

THE COLOR OF NUMBERS

EFFECT: Magician shows six small cards, each a different color. Magi then hands any spectator a chart containing the numbers 0 through 99, randomly arranged in squares of those same six colors. Spectator freely selects any of the numbers without telling it to the magi. They then subtract the sum of the digits in the original number from itself to arrive at a new number (again, without telling the magi what it is). Finding it on the chart, the magi asks the spectator to concentrate on the color. Magi selects one of the color cards and asks the spectator to announce the color of the square they are concentrating on. Magi turns their card around revealing the color they chose matches the spectator's.

SECRET: The effect relies on a very old mathematical formula wherein if you subtract the sum of any two-digit number from itself you always get a number that is a multiple of nine. So, all squares on the chart containing a number that could be the result of that math (0, 9, 18, 27, 36, 45, 54, 63, 72, and 81) are all the same color. To help hide this fact the number 99, while a multiple of nine, is a different color. Furthermore, six additional numbers that are not multiples of nine are that color. A computer program was written that randomly arranged all of the numbers on the chart as well as randomly assigned the color to each square. This ensures that there is no pattern to the chart and that each chart produced is unique.

In performance, you show off the six color cards and, announcing they will come into play later, place them on your table. Now introduce the chart, explaining that it contains all of the numbers between 0 and 99. Ask for a volunteer who can do simple math in their head (might not be a bad idea to have a pocket calculator handy, just in case). Give the chart to the volunteer and have them think of one of the numbers on it. Instruct them not to say it out-loud but they can share it with the person next to them by pointing to that number on the chart. Now for the math. Either have them subtract each digit in the original number from the original number separately or have them combine the digits and then subtract that number from the original.

Example: if they select 76 then they can either subtract 7 and 6 from 76 ($76-7-6=63$) or add 6 and 7 together ($7+6=13$) and subtract that number from 76 ($76-13=63$). If they select a single digit number like 8, then they can only subtract 8 from itself ($8-8=0$).

The spectator now has a new number that they believe is known only to them (unless they shared their original number with another person). Remind them not to say their new number out-loud. Pick up the cards from the table as you ask the spectator to find their new number on the chart and concentrate on the color of the square containing that number. If you want, you can turn your back so no one thinks you can tell the color by seeing where on the chart the spectator is looking. Fan the cards facing you and act like you're receiving a mental image from the spectator. After some hesitation and false starts, pick the card that matches the color of the square for the number "0" (zero) on your chart. Put the other cards away or lay them face down on a table. Keep your selection in view of the audience but only show them the blank back of the card. Ask the spectator to announce in a loud, clear voice the color then ended on. Turn your card around and show everyone that you selected the exact same color. Take your well-deserved bow.

You can add personal touches to the routine by having the spectator pick a number because something important happened to them when they were that age or an important event happened in that year (have them use the last 2 digits of the year). As a precaution, it's a good idea to have the spectator share their original and final numbers with another spectator. This ensures that the math is done correctly (the second spectator can correct the first one if they make a mistake) and keeps the original spectator honest in their selections (nothing kills a show faster than a spectator who deliberately announces a different color, just to be a smart aleck).