

Blake Zanidean

Subject/Grade: Mathematics 9		Lesson Title: Probability Casino		Teacher: Mr. Zanidean/Ms.Starchuk		
Stage 1: Identify Desired Results						
Established Goals: (Learning outcome/s & indicator/s from curriculum)						
<ul style="list-style-type: none"> Demonstrate an understanding of the role of probability in society. <p>(d) Explain, using examples, how decisions based on probability may be a combination of theoretical probability, experimental probability, and subjective judgement.</p>						
Understandings: (can also be written as 'I Can' statements) <i>Students will understand...</i> Probability			<i>U</i>	Essential Questions: <ul style="list-style-type: none"> Are we drawn to games that have higher probability? Why? Why are the rewards greater when the probability is higher? how does multiple variables affect the probability? 		
<i>Students will know...</i> Multiplication Fractions			<i>K</i>	<i>Students will be able to...</i> Demonstrate		<i>D</i>
Stage 2: Determine Evidence for Assessing Learning						
<ul style="list-style-type: none"> watch students decisions about which games to play to increase their points End activity with a group discussion about which game provided the best probability with a chance to win and which ones had the higher points associated with them. 						
Stage 3: Build Learning Plan						
Instructional Strategies: Cooperative learning, Hands on Learning, Inquiry based learning						

<p>Set (Engagement): Introduction min</p> <p>Length of Time: 15 min</p> <ul style="list-style-type: none"> -Divide class into 4 groups (do this based on the number of available staff able to help) -Explain to students the objective is to be the team with the most points at the end -Explain the payouts for each game (Coin flip 5, Dice roll 10, Pick a Card 20, Roulette(Color 5, Number 20)) - Give students time to strategize about the best way for their team to accumulate the most points. <p>Development: Game Time</p> <p>Time: 25</p> <ul style="list-style-type: none"> -Have Teachers/EA/Interns each run one station and allow students to approach and try their luck. Have students rotate stations every 8 min. - Get teachers to track # of wins and losses, get students to do the same. - Rotate through each student in a group before a student gets to try playing again. -Walk around and ask students which games they are enjoying, which they have been most successful at. <p>Closure:</p> <p>Time: 10</p> <ul style="list-style-type: none"> - Bring Students back into their groups and tally the number - Ask students which game they enjoyed most - Which games seemed to have a higher probability of winning theoretically? Did that seem to correlate with your personal numbers? - How is probability related to real world issues? 	<p>Materials/Resources:</p> <ul style="list-style-type: none"> - Dice - Cards - Coins - Roulette Table - VNPS - Fake Money / Chips <p>Possible Adaptations/ Differentiation:</p> <ul style="list-style-type: none"> - Implement different games of probability that you have access to. - Using something rather than money or chips to take away a dollar value. - Increase the probability of the games to increase the difficulty (Sum of Dice being rolled, guessing color, then suit, then higher or lower, guessing sequence of coin flips) - Use cross-curricular connections to talk about addictions with gambling (Probability) <p>Management Strategies:</p> <p>Safety Considerations:</p> <ul style="list-style-type: none"> - the resemblance of gambling may make some students feel uncomfortable. - Only let teachers handle the die, cards, etc. to minimize contact of surfaces.
Stage 4: Reflection	

Professional Development Goal is...

- Interact with students and ask them thought provoking questions. Try to get them to make connections to real world scenarios aside from gambling.