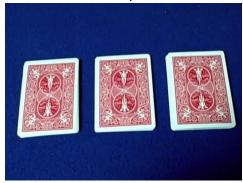# Magical Conditionals

## *Unplugged Computer Science Fair Demonstration*

## Summary

From the full deck of 52 cards, the spectator creates 3 piles, selecting 3 unknown cards. The spectator choses one and the magician can reveal which it is.

## Overview

HS student performs the 'Impossible Mind' magic trick. Then, the HS student reveals that the secret is 3 conditionals. The spectator can then try to perform the magic trick using the 3 conditionals.



## Computer Science Connection

Conditionals – A question in code that decides the next action a computer will take.
Programs with conditionals can respond to what the user is doing. IF the user shakes the device, THEN undo their typing.

**Take-away**

*"What is something you did today that you won't do tomorrow if a condition changes?"*

## Supplies

- Deck of Cards (2 or 3?)
- Magic wand
- Print out of the 'Magical Conditionals'

# Instructions

(Secretly, make sure the 8♠ is on the bottom of the deck.)

Hand the deck to the spectator.
Say: "Please split the deck into 3 piles."

Say: "Place approximately a third of the deck here."
Point to a spot on the right side of the table.

Say: "Place half of the remaining cards here.
Point to a spot in the middle of the table.

Say: "And, place your remaining cards here."
Point to a spot on the left side of the table.

Say: "I'm going to turn around so I cannot see what you are about to do."
Turn away.

Say: "Choose one of your stacks, pick it up, and turn it over to look at the card you cut to."
(Spectator does that.)
Say: "Remember that card and place the pile back exactly where it was."

Say: "Before I turn back, and see the 3 piles again, you should 'cover your tracks' and do some subterfuge."
Say: "Move the other 2 piles around – swap their placement."
(Spectator does that.)

Turn back around.
Say: "From the full deck of 52 cards, you created these 3 piles. By doing this, you selected 3 unknown cards."
Turn over the left pile.
Turn over the middle pile.
Turn over the right pile.

if the top ▾ card of the left pile matches 8♠ then
point to the left pile.
say You chose this card.

if the top ▾ card of the middle pile matches 8♠ then
point to the right pile.
say You chose this card.

if the top ▾ card of the right pile matches 8♠ then
point to the middle pile.
say You chose this card.

# References

- https://docs.google.com/document/d/1KJX45zko0mApTyGZobI5JVwzoiNRY6MTKjpK_sXJbHw/
- https://docs.google.com/document/d/1QWKPQB2cqZ2aiGRVV7zsx_FqaRBn3ex1vLYlh6OOvIo/