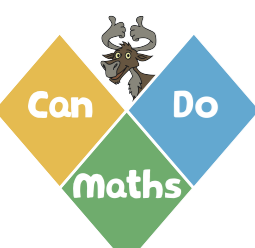


Multiplication



Year 1

If I know... then I also know...

The digit sum of multiples of 6 is 3, 6 or 9

All multiples of 6 are even numbers.

The digit sum of multiples of 9 is 9

An odd number multiplied by 9 gives an odd product.

An odd number multiplied by 7 gives an odd product.

An even number multiplied by 7 gives an even product.

$64 \times 0 = 0$
The product of a number and zero is zero.

$64 \times 1 = 64$
The product of a number and 1 is the number itself.

$64 \div 1 = 64$
The quotient when dividing a number by 1 is the number itself.

Year 2

If I know... then I also know...

If the digits are the same then a 2-digit number is divisible by 11

An odd number multiplied by 11 gives an odd product.

A number is divisible by 12 if it is divisible by 3 and 4

All multiples of 12 are even numbers.

$12 \times 6 = 72$ $6 \times 12 = 72$
 $72 \div 12 = 6$ $72 \div 6 = 12$
 $72 \div 12 = 6$ $72 \div 6 = 12$
 $6 = 72 \div 12$ $12 = 72 \div 6$

$5 \times 2 \times 6 = 60 = 6 \times 2 \times 5$

$5 \times 2 \times 6 = 60$ $5 \times 2 \times 6 = 60$
 $= 10 \times 6 = 60$ $= 2 \times 30 = 60$
 $= 60$ $= 60$

Year 1

Double 3 is 6
 $3 + 3 = 6$
2 groups of 3 = 6

The groups are equal

Three groups of 4
 $4 + 4 + 4 = 12$

8 groups of 4

$0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 \dots$

$0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50 \dots$

$0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100 \dots$

Year 2

Three groups of four
 $4 + 4 + 4 = 12$

4 multiplied by 3
 $4 \times 3 = 12$

3 groups of 4
 $3 \times 4 = 12$

$12 \div 3 = 4$
12 divided equally into 3 groups

$12 \div 3 = 4$
12 divided equally into groups of 3

How many 3s in twelve?

Year 4

3000 is one hundred times greater than 30
2 multiplied by one hundred is 200

$70 \times 6 = ?$
If I know $7 \times 6 = 42$ then I know $70 \times 6 = 420$ because it is ten times greater

$70 \times 6 = 420$
 $7 \times 60 = 420$

$7 \times 10 \times 6 = 42 \times 10 = 420$

523
 $\times 3$

1569

Year 4

20 is ten times greater than 2
30 multiplied by ten is 300

$60 \times 4 = ?$
If I know $6 \times 4 = 24$ then I know $60 \times 4 = 240$ because it is ten times greater

$6 \times 4 = 24$
 $60 \times 4 = 240$
 $6 \times 40 = 240$

$6 \times 10 \times 4 = 24 \times 10 = 240$

17 x 4

10 7
4 40 28

$\times 4$

68

Year 5

23×14

20 3
10 30
4 80 12

23×14

$\begin{array}{r} 23 \\ \times 14 \\ \hline 92 \\ 230 \\ \hline 322 \end{array}$

When I multiply the multiplicand by the tens digit of the multiplier I put a zero in the ones column.

In my head? With jottings? Formal written method?

$426 \times 50 = 426 \times 100 \div 2 = 42600 \div 2 = 21300$

$30 \times 99 = 30 \times 100 - 30 \times 1 = 3000 - 30 = 2970$

$04 \times 7 = ?$
If I know $4 \times 7 = 28$ then I also know that $04 \times 7 = 28$ because it is ten times smaller.

$24 \times 3 = ?$
If I know $24 \times 3 = 72$ then I also know $24 \times 3 = 72$ because it is ten times smaller.

$\begin{array}{r} 24 \\ \times 3 \\ \hline 72 \end{array}$

Year 6

2427
 $\times 38$

19416
19416

72810

92226

Year 3

If I know... then I also know...

The digit sum of multiples of 3 is 3, 6 or 9

An odd number multiplied by 3 gives an odd product.

All multiples of 4 are even numbers.

There is a repeating pattern in the ones column 0, 4, 8, 2, 6

All multiples of 8 are even numbers.

All multiples of 8 are also multiples of 2 and 4

Year 2

Factor, factor, product

2, 1, 2 2, 10, 20 2, 3, 6 2, 11, 22
2, 2, 4 2, 5, 10 2, 6, 12 2, 9, 18
2, 4, 8 2, 12, 24 2, 7, 14

There is a repeating pattern of 0, 2, 4, 6, 8

Even numbers are divisible by 2

$2 \times 5 = 10$ $5 \times 2 = 10$
 $10 \div 2 = 5$ $10 \div 5 = 2$
 $5 \div 10 = 2$ $2 \div 10 = 5$

Multiples of 10 all have a zero in the ones column.

The products of 10 are even numbers.

$10, 10, 100$ $10, 3, 30$ $10, 11, 110$
 $10, 2, 20$ $10, 5, 50$ $10, 6, 60$ $10, 9, 90$
 $10, 4, 40$ $10, 12, 120$ $10, 7, 70$
 $10, 8, 80$

$0, 10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120$

$0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12$

The product of an odd number and 5 is odd

$5, 1, 5$ $5, 10, 50$ $5, 3, 15$ $5, 11, 55$
 $5, 2, 10$ $5, 5, 25$ $5, 6, 30$ $5, 9, 45$
 $5, 4, 20$ $5, 12, 60$ $5, 7, 35$
 $5, 8, 40$

The product of an even number and 5 is even

$0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60$

$0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12$