

Strand: Use random sampling to draw inferences about a population (7.SP.1-2)			
Strand: Draw informal comparative inferences about two populations (7.SP.3-4)			
Strand: Investigate chance processes and develop, use, and evaluate probability models (7.SP.5-8)			
Standard 7 SP.1: Understand that statistics can be used to gain information by examining a sample. Understand that random sampling is more likely to produce representative samples and support valid inferences.			
<p>Learning Targets</p> <ul style="list-style-type: none"> Understand that representative samples can be used to make valid inferences about a population. Collect a random sample. Understand that a random sample increases the likelihood of obtaining a representative sample of a population. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> inference, valid, sample, random sample, representative sample, population 	<p>Question Stems</p> <ul style="list-style-type: none"> How have you shown your thinking? A graph (table, T-chart, picture) shows this the best because.... What did you learn today? 	<p>Possible Assessments</p> <ul style="list-style-type: none"> District CFA Statistics Form A District CFA Statistics Form B
Standard 7.SP.2: Use data from a random sample to draw inferences. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions.			
<p>Learning Targets</p> <ul style="list-style-type: none"> Use a sample to make an inference, then explore the variation in estimates or predictions based on multiple samples from the same data. Make inferences about a population based on multiple samples. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> variation, inference, prediction, sampling error 	<p>Question Stems</p> <ul style="list-style-type: none"> What would happen if.....? A question I had was..... How could you record your work? 	<p>Possible Assessments</p> <ul style="list-style-type: none"> District CFA Statistics Form A District CFA Statistics Form B

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Standard 7.SP.3: Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, estimating the difference between the centers by expressing it as a multiple of a measure of variability.			
<p>Learning Targets</p> <ul style="list-style-type: none"> Use visual representations to compare and contrast numerical data from two populations using measures of variability and center. (For example: The mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, approximately twice the variability). 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> variability, mean, median, interquartile range, mean absolute deviation 	<p>Question Stems</p> <ul style="list-style-type: none"> What decisions/conclusions can you make from the information you discovered? Convince me! 	<p>Possible Assessments</p> <ul style="list-style-type: none"> District CFA Statistics Form A District CFA Statistics Form B
Standard 7.SP.4: Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations.			
<p>Learning Targets</p> <ul style="list-style-type: none"> Make informal comparative inferences from random samples about two populations using measures of center and variability. (For example: decide whether the words in a chapter of a seventh grade science book are generally longer than the words in a chapter of a fourth grade science book). 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> inference, variability, mean, median, interquartile range, mean absolute deviation 	<p>Question Stems</p> <ul style="list-style-type: none"> What were the steps involved? How have you shown your thinking? 	<p>Possible Assessments</p> <ul style="list-style-type: none"> District CFA Statistics Form A District CFA Statistics Form B

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Standard 7.SP.5: Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring.			
<p>Learning Targets</p> <ul style="list-style-type: none"> • Larger numbers indicate greater likelihood • Represent the probability of an event as a fraction or decimal from 0 to 1 or percent from 0% to 100%. (For example: A probability near 0 indicates an unlikely event. A probability around $\frac{1}{2}$ indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event). 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> • probability, event, chance event, likelihood, outcome 	<p>Question Stems</p> <ul style="list-style-type: none"> • What did you learn today? • The steps I followed were.... 	<p>Possible Assessments</p> <ul style="list-style-type: none"> • District CFA Probability Form A • District CFA Probability Form B

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Standard 7.SP.6: Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and credit the approximate relative frequency given the probability.			
<p>Learning Targets</p> <ul style="list-style-type: none"> Perform an experiment and collect data on a chance event (i.e. when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times). Use the long-run relative frequency of an experiment to approximate the probability of the event. Given the probability of an event, estimate the long-run relative frequency of the event. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> relative frequency, long-run relative frequency 	<p>Question Stems</p> <ul style="list-style-type: none"> Tell me what is the same? What is different? I did something like this when... 	<p>Possible Assessments</p> <ul style="list-style-type: none"> <u>District CFA Probability Form A</u> <u>District CFA Probability Form B</u>

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Standard 7.SP.7: Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.			
<p>Learning Targets</p> <ul style="list-style-type: none"> Develop a probability model in which all outcomes are equally likely/uniform (i.e. organized list or table showing potential outcomes) Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. (i.e. spinning penny) Use observed frequencies to create a probability model for the data generated from a chance process. use probability models to find probabilities of events. Compare probability models Find the probability of a (simple) event as a fraction, decimal, or percent. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> probability model, uniform probability, discrepancy, sample space, event 	<p>Question Stems</p> <ul style="list-style-type: none"> Why do you think this works? Does it always? Why or why not? How is this similar to other problems? 	<p>Possible Assessments</p> <ul style="list-style-type: none"> <u>District CFA Probability Form A</u> <u>District CFA Probability Form B</u>

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Standard 7.SP.8: Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.			
<p>Learning Targets</p> <ul style="list-style-type: none"> Find the sample space of a compound event. Use organized lists, tables, tree diagrams, and simulations to find the probability of a compound event. Design and use a simulation (using a random number table, calculator, dice, cards, or other manipulatives) to generate frequencies of compound events. Represent the probability of a compound event as a fraction, decimal, or percent. 	<p>Academic Vocabulary & Notation</p> <ul style="list-style-type: none"> simple event, compound events, tree diagram, simulation, sample space 	<p>Question Stems</p> <ul style="list-style-type: none"> Which representation was most helpful and why? What other math can you connect this with? 	<p>Possible Assessments</p> <ul style="list-style-type: none"> District CFA Probability Form A District CFA Probability Form B