

## Using **Make a Ten** to Demonstrate the Adding Algorithm

The standard algorithm for adding is a short cut to calculate quick sums.

Here is a simple demonstration of how to use **Make a Ten** to demonstrate what is really happening in the algorithm. You can project the **Make a Ten** demo on a screen and do the algorithm on a board nearby.

### **Questions for the class.**



- How does the **Make a Ten** demonstration relate to the Algorithm?
- What are the advantages of seeing the 100's, 10's and 1's?
- Why does the standard algorithm leave out the extra digits?
- What are some examples where the algorithm might NOT be quicker? (see example at the end)

**Enter a triple digit sum in the Adding Screen. Pick a number that that will require some "carrying."**

687 + 284 =


687      284

### Stack the numbers



   $687 + 284 =$

687

284




### Pull part into 100s, 10s, and 1s



   $687 + 284 =$

600      80      7

200      80      4




Add the ones column



   $687 + 284 =$

|     |    |
|-----|----|
| 600 | 80 |
| 200 | 80 |

10




Carry the ten

   $687 + 284 =$

|     |    |    |
|-----|----|----|
| 600 | 80 | 10 |
| 200 | 80 |    |

1



### Add the tens column

687 + 284 =

600

200

170

1

The image shows a handwritten addition problem on a light green background. The equation is 687 + 284 =. Below the equation, there are four pieces of white paper with black text. The first piece is '600', the second is '200', the third is '170', and the fourth is '1'. There are two small icons of a pencil and a paper in the top left corner. A small orange circular icon with a white 'G' is in the bottom right corner.

### Carry the 100

687 + 284 =

600

200



100

70

1


The image shows a handwritten addition problem on a light green background. The equation is 687 + 284 =. Below the equation, there are five pieces of white paper with black text. The first piece is '600', the second is '200', the third is '100', the fourth is '70', and the fifth is '1'. There are two small icons of a pencil and a paper in the top left corner. A small orange circular icon with a white 'G' is in the bottom right corner.

Add the 100s column



 

$687 + 284 =$


900 70 1



Reassemble the number and see the solution

$687 + 284 =$  971



Now let's try a different example, it seems very similar...

$398 + 257 =$

398    257

$398 + 257 =$  300    90    8

200    50    7

$398 + 257 =$  300    90

200    50

15

$398 + 257 =$  300

200

150    5

$398 + 257 =$

600    50    5

$398 + 257 =$  655

But can we see a short cut if we think about tens and hundreds?

$398 + 257 =$

398    255    2

$398 + 257 =$

398    255    2

What was the clue that there might be a short cut?