

## It Adds Up to 1,089

Before you start get a book and go to page 108 and look at the 9<sup>th</sup> word on the top line and also look at the 9<sup>th</sup> line on that page. Get a book with interesting words on them – preferably ones someone can picture and imagine. Look at a couple of books until you find the best one to use.

1. Stand your spectator next to your flipchart or whiteboard. Tell them to write near the top of the board a three-digit number, where all the numbers are different. Example: 289 or 302, *not* 303 or 555, etc. They must all be different. (It doesn't work if all the numbers are the same or if the number is symmetrical like 202.)
2. Tell them to reverse the three-digit number and if it is a larger number than the original one, to put it above the original number. If it is a smaller value, ask them to write it below the original number.
3. Tell them to subtract the smaller value from the larger value.
4. **This is important:** Ask them if the resulting number is a two- or three-digit number. If it's a two-digit number, you know that it's 99. But, just tell them to put a zero in front of the two-digit number. If the result is a three-digit number, just continue.
5. Tell them to reverse the digits of the resulting number and add both three-digit numbers together.

The result will be 1,089. Ask the spectator to look up page 108 in the book and go to the 9<sup>th</sup> word on the top line and see if they can picture that word. Tell them what the word is by doing a bit of acting and pretending to read his mind! Then tell them to go the 9<sup>th</sup> line and read it silently in their heads. Once again describe the images or scene they are imagining.

When you're ready to explain the trick tell them if they take any 3-digit number, reverse it and subtract the smaller one from the larger one they will always get one of these 9 answers

99  
198  
297  
396  
495  
594  
693

792

891

Ask them “Can you see any patterns in the numbers?”

- The middle digit is always a 9
- The hundreds digit is increasing
- The units digit is decreasing
- Adding up the outside digits always gives you 9
- Adding up all the digits gives you 18 ( $1 + 8 = 9$ )
- The numbers are actually the 99 times table

When you add any one of those numbers to the reverse of itself, you always get 1089!