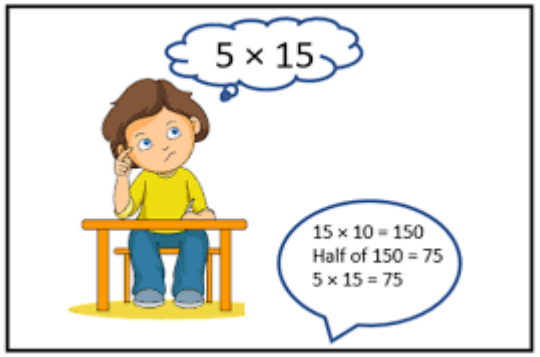
Written Calculation Guidance

Multiplication

At Joseph Turner Primary School, we are always striving to raise standard sand support our children in their learning. In order to do this, we have devised this calculation guidance to ensure there is a progression of skills from mental methods to formal written methods.

As all children learn at different paces, no year groups have been assigned to each specific method as adaptations will be made to suit each learner.

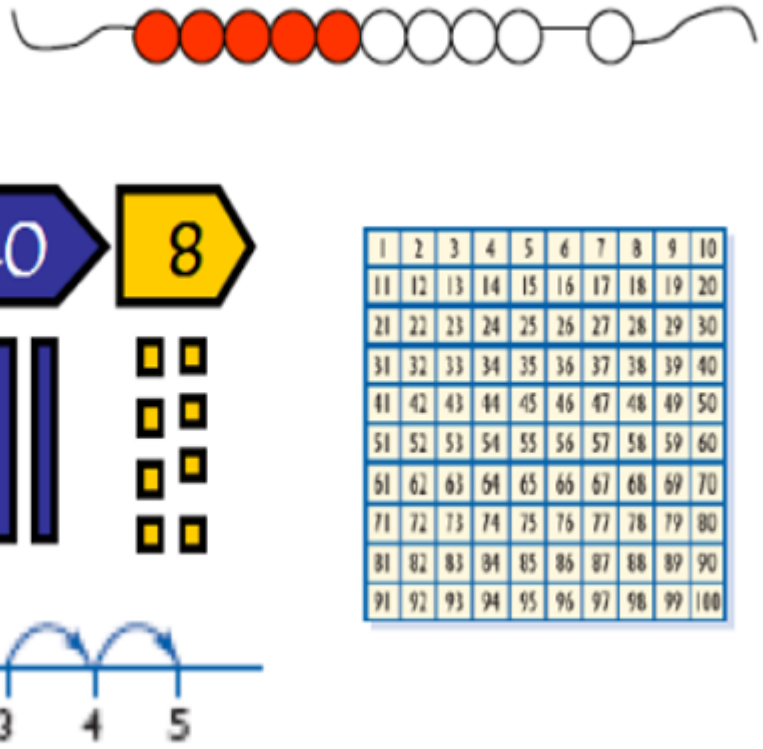
Mental Skills



- Recognise the size and position of numbers
- Count in different steps 2s, 5s, 10s.
- Double number to 10
- Recognise multiplication as repeated addition
- Quick recall of multiplication facts
- Multiplying by 10, 100, 1000 and understand the effect
- Multiplying by multiples of 10

Models, Image and Apparatus

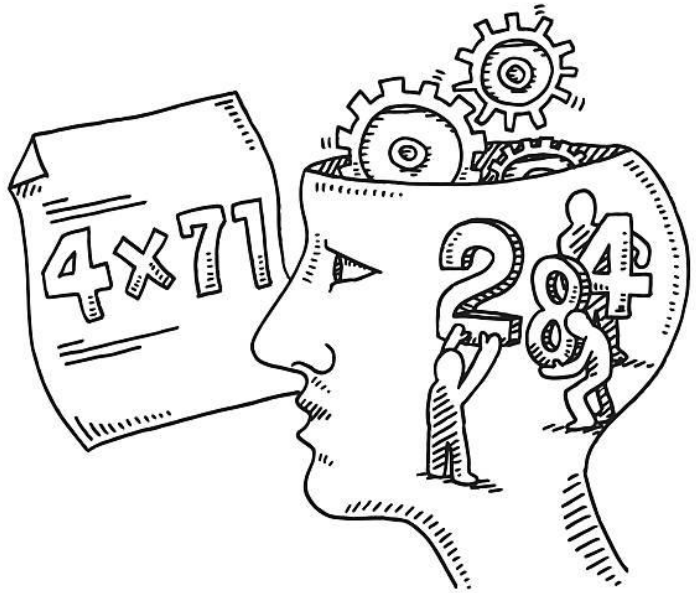
- Place value opportunities
- Arrays
- 100 squares
- Number tracks
- Numbered number lines
- Marked by unnumbered lines
- Empty numberlines
- Multiplication squares
- Counting stick
- Models and images charts
- ITPs – Multiplication grid, number dials, multiplication facts.



Key Vocabulary

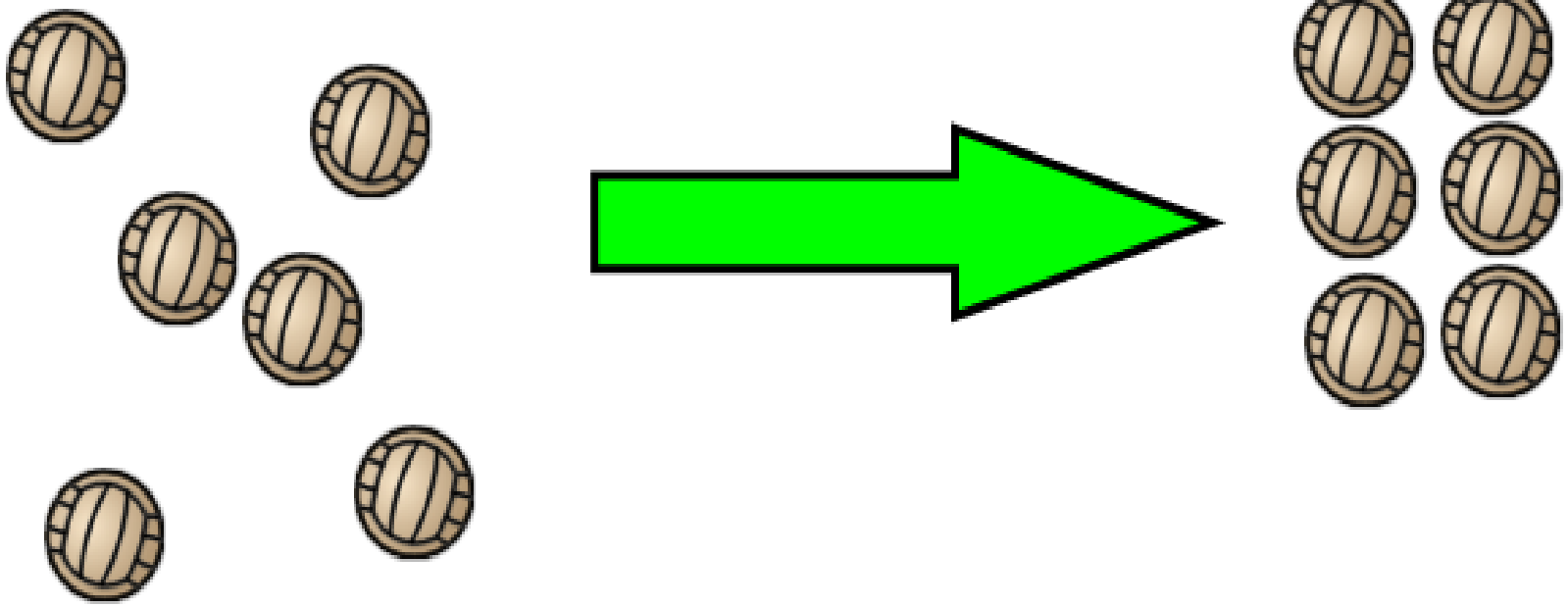
- Multiplier
- Multiplicative
- Lots of
- Groups of
- Times
- Multiply
- Multiplication
- Multiple
- Product

- Once, twice, three times
- Array
- Row
- Column
- Double
- Repeated addition

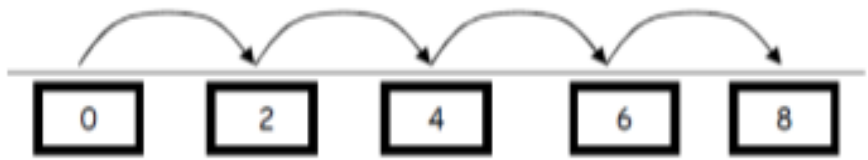


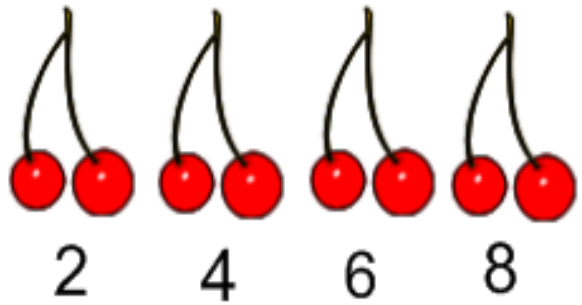
Progression of methods

To put things into groups

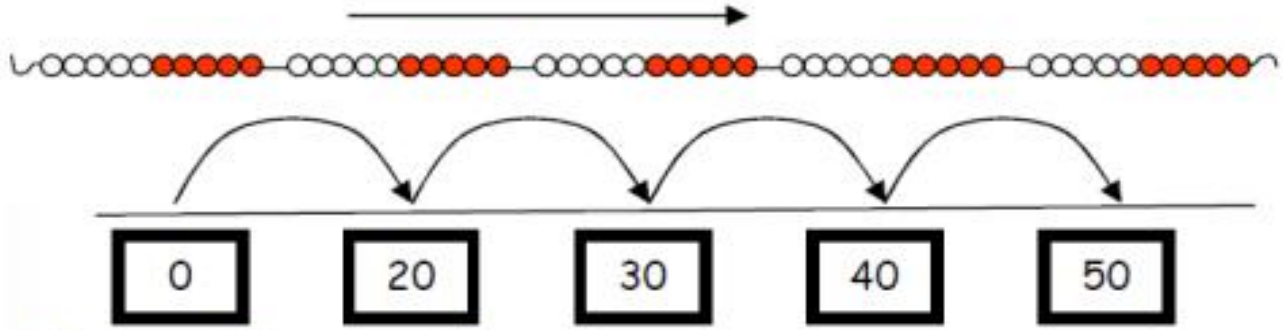


Count in twos from zero

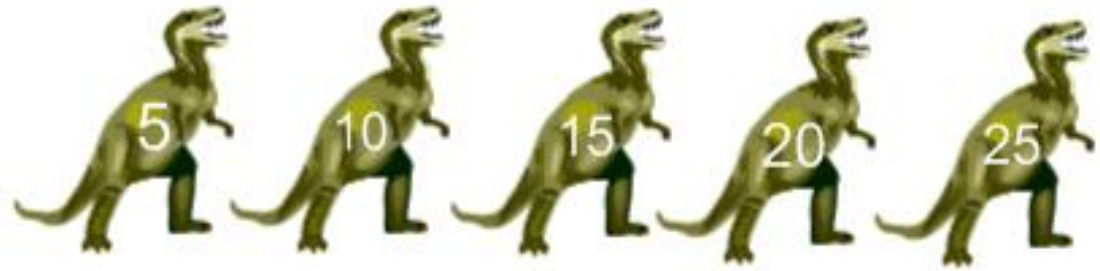


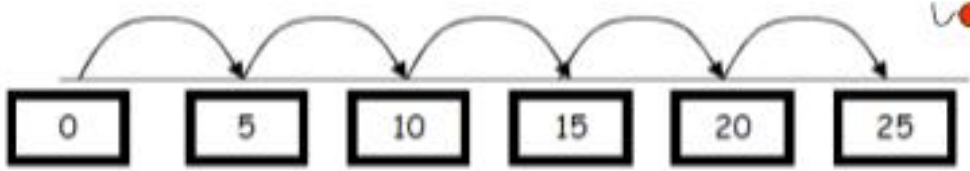


Count in tens from zero



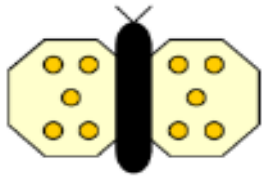
Count in fives from zero



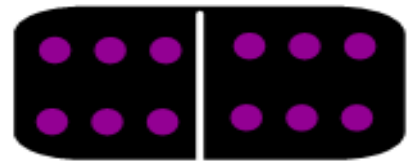


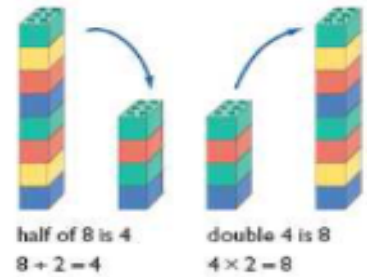
Know doubles and corresponding halves to 20

5 + 5 = 10



6 + 6 = 12





Understand multiplication as repeated addition

2 + 2 + 2 + 2

2 + 2 + 2 + 2 = 8

4 x 2 = 10

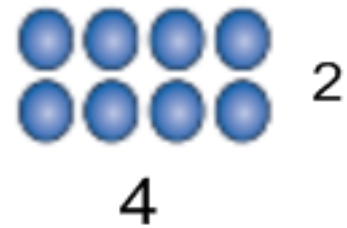
2 multiplied by 4

4 lots of 2

Understand multiplication as an array

4 x 2

2 x 4

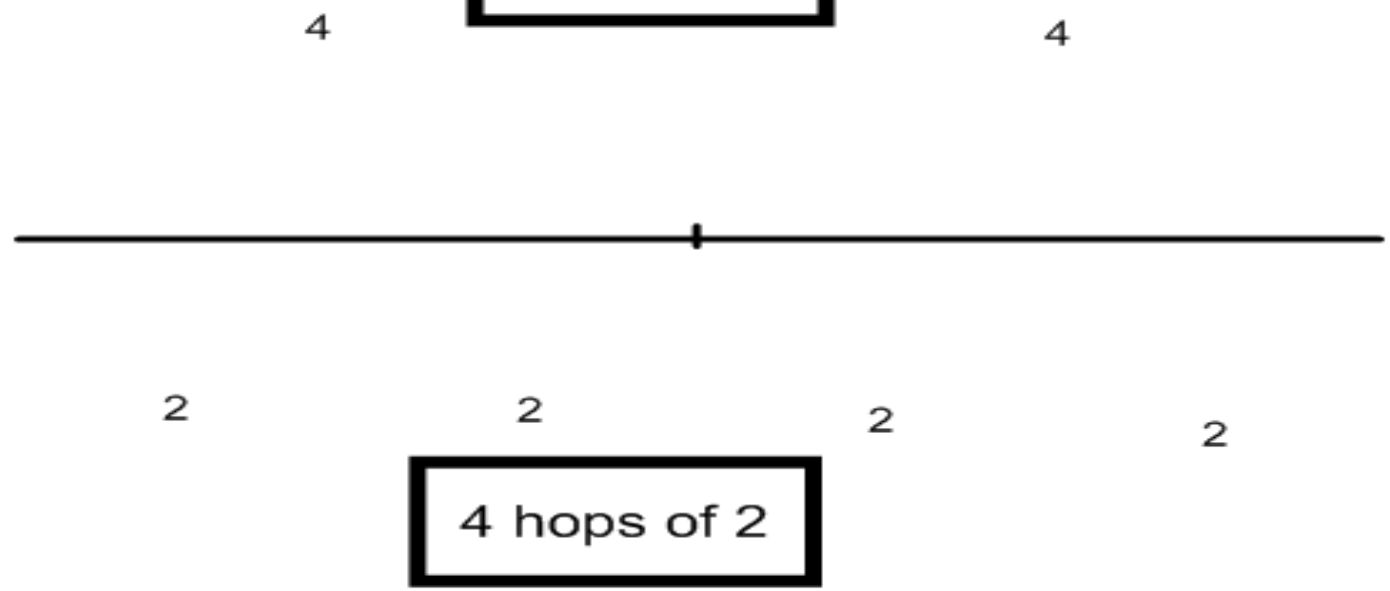


2 x 4 = 8

4 x 2 = 8

Understand how to represent arrays on a number line

2 hops of 4



4 hops of 2

Know by heart facts for the 2,5 & 10 multiplication tables

Tables Spider

4 x 5 = 20

2 x 5 = 10

5 x 5 = 25

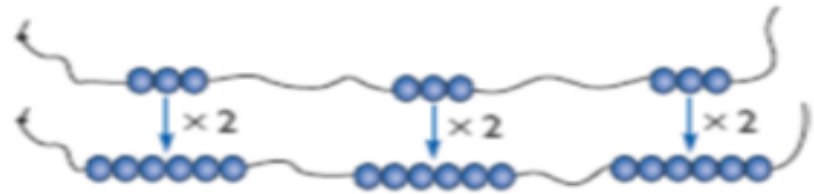
6 x 5 = 30

10 x 5 = 50

3 x 5 = 15

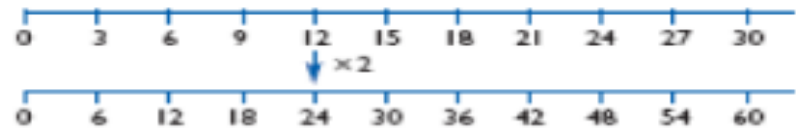
8 x 5 = 40

Use known facts and place value to carry out mentally simple x calculations



double double

1 x 3 = 3	1 x 6 = 6
2 x 3 = 6	2 x 6 = 12
3 x 3 = 9	3 x 6 = 18
4 x 3 = 12	4 x 6 = 24



twice as many

Know by heart facts for the 2,3,4,5 & 10 multiplication tables

Snappy Maths

Rules of multiples

X factor Maths

Loop games

Minute Maths

fizz buzz

related facts

Speed Tests

To know by heart multiplication tables up to and including 12 x 12

X factor Maths

Rules of multiples

Loop games

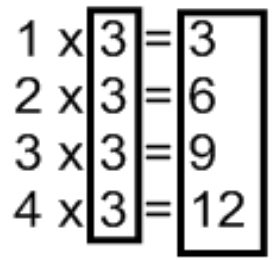
Minute Maths

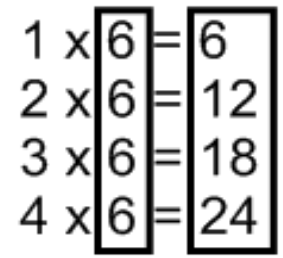
Snappy Maths

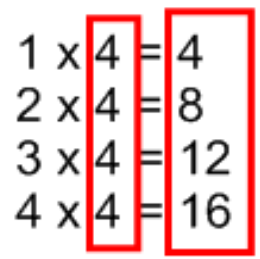
related facts

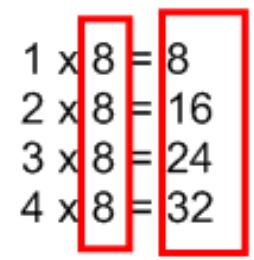
Speed Tests

fizz buzz



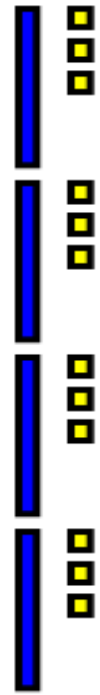






Use place value apparatus to support the multiplication of U x TU

4 x 13

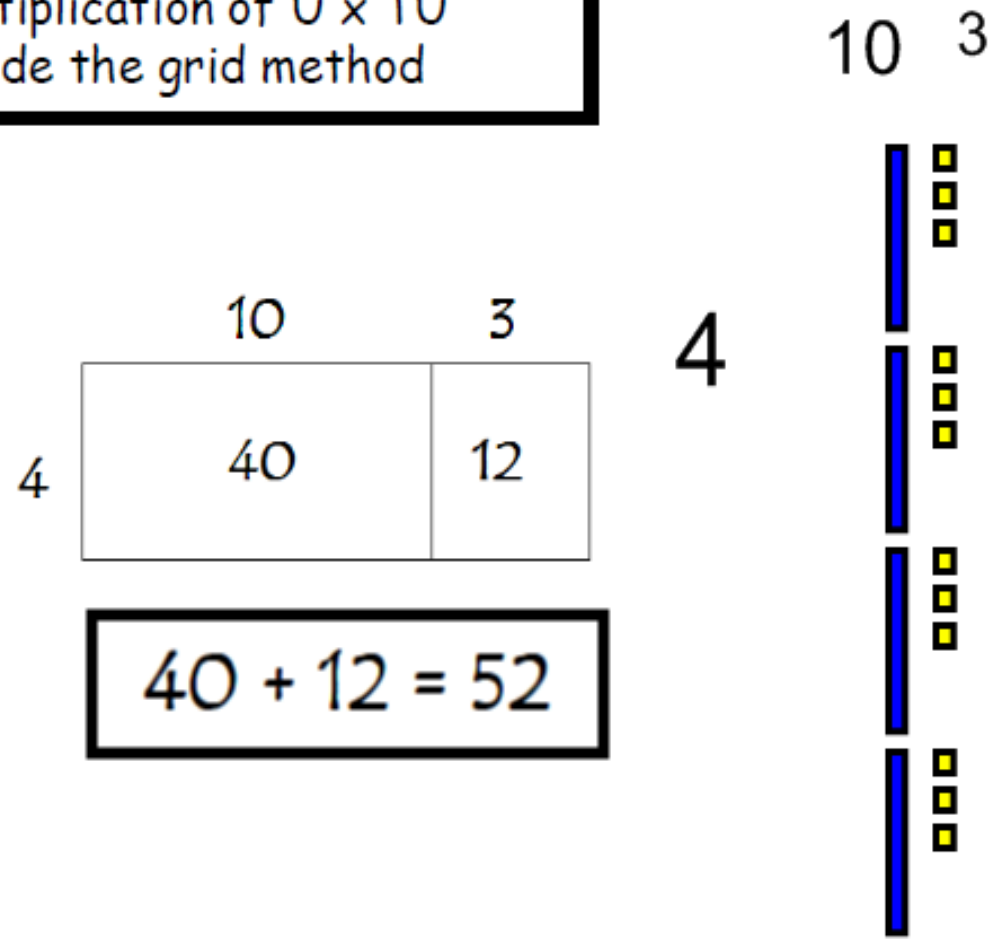


Use place value apparatus to support the multiplication of U x TU alongside the grid method

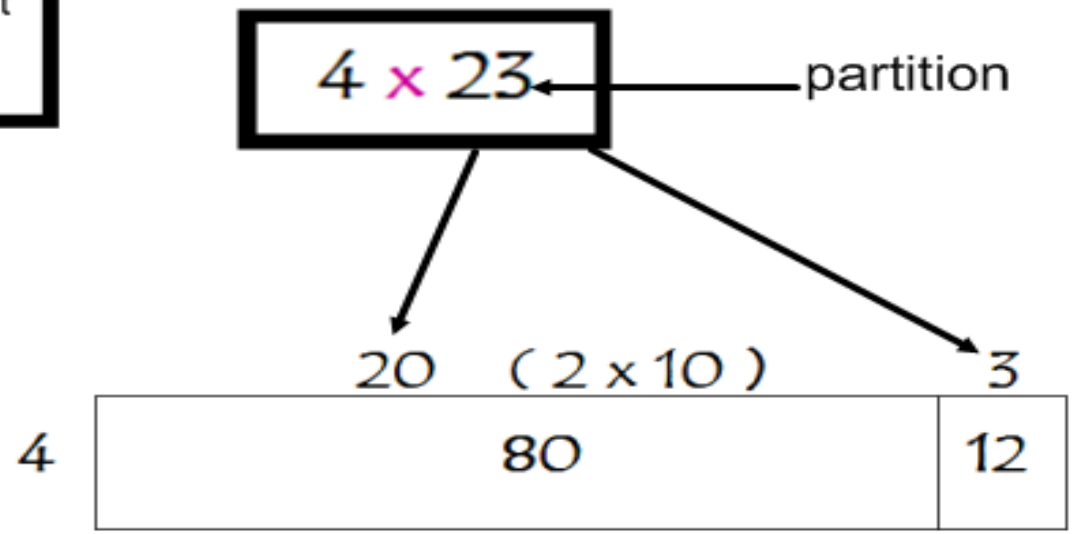
4 x 13

	10	3
4	40	12

40 + 12 = 52



To use place value to carry out the grid method



80 + 12 = 92

14 x 33

Grid method
TU x TU and beyond

	30	3
10	300	30
4	120	12

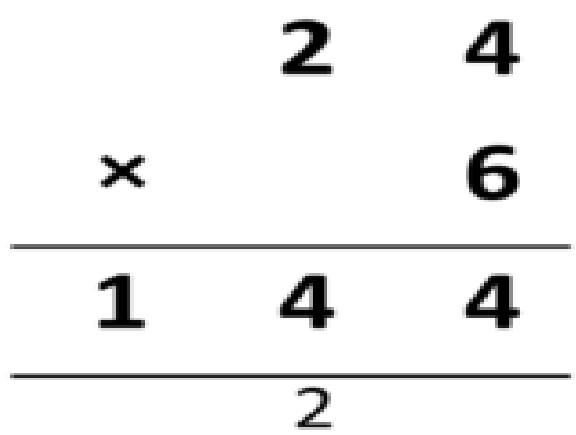
= 330 +

= 132

300
120
30
+ 12

Then use appropriate addition method to gain the answer

24 × 6 becomes



Answer: 144

24 × 16 becomes

$$\begin{array}{rrr} & {\scriptstyle 2} & \\ & 2 & 4 \\ \times & 1 & 6 \\ \hline 2 & 4 & 0 \\ 1 & 4 & 4 \\ \hline 3 & 8 & 4 \\ \hline \end{array}$$

124 × 26 becomes

$$\begin{array}{rrrr} & {\scriptstyle 1} & {\scriptstyle 2} & \\ & 1 & 2 & 4 \\ \times & & 2 & 6 \\ \hline 2 & 4 & 8 & 0 \\ & 7 & 4 & 4 \\ \hline 3 & 2 & 2 & 4 \\ \hline {\scriptstyle 1} & {\scriptstyle 1} & & \end{array}$$

Answer: 3224