

ABSS Math Unit Planning Template

Introduction:

Grade/Course: 9_12 Discrete Mathematics		Suggested Unit Pacing (# of days): 7 days		
Unit Number and Title: Probability		Mathematical Practices		
		P1	Make sense of problems and persevere in solving them.	
Conceptual Overview		P2	Reason abstractly and quantitatively.	
		P3	Construct viable arguments and critique the reasoning of others.	
Essential Understandings		P4	Model with mathematics.	
		P5	Use appropriate tools strategically.	
CCSS		Conditional Probability and the Rules of Probability	CCSS.9_12.MA.SP.S.CP.1	Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events ("or," "and," "not").
		Conditional Probability and the Rules of Probability	CCSS.9_12.MA.SP.S.CP.2	Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.
CCSS		Conditional Probability and the Rules of Probability	CCSS.9_12.MA.SP.S.CP.3	Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A , and the conditional probability of B given A is the same as the probability of B .
		Conditional Probability and the Rules of Probability	CCSS.9_12.MA.SP.S.CP.4	Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. <i>For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.</i>
CCSS		Conditional Probability and the Rules of Probability	CCSS.9_12.MA.SP.S.CP.5	Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. <i>For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.</i>
		Conditional Probability and the Rules of Probability	CCSS.9_12.MA.SP.S.CP.7	Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.
CCSS		Conditional Probability and the Rules of Probability	CCSS.9_12.MA.SP.S.CP.8	(+) Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B A) = P(B)P(A B)$, and interpret the answer in terms of the model.
		Conditional Probability and the Rules of Probability	CCSS.9_12.MA.SP.S.CP.9	(+) Use permutations and combinations to compute probabilities of compound events and solve problems.
SCS		The learner will analyze data and apply probability concepts to solve problems.	SCS.9_12.MA.2.02.a	Use addition and multiplication principles.
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.
Learning Targets		<ul style="list-style-type: none"> Determine the number of possible outcomes in a sample space using the counting principal. Distinguish between situations that require permutations and combinations. Apply the permutation or combination formula to determine the number of outcomes in an event. Find the probability of an event. Define and identify independent and dependent events. Calculate the probability of independent and dependent events. Apply the Addition Rule to determine the probability of two events (one event two characteristics) Possible activities like Playing With a Full Deck (MPJ), Experimental Probability (Data Analysis Workbook p.81) What 're the Odds (DMP, Colorado.edu) Choose a probability model to solve problems. 		
Essential Terminology				
Literacy Integration		Literacy Standards	Level	Standard
Technology Integration		Technology Standards	Level	Standard
Assessment		Websites		
		Formative		
		Performance Tasks		
		Summative		
Resources				
Learning Plan		Instructional Sequence	<ol style="list-style-type: none"> Counting principal Permutations and combinations Multiplying probabilities Adding probabilities ?experiments? Review Test 	
Differentiation		Remediation		
		Enrichment		

