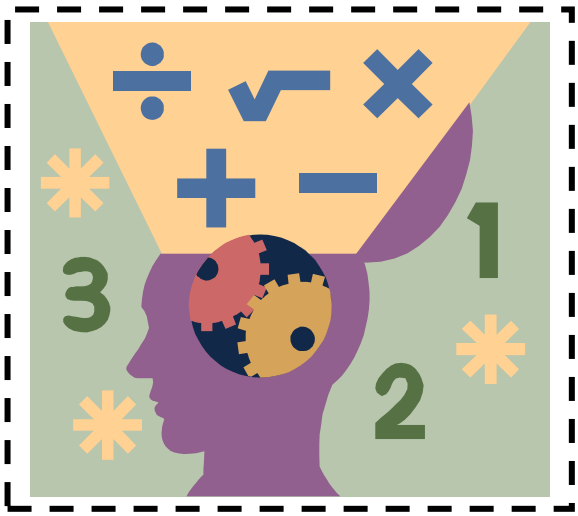
Calculation

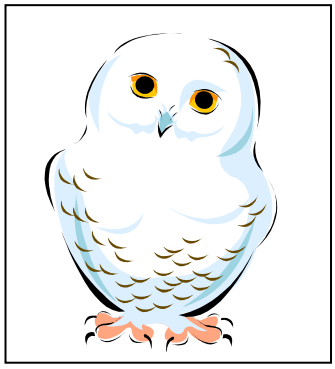
I do it my way!

This booklet belongs to ……..……



Adding What is the best way to add?

This way is easy. You partition the numbers and then add hundreds, tens and ones separately before adding them all together. It works for large numbers and decimals too.



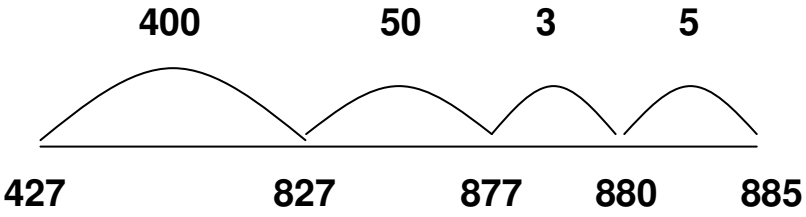
636 + 145 = 600 + 100 + 30 + 40 + 6 + 5
= 700 + 70 + 11
= 781

24.5 + 87.7 = 20 + 80 + 4 + 7 + 0.5 + 0.7
= 100 + 11 + 1.2
= 112.2

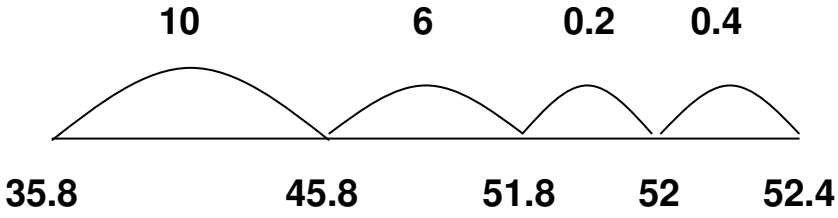
Try partitioning here

Number lines are also easy to use. You can jump in any multiples of 1, 10, 100 or more, and it also works for decimals.

427 + 458 = 785



16.6 + 35.8 = 53.4



Try a number line

If you add vertically you have to be extremely careful. It's easier to make mistakes than with some other methods. You have to line up your numbers so that ones numbers are above each other, tens are above each other and so on. Decimal points must be above each other too.

Only do this if you are already really good with partitioning and number lines. This method isn't any better than those.

	3	6	.	9
+	4	9	.	3
	7	0	.	0
	1	5	.	0
		1	.	2
	8	6	.	2

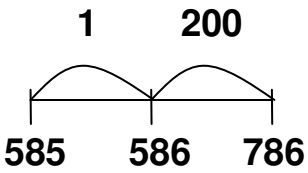
The calculation, 36.9 + 49.3, shows the best way to do vertical addition. Start with the largest amounts, 30 + 40, and write 70 in line with the 30 and 40. Then do 6 + 9 to make 15 and make sure you line up the 15 under the 70. Then do 0.9 + 0.3and write the total, 1.2, so that the 1 is under the 6 and 9, and 0.2 is under the 0.9 and 0.3. Then add together 70 + 15 + 1.2 to make 86.2

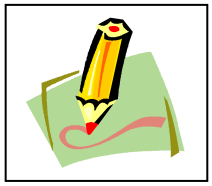
My way to add

Subtracting What is the best way to subtract?

Subtraction is either 'take-away', which means counting backwards, or counting on. We use counting on much more often then counting back.
You only use counting back when the numbers to take away are small or very easy.

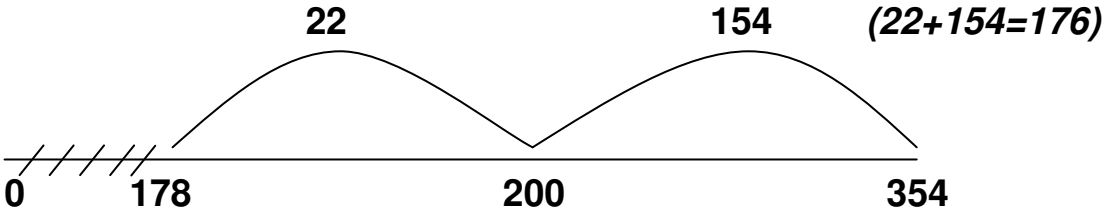
786 – 201= 585



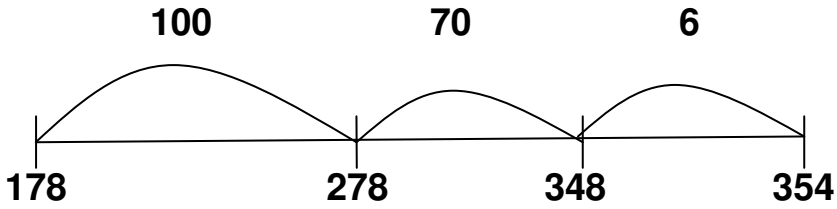


Counting on works for all subtraction calculations.

354 – 178 =
Put 0 and 354 on your number line. Now put in the 178 and cross out 0 to 188, because that is what has been subtracted. Count on. You could count on 22 to get to 200, then 154 to get to 354. That's 176 altogether.



Or you could do the same but count on in steps of 100, in 10s and in 1s.



354 – 178 = 176

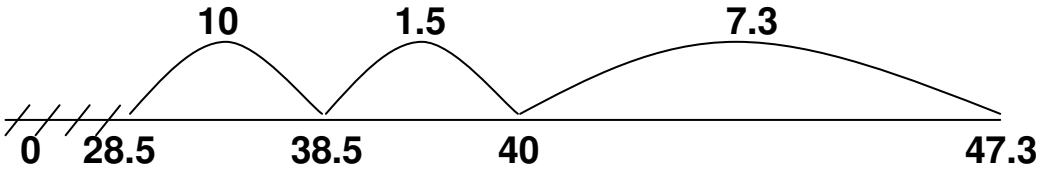
Try one here

Counting on works for money and decimals as well.

£33.42 – £13.80

£33.42 - £13.80 = 20p + £6 + £13.42 = £19.62

47.3 – 28.5



47.3 – 28.5 = 10 + 7.3 + 1.5 = 18.8

My way to subtract

Multiplying What is the best way to do multiplication?

Always use a grid when you multiply.

24 X 7

X	10	10	4
7	70	70	28

or

X	20	4
7	140	28

24x7 = 140 + 28 = 168

Partition the 24 into 20 and 4, or 10, 10 and 4.
Put them in your grid so you can multiply
20 by 7 and 4 by 7.
Add together the 140 and 28 to make the
product of 168.

To multiply* 66x34 *you need boxes for the 60 and 6, 30 and 4.

If 30 x 60 is difficult do 3 x 6 = 18, 30 x 6 = 180, 30 x 60 = 1800

X	60	6	
30	1800	180	
4	240	24	
	= 2040	= 204	= 2244

You can add vertically…

X	60	6	
30	1800	180	= 1980
4	240	24	= 264
			= 2244

or horizontally to get the total.

Use the grid to multiply decimals as well.

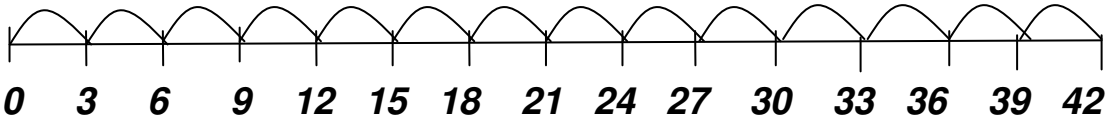
3.5 x 9 = 24.5

X	3	0.5
9	27	4.5

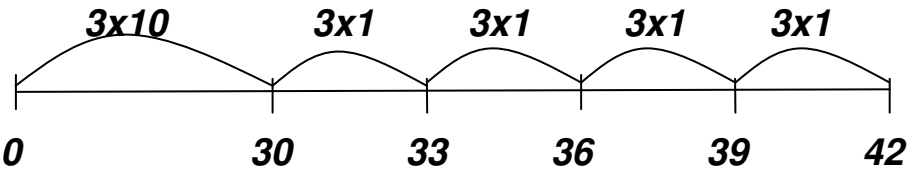
My way to multiply

Dividing What is the best way to divide?

To do 42 ÷ 3 I can count on in 3s.



It's easier and quicker to jump 3 x 10 in one jump.



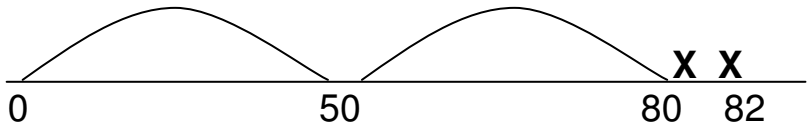
42 ÷ 3 = 14

82 ÷ 5 means: 'How many 5s are there in 82?'
Count on in 5s.
Ten 5s are 50 and six 5s are 30. On my number line that takes me to 80.
I only have 2 more, so I can't do a jump of 5.
I have 2 left, and I marked them with a X, not a jump.
That means I have done 16 jumps of 5, with 2 left.
I can call 2 left 'remainder 2'.

82 ÷ 5 =

(10 lots of 5) *(6 lots of 5)* *(2 left – not enough to make a group of 5)*

5x**10**=50 6x**4**=30

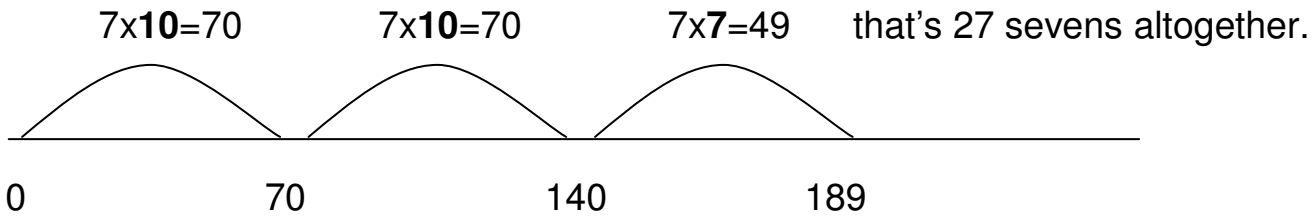


82 ÷ 5 = 16 r 2

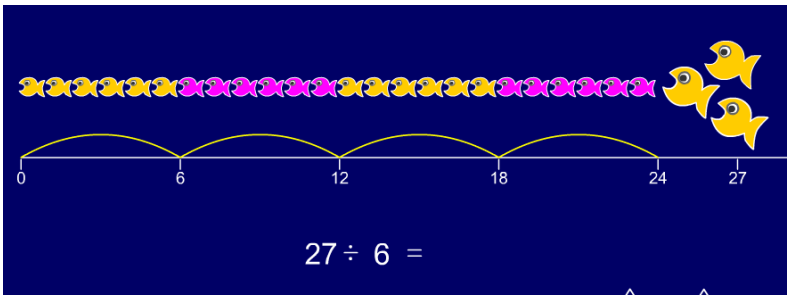
Try one here

This works for larger numbers too.

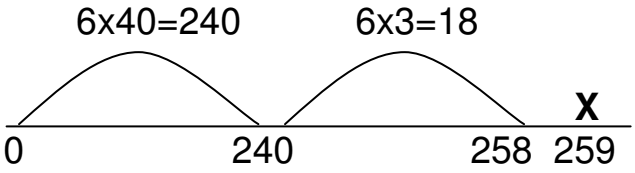
189 ÷ 7 =



189 ÷ 7 =27



To do* 259 ÷ 6 *it helps to use an* 'I know' *box.



259 ÷ 6 = 43r1

I Know

6 x 10 = 60

6 x 20 = 120

6 x 30 = 180

6 x 40 = 240

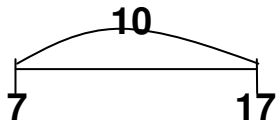
6 x 50 = 300 **too many**

so I will use 6 x 40

Try one here

My way to divide

Words for calculating

add sum total plus	All these words mean add The sum of 64 and 20 is 84 The total of 2.3 and 1.4 is 3.7 1001 plus 2002 is 3003
subtract minus	These words both mean subtract, but you might find out the answer by counting on, not just by counting back. We do this with money all the time. 140 subtract 90 is 50 48 minus 18 is 30
difference	The difference between 17 and 7 is 10. You can also say the difference between 7 and 17 is 10. Difference is the jump between them, so it could be seen as addition or subtraction  When you use a calculator you find the difference by subtracting. You would do 17 – 7, not 7 – 17, of course - though this would be much too easy to do on a calculator!
multiply product times	10 multiplied by 4 means to have 10 four times. The product of 10 and 4 is 40. xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx xxxxxxxxxx
divide quotient remainder	Division is sharing or grouping. I can share 36 pencils between 4 pupils and they will have 9 each. I can group 36 pencils into 12s, and I will make 3 groups of 12. Sometimes I make equal groups and have some left. This is a remainder.
equation	An equation contains an equals sign = The number statement on either side is equal 82 + 20 = 102 102 = 82 + 20 82 + 20 = 100 + 2 82 + 20 = 51 x 2
estimate	To estimate means to find and answer that is close enough. I estimate that 458 + 469 is between 800 (400+400) and 1000 (500+500)