x Multiplication x

Column Method

```
   35
  X 7
 ─────
  245
    3
```

```
    35
   x27
  ─────
   245
   700
  ─────
   945
```

When multiplying TU x U. Children need to understand the role of the zero as a place holder.
PROGRESSION
TU x TU
HTU x TU
-Extend to decimals

Start with the units column and multiply the number top number by the bottom.
-Continue with tens, hundreds etc.

DON'T FORGET
Don't forget the 10's, 100's or 1000's that you have carried! Remember to store them underneath!

Grid method (cross multiply)

34 X 12 =

X	30	4
10	300	40
2	60	8

```
  300
   60
   40
 +  8
 ────
  408
    1
```

-Partition both numbers and place within a grid.
-Multiply across, ensuring cross multiplying is understood.
-Add together to reach the answer.

PROGRESSION
TU x TU
HTU x TU
-Can be extended to decimals

Grid method (simple)

34 X 5 =

X	5
30	150
4	20

```
  150
 + 20
 ────
  170
```

-Partition the numbers and place within a grid.
-Multiply across
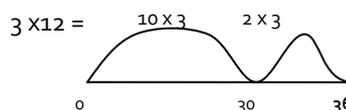-Add together to reach the answer.

PROGRESSION
TU x U
HTU x U

Using known number facts on a number line (teens and units)

3 X12 =

```
      10 X 3      2 X 3
    ⌒⌒⌒⌒⌒⌒    ⌒⌒
   0          30      36
```

Children to know **AT LEAST** their 2, 3, 5 and 10 times tables by this stage.

Use knowledge of times tables and partitioning to complete more complex problems.

Multiplication as arrays

```
* * *      * *
* * *      * *
           * *
```

3 x 2 = 2 lots of 3 **OR** 3 lots of 2

Use concrete materials or simple jottings to ensure children understand that multiplication is commutative.

PROGRESSION
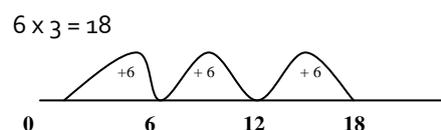-Children to start by counting the arrays (repeated addition)
-Progress to counting in multiples (3, 6 etc)

Repeated Addition on a number line

6 x 3 = 18

```
    ⌒+6  ⌒+6  ⌒+6
   0    6    12    18
```

Prior to using a number line, concrete materials can be used. Multiplication is the equivalent to repeated addition.

PROGRESSION
-Start with U x U
-Progress to TU x U

Associated vocabulary

Lots of
Array
Groups of
Times
Product
Multiple
Sets of
Partition
Repeated addition
Multiplication