Calculation Policy

Multiplication

2024

**Multiplication**

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| **EYFS:** |  |  |  |
| **Vocabulary:** | Double  Equal  Groups  Grouping | **Manipulatives & scaffolds:** | Fingers  Five frames  Ten frames  Double sided counters  Numicon  Cubes  Bead strings  Part-whole model |
|  |  |  |  |
| **Small step:** | **Concrete:** | **Pictorial:** | **Abstract:** |
| Doubling | The link between addition and multiplication can be introduced through doubling. Domino and dice fames can be used to do this as well as fingers. Representing the even number pair-wise on 10 frames supports the children to make the link between doubling and halving. They can also be used to illustrate the odd and even patterns of numbers | Children have a go at recording by drawing pictures in groups | 1 + 1 = 2  Double 1 equals 2  Double \_\_\_ is \_\_\_ |
| Doubles to 10 | There are 3 here and 3 there.  Double 3 is 6.  6 is double 3. | There are 5 here and 5 there.  Double 5 is 10.  10 is double 5. | There are \_\_\_here and \_\_\_there.  Double \_\_\_ is \_\_\_  \_\_\_ is double \_\_\_ |
| Grouping | Children will experience equal groups of objects. Children will be encouraged to count the groups, then count how many objects are in a group – 4 and 4 |  | Stem sentence:  There are \_\_ groups  There are \_\_ in each group |
| Play with and build doubles | Children find and make doubles. Progress this to showing children a double and asking them to say what number has been doubled, by finding the inverse. | I can see 4 and 4  Double 4 is 8 | Double \_\_ is \_\_\_  I can see \_\_\_ and \_\_\_  I can see \_\_\_ altogether  This is double \_\_\_ |
| **Y1** |  |  |  |
| **Vocabulary:** | equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by, division, dividing, grouping, groups of | **Manipulatives & scaffolds:** | Ten frames  Double sided counters  Numicon  Cubes  Bead strings  Number line  Bar model |
|  |  |  |  |
| **Small step:** | **Concrete:** | **Pictorial:** | **Abstract:** |
| Counting in multiples – 2s, 5, 10s |  |  | Say/write sequences:  2, 4, 6, 8…  10, 20, 30, 40…  5, 10, 15, 20, 25, 30… |
| Recognise equal groups | A group of pencils in a container  Description automatically generated with medium confidence | There are \_\_\_ equal groups of\_\_\_ | There are \_\_\_ equal groups of\_\_\_ |
| Add equal groups | 10 + 10 + 10 = 30 | 5 + 5 + 5 = 15 | 5 + 5 + 5 = 15 |
| Make arrays | There are \_\_ rows.  There are \_\_ in a row.  There are \_\_ in total.  There are \_\_ columns.  There are \_\_ in a column.  There are \_\_ altogether. | There are \_\_ rows.  There are \_\_ in a row.  There are \_\_ in total.  There are \_\_ columns.  There are \_\_ in a column.  There are \_\_ altogether. | 2 + 2 + 2 = 6  3 + 3 = 6  There are 6 altogether |
| Make doubles |  | Double 12 is \_\_\_ | Double 6 is\_\_ |
| **Y2** |  |  |  |
| **Vocabulary:** | equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by, division, dividing, grouping, groups of, times, repeated addition, row, column, commutative | **Manipulatives & scaffolds:** | Ten frames  Double sided counters  Numicon  Cubes  Bead strings  Number line  Bar model |
|  |  |  |  |
| **Small step:** | **Concrete:** | **Pictorial:** | **Abstract:** |
|  |  |  |  |
| Multiplication symbol | 5 + 5 + 5 + 5 + 5 + 5 =  There are 6 lots of 5  5 x 6 = 30 | A picture containing screenshot, line, font, diagram  Description automatically generated |  |
| Multiplication sentences | 3 + 3 + 3 + 3 = 12  \_\_ lots of 3 = 12  \_\_ multiplied by \_\_ = 12  \_\_ x \_\_ = 12 |  |  |
| Use arrays | 5 x 3 = 15  3 x 5 = 15 |  | \_\_ X \_\_ = 20  \_\_ x \_\_ = 20 |
| **Y3:** |  |  |  |
| **Vocabulary:** | equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by, division, dividing, grouping, groups of, times, repeated addition, row, column, commutative, factor, product | **Manipulatives and scaffolds:** | Base 10/Dienes  Place value charts  Part whole models |
|  |  |  |  |
| **Small step:** | **Concrete:** | **Pictorial:** | **Abstract:** |
| Multiply a 2-digit number by a 1-digit number (no exchange) | 3 tens x 2 = \_\_ tens  2 ones x 2 = \_\_ ones  \_\_ + \_\_ =  32 x 2 = | A picture containing text, font, diagram, cartoon  Description automatically generated |  |
| Multiply a 2-digit number by a 1-digit number (with exchange) | 2 tens X 4 = \_\_ tens  3 ones X 4 = \_\_ ones  24 X 3 = \_\_ + \_\_  24 X 3 = | A picture containing text, font, diagram, cartoon  Description automatically generated |  |
| **Y4** |  |  |  |
| **Vocabulary:** | equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by, division, dividing, grouping, groups of, times, repeated addition, row, column, commutative, factor, product | **Manipulatives & scaffolds:** | Base 10/Dienes  Place value charts  Place value counters  Part whole models |
|  |  |  |  |
| **Small step:** | **Concrete:** | **Pictorial:** | **Abstract:** |
| Informal methods | A picture containing text, screenshot, font, line  Description automatically generated | A picture containing text, diagram, sketch, cartoon  Description automatically generated | 36 X 4 = 160 + 35 = 195 |
| Multiply a 2-digit number by a 1-digit number |  |  |  |
| Multiply a 3-digit number by a 1-digit number | A picture containing text, screenshot, font, number  Description automatically generated |  |  |
| **Y5** |  |  |  |
| **Vocabulary:** | equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by, division, dividing, grouping, groups of, times, repeated addition, row, column, commutative, factor, product | **Manipulatives & scaffolds:** | Base 10/Dienes  Place value charts  Place value counters  Part whole models |
|  |  |  |  |
| **Small step:** | **Concrete:** | **Pictorial:** | **Abstract:** |
| Multiply a 4-digit number by a 1-digit number | A picture containing screenshot, text, diagram, number  Description automatically generated | 2341 x 3 = |  |
| Multiply a 2-digit number by a 2-digit number (area model) | A picture containing text, screenshot, font, rectangle  Description automatically generated |  |  |
| Multiply a 2-digit number by a 2-digit number | A picture containing text, screenshot, font, rectangle  Description automatically generated |  |  |
| Multiply a 3-digit number by a 2-digit number | When children begin to multiply larger numbers, written methods become more efficient; concrete and pictorial methods are less effective and take too much time |  |  |
| Multiply a 4-digit number by a 2-digit number |  |  |  |
| Multiply decimals – missing values |  | A table with numbers and a red circle  Description automatically generated with low confidence |  |
| **Y6** |  |  |  |
| **Vocabulary:** | equal, unequal, group, odd, even, array, multiple, multiplication, multiplied by, division, dividing, grouping, groups of, times, repeated addition, row, column, commutative, factor, product | **Manipulatives & scaffolds:** | Base 10/Dienes  Place value charts  Place value counters  Part whole models |
|  |  |  |  |
| **Small step:** | **Concrete:** | **Pictorial:** | **Abstract:** |
| Multiply up to a 4-digit number by a 2-digit number |  | A picture containing text, diagram, line, number  Description automatically generated |  |
| Multiply decimals by integers | A picture containing screenshot, font, number, line  Description automatically generated | 3.24 X 3 = |  |