<u>Strategies for Basic Multiplication Facts</u>

First, some fundamental concepts kids need to understand. They are worth teaching/reviewing with older kids:

1. Multiplication is repeated addition

7 x 6 = 6 + 6 + 6 + 6 + 6 + 6 + 6
Knowing the 6 x 7 fact lets you figure this out a LOT faster!

2. The multiplication symbol means "groups of" (or "sets of" or piles of or whatever.

7 x 6 means 7 groups of 6
7 x 6 means 6, seven times

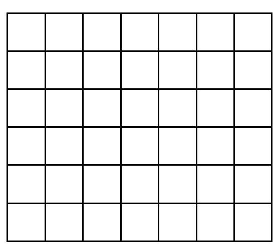
3. **The order doesn't matter.** (Commutative property – kids don't need to know this word).

7 x 6 is the same as 6 x 7.

4. **Any fact can be modeled with an array,** a.k.a. area model**.**

7 x 6

7



6

5. **Practice doubling. Practice halving.**

On to the strategies….

X 0 = “groups of nothing”

4 x 0 means 4 groups of nothing.
0 x 4 means no groups of 4

X 1 = the other number. “1” is like a mirror, reflecting the other number.

1 x 4 means “one group of 4”.

X 2 = double

X 2 = the other factor added to itself
8 x 2 = 8 + 8

X 4 = double, double.

Four goes to Tim Horton’s and orders a double, double, Double the other number, then double again.

6 x 4 =
Double 6 = 12
Double 12 = 24

X 8 = double, double, double

Eight is twice as much as four. Double the other factor three times.

7 x 8 =
Double 7 = 14
Double 14 = 28
Double 28 = 56
(see where lots of doubling comes in handy? Kids need practice doubling two digit numbers.)

X 10 = “tack on a zero”

(Never say “add a zero to the end”. We aren’t adding it, we’re tacking it on, sticking it on, annexing it, etc. Choose your favourite; just don’t say “add”.)

X 5 = skip count by fives.

Students have learned to skip count by fives in primary grades. This should come easily.

X 5 = double and half.

Double 5 = 10; cut the other number in half.
6 x 5 = 3 x 10 = 30
12 x 5 = 6 x 10 = 60
(This works great when the other factor is even. When it’s odd, it works if kids are comfortable halving odd numbers. 7 x 5 = 3.5 x 10 = 35)

X 5 = 0,5,0,5 pattern in the ones’ place.

This visual/rhythmic pattern helps some kids remember.
Even number factors end in zero; odds end in 5.

X 5 = use the five minute intervals on a clock.

7 x 5 = 7 on the clock face – 35 minutes after the hour.

X3 = skip count by threes

Okay, not the greatest strategy, but it works for some kids. For other kids, some of the x 3 facts remain ones that just need to be memorized.

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x 6 = use the closest x 5 and count on one more set

7 x 6 = 7 x 5 = 35 plus 7
8 x 6 = (8x5) 40 + 8
3 x 6 = (3 x 5) 15 + 3

X 7 = multiply by 5 then add on 2 groups.

7 x 7 = 5 x 7 = 35 plus 2 x 7 = 14, 35 + 14 = 49
7 x 4 = 5 x 4 = 20 plus 2 x 4 = 8, 20 + 8 = 28

X 9 = look at the patterns in the products.

* the digits in the products always add to 9

* you're counting up in the tens' place, and down in the ones' place

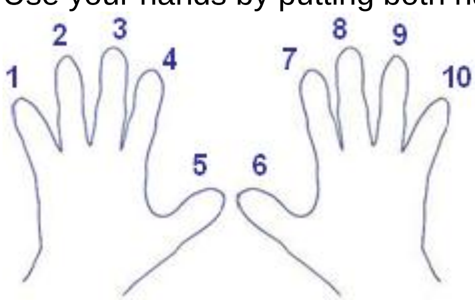
* the tens' place digit is **one less** than the factor
6 x 9 = one less than 6 is 5
5 will be the tens place. What adds with 5 to make 9? 4!
54

0**9**
18
27
36
45
54
63
72
81
90

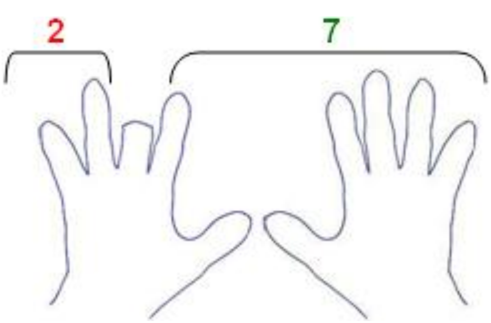
X 9 =

Multiply by 10 then subtract one group. For example, 10 x 6 = 60, 60 – 6 = 54, so 9 x 6 = 54

the fingers trick!
Use your hands by putting both hands out in front of you.

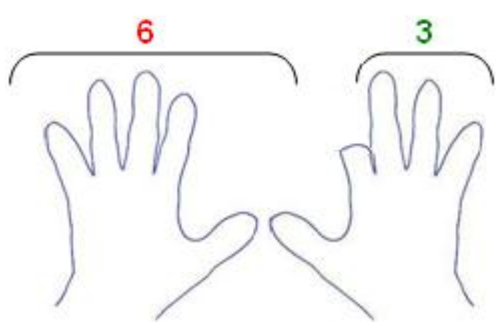


Bend the finger of the number you want to multiply. Then count the number of fingers on both sides of the bent finger to get the answer.



For 3 × 9, bend Finger 3.

3 × 9 = 27



For 7 × 9, bend Finger 7.

7 × 9 = 63