

MULTIPLICATION SHORTCUTS

FACT 1: When you multiply a number by 0, the product is 0.

$$\begin{aligned}6 \times 0 &= 0 \\512 \times 0 &= 0\end{aligned}$$

FACT 3: When you multiply a number by 1, the product is the number.

$$\begin{aligned}6 \times 1 &= 6 \\512 \times 1 &= 512\end{aligned}$$

FACT 4: When you multiply a number by 10, the product is the number followed by a 0.

$$\begin{aligned}6 \times 10 &= 60 \\512 \times 10 &= 5,120\end{aligned}$$

(NOTE: Put as many 0's after the number as there are 0's in 10, 100, 1000, etc.)

FACT 5: To multiply a number by 2, simply double the number.

$$\begin{aligned}7 \times 2 &= 7 + 7 = 14 \\36 \times 2 &= 36 + 36 = 72\end{aligned}$$

(NOTE: To multiply by 4, double the number a second time.)

(NOTE: To multiply by 8, double the number a third time.)

FACT 6: To halve a number, find a number doubling which will give you this number.

Half of 14: What number doubled is 14? The answer is 7.

Half of 72: What number doubled is 72? The answer is 36.

(NOTE: Practice with even numbers only. It may take some trial and error.)

FACT 7: To multiply a number by 5, put a 0 in front of the number, then halve it.

$$\begin{aligned}6 \times 5 &= \text{half of } 60 = 30 \\24 \times 5 &= \text{half of } 240 = 120\end{aligned}$$

FACT 8: To multiply a number by 9, put a 0 in front of the number and then subtract the number from it.

$$\begin{aligned}6 \times 9 &= 60 - 6 = 54 \\24 \times 9 &= 240 - 24 = 216\end{aligned}$$

1. Practice multiplying numbers by 0, 1 and 10.
2. Practice doubling numbers.
3. Practice halving numbers.
4. Practice multiplying numbers by 5.
5. Practice multiplying numbers by 9.
6. Work out why these shortcuts work.

End of Lesson