

Multiplication & Division

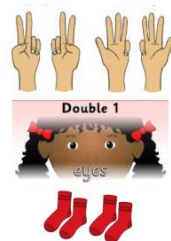
Pre-School



Children have the opportunity to physically cut objects, food or shapes in half.



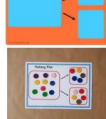
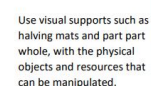
Counting and other maths resources for children to make 2 equal groups.



Physical and real life examples that encourage children to see concept of doubling as adding two equal groups.



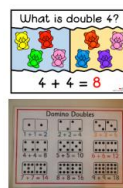
Counting and other maths resources for children to share into two equal groups.



Use visual supports such as halving mats and part whole, with the physical objects and resources that can be manipulated.



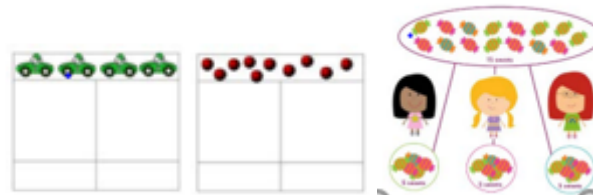
EYFS



1+1=	7+7=
2+2=	8+8=
3+3=	9+9=
4+4=	10+10=
5+5=	11+11=
6+6=	12+12=

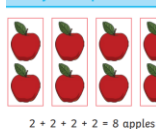
Pictures and icons that encourage children to see concept of doubling as adding two equal groups.

Addition calculations to model adding two equal groups.



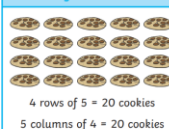
Year 1

Add Equal Groups



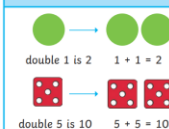
$2 + 2 + 2 + 2 = 8$ apples

Make Arrays



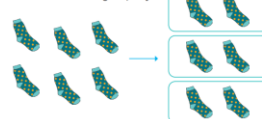
4 rows of 5 = 20 cookies
5 columns of 4 = 20 cookies

Make Doubles



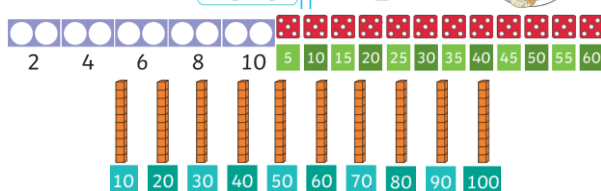
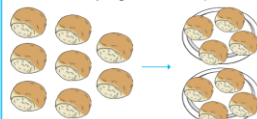
Group Equally

Put the socks into groups of 2.



Share Equally

Share the buns equally between the 2 plates.



Year 2

Recognise Equal Groups



5 equal groups with 3 in each group



2 equal groups with 4 in each group

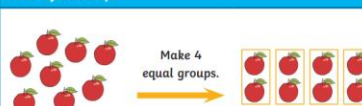


4 equal groups of 10



6 equal amounts of 5 pence

Make Equal Groups



Make 4 equal groups.



$2 + 2 + 2 + 2 = 8$ apples

The Multiplication Symbol



Year 3

Written Multiplication Methods - No Regrouping



Written Multiplication Methods - With Regrouping



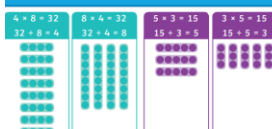
Written Division Methods - No Regrouping



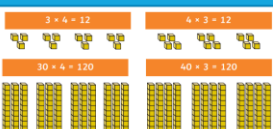
Written Division Methods - With Regrouping



Write and Calculate Mathematical Statements



Related Calculations

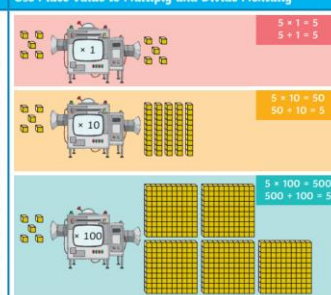


Year 4

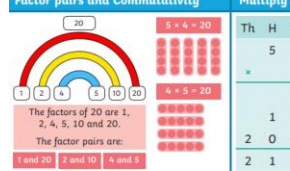
Multiplication and Division Facts

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8 <td>16</td> <td>24</td> <td>32</td> <td>40</td> <td>48</td> <td>56</td> <td>64</td> <td>72</td> <td>80</td> <td>88</td> <td>96</td>	16	24	32	40	48	56	64	72	80	88	96
9	9 <td>18</td> <td>27</td> <td>36</td> <td>45</td> <td>54</td> <td>63</td> <td>72</td> <td>81</td> <td>90</td> <td>99</td> <td>108</td>	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

Use Place Value to Multiply and Divide Mentally



Factor pairs and Commutativity



Multiply Using Formal Written Methods



Year 5

Factors
A factor is a number that divides into another number exactly, without leaving a remainder.

A common factor is a factor of 2 or more numbers.

The factors of 20 are 1, 2, 4, 5, 10 and 20.
The factor pairs are:
1 and 20
2 and 10
4 and 5

Short Multiplication
 $2543 \times 7 = 17801$

Short Division
 $15 \div 4 = 3$ remainder 3
Remember to regroup any remainders and move them into the next column.

Prime Numbers
A grid of numbers from 1 to 100, with prime numbers highlighted in purple.

Year 6

Multiply up to 4-digit by 2-digit
 $5382 \times 5 = 26910$
 $5382 \times 70 = 376740$

Long Division
Method 1 - using multiples
 $15 \overline{) 300} \quad (15 \times 20)$
 $15 \overline{) 87} \quad (15 \times 5)$

Division Using Factors
The factor pairs of 15 are 3 and 5.
 $4680 \div 15 = 4680 \div 3 \div 5$
 $4680 \div 3 = 1560$
 $1560 \div 5 = 312$
So $4680 \div 15 = 312$

Short Division
Start from the left.
 $12 \overline{) 5248} \text{ r6}$

Common Factors
Factors of 48: 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
Factors of 30: 1, 2, 3, 5, 6, 10, 15, 30
Common factors: 1, 2, 3, 6

Common Multiples
Multiples of 3: 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39, 42
Multiples of 7: 7, 14, 21, 28, 35, 42
Common multiples: 21, 42...

Ideas for home

Pre-School - Cut food into 2 halves, share sweets/toys equally. Play games on your fingers - show me 2 fingers on one hand then show me 2 fingers on the other hand. Now we have double 2 which is $2+2=4$.

EYFS - Share out toys/sweets etc. equally between family members. Use butterflies, ladybirds or mirrors to double objects. $3+3=6$. Play domino's and look at the double numbers.

Year 1 - Practise counting in multiples of 2, 5 and 10. Double and half objects like toys or sweets.

Year 2 - Practise counting in multiples of 2, 3, 5 and 10. Sharing toys and sweets into groups of equal amounts.

Year 3 - Count in multiples of 3, 4 and 8. Solve problems using $\times$ and $\div$, for example, If you have saved £32 and I have saved three times as much as you, how much money have I saved?, If you are 5 years old and I am 6 times older than you, how old am I?

Year 4 - Practise counting in steps of all numbers up to 12×12 . Solve real life problems, e.g. if you are in the supermarket and you buy three packets of multipack crisps which have 6 packets in each, you could ask your child how many packets of crisps you will have in total. Discuss which calculation they used.

Year 5/6 - Use the times tables up to 12×12 to solve real life problems e.g. Eggs come in boxes of 6. How many boxes will I need if I want 96 eggs? How much will it cost to fill the car with 50 litres of petrol?

This site gives some great suggestions for home:

<https://home.oxfordowl.co.uk/maths/maths-at-home/>