Math "Magic" Card Trick 1

Inventory:

1 full deck of cards

Directions:

1) Shuffle the full deck of 52 cards.
2) Deal the cards out into piles.
3) Have a person select three of the piles and turn them over.
4) Have the person select the top card from one of the piles.
5) Perform the rest of the trick and õmathemagicallyö tell them which card they selected.

Math "Magic" Card Trick 1 - What the heck? – FOR PRESENTERS EYES ONLY

After shuffling the cards, place the top card on the table face up. Unless the card is a King, place other cards on top of the first card, also face up, and count from the first card's value up to 13. For instance, if you turn up a 9, you would put four cards on top of it face up as you say to yourself 10, 11, 12, 13. Remember that Jacks are worth 11, Queens 12, and Kings 13.

Once the pile is complete, put the next card face up in a new pile. Repeat the same procedure counting up from that card's value to 13. So, if the second pile starts with a 6, you would put 7 cards on top as you count in your head – 7, 8, 9, … 13. Keep building piles in this way until you get low on cards. If you miscalculate and don't have enough cards to complete the last pile, just pick it back up.

Now have someone select three piles and turn them over. Collect the remaining piles that are still face up. Have the person then take the top card off one of the piles. They should not show you this card as you are going to figure out the value of it using mathemagic.

Turn over the top cards on the two piles the person did not take. Add these together remembering again the values for a Jack, Queen, and King if necessary. Now, from the cards you have in your hand, count out the number of cards equal to the sum plus another ten. So, if the top two cards are 3 and 8, you would count out 11 + 10 or 21 cards. Then count the remaining cards you still have in your hand and you have the value of the card the person selected. And again, if it is 11 – they have a Jack and so on.

Math "Magic" Card Trick 2

Inventory:

1 full deck of cards

Directions:

1) Select out just the cards 1-9 from one of the decks.
2) Shuffle the cards and have a person select a card. They should look at the card but not show it to you.
3) Perform the trick and õmathemagicallyö tell them which card they selected.

Math "Magic" Card Trick 2 - What the heck? – FOR PRESENTERS EYES ONLY

After the person has selected their card, start setting the leftover cards out face up one at a time in different piles. As you see pairs of cards that add up to ten, cover them both with new cards you are laying out face up. When you have placed all the cards out face up, collect the piles that add up to ten. You will have one unpaired card. Subtract the face value of that card from ten and you will know what the value of the card they selected at the beginning. You can also just scan the piles and look for the one that does not have a "buddy" that adds up to ten.

Variations:

1-10 – use the cards 1-10. If a ten turns up on one of the piles immediately cover it with another card face up. If all the piles at the end have a "buddy" that adds up to 10, then the card selected by your participant was a ten. Otherwise, the trick remains the same.

Full Deck – use the entire deck. Instead of covering pairs that add up to 10, cover pairs that add up to 14 with the Jack representing the number 11, Queen 12, and King 13. Everything remains the same as the original trick only now the magic number is 14 and not 10.

Full Deck Version 2 – Use 13 as your magic number and cover Kings immediately. If you can switch back and forth between the two full deck versions of this trick, you can really keep people guessing.

# Math "Magic" Card Trick 3

Inventory:

1 full deck of cards

Directions:

1) Remove THREE cards from the deck so you only have 49 cards. It does not matter which three you remove.
2) Shuffle the 49 cards.
3) Have a person select a card from the deck, look at it, remember the card, and then return in anywhere into the deck without you seeing it.
4) Have the person select their favorite number between 1-49.
5) Ask the person to watch for their card as you deal the deck out into 7 piles.
6) Once done, have the person indicate which pile their card is in, then pick up the piles.
7) Repeat the seven piles process again and have the person indicate which pile their card is in.
8) Now, pick up the piles and then count out until you get to the number they selected and VOILA ó that is the card they had selected at the beginning.

Math "Magic" Card Trick 3 - What the heck? – FOR PRESENTERS EYES ONLY

After the person has selected and returned a card, which they will remember, and selected a number between 1-49, you have to do a little simple math. Take the number they have selected, subtract ONE and then divide that number by SEVEN. This trick relies on the mathematics of base 7 numbers ó NOTE: $7^2 = 49$. So, if the person selected 26 for their number, you would subtract ONE to get 25 and then divide by SEVEN to get a quotient of 3 with a remainder of 4. The remainder (4 in our example) will be important for the first deal. The quotient (3 in our example) will be important in the second deal.

Now, deal out the 49 cards into seven piles face up. Be sure to tell the person to watch for their card so they can tell you at the end which pile it is in, but not before you are done dealing out all the cards. Lay out seven cards face up and then start over covering up the first layer with the next, also face up, until you run out of cards. Ask them which pile their card is in. Now, being sure the pile which contains their card is in the right order is critical. You can work on the showmanship later. The remainder in our example was 4. So, we need the pile they indicated to be in position 4 in the layers indicated to the right. Pick up their pile and turn it over. Then, pick up four piles and turn them over on top of the pile containing their card. The last two piles you will turn over and place on the bottom of the deck.

0
1
2
3
4
5
6
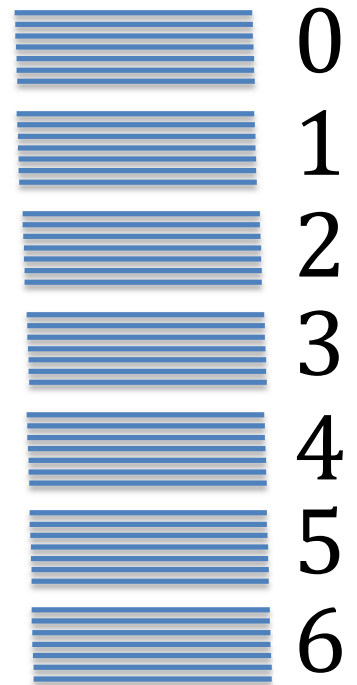
Repeat dealing out seven piles face up with the person watching for their card. It is really important that you lay out seven piles and then start back at the beginning to cover them up in the same order. Then, have them indicate which pile contains their card. Now, the quotient (3 in our example) is important. Pick up their pile and turn it over. Then, pick up three piles and turn them over on top of the pile containing their card. The last three piles you will turn over and place on the bottom of the deck.

Now, count out cards from the top of the deck face down until you get to 25. The 26th card will be the card they selected at the very beginning ó VOILA!

You can also do this trick with 36, 25, or 16 cards using base 6, 5, or 4 respectively. This is an easier way to work students into the full 49 card version. Just adjust the number of piles in each deal to 6, 5, or 4.

Math "Magic" Card Trick 4

Inventory:

1 full deck of cards

Directions:

1) Shuffle the full deck of 52 cards and count out 27 cards to use for this trick. Place the rest to the side and out of the way.
2) Have a person select a card from the deck of 27, look at it, remember the card, and then return in anywhere into the deck without you seeing it.
3) Have the person select their favorite number between 1-27.
4) Ask the person to watch for their card as you deal the deck out into 3 piles.
5) Once done, have the person indicate which pile their card is in, then pick up the piles.
6) Repeat the three piles process again and have the person indicate which pile their card is in.
7) Once done, have the person indicate which pile their card is in, then pick up the piles.
8) Repeat the three piles process a third time and have the person indicate which pile their card is in.
9) Now, pick up the piles and then count out until you get to the number they selected and VOILA ó that is the card they had selected at the beginning.

Math "Magic" Card Trick 4 - What the heck? – FOR PRESENTERS EYES ONLY

After the person has selected and returned a card, which they will remember, and selected a number between 1-27, you have to do a little simple math. Take the number they have selected, subtract ONE and then divide that number by NINE. You will get a quotient and a remainder. Divide the remainder by THREE to get a quotient and a remainder. This trick relies on the mathematics of base 3 numbers ó NOTE: $3^3 = 27$. So, if the person selected 16 for their number, you would subtract ONE to get 15 and then divide by NINE to get a quotient of 1 with a remainder of 6. Now, take that remainder (6) and divide by THREE, which give you a quotient of 2 and a remainder of 0. The remainder (0 in our example) will be important for the first deal. The quotient from dividing by THREE (2 in our example) will be important in the second deal. The original quotient from dividing by NINE (1 in our example) will be important in the third deal.

Now, deal out the 27 cards into three piles face up. Be sure to tell the person to watch for their card so they can tell you at the end which pile it is in, but not before you are done dealing out all the cards. When dealing out piles, be sure to lay out three cards face up and then start over covering up the first layer with the next, also face up, until you run out of cards.

Ask them which pile their card is in. Now, being sure the pile which contains their card is in the right order is critical. You can work on the showmanship later. The final remainder in our example was 0. So, we need the pile they indicated to be in position 0 in the layers indicated to the right. Pick up their pile and turn it over. Then, pick up the other two piles, turn them over, and place them below the pile they indicated.

0
1
2
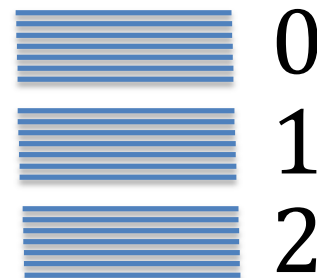
Repeat, dealing out three piles face up with the person watching for their card. It is really important you lay out three piles and then start at the beginning to cover them up in the same order. Then, have the person indicate which pile contains their card. Now, the second quotient when we divided by THREE (2 in our example) is important. Pick up their pile and turn it over. Then, pick up the other two piles, turn them over, and place them on top of the pile they indicated. Repeat dealing out three piles one last time. For the last deal, the quotient from when we divided by NINE is important (1 in our example). So, pick up the pile they indicate and turn it over. Then place one pile on top of it and the other below it.

Now, count out 15 cards face down. The 16th card you can flip face up and it should be the card they selected at the very beginning ó VOILA!

You can see this trick demonstrated and explained in detail here: http://bit.ly/Base3CardTrick