AP Statistics UNIT PLANNER

Unit title	Unit 5: Probability and Random Variables	Unit duration	10 Class Blocks

Essential Questions (OR GUIDING QUESTIONS?)

How do we interpret probability as a long-run relative frequency?
Why would we use simulation to model chance behavior?
What are the advantages/disadvantages of using various methods to determine probability? (tables, Venn diagram, tree diagram, formulas)
How do we determine if two events are independent?
How do we calculate and interpret the mean (expected value) and standard deviation of a discrete random variable?
How do we describe the effects of transforming a random variable by adding and subtracting a constant and multiplying or dividing by a constant?
How do we find the mean and standard deviation of the sum or difference of independent random variables?
How do we determine whether the conditions for a binomial setting exist?
How do we compute and interpret the mean and standard deviation of binomial distributions?
How do we calculate probabilities given a binomial setting?

Assessments

Common Formative Assessment – Ticket out the Door, Homework, Group Presentations, Quiz

Common Summative Assessment – Unit 5 Test(50% Multiple Choice/50% Free Response)

Content Standards

Topic III: Anticipating patterns: exploring random phenomena using probability and simulation

Learning Activities and Experiences

Topic	Resource	Content Covered	Standards Addressed
Probability	Activities: Are You Ready for Basketball Season?	● Basic Probability Rules (including Multiplication Rule, Additional Rule, Independence)	
	Do you Prefer English or Math?	● Basic Probability Rules (including Multiplication Rule, Additional Rule, Independence) ● Use of Tables ● Venn Diagrams ● Tree Diagrams ● Conditional Probability	

	Odd or Even: Who will win?	• Basic Probability Rules (including Multiplication Rule, Additional Rule, Independence) • Use of Tables • Formulas • Conditional Probability	
	Additional Resources: • The Practice of Statistics, 5th Edition: Chapter 5: Probability: What are the Chances?		
Random Variables	How many Children are in Your Family	• Histograms/Probability Distributions • Discrete Random Variables • Continuous Random Variables • Mean(Expected Value) and Standard Deviation	
	How Much Will You Make Next Year?	• Histograms/Probability Distributions • Discrete Random Variables • Continuous Random Variables • Mean(Expected Value) and Standard Deviation • Discrete Random Variables • Transforming and Combining Random Variables	
	Is it smart to Foul at the end of the Game?	• Binomial Distributions • Mean and Standard Deviation and Probability in a Binomial Setting	
	Additional Resources: • The Practice of Statistics, 5th Edition: Chapter 6 Random Variables		

Personalized Learning and Differentiation

Teachers differentiate by providing examples (work samples or task-specific clarifications of assessment criteria); structuring support (advance organizers, flexible grouping, peer relationships); establishing flexible deadlines, and adjusting the pace.

-SWD/504- Accommodations provided
-ELL- Five Principle ELL Curriculum Framework and Vocabulary Supports
-Intervention Support- Re-teaching Activities in Small Groups with Progress Monitoring
-Extensions- Enrichment Tasks and Projects

Resources

- The Practice of Statistics, 5th Edition
- Notes, Review, and Extra Practice are all provided on Schoology.