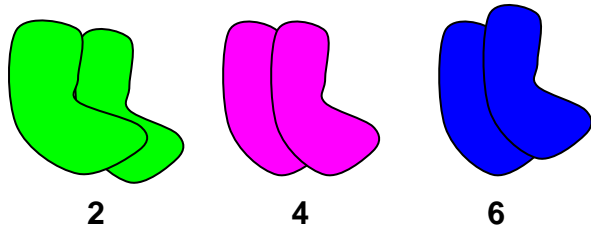
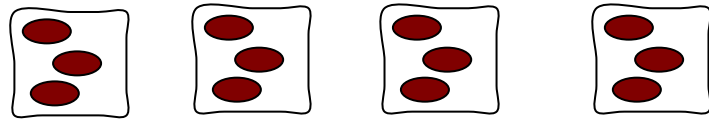


Counting in multiples



2 4 6

3 pairs of socks, there are 6 socks altogether. ($2 + 2 + 2$)



3 6 9 12

3 cookies in each bag, there are 12 cookies altogether. ($3 + 3 + 3 + 3$)



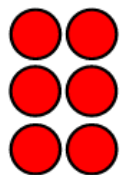
10 20 30 40 50

Ben has 5 10p coins, he has 50p altogether. ($10 + 10 + 10 + 10 + 10$)

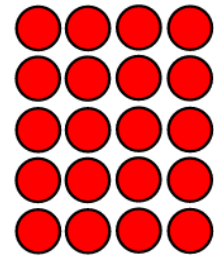
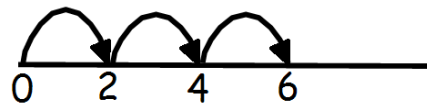
Arrays

Arrays are useful models for multiplication that can be used in a variety of ways. An array is formed by arranging a set of objects into rows and columns. Each column must contain the same number of objects as the other columns, and each row must have the same number as the other rows.

What number sentences could we write about this array?



3 lots of 2
3 groups of 2
 $2 + 2 + 2 = 6$
 $3 \times 2 = 6$
2 multiplied by 3

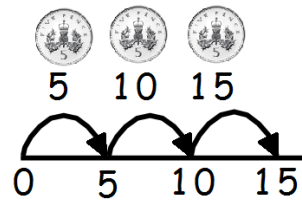


What number sentences could we write about this array?

4 lots of 5
4 groups of 5
 $5 + 5 + 5 + 5 = 20$
 $4 \times 5 = 20$
5 multiplied by 4

Number lines

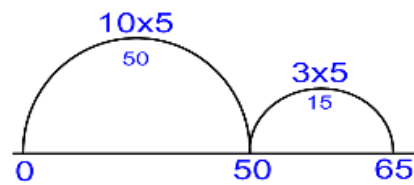
I have 3 5p coins how much money do I have?



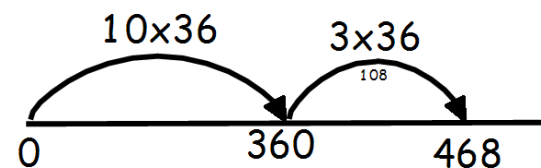
$5p + 5p + 5p = 15p$

$5p \times 3 = 15p$ or $3 \times 5p = 15p$

$13 \times 5 = 65$

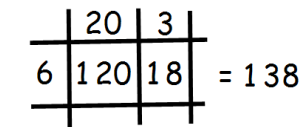


$36 \times 13 = 468$

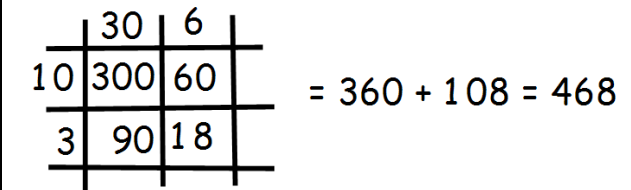


The Grid method

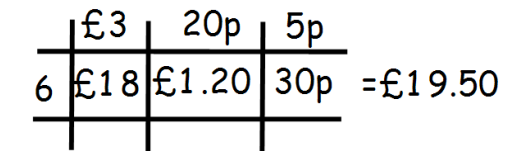
$6 \times 23 = 138$



$36 \times 13 = 468$



$\pounds 3.25 \times 6 = \pounds 19.50$



Formal Multiplication Method

$$\begin{array}{r} 24 \\ \times 6 \\ \hline 120 \\ 24 \\ \hline 144 \end{array}$$

24×6 becomes

$$\begin{array}{r} 24 \\ \times 6 \\ \hline 144 \\ 2 \end{array}$$

Answer: 144

342×7 becomes

$$\begin{array}{r} 342 \\ \times 7 \\ \hline 2394 \\ 21 \end{array}$$

Answer: 2394