

x 0= ALWAYS zero

Multiplication Strategies

x 1= ALWAYS the same number you are multiplying 1 by

x 2,5,10= SKIP count by either 2, 5, 10. Hold up the number of fingers you are multiplying by and skip count.

x 3, 4, 6, 7, 8= SKIP count by either 3, 4, 6, 7,8 OR use the knuckles on your fingers to count with. Hold up the number fingers you are multiplying by and count the number needed on each finger.

Hint: For 6= do 3 two times

For 7= do 3 two times and then 1 more knuckle

For 8= do 4 two times

x 9= Skip count by 9 OR use the "9" trick

Trick: Hold up all ten fingers with the back of your hands facing you. Count from left to write just like a number line.

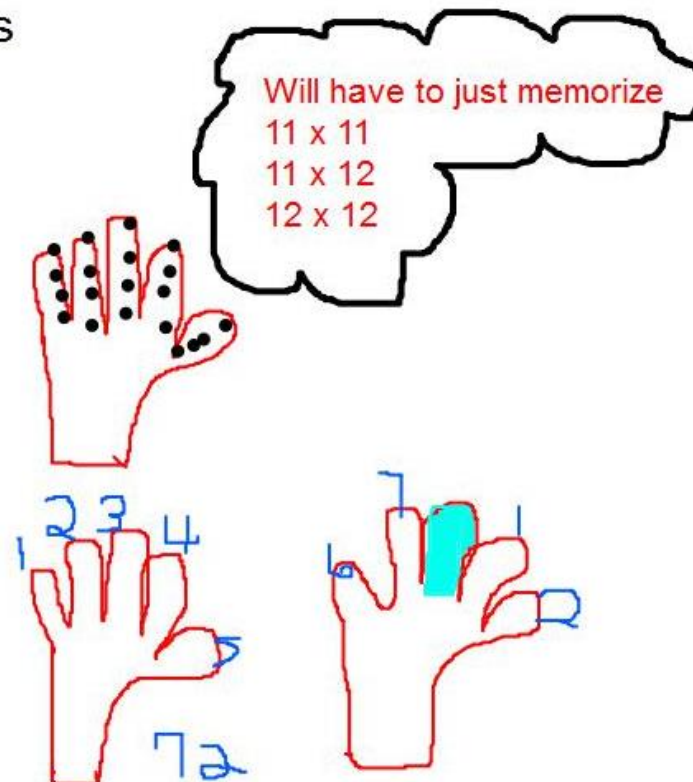
Fold down the number of finger that you are multiplying 9 by. Fingers on the left of folded are the "tens" number and on the right are the "ones" number. Put the numbers together and you have your answer. EX: $9 \times 8 = 72$

x10= Add a zero at the end of the number you are multiplying by.

x 11= Twin numbers; just write the number you are multiplying by two times.

EX: $11 \times 4 = 44$ You will have to memorize the 11×11 & 11×12

x12= You will use your strategies previously up to the 12×10 (10×12)



Divisibility Rules

Divisor	Divisibility Condition	Example
2	The last digit is even (0, 2, 4, 6, or 8).	38 : 2 is even which is divisible by 2.
3	The sum of the digits is divisible by 3. For large numbers, digits may be summed iteratively.	4,053 => 4+0+5+3=12 and 1+2=3 which is clearly divisible by 3.
4	Add the ones digit to twice the tens digit. (All digits to the left of the tens digit can be ignored.)	7,372 : 2 + (2 x 7) = 16 which is clearly divisible by 4.
	The last two digits divisible by 4.	20,516 : 16 is divisible by 4.
	If the tens digit is even, and the ones digit is 0, 4, or 8. If the tens digit is odd, and the ones digit is 2, or 6.	728 : 2 is even, & the last digit is 8. 356 : 5 is odd, & the last digit is 6.
5	The last digit is 0 or 5.	1,285 : the last digit is 5.
6	If it is divisible by 2 and by 3.	2,562 : 2 + 5 + 6 + 2 = 15, which it is divisible by 3, and the last digit is even which is divisible by 2, so the number is divisible 6.
8	If the last three digits are divisible by 8, then the entire number is also divisible by 8.	1,024 : 024 is divisible by 8 so, 1,024 is also divisible by 8.
9	The sum of the digits is divisible by 9. For large numbers, digits may be summed iteratively.	1,269 => 1+2+6+9=18 and 1+8=9 which is clearly divisible by 9.

