



ADVANCED MATHEMATICAL DECISION MAKING UNIT PLANNER



Unit title	Unit 2 - Probability	Unit duration	15 Days
Essential Questions (OR GUIDING QUESTIONS?)			
<ul style="list-style-type: none">• What are the steps to calculate probability?• What is the difference between theoretical and experimental probability?• How is expected value calculated?• When are Venn diagrams used to solve problems?			
Assessments			
Common Formative Assessment - Unit quiz(zes) Common Summative Assessment – Carnival Project – Test Grade Unit 2 Test			
Content Standards			
<u>Students will extend their understanding and use of ratios, proportions to solve problems involving in decision making.</u> MAMDM.N.1 Students will extend the understanding of proportional reasoning, ratios, rates, and percents by applying them to various settings to include business, media, and consumerism. <ul style="list-style-type: none">a. Use proportional reasoning to solve problems involving ratios.b. Understand and use averages, weighted averages, and indices.c. Solve problems involving large quantities that are not easily measured.d. Understand how identification numbers, such as UPCs, are created and verified.			
<u>Students will explore the applications of functions, their characteristics and their use in modeling. Vectors and matrices are employed for solving problems.</u> MAMDM.A.4 Students will analyze and evaluate the mathematics behind various methods of voting and selection. <ul style="list-style-type: none">a. Evaluate various voting and selection processes to determine an appropriate method for a given situation.b. Apply various ranking algorithms to determine an appropriate method for a given situation.			
Learning Activities and Experiences			

Topic	Resource	Content Covered	Standards Addressed
Probability Decisions and Expected Value	Determining Probabilities Notes	<ul style="list-style-type: none"> Theoretical vs. Experimental probability Venn diagram 	MAMDM.N.1
	Tree Diagrams Notes	<ul style="list-style-type: none"> Tree Diagrams Area models 	MAMDM.N.1
	Expected Value - Winning the Lottery Task	<ul style="list-style-type: none"> Expected value calculation 	MAMDM.N.1
	Carnival Project	<ul style="list-style-type: none"> Expected Value vs Actual Profit Binomial Probability Theoretical and Experimental Probability 	MAMDM.A.4
	Additional Resources:		
Probability Application Tasks	Baseball Task	<ul style="list-style-type: none"> Binomial Probability 	MAMDM.A.4
	Choosing the Right Class Task	<ul style="list-style-type: none"> Basic Probability 	MAMDM.A.4
	Additional Resources:		
Personalized Learning and Differentiation			
<p>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.</p> <ul style="list-style-type: none"> -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			
Advanced Mathematical Decision Making the UT Dana Center			