DISCRETE MATHEMATICS

Content Area: **Mathematics**
Course(s): **Generic Course**
Time Period: **Generic Time Period**
Length: **21 Days**
Status: **Published**

Established Goals/Standards

Please choose the appropriate Goals/Standards from the Standards tab above.

MA.7.SP.C.6	Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability.
MA.7.SP.C.7	Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.
MA.7.SP.C.7a	Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.
MA.7.SP.C.7b	Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.
MA.7.SP.C.8	Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.
MA.7.SP.C.8a	Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.
MA.7.SP.C.8b	Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.
MA.7.SP.C.8c	Design and use a simulation to generate frequencies for compound events.

Essential Questions

Please add your Essential Questions by clicking on the Lists tab above.

- How do you calculate probability?
- How do you determine if a game is fair or unfair?
- How do you determine the total number of possible outcomes?
- How do you develop a "gaming" strategy prior to playing a game involving probability?

Enduring Understanding

Please add your Enduring Understandings by clicking on the Lists tab above.

- A game is considered fair if each person playing has an equal probability of winning.
- Prior to playing a game think critically about a strategic approach.
- You create a sample space that list all the possible combinations.

- You find probability by creating a fraction that represents the number of successful outcomes over the total possible outcomes.

Content

8th grade

- spirolateral codes (iterations)
- create Sierpinski's triangle
- create a Pythagoras tree
- Othello tournament
- High/low with a standard deck of cards
- Sequence dice
- Jenga tournament

7th grade

- PIG (dice game)
- "Roulette" using 3 dice
- Blockus tournament
- Sequence tournament
- Tessellations
- Bounce off tournament

6th grade

- simple probability (flip a coin, roll a die, pick a card)
- Modeling of perfect squares and perfect cubes
- Countdown tournament
- Sugar, Sugar
- Factory Balls
- Spot it
- Sequence Dice

5th grade

- Intro to simple probability (flip a coin, roll a die, pick a card)
- PIG (dice game)
- Connect 4 tournament
- MAKE 7 tournament
- BUPKIS (aka....Farkle)
- Curve stitching
- Spot it

Resources

- www.coolmath.com
- Teachers pay teachers