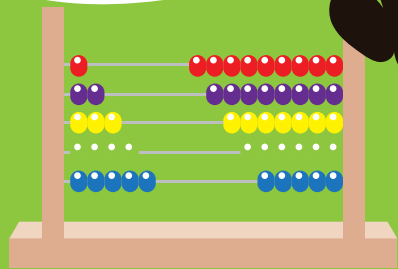
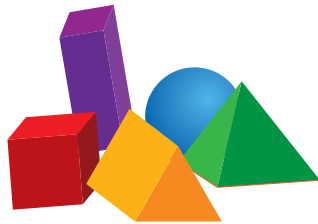
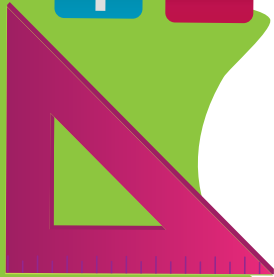


# Mental Maths MULTIPLICATION



# Zero Facts ( $\times 0$ )

Any number multiplied by 0 is 0 because you have no groups.

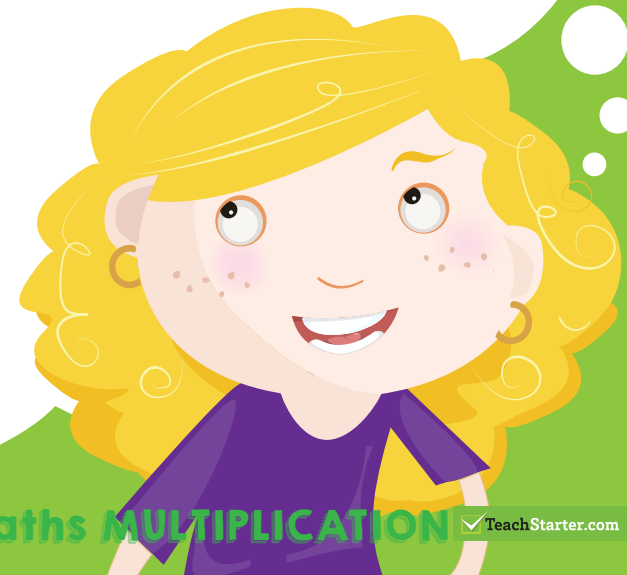
$$1 \times 0 = 0$$

**1** multiplied by **0** is still **0**

$$2 \times 0 = 0$$

$$3 \times 0 = 0$$

$$4 \times 0 = 0$$



# Multiply by 1 ( $\times 1$ )

Any number multiplied by 1 equals that number because it is just 1 group.

$$1 \times 1 = 1$$

**1** multiplied by **1** group is **1** group

$$2 \times 1 = 2$$

$$3 \times 1 = 3$$

$$4 \times 1 = 4$$



# Use Doubles (x2)

Any number multiplied by 2 is simply doubled.

$$\begin{array}{l} 2 \times 2 = 4 = 2 + 2 \\ 3 \times 2 = 6 = 3 + 3 \\ 4 \times 2 = 8 = 4 + 4 \\ 5 \times 2 = 10 = 5 + 5 \end{array}$$



# Use a Known Fact to Build Up ( $\times 3$ )

Any number multiplied by 3 is like multiplying by 2, then adding 1 more group.

$$3 \times 8 = ?$$

Think  $2 \times 8 = 16$ ,  
then add another 8

$$3 \times 8 = 24$$



# Use a Known Fact to Build Up ( $\times 6$ )

Any number multiplied by 6 is like multiplying by 5, then adding 1 more group.

$$6 \times 8 = ?$$

Think  $5 \times 8 = 40$ ,  
then add another 8

$$6 \times 8 = 48$$





# Double and Half ( $\times 5$ )

Any number that is multiplied by 5 is first multiplied by 10 and then halved.

$$8 \times 5 = ?$$

First multiply by 10:

$$8 \times 10 = 80$$

Then halve:

$$80 \div 2 = 40$$

$$8 \times 5 = 40$$



# Use Double-Doubles ( $\times 4$ )

Any number that is multiplied by 4 is doubled and then doubled again.

$$4 \times 5 = ?$$

Since  $4 \times 5$  is like  $5 + 5 + 5 + 5$ ,  
you can double the 5s to get  $10 + 10$ ,  
then double the 10s to get 20.

$$4 \times 5 = 20$$





# Use Double-Double-Doubles ( $\times 8$ )

Any number that is multiplied by 8 is doubled, doubled, and doubled again.

$$8 \times 4 = ?$$

Since  $8 \times 4$  is like  $4 + 4 + 4 + 4 + 4 + 4 + 4 + 4$ ,  
you can double the 4s to get  $8 + 8 + 8 + 8$ ,  
then double the 8s to get  $16 + 16$ ,  
then double the 16s to get 32

$$8 \times 4 = 32$$



# Use a Known Fact to Build Down ( $\times 9$ )

Multiplying by 9 is like multiplying by 10  
and then taking one group away.

$$6 \times 9 = ?$$

Think  $6 \times 10 = 60$ ,  
then minus 1 set of 6

$$60 - 6 = 54$$

$$6 \times 9 = 54$$

