence interval to make a decision about the value of a parameter.	1, 3, 5, 7, 9	Jar of beads	Confidence Intervals		Google Slides	Desmos Activity	
2	What is a Confidence Level?	TOPIC 6.3	8.1 Interpreting Confidence Level, What Affects the Margin of Error?	· Interpret a confidence level in context. · Describe how the sample size and confidence level affect the margin of error. · Explain how practical issues like nonresponse, undercoverage, and response bias can affect the interpretation of a confidence interval.	11, 15, 17, 19, 21, **23-26**		Confidence Intervals for Proportions		Google Slides		
3	Quiz 8.1										
4	Estimating a Population Proportion Day 1	TOPIC 6.2 - 6.3	8.2 Constructing a Confidence Interval for p	· State and check the Random, 10%, and Large Counts conditions for constructing a confidence interval for a population proportion. · Determine the critical value for calculating a C% confidence interval for a population proportion using a table or technology.	29, 31, 35, 37, 39	Hershey Kisses	Desmos		Google Slides		
5	Estimating a Population Proportion Day 2	TOPIC 6.2 - 6.3	8.2 Putting It All Together: The Four-Step Process, Choosing the Sample Size	· Construct and interpret a confidence interval for a population proportion. · Determine the sample size required to obtain a C% confidence interval for a population proportion with a specified margin of error.	41, 45, 49, **55-58**	Earth globes	Random Geographic		Google Slides	Desmos Activity	
6	Quiz 8.2										
7	Confidence Intervals for a Difference in Proportions	TOPIC 6.8 - 6.9	8.3 Confidence Intervals for a Difference in Proportions, Putting It All Together: Two-Sample z Interval for a Difference in Proportions	· Determine whether the conditions are met for constructing a confidence interval about a difference between two proportions. · Construct and interpret a confidence interval for a difference between two proportions.	61, 65, 67, 71, **73-75**				Google Slides	Desmos Activity	
8	Chapter 8 Review		Chapter 8 Review/FRAPPY!		Chapter 7 Review Exercises	Big Ideas, Formula sheet			Formula Review Slides	Sample Size Slides	4 Step Process Slides
9	Chapter 8 Test		Chapter 8 Test								

Chapter 9: Testing Claims about Proportions

Day	Stats Medic	CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Resources for teaching online	Resources for teaching online			
1	Introduction to Significance Tests	TOPIC 6.4 - 6.5	Chapter 9 Introduction, 9.1 Intro to Hypotheses, P-values, and Conclusions	· State appropriate hypotheses for a significance test about a population parameter. · Interpret a P-value in context. · Make an appropriate conclusion for a significance test.	1, 3, 5, 7, 9, 13, 14, 15, 19	Die, Spinner, Poster paper, Dot Stickers	Spinner		Google Slides	Desmos Activity	
2	What is a Significance Test?	TOPIC 6.4 - 6.5	Chapter 9 Introduction, 9.1 Stating Hypotheses, Interpreting P-values, Making Conclusions	· State appropriate hypotheses for a significance test about a population parameter. · Interpret a P-value in context. · Make an appropriate conclusion for a significance test.		Optional: dice, spinners			Google Slides	Desmos Activity	
3	Tests About a Proportion Day 1	TOPIC 6.6	9.2 Performing a Significance Test about p	· State and check the Random, 10%, and Large Counts conditions for performing a significance test about a population proportion. · Calculate the standardized test statistic and P-value for a test about a population proportion.	35, 37, 39, 41				Google Slides	Desmos Activity	
4	Tests About a Proportion Day 2	TOPIC 6.6	9.2 Putting It All Together: One-Sample z Test for p, Two-Sided Tests	· Perform a significance test about a population proportion.	43, 45, 47, 51, 53, 55	Skittles			Testing Flint Water Google Slides	Desmos Activity (Flint Water)	
5	Quiz 9.1 - 9.2										
6	Tests about a Difference in Proportions Intro	TOPIC 6.10	9.3 Significance Tests for a Difference in Proportions	· State appropriate hypotheses for a significance test about a difference between two proportions. · Determine whether the conditions are met for performing a test about a difference between two proportions. · Calculate the standardized test statistic and P-value for a test about a difference between two proportions.	77, 79, 83, 85	Yawning Template cards	MythBusters clip	Yawn Simulation applet	Google Slides	Desmos Activity	
7	Significance Tests for a Difference in Proportions	TOPIC 6.11	9.3 Putting It All Together: Two-sample z Test for a Difference in Proportions	· Perform a significance test about a difference between two proportions.	87, 89, 93, **95-98**				Who is more likely to go to prom? Google Slides	Desmos Activity	
8	Quiz 9.3										
9	Type 1 and Type 2 Error	TOPIC 6.7	9.1 Type I and Type II Errors	· Interpret a Type I and a Type II error in context. Give a consequence of each error in a given setting.	21, 23, 25, 27, **29-32**				Google Slides	Desmos Activity	
10	Power	TOPIC 6.7	9.2 The Power of a Test	· Interpret the power of a significance test and describe what factors affect the power of a test.	59, 61, 63, 65, 67, **70-73**		Statistical Power		Google Slides		
11	Chapter 9 Review		Chapter 9 Review/FRAPPY!		Chapter 9 Review Exercises				Google Slides		
12	Chapter 9 Test		Chapter 9 Test								

CED UNIT 7: INFERENCE FOR QUANTITATIVE DATA: MEANS

Chapter 10: Estimating Means with Confidence

Day	Stats Medic	CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Digital Resources	Digital Resources	Digital Resources	Digital Resources
1	Estimating a Population Mean Day 1	TOPIC 7.2	10.1 The Problem of Unknown σ, Conditions for Estimating μ	· Determine the critical value for calculating a C% confidence interval for a population mean using a table or technology. · State and check the Random, 10%, and Normal/Large Sample conditions for constructing a confidence interval for a population mean.	1, 3, 5, 7	Oreos			Desmos activity	Google Slides
2	Estimating a Population Mean Day 2	TOPIC 7.2 - 7.3	10.1 Constructing a Confidence Interval for μ	· Construct and interpret a confidence interval for a population mean.	9, 13, 15, **21-24**	Timer	One Quantitative Variable, Single Group applet	One Quantitative Variable, Single Group applet (COLLABORATIVE)	Desmos Activity	Google Slides
3	Quiz 10.1									
4	Confidence Interval for a Difference of Means	TOPIC 7.6 - 7.7	10.2 Confidence Intervals for μ1 - μ2	· Determine whether the conditions are met for constructing a confidence interval for a difference between two means. · Construct and interpret a confidence interval for a difference between two means.	27, 31, 33, 35	Chips Ahoy Cookies and Store Brand equivalent			Desmos Activity	Google Slides
5	Confidence Intervals for a Mean Difference	TOPIC 7.3	10.2 Comparing Two Means: Paired Data, Confidence Intervals for μdiff	· Analyze the distribution of differences in a paired data set using graphs and summary statistics. · Construct and interpret a confidence interval for a mean difference.	37, 41, 45, **49-52**	Memory Training Stategies and Word List	One Quantitative Variable, Single Group applet	One Quantitative Variable, Single Group applet (COLLABORATIVE)	Desmos Activity	Google Slides
6	Quiz 10.2				Chapter 10 Review Exercises					
7	Chapter 10 Review		Chapter 10 Review/ FRAPPY!							
8	Chapter 10 Test		Chapter 10 Test							

Chapter 11: Testing Claims about Means

Day	Stats Medic	CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Resources for teaching online			
1	Significance Test for a Mean Day 1	TOPIC 7.4 - 7.5	11.1 Carrying Out a Significance Test for μ, Putting It All Together: One-Sample t Test for μ	· State and check the Random, 10%, and Normal/Large Sample conditions for performing a significance test about a population mean. · Calculate the standardized test statistic and P-value for a test about a population mean. · Perform a significance test about a population mean.	1, 3, 5, 9, 11			Google Slides	Desmos Activity	
2	Significance Test for a Mean Day 2				13, 15, 17, 19, 21, 23, **27-32**			Google Slides	Desmos Activity	
3	Quiz 11.1									
4	Significance Test for a Difference of Means Day 1	TOPIC 7.8 - 7.9	11.2 Significance Tests for μ1 - μ2	· State appropriate hypotheses for a significance test about a difference in means. · Determine whether the conditions are met for performing a test about a difference between two means. · Calculate the standardized test statistic and P-value for a test about a difference between two means.	35, 37, 39	Score Templates, Poster paper, Dot stickers		Google Slides	Desmos Activity	Simulation
5	Significance Test for a Difference of Means Day 2	TOPIC 7.8 - 7.9	11.2 Putting It All Together: Two-Sample t Test for μ1 - μ2	· Perform a significance test about a difference between two means.	41, 43, 45, 47, 51			Google Slides	Desmos Activity	
6	Significance Test for a Mean of Differences	TOPIC 7.5	11.2 Significance Tests for μdiff , Paired Data or Two Samples?	· Perform a significance test about a mean difference. · Determine when it is appropriate to use paired t procedures versus two-sample t procedures.	53, 55, 57, 59, **65-69**			Google Slides		
7	Quiz 11.2				Chapter 11 Review Exercises					
8	Chapter 11 Review		Chapter 11 Review/ FRAPPY!					Google Slides		
9	Chapter 11 Test		Chapter 11 Test							

CED UNIT 8: INFERENCE FOR CATEGORICAL DATA: CHI-SQUARE

Chapter 12: Inference for Distributions and Relationship

Day	Stats Medic	CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Digital Resources	Digital Resources	
1	Chi-Square Goodness of Fit - Day 1	TOPIC 8.2	Chapter 12 Introduction, 12.1 Stating Hypotheses, Comparing Observed and Expected Counts: The Chi-Square Test Statistic, The Chi-Square Distributions and P-Values	· State appropriate hypotheses and compute the expected counts and chi-square test statistic for a chi-square test for goodness of fit. · State and check the Random, 10%, and Large Counts conditions for performing a chi-square test for goodness of fit. · Calculate the degrees of freedom and P-value for a chi-square test for goodness of fit.	1, 3, 5, 7	MMs	Chi-square Goodness-of-Fit	Google Slides: M&Ms	
2	Chi-Square Goodness of Fit - Day 2	TOPIC 8.3	12.1 Carrying Out a Test	· Perform a chi-square test for goodness of fit. · Conduct a follow-up analysis when the results of a chi-square test are statistically significant.	9, 13, **19-22**			Google Slides: M&Ms	
3	Quiz 12.1								
4	Chi-Square Test of Homogeneity	TOPIC 8.4 - 8.6	12.2 Tests for Homogeneity: Stating Hypotheses, Expected Counts and the Chi-Square Test Statistic, Conditions and P-Values; The Chi-Square Test for Homogeneity	· State appropriate hypotheses and compute the expected counts and chi-square test statistic for a chi-square test based on data in a two-way table. · State and check the Random, 10%, and Large Counts conditions for a chi-square test based on data in a two-way table. · Calculate the degrees of freedom and P-value for a chi-square test based on data in a two-way table. · Perform a chi-square test for homogeneity.	27, 29, 31, 33, 35	Gummy Bears (two brands)	Chi-square Homogeneity	Google Slides	Desmos
5	Chi-Square Test for Independence	TOPIC 8.5 - 8.6	12.2 Relationships Between Two Categorical Variables, The Chi-Square Test for Independence, Using Chi-Square Tests Wisely	· Perform a chi-square test for independence. · Choose the appropriate chi-square test in a given setting.	41, 43, 47, 49, 51, **55-60**		Chi-square Independence	Desmos Activity	Google Slides
6	Quiz 12.2				65, 67, 69				
7	Chapter 12 Review		Chapter 12 Review/ FRAPPY!		71, 73, 75				
8	12.1 - 12.2 Test		Chapter 12 Test						

CED UNIT 9: INFERENCE FOR QUANTITATIVE DATA: SLOPES

Chapter 12: Inference for Distributions and Relationship

Day	Stats Medic	CED Topic	TPS Content	Learning Targets Students will be able to …	Suggested Assignment (MC bold)	Materials needed for in-class	Digital Resources	
1	Sampling Distribution of Slopes	TOPIC 9.2	12.3 Sampling Distribution of b, Conditions for Regression Inference	· Check the conditions for performing inference about the slope □ of the population (true) regression line.	79, 83, 87-92	Seat location cards		Google Slides
2	Confidence Intervals for Slope	TOPIC 9.2 - 9.3	12.3 Estimating the Parameters, Constructing a Confidence Interval for the Slope	· Interpret the values of a, b, s, and SEb in context, and determine these values from computer output. · Construct and interpret a confidence interval for the slope □ of the population (true) regression line.	Chapter 12 Review Exercises		Linear Regression t Interval	Google Slides
3	Significance Tests for Slope	TOPIC 9.4 - 9.5	12.3 Performing a Significance Test for the Slope	· Perform a significance test about the slope □ of the population (true) regression line.	Cumulative AP® Practice Test 4		Linear Regression t Test	Google Slides
4	Quiz 12.3							