Subject/Grade:Math 9	Lesson Title: Intro to Probability	Teacher: Mr.Zanidean

Stage 1: Identify Desired Results

Established Goals: (Learning outcome/s & indicator/s from curriculum)

SP9.2 Demonstrate an understanding of the collection, display, and analysis of data through a project

Understandings: (can also be written as 'I Can' statements) *Students will understand…* *collection, display, analysis of data* *U*	**Essential Questions:** In what ways can we represent probability?
Students will know… *fractions* *Percentages* *K*	*Students will be able to…* *D* Demonstrate an understanding of probability

Stage 2: Determine Evidence for Assessing Learning

Have students fill out a graphic organizer to accumulate notes. They will then use this organizer for the next class to assist themselves in strategizing with their team. This allows them to use their own understanding and make notes to how they make sense of it. This can be a double edge sword.

Stage 3: Build Learning Plan

Instructional Strategies:

-Graphic Organizer
- Interactive Learning

Set (Engagement): Pick a Card **Length of Time: 5 min** Once students have taken their seats, one by one, ask them to guess the card that will be pulled next. Have the other teacher keep track of how many students guessed correctly and how many got it wrong. Then ask "which student had the best chance of guessing the card correctly?" When they answer, ask why. This is where we would introduce the term probability and what it means.	**Materials/Resources:** **Deck of Cards** **Coins** **Dice** **Graphic Organizer** **Pencils**

Development: How Probability Works   **Time:** 35 min

Using a coin, ask the students what the chances are that the coin will land on heads. Depending on their answer (if correct ask for elaboration as to why, if incorrect ask how many sides are on the coin). Now show them a dice, ask the probability of rolling a 3. Applying the same logic as the dice, work through the logic with the students. Now is an important time to introduce theoretical probability to actual statistics. Explain how even though theoretically your chance of rolling a 6 should be once every 6 rolls, doesn't mean that it will always happen. Ask the probability of certain conditions(even numbers, odd numbers, higher than 5, multiple of 3, etc.). We will then show a deck of cards and ask if students know how many cards are in a deck. Talk about the probability of certain conditions(pulling a card of a certain suit, pulling a particular number, pulling a face card). Explain the probability of pulling the card you want out of the deck. This is a theoretical probability.

We will then go over how probability works when adding extra variables, such as rolling consecutive dice (what is the probability of rolling a 6 and a 2, what is the probability of rolling the sum of seven). do the same with cards.

Closure: Learning Statistical Probability   **Time:** 20 min

Have decks of cards, coins, and dice available to the students. get them to collect data on trying to see if the theoretical probability matches the statistical probability. this information will be used in the next lesson for deciding which games to optimize their earnings.

Possible Adaptations/ Differentiation:

-Provide additional notes for those who struggle with graphic organizers

Management Strategies:
-Allow students to use the resources around the room
-Circulate the room to ensure students are on task
-Ask questions to students in vacinity

Safety Considerations:

Stage 4: Reflection

Professional Development Goal is…

Keep the kids engaged during the closure, it will be alot of independence to compare the 2. Keeping them on task will help for next week's activity.