MULTIPLICATION: Y1

Understanding the operation and vocabulary

Understanding the operation

Begin to understand multiplication by using concrete objects, pictorial representations and arrays to solve problems; make connections between the different representations.

Begin to use the vocabulary involved in multiplying

Vocabulary

Understand the vocabulary related to multiplication

ones, groups, lots of, doubling
repeated addition array, row, column,
groups of, lots of, times, columns, rows
longer, bigger, higher etc
times as (big, long, wide …etc)

Generalisations

Understand 6 counters can be arranged as
3 + 3 or 2 + 2 + 2

Understand that when counting in twos, the numbers are always even.

Misconceptions

- Pupils may not ensure that all their groups have the same amount when representing a multiplication.
- Pupils tend to use the repeated addition representation of multiplication much more than scaling.

Number Sense and Fluency

Number facts

Count in multiples of twos, fives and tens
0 2 4 6 8 10…

Know doubles of all numbers to 10

Double 3 is ☐ 8 + 8 = ☐
Double 5 is ☐ 6 + 6 = ☐

Know that multiplication is related to doubling and counting groups of the same size

Begin to recognise odd and even numbers
Use cubes to make 9 and recognise it is odd (as the cubes cannot be paired)

Mental Methods and jottings

Counting

Count a set of objects by grouping in 2s, 5s or 10s
Count these marbles (2 at a time)

Solve problems involving doubling and equal groups
I need 5 eggs to bake a cake. How many eggs will I need to bake 2 cakes?

Counting on

There are 3 pots. Each pot has 2 seeds in. How many seeds are planted?
(by counting on in twos using objects or pictures to keep track)

Doubling and halving

A ladybird has 6 spots on each wing.
How many spots are there altogether?
(by recognising 6 + 6 = 12)

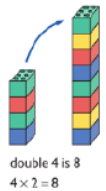
Recording

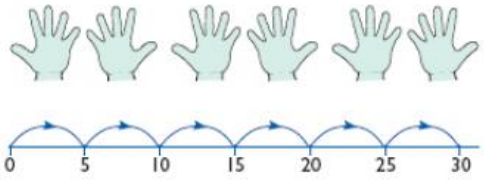
https://www.ncetm.org.uk/resources/52830
No formal written layout.

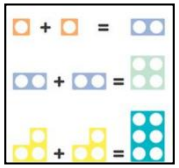
Pupils will be recording their mathematics using pictorial representations, arrays, number lines and mathematical statements.

Solve one-step problems involving multiplication and division, using concrete objects, pictorial representations and arrays

How many legs have 5 teddies got altogether?







How many fingers are on 6 hands?

Counters, objects, pictures, arrays, number lines, bead strings, bundles of straws

Begin to group in rows and columns to aid counting

MULTIPLICATION: Y2

Understanding the operation and vocabulary

Understanding the operation

Understand multiplication as

- repeated addition
- describing an array
- scaling (to compare 2 items) e.g. twice as long
- correspondence problems – one to many

Show that multiplication of two numbers can be done in any order

recognise that 5 x 3 is equal to 3 x 5

Recognise the inverse relationship between multiplication and division

Write the related number sentences:

5 x 3 = 15 3 x 5 = 15 15 = 5 x 3 15 = 3 x 5

15 ÷ 3 = 5 15 ÷ 5 = 3 3 = 15 ÷ 5 5 = 15 ÷ 3

Write mathematical statements using the multiplication (×), and equals (=) signs

4 x 5 = 20 16 = 8 x 2 3 x ☐ = 15

☐ = 7 x 2 20 = ☐ x ☐

Vocabulary

Understand the vocabulary related to multiplication

Also see Y1

multiple, multiply, multiplication array, multiplication tables / facts, groups of, lots of, times, columns, rows, once, twice, three, ten…times a big, repeated addition

Generalisation

Repeated addition can be shown on a number line

Use an array to explore how numbers can be organised into groups. Link multiplication and division

Explore what happens when a number is multiplied by 10. (Avoid add a zero!)

Number Sense and Fluency

Number facts

Count in steps of 2, 3, and 5 from 0

0 3 6 9 12 15 18 ……30

50 45 40 35 30 …….. 0

Recall doubles of all numbers to 15 and doubles of multiples of 5 to 50

Double 13 is ☐ 11 + 11 = ☐ Double 25 is ☐

45 + 45 = ☐

Recall and use multiplication facts for the 2, 5 and 10 multiplication tables

3 groups of 10 multiply 7 by 2 5 multiplied by 4

Recognise odd and even numbers

Explain why 27 is an odd number

Link multiplication with repeated addition

3 x 5 = 5 + 5 + 5

Mental Methods and Jottings

Calculate mathematical statements for multiplication within the multiplication tables

3 x 5 = ___ 7 x ___ = 14 4 x 5 = ___

Counting on

7x5 (count on in fives using fingers to keep track)

With jottings 3 x 5 (count on in threes using a number line to keep track)

Recording

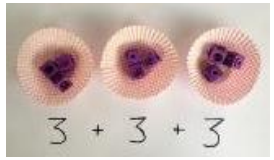
https://www.ncetm.org.uk/resources/52830

No formal written layout.

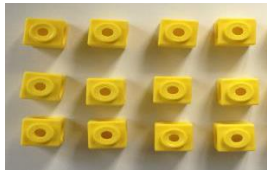
Pupils will be recording their mathematics using pictorial representations, arrays, number lines and mathematical statements.

CONCRETE

Repeated addition linked to multiplication

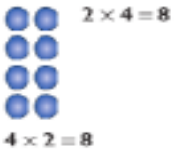


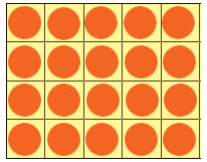
Use of arrays

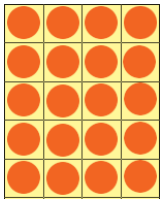


PICTORIAL

Demonstrate commutativity







Misconceptions • Pupils may find it hard to understand what operation they need to use from a word problem because there are so many ways to imply a multiplication • Pupils tend to use the 'lots of' representation [repeated addition] of multiplication much more than scaling. Similarly, they may use sharing more than grouping (which makes using an array for division harder). • Pupils may not recognise key trigger words for multiplication and division and so use the wrong operation when solving a word problem.		**ABSTRACT**  Use arrays to reinforce the link between multiplication and repeated addition **5 + 5 + 5 = 15** **3 + 3 + 3 + 3 + 3 = 15** **3 x 5 = 15** **5 x 3 = 15**

MULTIPLICATION: Y3

Understanding the operation and vocabulary

Understanding the operation

Understand multiplication as

- repeated addition
- describing an array
- scaling – comparison and enlargement
- correspondence problems – one to many and many-to-many

Understand commutativity and associativity

Recognise that 7 x 4 is equal to 4 x 7

Recognise that if calculating 2 x 3 x 10 the numbers can be combined in any order

Use models and images to demonstrate distributive and commutative laws

Understand the inverse relationship between multiplication and division

write the related number sentences

6 x 3 = 18 3 x 6 = 18 18 = 6 x 3 18 = 3 x 6

18 ÷ 3 = 6 18 ÷ 6 = 3 3 = 18 ÷ 6 6 = 18 ÷ 3

Solve missing numbers problems involving multiplication

3 x ☐ = 15 ☐ = 2 x 7 20 = ☐ x ☐

25 + 10 = 5 x ☐ 15 < ☐ x 2☐x☐> 20

Vocabulary

Understand, read and spell vocabulary related to multiplication correctly

Also see Y1 and Y2

12 x 5 = 60

factor x factor = product

partition, grid method, inverse, product

Number Sense and Fluency

Number facts

Count from 0 in multiples of 4, 8, 50 and 100

0 8 16 24 32 ….

500 450 400 350 ….

50,100,150,200, 250

Recall doubles of all numbers to 20, doubles of multiples of 5 to 100 and doubles of multiples of 100 to 500

Double 17 is ☐ 85 x 2 = ☐ Double 300 is ☐

Recall and use multiplication facts for the 3, 4 and 8 multiplication tables and begin to use knowledge of place value to derive related facts

multiply 9 by 4 the product of 8 and 4 50 x 4

Mental Methods and Jottings

Calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers

Use doubling to connect 2, 4 and 8 multiplication tables

Counting on

5 x 14 (by counting on in fives from 50)

with jottings

4 x 13 (by counting on in fours from 4 x 10 using a number line to keep track)

Partioning (with distributive law)

Without crossing the tens boundary

32 x 3 = (30 x 3 = 90, 2 x 3 = 6, 90 + 6 = 96)

with jottings

Crossing the tens boundary

17 x 5 = (10 x 5 = 50, 7 x 5 = 35, 50 + 35 = 85)

Doubling and halving

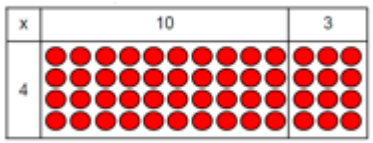
9 x 20 (multiply by 10 and then double)

Recording

https://www.ncetm.org.uk/resources/52830

Begin to use formal written methods for two-digit numbers multiplied by one-digit numbers

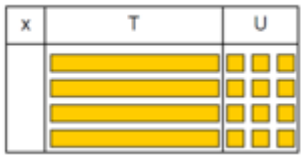
CONCRETE



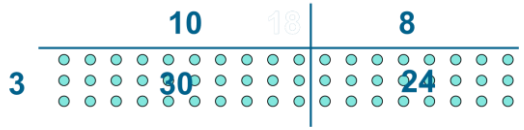
4 rows of 10

4 rows of 3

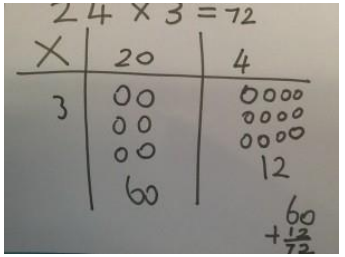
Show the link to arrays when multiplying larger numbers

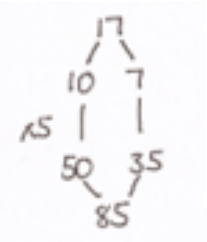


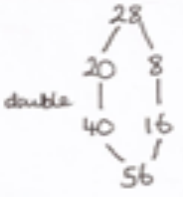
4 rows of 13



PICTORIAL







Generalisations

Connecting x2, x4 and x8 through multiplication facts
Comparing times tables with the same times tables which is ten times bigger. If 4 x 3 = 12, then we know 4 x 30 = 120. Use place value counters to demonstrate this.

When pupils know multiplication facts up to x12, do they know what x13 is? (i.e. can they use 4x12 to work out 4x13 and 4x14 and beyond?)

MISCONCEPTIONS

- Pupils think that numbers ending in 3 will be multiples of 3 and so on
- Pupils may assume that, since multiplication is commutative, division is commutative and can be done in any order
- Pupils may not see how an array can be used to support division, only multiplication.
- Pupils with weak understanding of how to represent a multiplication as an array may struggle to represent and calculate a 2dx1d multiplication and fail to see why they need to be able to partition it. They may try to work with a very large array rather than sectioning it off and partitioning.
- Some pupils struggle to understand the range of language of multiplication and division. Similarly, they may find it hard to understand what operation they need to use from a word problem because there are so many ways to imply a multiplication or division
- Pupils often fail to recognise scaling problems as multiplication (or division problems) and find it hard to represent these practically.
- Some pupils may not yet have a strong understanding that multiplication is the inverse of division and so find it hard to move between the two operations.
- Pupils often fail to recognise scaling problems as multiplication (or division problems) and find it hard to represent these practically.

9 x 10 = 90 Double 90 is 180
28 x 4 (double and double again)

Compensating and Adjusting

18 x 9 = (18 x 10) - 18

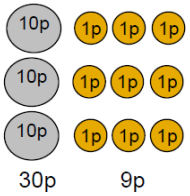
Re-ordering calculations

4 x 12 x 5 = 4 x 5 x 12

Using known facts and place value

Use manipulatives to demonstrate this.

13 x 3



Estimating and checking

Estimate the answer to a calculation
38 x 5 is approximately 40 x 4

Use inverse operations to check

ABSTRACT

×	30	5
7	210	35

210 + 35 = 245

MULTIPLICATION: Y4

Understanding the operation and vocabulary

Understanding the operation

Continue to understand multiplication as

- repeated addition
- describing an array
- scaling – comparison and enlargement
- correspondence problems – one to many and many-to-many

Understand the distributive law

Recognise that 14 x 5 is the same as 10 x 5 added to 4 x 5

Continue to understand commutativity and associativity

Recognise that 7 x 9 is equal to 9 x 7

Recognise that if calculating 4 x 8 x 10 the numbers can be combined in any order

Continue to understand the inverse relationship between multiplication and division

write the related number sentences

6 x 7 = 42 7 x 6 = 42 42 = 6 x 7 42 = 7 x 6

42 ÷ 7 = 6 42 ÷ 6 = 7 7 = 42 ÷ 6 6 = 42 ÷ 7

Solve missing numbers problems involving multiplication

3 x ☐ = 15 ☐ = 2 x 7 20 = ☐ x ☐

25 + 10 = 5 x ☐ 15 < ☐ x 2 ☐ x ☐ > 20

Vocabulary

Understand, read and spell vocabulary related to multiplication correctly

Also see Y1 Y2 and Y3

12 x 5 = 60

factor x factor = product

factor

Number Sense and Fluency

Number facts

Count in multiples of 6, 7, 9, 25 and 1000

0 7 14 21 28 …

300 275 250 225 200 …

Derive doubles of multiples of 50 to 1000 and multiples of 1000

Double 950 is ☐ 750 x 2 = ☐

Double 8000 is ☐ 6000 + 6000 = ☐

Recall multiplication facts for multiplication tables up to 12 × 12, and use place value to derive related facts

7 groups of 8 multiply 9 by 6

the product of 8 and 11 60 multiplied by 4

Recognise factor pairs

list the factors pairs of 32

Mental Methods and Jottings

Multiply mentally using place value, known and derived facts, including: multiplying by 0 and 1; multiplying together three numbers

Use associative law:

(2 x 3) x 4 = 2 x (3 x 4)

2 x 6 x 5 = 10 x 6 = 12 x 5 = 2 x 30

Counting on

3 x 42 (by counting on in threes from 120)

With jottings

7 x 53 (by counting on in sevens from 7 x 50 using a number line to keep track)

7 X 50 = 350

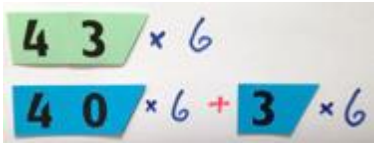
7 X 53 = 371

Recording

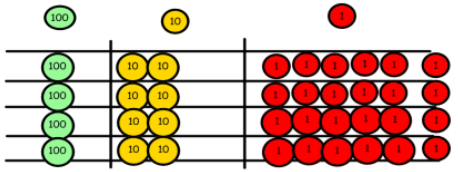
https://www.ncetm.org.uk/resources/52830

Multiply two-digit and three-digit numbers by a one-digit number using formal written layout

CONCRETE



126 x 4



PICTORIAL

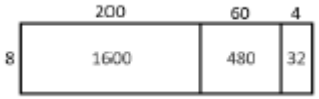
36 x 4 = 144

x	4
30	120
6	24
	144

127 x 6

x	100	20	7
6	600	120	42

264 x 8



	200	60	4
8	1600	480	32

Generalisations

When they know multiplication facts up to x12, do they know what x13 is? (i.e. can they use 4x12 to work out 4x13 and 4x14 and beyond?)

Misconceptions

- When counting in multiples, many pupils believe that you stop after the 10th or 12th multiple they do not see that multiples are infinite.
- Pupils know that multiplication is commutative but they struggle to use it in questions by spotting pairs of numbers in a multiplication string that could be easily combined.
- Pupils sometimes struggle to partition correctly when dividing up an array or using the grid method.
- Finding related facts to those already containing 0s can cause errors e.g. 200 x 5 can be incorrectly stated as 100
- When carrying out more complex multiplications, some pupils will fail to realise that multiplication is commutative and struggle to use the times tables that they know to tackle a related question.
- Pupils may struggle to represent scaling and correspondence problems
- Pupils find it hard to separate how you can 'make' a number by both ADDING and MULTIPLYING - they may lean towards additive relationships more than multiplicative e.g. they may not have understanding of how 24 can be made of 10 and 14 as well as 20 and 4 (and other examples).
- Pupils sometimes make errors when multiplying by 1 or 0.
- When multiplying 3 digits together pupils can forget to use the product of the first calculation for the 2nd part.

Partitioning (using the distributive law)

53 x 6 (50 x 6 = 300 3 x 6 = 18 300 + 18 = 318)

with jottings

86 x 7 (80 x 7 = 560 6 x 7 = 42 560 + 42)

Using doubling and halving

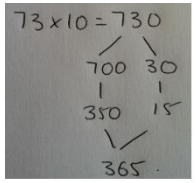
35 x 8 (double, double and double again)

Double 35 is 70, double 70 is 140, double 140 is 280

With jottings

73 x 5 (multiply by 10 and then halve)

73 x 10 = 730 Half of 730 is 365 (Some pupils may need to partition 730 in a different way)



Using factors

15 x 6 = 15 x 3 x 2

15 x 3 = 45 45 x 2 = 90

with jottings

8 x 18 = 8 x 9 x 2

8 x 9 = 72 72 x 2 = 144

Using known facts and place value

24 x 10 = 240 so 24 x 9 = 216

(by subtracting 24 from 240)

800 x 6

8 x 6 = 48 so 800 x 6 = 4800

ABSTRACT

compact method when secure

```
  36
 x  4
  24
 120
 144
```

```
  36
 x  4
 144
  2
```

```
  127
 x  6
  42
 120
 600
 762
```

```
  127
 x  6
 762
 1 4
```

MULTIPLICATION: Y5

Understanding the operation and vocabulary

Understanding the operation

Continue to develop understanding of multiplication to include:

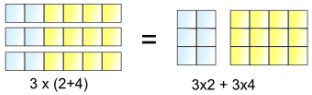
- scaling by simple fractions
- simple rates

Continue to understand the distributive, commutative and associative laws

Recognise that 37 x 6 is the same as 30 x 6 added to 7 x 6 (distributive)

Recognise that 25 x 7 is equal to 7 x 25 (commutative)

recognise that if calculating 18 x 4 x 10 the numbers can be combined in any order (associative)



Continue to understand the inverse relationship between multiplication and division

write the related number sentences

6 x 0.7 = 4.2 0.7 x 6 = 4.2 4.2 = 6 x 0.7 4.2 = 0.7 x 6

4.2 ÷ 0.7 = 6 4.2 ÷ 6 = 0.7 0.7 = 4.2 ÷ 6 6 = 4.2 ÷ 0.7

Continue to solve missing number problems

6 x ☐= 540 ☐= 0.4 x 8 480 = ☐x☐

90 x 40 = 6 x ☐ 2.5 < ☐ x 5 ☐x☐> 700 x 8

begin to use brackets

(10+3) x 7 = ☐ ☐= 10 + (0.4 x 8)

Vocabulary

Understand, read and spell vocabulary related to multiplication correctly

Also see previous years

12 x 5 = 60

factor x factor = product

Number Sense and Fluency

Number facts

Use knowledge of counting in multiples to count in decimal steps (one decimal place)

0.6 1.2 1.8 2.4 ….

8.4 7.7 7.0 6.3 …

Derive doubles of decimals (to one decimal place) using knowledge of place value

Double 0.4 is ☐ 0.7 x 2 = ☐

Double 3.8 is ☐ 5.6 + 5.6 = ☐

Continue to recall multiplication facts for multiplication tables up to 12 × 12 fluently, and derive and use related facts

7 groups of 8 multiply 12 by 9

the product of 80 and 40 0.6 multiplied by 4

Identify multiples and factors, and common factors of two numbers.

list the factors of 96

identify the common factors of 30 and 36 by listing factor pairs

give a number that is a multiple of 3 and a multiple of 2 (and recognise these are multiples of 6)

Establish whether a number up to 100 is prime and recall primes up to 19; find prime factors

explain why 23 is a prime number

list the prime factors of 40

Recognise and use square and cube numbers

What is… 8^2? 3^3?

Mental Methods and Jottings

Multiply numbers mentally drawing upon known facts

use factors to construct equivalence statements

4 x 35 = 2 x 2 x 35

3 x 270 = 3 x 3 x 9 x 10 = 9^2 x 10

Recording

https://www.ncetm.org.uk/resources/52830

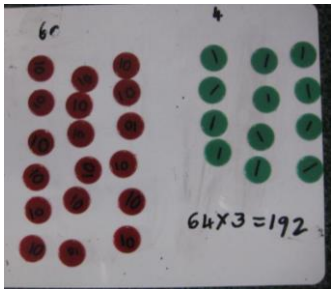
Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers.

Multiply numbers with up to one decimal place by one-digit whole number.

Continue to embed understanding through the use of manipulatives and grid method.

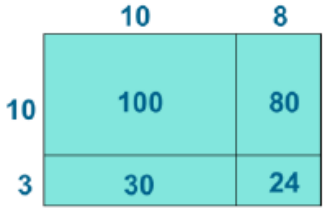
CONCRETE

Pupils can continue to be supported by place value counters at the stage of multiplication.



It is important at this stage that pupils always multiply the ones first and note down their answer followed by the tens which they note below.

PICTORIAL



X	1000	300	40	2
10	10000	3000	400	20
8	8000	2400	320	16

cube, prime, square, common factors, prime factors composite numbers

Generalisation

Relating arrays to an understanding of square numbers and making cubes to show cube numbers.
Understanding that the use of scaling by multiples of 10 can be used to convert between units of measure (e.g. metres to kilometres means to times by 1000)

Misconceptions

- Pupils can struggle to understand why they 'add a zero' when multiplying by the tens digit during column multiplication.
- Pupils may confuse the language of' ten more' and 'ten times greater' mixing addition and multiplication
- Pupils struggle to take account of zeroes already held by numbers when multiplying by 10, 100, 1000.
- Pupils may simply add zeroes when multiplying by 10, 100 or 100, even when they are working with a decimal
- Pupils may find scaling problems challenging if they do not naturally represent these as multiplication. Sometimes they simply interpret scaling as making bigger in general and do not understand the need to keep things in proportion.

begin to multiply tenths, and one-digit whole numbers and tenths by one-digit whole numbers
0.2 x 3 = 0.6

Partitioning (using the distributive law)

1.2 x 7 (1 x 7 = 7 0.2 x 7 = 1.4 7 + 1.4 = 8.4)

With jottings
3.5 x 7 (3 x 7 = 21 0.5 x 7 = 3.5 21 + 3.5 =24.5)

Doubling and halving

3.7 x 4 (Double and double again)
Double 3.7 is 7.4, double 7.4 is 14.8

with jottings
76 x 50 (multiply by 100 and halve)
76 x 100 = 7600 Half of 7600 is 3800

Using factors

25 x 12 = 25 x 2 x 6
25 x 2 = 50 50 x 6 = 300

with jottings
3 x 270 = 3 x 3 x 9 x 10 = 9 x 9 x 10 = 9^2 x 10= 81 x 10 = 810

Using Known facts and place value

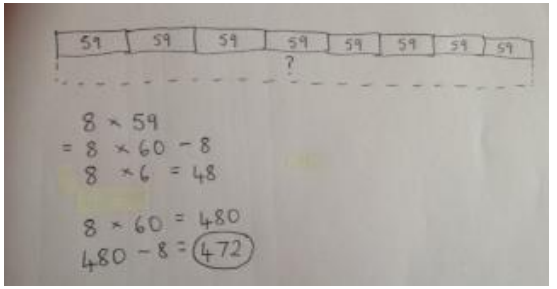
13 x 19
13 x 20 = 260 so 13 x 19 = 247 (subtract 26 from 260)

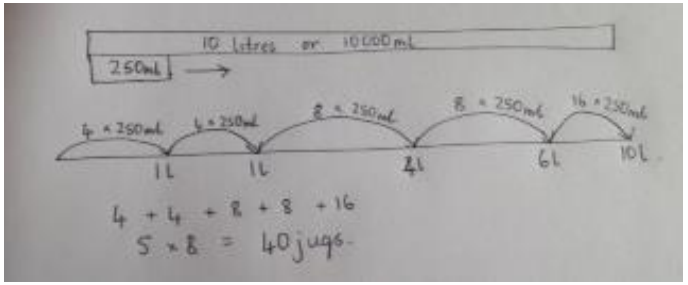
3 x 14
recognise 3 x 14 is equivalent to 6 x 7

Estimating and Checking

Check 86 x 9 by using an equivalent calculation
Multiply by 10 and adjust (860 - 86) or partition (80 x 9 added to 6 x 9)

Bar modelling and number lines can support learners when solving problems with multiplication alongside the formal written methods.





ABSTRACT

Expanded Method

$$\begin{array}{rl} 32 & \\ \times\ 24 & \\ \hline 8 & (4 \times 2) \\ 120 & (4 \times 30) \\ 40 & (20 \times 2) \\ 600 & (20 \times 30) \\ \hline 768 & \end{array}$$

Importance of lining up numbers in columns clearly

Compact method

$$\begin{array}{r} {\scriptstyle 2\ 3\ 1} \\ 1342 \\ \times\ \ 18 \\ \hline 10736 \\ 13420 \\ \hline 24156 \\ {\scriptstyle 1} \end{array}$$

MULTIPLICATION: Y6

Understanding the operation and vocabulary

Understanding the operation

Continue to understand

- Scaling by fractions
  Of the 90 students on a field trip to the zoo, two ninths want to go to see the bears. How many students want to see the bears?
  90 x 2/9 90 ÷9 = 10 10 X 2 = 20
- Rate
  A car travels 60 miles per hour. How far will it travel in 2 and a quarter hours?

Use their knowledge of the order of operations - BODMAS

Understand that when there are no brackets in an expression, do multiplication or division before addition or subtraction

Understand that if the operations are at the same level of priority, work out the example from left to right

Continue to solve missing number problems

6 x ☐ = 0.54 ☐ = 0.06 x 8 4.8 = ☐x☐

0.9 x 4 = 6 x ☐ 0.63 < ☐ x 0.09 ☐x☐ > 0.07 x 8

Explore the order of operations using brackets

Compare 14 ÷ (2 x 5) with (14 ÷ 2) x 5

Compare 2 + (1 x 3) with (2 + 1) x 3

Vocabulary

Understand, read and spell the vocabulary related to multiplication correctly.

Also see previous years

12 x 5 = 60

factor x factor = product

common factor/multiple

Number Sense and Fluency

Number facts

Use knowledge of counting in multiples to count in decimal steps (two decimal places)

0.09 0.18 0.27 0.36 ….

0.48 0.44 0.4 0.36 …

Derive doubles of decimals (to two decimal places) using knowledge of place value

Double 0.47 is ☐ 0.73 x 2 = ☐

Double 3.08 is ☐ 2.59 + 2.59 =☐

Continue to recall multiplication facts for multiplication tables up to 12 × 12 fluently, and derive and use related facts

30 multiplied by 800 multiply 0.12 by 6

the product of 0.08 and 4 0.4 multiplied by 0.5

identify common factors, common multiples and prime numbers

find the highest common factor of 18 and 24

find the lowest common multiple of 6 and 15

identify whether 87 is a prime number

list the prime factors of 84 (84 = 2x42 = 2x2x21 = 2x2x3x7)

use the tests of divisibility to identify factors and multiples

continue to use square and cube numbers

What is…12^2? 6^3?

Mental Methods and Jottings

Perform mental calculations, including with mixed operations, large numbers and decimals

Partitioning (using distributive law)

6.04 x 3 (6 x 3 = 18 0.04 x 3 = 0.12 18 + 0.12 = 18.12)

With jottings

0.43 x 6 (0.4 x 6 = 2.4 0.03 x 6 = 0.18 2.4 + 0.18 = 2.58)

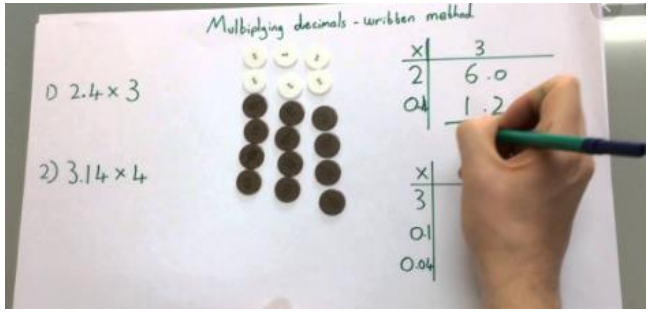
Recording

https://www.ncetm.org.uk/resources/52830

Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication

Multiply numbers with up to two decimal places by one-digit and two-digit whole numbers

CONCRETE



PICTORIAL

15.76 x 3 =

Insert zeroes initially

X	3
10.00	30.00
5.00	15.00
0.70	2.10
0.06	0.18

47.28

Generalisations

Order of operations: brackets first, then multiplication and division (left to right) before addition and subtraction (left to right).

B O D M A S

Understanding the use of multiplication to support conversions between units of measurement.

Misconceptions

- Pupils forget to put in a place holder of 0 when multiplying by a tens digit.
- When substituting, students forget that the order of operations applies – this learning for number is not connected to algebraic situations.
- Pupils find the order of operations rules non-intuitive sometimes because they are used to reading from left to right. They do not therefore always carry out multiplication and division before addition and subtraction when a calculation is presented

Doubling and halving

0.24 x 40 (double & double again, then multiply by 10)
Double 0.24 is 0.48, double 0.48 is 0.96, 0.96 x 10 = 9.6

With jottings
68 x 25 (multiply by 100, then halve & halve again)
68 x 100 = 6800 Half of 6800 is 3400 Half of 3400 is 1700

Using factors

1.5 x 16 = 1.5 x 2 x 8 = 3 x 8 =24
with jottings
32 x 12 = 32 x 3 x 2 x 2 = 96 x 2 x2 = 192 x 2 = 384

Using known facts and Place value

17 x 98
17 x 100 = 1700 so 17 x 98 is 1666 (subtract 17 x 2 from 1700)

15 x 18 = 30 x 9 = 270

Estimating and checking

Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy.
5872 x 54 is approximately 6000 x 50

Continue to use appropriate strategies to check answers
Check 496 x 5 by using an equivalent calculation
Multiply by 10 and halve or use a known fact and adjust
(500 x 5) – (4 x 5)

ABSTRACT

Expanded method

15.76 x 3

```
   1 5 . 7 6
x          3
     0 . 1 8  (3 x 0.06)
     2 . 1 0  (3 x 0.7)
   1 5 . 0 0  (3 x 5)
   3 0 . 0 0  (3 x 10)
```

Compact method

```
   1 5 . 7 6
x          3
  4 7 . 2 8
    1   2   1
```