

You Are Out of Cards Trick

What the audience sees.

You have a shuffled deck of cards. You explain that your assistant will give a few cards to a volunteer from the audience, and then some to you. You turn around so that you don't see how many cards the volunteer gets. The assistant says he or she will start dealing cards now, one at a time, and instructs the volunteer to say "stop" whenever he or she wants. After the volunteer gets some cards, the assistant tells the volunteer to hide his/her cards behind his/her back so that you do not see them. Then you turn and the assistant starts dealing cards to you. When you say "stop", the assistant stops.

Alternatively, you can ask the volunteer to roll three dice and add up their values (to get a number between 3 and 18), or just pick a number, not too big, say, from 1 to 20, and then take that number of cards from the top of the deck while you turn around and do not look. Then you take some cards from the deck as well.

When both the volunteer and you get some cards, you put one of your cards on the table, face up, and explain that you and the volunteer will need to take turns putting your cards on the table, face up. While doing so, the volunteer may still hold his/her cards behind his/her back so that you do not see how many cards remain. The volunteer puts his/her card, then you do, then the volunteer, and so on. After the volunteer puts his/her last card, you put your card, and it reads "you are out of cards".

How you do it.

You have to write the message "you are out of cards" on one card in advance (or tape a piece of paper with the message to the card if you don't want to write on it), and put it into the 21st position from the top when the deck is face down. When/if you show the audience that your deck is shuffled, be sure to spread the cards so as to not show the card with the message. The volunteer gets/takes some number (from 1 to 20) of cards from the top of the deck. It is important that the volunteer gets no more than 20 cards. If your assistant is dealing them to the volunteer, it is best to deal the cards rather slowly to encourage the volunteer to take fewer cards. If the volunteer doesn't stop the assistant after 10 cards or so, the assistant should encourage him/her to say "stop" soon, "or otherwise we'll be here until tomorrow." This kind of pressure usually works, but if you think your volunteer might get stubborn, you may prefer to ask him/her to roll three dice or choose a number between 1 and 20 first and then getting that number of cards. You also get/take 21 cards from the remaining deck. Whether your assistant deals cards to you or you take them yourself, the cards are taken from the top of the deck one at a time and stacked on the table, thus reversing their order. Don't tell the audience how many cards you are taking, just count to 21 in your head. Then keep your stack face down in your hand. When you and the volunteer take turns putting your cards on the table one at a time, face up, take the cards from the top of your stack. The card that you put right after the volunteer's last card will have the message.

Why it works.

Suppose the volunteer took x cards. Then there are $20 - x$ more cards at the top of the remaining deck until the one with the message. You take 21 cards total, so you take these $20 - x$ cards, then the one with the message, and then x more cards. Their

order was reversed, so now, from the top of the stack in your hand, there are x cards until the one with the message. After you and the volunteer put x cards each, you put the card with the message.

