ONE OF SIX AND ANOTHER OF HALF A DOZEN

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We consider two different arrangements of the numbers 1, 2, 3, 4, 5, 6, whose applications illustrate a curious numerical/alphabetical duality. These can easily be explored with cards.

One of Six has numerical origins, and leads to a spelling effect. Another of Half a Dozen has alphabetical origins, and leads to a counting effect.

One of Six (4 2 5 1 3 6)

Consider this arrangement: 4 2 5 1 3 6. One way to generate this is to remember the phrase

Note: To spell I tri(angulate) 6

paying attention to the number of letters in (most of) the words.

An innocent way to attain this order for an Ace, 2, 3, 4, 5 and 6 is to start by dealing them into a triangle like this

\[
\begin{array}{ccc}
A \\
2 & 3 \\
4 & 5 & 6 \\
\end{array}
\]

To get the cards in order 4, 2, 5, Ace, 3, 6, pick them up along the “backslash” diagonals, from upper left to lower right, starting at the lower left corner. Namely, pick up the 4, tucking the 2 and 5 underneath it in that order, and finally tuck the Ace, 3 and 6 underneath those.

Why is 4, 2, 5, Ace, 3, 6 interesting? With the cards in that order, and all face-down, explain that you will spell from Ace to six. Spell out ”Ace” (which is interchangable with “One” here), moving three cards from top to bottom. The next card on the top is the Ace; turn it over for all to see, and set it aside face-up. Now spell out “Two” and move three more cards from top to bottom. The next card on the top is the 2. Turn it over for all to see and set it face up on top of the Ace. Continue, spelling “Three,” “Four,” and “Five” in turn, moving the appropriate number of cards each time, and set aside the desired card once it turns up after its spelling is completed. When you have just one card left, wave it around to simulate movement from top to bottom of the depleted packet, as you spell out “S, I, X,” and triumphantly turn over the last card.
Another of Half a Dozen (4 1 6 3 2 5)

Next, consider the arrangement: 4 1 6 3 2 5. This can be generated with one simple adjustment from the key Alpha Order

5 4 1 6 3 2 (five, four, one, six, three, two are in alphabetical order)

by moving (cutting) the 5 from the start to the end. Even better, this can be generated without recourse to actual alphabetization—despite the embedded reference to the latter below—as follows. Just remember any of the phrases implicit here

Note: I Rotate One/Top Of/In Alpha/Order

once more paying attention to the number of letters in (most of) the words.

Why is 4, 1, 6, 3, 2, 5 an interesting order? With the cards in that order, all face-down, explain that you will count from one to six. Count "One," moving the top card to the bottom, the next card on the top is the Ace; turn it over for all to see, and set it aside face-up. Now count out “Two” and move two more cards from top to bottom, the next card on the top is the 2. Turn it over and set it face up on top of the Ace. Continue, counting “Three,” “Four,” and “Five” in turn, moving the appropriate number of cards each time, and set aside each desired card once it turns up. When you have just one card left, wave it around six times to simulate movement from top to bottom of the depleted packet, as you count out “Six,” and triumphantly turn over the last card.

This counting out can also be done starting with the cards in pure alphabetical order 5, 4, 1, 6, 3, 2, even in the hands of a spectator. Begin by explaining the principle, and demonstrate with the hypothetical number seven, moving that numbers of card from top to bottom, then motioning that the following card is set aside before the next count is done. This of course results in the 4 being on top as required, so you can hand the packet to a spectator and all will work out fine.

One of Six or Another of Half a Dozen?

There are natural seeming ways to get from one arrangement to the other, as well as other ways to attain either order from scratch. These permit demonstrations of both the counting and spelling deals for the same audience, or alternatively spectators can decide which type of deal they’d like to see and you can oblige (almost) on the spot without drawing attention to the required set-up.