

Number	Chapter	Video	Description	Link
1	Basic Terms	What is Statistics?	Introduction to what statistics is and why we use it over anecdotes.	https://youtu.be/aU7k1MO_J4M
2	Basic Terms	Raw Data and Data	This video introduces you to some basic vocabulary connected to data, which includes variables, individuals, and observation.	https://youtu.be/BsMiTvc0tc0
3	Basic Terms	Variable Distributions	This introduces the idea of a variable's distribution.	https://youtu.be/ZXnFzE1uHXU
4	Basic Terms	Populations, Parameters, Samples, Statistics	This video introduces the definition of population, census, parameter, sample, statistic, and sampling.	https://youtu.be/9C-Y29X9i_A
5	Basic Terms	Parameters and Statistics (practice)	Looking at different paragraph descriptions and deciding if what is being described is a parameter or statistic.	https://youtu.be/ezy0tNv4ZRc
6	Basic Terms	Descriptive Statistics	Descriptive Statistics versus Inferential Statistics	https://youtu.be/kGxKNU6r-9c
7	Basic Terms	Variable Types	An introduction to categorical variables and quantitative variables.	https://youtu.be/hbP-BUiU5ss
8	Basic Terms	Quantitative versus Categorical practice	This is a look at multiple paragraphs and how you can tell what type of data is being described.	https://youtu.be/1I2COjwTW1A
9	Basic Terms	Nominal, Ordinal and Ratio	Looking at the different measurement scales within categorical and quantitative data, specifically nominal, ordinal and ratio.	https://youtu.be/JbohMPViXGc
10	Basic Terms	Basic Terms Review	Reviewing Data, Raw Data, Categorical, Quantitative, Variable, Observation, Individuals, Subjects, Population, Sample, Census, Sampling, Parameter, Statistic, Descriptive, and Inferential	https://youtu.be/vyKihB8MWh4
Number	Chapter	Video	Description	Link
1	Analysis of Categorical Data	Introduction to the Topic	Introducing the unit and topics to be discussed in this playlist.	https://youtu.be/WsQ1cy_cv4I
2	Analysis of Categorical Data	Numeric Summaries	Numeric summaries for categorical data, including frequency, relative frequency and percent.	https://youtu.be/Emzb-w18JHg

3	Analysis of Categorical Data	Frequency tables	Using a frequency table and showing how to calculate relative frequencies and percent.	https://youtu.be/tjmA5-goWb0
4	Analysis of Categorical Data	Bar Graph	An introduction to bar graphs for one categorical variable.	https://youtu.be/IO53gSSP2Wc
5	Analysis of Categorical Data	Bar Graph versus Histograms	Showing the difference between a bar graph and a histogram.	https://youtu.be/6FqI7nVgEF8
6	Analysis of Categorical Data	Pie Graph	Introducing a pie graph and discussing the best way to represent the slices.	https://youtu.be/qMazlkt-U1A
7	Analysis of Categorical Data	Comparing Pie Graphs and Bar Graphs	A quick comparison of Pie Charts and Bar Graphs.	https://youtu.be/yw2kU3bVcpw
8	Analysis of Categorical Data	Introduction to Two Way Tables	Looking at the definitions of explanatory and response variables, with examples.	https://youtu.be/XCkQ5NBL7ak
9	Analysis of Categorical Data	Explanatory and Response Variables	This video introduces two-way tables, aka contingency tables.	https://youtu.be/ld4zQSnieH4
10	Analysis of Categorical Data	Joint Distribution Relative Frequencies	This video introduces Joint Distribution Relative Frequencies, as well as showing how they are calculated.	https://youtu.be/MRgD_-T6aiM
11	Analysis of Categorical Data	Conditional Distributions for a cell	Introducing conditional distributions and how calculations are performed.	https://youtu.be/KIG_mUP1T3w
12	Analysis of Categorical Data	Joint Distribution and Conditional Distributions for a cell, example 2	Showing another example of joint and conditional distributions and comparing the results.	https://youtu.be/q6sea8qITew
13	Analysis of Categorical Data	Clustered Bar Graphs	Introduction to clustered bar graphs and how to read them.	https://youtu.be/2yi2Gtp68NU
14	Analysis of Categorical Data	Clustered Bar Graphs Another look	This video discusses where the explanatory and response variables are located on a clustered bar graph. It also looks at how to compare bar height to decide if there is a difference/relationship between the variables.	https://youtu.be/oBiVM7zI9oI
15	Analysis of Categorical Data	Maps	This video introduces viewers to using maps to display categorical	https://youtu.be/ty_ljn1Jg_8

			data, when there is also a geographic component to the data.	
16	Analysis of Categorical Data	Lurking Variables	Defining lurking variables and giving some examples of what those might look like in a study.	https://youtu.be/7lr7MzunGs4
17	Analysis of Categorical Data	Simpsons Paradox		
18	Analysis of Categorical	Using R to perform descriptive statistics for Categorical Data	This video shows viewers how to create numeric summaries and graphical displays using R's mosaic package.	https://youtu.be/G46351ereW8
19	Analysis of Categorical Data	Review	This video reviews the chapter, Analysis of Categorical Data.	https://youtu.be/gjwFW5xvN8k
Number	Chapter	Video	Description	Link
1	Analysis of One Quantitative Variable	Introduction to Topic	This video is an overview and introduction to the playlist looking at the analysis of one quantitative variable.	https://youtu.be/6peUz9LsanE
2	Analysis of One Quantitative Variable	Percentiles	An introduction to percentiles.	https://youtu.be/Kj9FI9yCImM
3	Analysis of One Quantitative Variable	Introduction to Five Number Summary	Introducing the five number summary, defining each measurement within the five number summary, and showing the percentages located between each location.	https://youtu.be/hFvNqYoBicE
4	Analysis of One Quantitative Variable	Five Number Summary, Example 1	A look at finding the five number summary by hand.	https://youtu.be/KSGM7c7AN74
5	Analysis of One Quantitative Variable	Five Number Summary, Example, another look	Looking at the five number summary when there are no labels for it, specifically an output coming from the computing package R.	https://youtu.be/9ErHXynkHB0
6	Analysis of One Quantitative Variable	Introduction to Boxplots	Showing the basics of a boxplot and connecting it to the five number summary. Showing what a boxplot looks like with outliers, side-by-side and horizontal.	https://youtu.be/ZMVUxoE3X80

7	Analysis of One Quantitative Variable	Range	Introducing range, the formula for range and examples of calculating the range.	https://youtu.be/tA19oADYFXy
8	Analysis of One Quantitative Variable	Introduction to IQR	This video introduces you to the interquartile range, IQR, and shows you how to calculate. The video also points out that IQR is the middle 50% of the data.	https://youtu.be/mK2o97LbPsg
9	Analysis of One Quantitative Variable	Histogram	This video introduces histograms and all of their parts.	https://youtu.be/erSVJ6Sv6y4
10	Analysis of One Quantitative Variable	Describing a Distribution	Introducing the method for describing a distribution. This includes center, variability, shape and outliers.	https://youtu.be/KsMFa8lKp1s
11	Analysis of One Quantitative Variable	Shape Descriptors	Looking at different terms for describing the shape of a distribution. Terms include: unimodal, bimodal, bell-shaped, symmetric, skewed, right skewed, left skewed, and uniform.	https://youtu.be/R87Y8KTuaT0
12	Analysis of One Quantitative Variable	Outliers	A look at outliers, how you identify them, what impact they might have, and more.	https://youtu.be/iK8JdmeOlyg
13	Analysis of One Quantitative Variable	Examples of Describing a distribution	This video practices describing a distribution for one quantitative variable.	https://youtu.be/oNCel16DjYw
14	Analysis of One Quantitative Variable	Measures of Center, Mean	Introducing the measure of center the mean. This video includes the notation and the definition for the population mean and sample mean.	https://youtu.be/Q895z_uTaeE
15	Analysis of One Quantitative Variable	Calculating the mean by hand	This video shows an example of calculating the mean by hand, including the appropriate notation.	https://youtu.be/YlfqEvI3t8c
16	Analysis of One Quantitative Variable	Comparing Mean and Median on Graphs	This video looks at different distributions that are symmetric and skewed. Then a comparison of mean and median is done for the different distributions, including which is better for a given scenario.	https://youtu.be/OfkNz_VCMw0

17	Analysis of One Quantitative Variable	Deviation	The definition of deviation and an example of calculating it.	https://youtu.be/9F86d7SUFnw
18	Analysis of One Quantitative Variable	Variance and Standard Deviation for a sample	Introducing the measurements for sample variance and sample standard deviation. This video includes the notation and formulas. An example of calculating this by hand is included.	https://youtu.be/Qe2RT4mJX4A
19	Analysis of One Quantitative Variable	Numeric summaries for one quantitative with R	This video shows viewers how to create analysis for one quantitative variable using R.	https://youtu.be/ybfgaSHOpoE
20	Analysis of One Quantitative Variable	Graphical Displays for One Quantitative with R	Using R to create graphical displays for one quantitative variable, including boxplots and histograms.	https://youtu.be/bkwGXqjX3PE
21	Analysis of One Quantitative Variable	Introduction to the Normal Distribution	Looking at the rules/aspects of the Normal Distribution.	https://youtu.be/iYPHP_BgKcl
22	Analysis of One Quantitative Variable	Introduction to the Empirical Rule	This video introduces the empirical rule, shows the formula and labels the normal curve using the empirical rule.	https://youtu.be/Mb31CH8MfWI
23	Analysis of One Quantitative Variable	Empirical Rule Example	This is a video showing how to use/calculate the empirical rule, as well as showing where values fall on the curve.	https://youtu.be/v5iG_rCLmKE
24	Analysis of One Quantitative Variable	Introduction to z-scores	This video gives an introduction to z-scores, including the formula, why we use it, and example of calculating it.	https://youtu.be/ZRLbTvcTnr8
25	Analysis of One Quantitative Variable	Analysis of One quantitative by group with R	Using R to create numeric summaries and graphical displays for one quantitative variable when you want to compare multiple groups.	https://youtu.be/lBzjDZ_k4-l
26	Analysis of One Quantitative Variable	How to compare by Group Summaries		

27	Analysis of One Quantitative Variable	Review of the Chapter	This video reviews the chapter on the Analysis of One Quantitative Variable.	https://youtu.be/MwZl5gra0KY
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Number	Chapter	Video	Description	Link
1	Sample to Sample Variability	Introduction to Topic	This video introduces the topic of sample to sample variability and what will be discussed in the chapter.	https://youtu.be/F0nOTKccy5o
2	Sample to Sample Variability	Observational versus Designed Experiment Cause and Effect	This video introduces observational studies and designed experiments.	https://youtu.be/oAwUQAN1PCA
3	Sample to Sample Variability	Practice telling the difference between Observational and Designed Exp.	Practice telling the difference between observational studies and designed experiments.	https://youtu.be/IRQbtmn6vQQ
4	Sample to Sample Variability	Simple Random Sample	This video introduces simple random samples.	https://youtu.be/JVbBvePxtgc
5	Sample to Sample Variability	Convenience Sample	This video introduces the idea of convenience sampling.	https://youtu.be/GuA4TAPQhlg
6	Sample to Sample Variability	Sampling Variability	This video introduces the concept of sampling variability.	https://youtu.be/GTcqks3qVvA
7	Sample to Sample Variability	Population Proportion, Sample Proportion, Population Mean and Sample Mean	Looking at the vocabulary and notation for population mean and population proportion, as well as their corresponding statistics, sample mean and sample proportion.	https://youtu.be/LxV8TFYTBMQ
8	Sample to Sample Variability	Parameters do not change	This video discusses how parameters do not change when different random samples are taken from the population. However, we would expect different values for the statistic with different random samples.	https://youtu.be/OqqRLVD6ABo
9	Sample to Sample Variability	Sampling Distribution of a Statistic and the facts for Center, Variability and Shape	This video introduces the sampling distribution of a statistic, as well as discussing the facts associated with the sampling distribution of \hat{p} and \bar{x} .	https://youtu.be/QA8OLS4bKOk

10	Sample to Sample Variability	Sampling Distribution Simulation	This video introduces the sampling distribution of a statistics using a simulation from Stat Crunch.	https://youtu.be/KPAcl-abEFU
12	Sample to Sample Variability	Statistical Inference	Introducing the definition of a statistical inference, including the types.	https://youtu.be/zNw2g6wPHvQ
13	Sample to Sample Variability	Selection Bias	Defining selection bias and giving an example of selection bias.	https://youtu.be/_Mp3SXYvka0
14	Sample to Sample Variability	Summary/Review		
Number	Chapter	Video	Description	Link
1	Estimating a Population Parameter	Introduction to Confidence Intervals and vocab	This video is introducing the formula and purpose of calculating a confidence interval generically, without a specific parameter stated.	https://youtu.be/6tOCRus9FwM
2	Estimating a Population Parameter	Margin of Error and Standard Error	This video generically introduces the topics of margin of error and standard error.	https://youtu.be/OSKPaxU3MGY
3	Estimating a Population Parameter	Writing Parameters, p and μ	This video introduces you to defining a parameter for both the population proportion and the population mean.	https://youtu.be/uxWSYLq5Zzw
4	Estimating a Population Parameter	FRED generic for p	This is introducing the steps for calculating a confidence interval for p , specifically using the FRED method.	https://youtu.be/AjdBPGYw40Q
5	Estimating a Population Parameter	Reviewing a completed CI for p where values are, center, width, ME, etc.	This video looks at a completed CI for p and the mechanics of it. Where in the CI is \hat{p} , how to calculate the width, how to find ME, how many MEs are in a CI, etc.	https://youtu.be/_8Kfc4HzFZU
6	Estimating a Population Parameter	CI example for p , 1	A video showing how to calculating a confidence interval for one population proportion using the FRED method.	https://youtu.be/ME0BDNMLDJ4
7	Estimating a Population Parameter	CI example for p , 2	This is an example of calculating a confidence interval for the parameter p , one population proportion, using the FRED method.	https://youtu.be/oFm4ZX0SG0k
8	Estimating a Population Parameter	Generic CI for μ	This video introduces the steps for creating a confidence interval for the	https://youtu.be/0QI1eTPYIgl

			population mean generically using the FRED method.	
9	Estimating a Population Parameter	T distribution	An initial look at the t-distribution and comparing/contrasting it to the z-distribution.	https://youtu.be/dKlM59Q79aE
10	Estimating a Population Parameter	CI for one population mean, example 1	An example of calculating a confidence interval for one population mean, using the FRED method.	https://youtu.be/Q5wzpvJACyg
11	Estimating a Population Parameter	Completed CI for mu where values are, width, ME, point estimate, etc.		
12	Estimating a Population Parameter	CI for one population mean, example 2	An example of using the FRED method to calculate a CI for mu.	https://youtu.be/NOHxqY8aMMc
13	Estimating a Population Parameter	Using R to find a CI for mu and p		
14	Estimating a Population Parameter	Confidence Levels	This video discusses confidence levels and their impact on interval widths. It utilizes an applet from statcrunch.com	https://youtu.be/l_pJDEEkeo
15	Estimating a Population Parameter	Summary/Review		
Number	Chapter	Video	Description	Link
1	Analysis of Two Quantitative Variables	Introduction to Topic	This video introduces the topic of the analysis of two quantitative variables, including scatterplots, correlation, regression, extrapolation, prediction, etc.	https://youtu.be/Z6PmeILKcvk
2	Analysis of Two Quantitative Variables	Scatterplots, Example 1	This is looking at the basics of a scatterplot, which includes what variables are used, the explanatory and response variable, and the five questions to ask of a scatterplot.	https://youtu.be/WPROUKvCFDA
3	Analysis of Two Quantitative Variables	Scatterplots, Example 2	This videos looks at a scatterplot and the process of describing it. This	https://youtu.be/OISxZxIQsIc

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			includes the pattern, direction, strength and outliers.	
4	Analysis of Two Quantitative Variables	Linear Correlation	An introduction to linear correlation, correlation coefficient, r, Pearson Correlation, as well as the rules/definitions.	https://youtu.be/_2sSbPTm5nU
5	Analysis of Two Quantitative Variables	How Outliers impact Linear Correlation		
6	Analysis of Two Quantitative Variables	Method of Least Squares		
7	Analysis of Two Quantitative Variables	Linear Regression		
8	Analysis of Two Quantitative Variables	Interpreting Slope	Looking at how to interpret the slope for a simple linear regression.	https://youtu.be/-3Scxnthfx0
9	Analysis of Two Quantitative Variables	Predictions with regression line		
10	Analysis of Two Quantitative Variables	Extrapolation		
11	Analysis of Two Quantitative Variables	Coefficient Determination with r-squared		
12	Analysis of Two Quantitative Variables	Association versus Causation		
13	Analysis of Two Quantitative Variables	Reverse Causality		
14	Analysis of Two Quantitative Variables	Multiple Variable thinking		
15	Analysis of Two Quantitative Variables	Review		

1	Introduction to Hypothesis Testing	Logic of Hypothesis Testing		
2	Introduction to Hypothesis Testing	Null and Alternative		
3	Introduction to Hypothesis Testing	Statistically Significant versus Not		
4	Introduction to Hypothesis Testing	Chi-Squared Generic, part F	This is an introduction to a Chi-Squared hypothesis test, specifically formulating the problem.	https://youtu.be/Y9EQby4IPhg
5	Introduction to Hypothesis Testing	Chi-Squared Example, part R	This is an introduction to how conditions are reviewed for a Chi-Squared hypothesis test.	https://youtu.be/nW3LoZ1oAQQ
6	Introduction to Hypothesis Testing	Chi-Squared Example, part E1	This is an introduction to executing the calculations for a Chi-Squared hypothesis test.	https://youtu.be/c3o1KEFlyI0
7	Introduction to Hypothesis Testing	Chi-Squared Example, part E2	Looking at the last part of executing calculations for a Chi-Squared hypothesis test.	https://youtu.be/PcZn-zMX6IY
8	Introduction to Hypothesis Testing	Chi-Squared Example, part D	This video shows viewers how to draw a conclusion for a Chi-Squared hypothesis test.	https://youtu.be/k7I6C8yTWYc
9	Introduction to Hypothesis Testing	Expected Counts	Introduction to expected counts and how to calculate them.	https://youtu.be/l8M6n3Cby5A
10	Introduction to Hypothesis Testing	Post Hoc Generic	Introducing the post hoc analysis for a chi-squared hypothesis test.	https://youtu.be/PN6c_m6faM4
11	Introduction to Hypothesis Testing	Chi-Squared Example 1	This is a look at an entire chi-squared hypothesis test using the FRED method.	https://youtu.be/rsbDHhLuy9M
12	Introduction to Hypothesis Testing	Post Hoc Example	A look at a post-hoc analysis and interpretation for a Chi-Squared hypothesis test where the results were statistically significant.	https://youtu.be/S-mtLG7w0Go
13	Introduction to Hypothesis Testing	Chi-Squared Example 2, with a post hoc	This is a second example of performing a chi-squared hypothesis test, which includes a post hoc analysis.	https://youtu.be/8yvb-w5Twmo
14	Introduction to Hypothesis Testing	Chi-squared example 3, not significant	This video shows how to create a chi-squared analysis using R and then to interpret the output/results from R.	https://youtu.be/K2LwZd4a11k

15	Introduction to Hypothesis Testing	False Positives and False Negatives, Type Errors		
Number	Chapter	Video	Description	Link
1	Testing for Differences	Introduction to topic		
2	Testing for Differences	Designed experiments and vocabulary	An introduction and an example of the vocabulary used in designed experiments. This includes observational unit, factor, levels, treatment, response, and experimental units.	https://youtu.be/HrkIVgH2SDE
3	Testing for Differences	Placebo	An introduction to placebos and blinding.	https://youtu.be/lauiLQshOKs
4	Testing for Differences	Independent versus dependent		
5	Testing for Differences	Repeated measures		
6	Testing for Differences	Matched pairs		
7	Testing for Differences	Two-tailed, Right Tailed and Left Tailed		
8	Testing for Differences	Paired t-test FRED, example 1		
9	Testing for Differences	Paired t-test FRED, example 2		
10	Testing for Differences	Paired t-test FRED, example 3		
11	Testing for Differences	CI for μ_d		
12	Testing for Differences	Independent t-Test, FRED, example 1		
13	Testing for Differences	Independent t-Test, FRED, example 2		

14	Testing for Differences	Independent t-Test, FRED, example 3		
15	Testing for Differences	CI for Independent data		
16	Testing for Differences	ANOVA generic, F	This is an introduction to an ANOVA. This includes the type of data, identifying populations, variable of interest, writing out parameters, and how to write the appropriate null and alternative hypothesis.	https://youtu.be/8aSSdZpqpPM
17	Testing for Differences	ANOVA generic, R	This video looks at the conditions appropriate for an ANOVA test and how to review them.	https://youtu.be/MHlx7EUq0go
18	Testing for Differences	ANOVA generic, E	This video introduces the executing of calculations for an ANOVA. It includes degrees of freedom, the test statistic, and p-value, as well as making a decision.	https://youtu.be/Uhx8hKfKudM
19	Testing for Differences	ANOVA generic, D	This video looks at how to write the appropriate conclusion for an ANOVA hypothesis test.	https://youtu.be/Sdup0l6ur5o
20	Testing for Differences	ANOVA example 1, F		
21	Testing for Differences	ANOVA example 1, R		
22	Testing for Differences	ANOVA example 1, E		
23	Testing for Differences	ANOVA example 1, D		
24	Testing for Differences	ANOVA with R		