



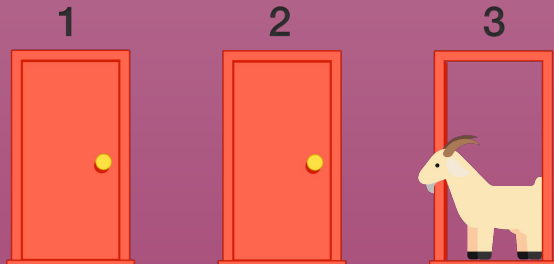
# Math, Magic, Puzzles and Games at Castle Square Community Center



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## Monty Hall

In the Monty Hall problem a host has a contestant pick one of three door behind one is a new car and behind the other two are donkeys. After the contestant has picked one, he reveals one of the others doors with a donkey behind it and asks the contestant if they want to switch or stay with the same door. The chances of getting the car increases if you switch doors due to the rules of probability!



## Liar Card Trick

The Liar Card Trick is a simple card trick where the magician puts the player's card 3 cards from the top of a pile of nine. The player will then spell out the name of their card putting one card down for each letter, but they are allowed to lie! However, the magician knows where the card is and will then spell out liar so that the next card flipped over will be the player's card whether they lied or not due to the orbital nature of the trick!

## Circular Nim

Circular Nim is a game where 15 objects are placed in a circle. Two players then alternate removing one or two adjacent pieces. The game can always be won by the second player using a strategy involving symmetry and simple math! We also played a variation where the students added 1,2,3 or 4 to see whoever reached 20 first. This version can be won by sticking to safe numbers to add to.

