ABSS Math Unit Planning Template

Introduction:

Grade/Course: 9_12 **|** Discrete Mathematics			**Suggested Unit Pacing (# of days):** 8 days
Unit Number and Title: Unit 3 Graphs and Statistics			**Mathematical Practices**
			P1 Make sense of problems and persever in solving them.
			P2 Reason abstractly and quantitatively.
			P3 Construct viable arguments and critique the reasoning of others.
			P4 Model with mathematics.
Conceptual Overview			**P5** Use appropriate tools strategically.
			P6 Attend to precision.
			P7 Look for and make use of structure.
			P8 Look for and express regularity in repeated reasoning.
Essential Understandings			
SCS	**The learner will analyze data and apply probability concepts to solve problems.**	**SCS.9_12.MA.2.01.a**	Apply and compare methods of data collection.
SCS	**The learner will analyze data and apply probability concepts to solve problems.**	**SCS.9_12.MA.2.02.b**	Calculate and apply permutations and combinations.
SCS	**The learner will analyze data and apply probability concepts to solve problems.**	**SCS.9_12.MA.2.02.c**	Create and use simulations for probability models.
SCS	**The learner will analyze data and apply probability concepts to solve problems.**	**SCS.9_12.MA.2.02.d**	Find expected values and determine fairness.
SCS	**The learner will analyze data and apply probability concepts to solve problems.**	**SCS.9_12.MA.2.02.e**	Identify and use discrete random variables to solve problems.
CCSS	**Interpreting Categorical and Quantitative Data**	**CCSS.9_12.MA.SP.S.ID.1**	Represent data with plots on the real number line (dot plots, histograms, and box plots).
CCSS	**Interpreting Categorical and Quantitative Data**	**CCSS.9_12.MA.SP.S.ID.2**	Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
CCSS	**Interpreting Categorical and Quantitative Data**	**CCSS.9_12.MA.SP.S.ID.3**	Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
CCSS	**Interpreting Categorical and Quantitative Data**	**CCSS.9_12.MA.SP.S.ID.4**	Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.
CCSS	**Interpreting Categorical and Quantitative Data**	**CCSS.9_12.MA.SP.S.ID.5**	Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.
CCSS	**Making Inferences and Justifying Conclusions**	**CCSS.9_12.MA.SP.S.IC.1**	Understand statistics as a process for making inferences about population parameters based on a random sample from that population.

Learning Targets	• Calculate the relative frequency of a list given a frequency table. • Read and interpret data displayed in a two-way frequency table. • Calculate relative frequencies of a two-way frequency table. • Read the different types of graphs. • Graph data using the different types of graphs. • With bar graphs, see how changing the graph influences perception. • Graph data from a list, frequency table and relative frequency tables using histograms and stem and leaf plots. • Graph relative frequencies from single and two-way frequency tables using histograms. • Use mean, median, mode, and five number summary to describe data. • Compare data sets using measures of central tendency. • Graph data with box and whiskers plot to represent five number summary. • Determine if a data set contains outliers. • Calculate the standard deviation of a list of data. • Use standard deviation to fit data to a normal curve (curve grades) • Use 68-95-99.7 Rule to estimate the percent of a normal population that falls within 1, 2, or 3 standard deviations of the mean. • Calculate the z-score of one data point and determine the percent above or below using a z-score table.
Essential Terminology	

Literacy Integration	**Literacy Standards**	Level	Standard	Standard Name
	Literature Connections			
Technology Integration	**Technology Standards**	Level	Standard	Standard Name
	Websites			
Assessment	**Formative**			
	Performance Tasks			
	Summative			
Resources				
Learning Plan	**Instructional Sequence**	1- Frequency/relative frequency 2- Circle graph, dot plot, bar graph 3- Histogram, stem and leaf plot 4- Measure central tendency, box and whiskers plot(data spread, random sample) 5- Standard deviation 6- normal distribution , z-scores 7- review 8- test		
	Remediation			

Differentiation	Enrichment	