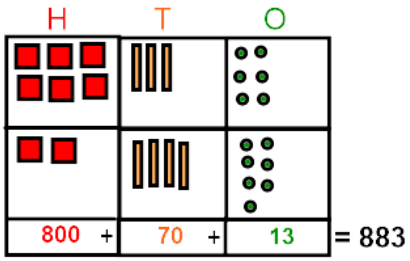
Lesson 1 - Add numbers with three digits, using expanded column method.

EXPANDED COLUMN ADDTION	PICTORIAL REPRESENTATION
636 + 247 = 883 **H** **T** **O** 600 + 30 + 6 + 200 + 40 + 7 800 + 70 + 13 = 883	

Important information

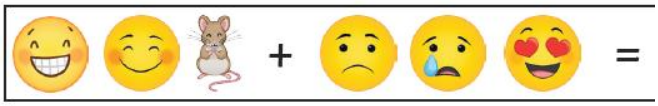
Friendly addition calculations do not cross the 10s or 100s boundary.
For example; 32**6** + 54**3** or 41**7** + 37**1**

Unfriendly addition calculations cross the 10s or 100s boundary.
For example; 25**7** + 43**9** (crosses the 10s boundary) or 6**8**2 + 2**6**4 (crosses the 100s boundary)

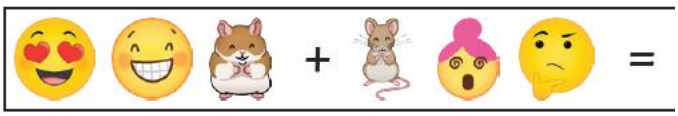
1) Sort the following calculations into friendly and unfriendly.
248 + 536 = 214 + 352 = 473 + 315 = 681 + 274 =

Friendly	Unfriendly

2) Solve these Emoji code-breaking calculations in your book, **using the expanded column method**.

a) 

b)

c) 

3) The table shows the number of boys and girls in 2 schools.

	Boys	Girls
School A	224	305
School B	400	

a) The total number of children in each school is equal.

Without working it out, which school has the most girls?

_____

How do you know?

b) How many girls are there in school B?

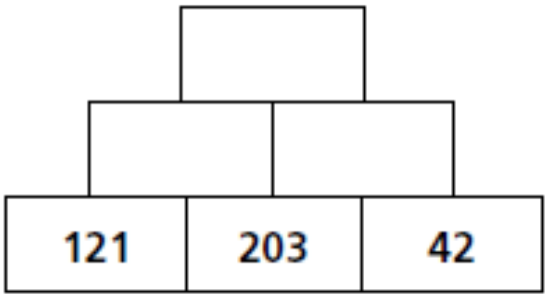
4) Jane says 276 + 145 equals 411. Is she correct? Explain how you know.

$$\begin{array}{r} 200 + 70 + 6 \\ +\ 100 + 40 + 5 \\ \hline 300 + 100 + 11 = 411 \end{array}$$

5) Here is an addition pyramid.

Add the two numbers below to make the number above.

a) Complete the addition pyramid.



6) Which question is harder: 340 + 130 or 67 + 76? Explain your opinion.

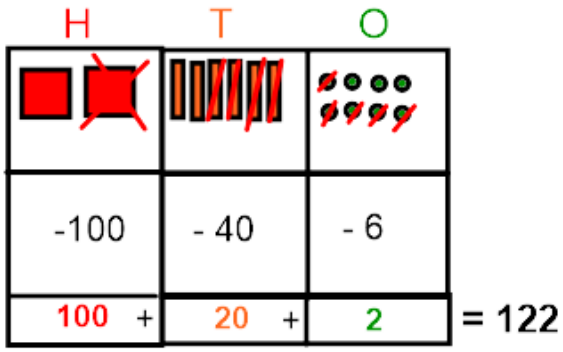
Lesson 2 – Subtract friendly numbers with three digits, using expanded column method.

EXPANDED COLUMN SUBTRACTION

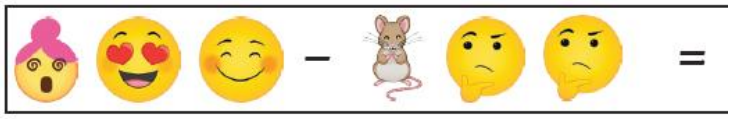
268 – 146 = 122

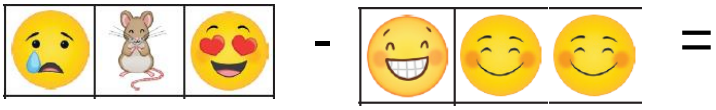
H	T	O
200	+ 60	+ 8
- 100	+ 40	+ 6
100	+ 20	+ 2 = 122

PICTORIAL REPRESENTATION



1) Solve these Emoji code-breaking calculations in your book, **using the expanded column method**.

a) 

b) 

c)

2) There are 849 people at a concert.

There are 625 adults at the concert.

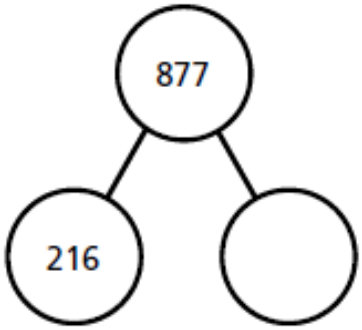
a) How many children are at the concert?

b) How many more adults than children are at the concert?

3) A TV cost £125 less than this computer.
How much does the TV cost?

4) Complete the part-whole models.

a)



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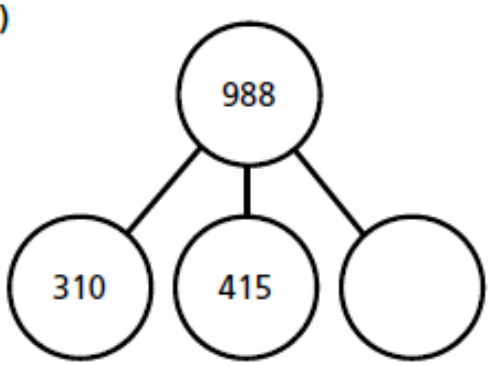


5) Dan saved £547 in his bank account. He spent £215. Does the subtraction below show how much he has left? Explain your answer.

547 – 215 = 333

6) Create your own word problem for the calculation below then solve it.

£826 - £325 =

Lesson 3 – Subtract unfriendly numbers with three digits, using expanded column method.

EXPANDED COLUMN SUBTRACTION

Unfriendly ones

381 – 157

	H	T	O
		70	1
	300	~~80~~	1
-	100	50	7
	200	+ 20	+ 4 = 224

Unfriendly tens

345 – 163

	H	T	O
	200	1	
	~~300~~	40	5
-	100	60	3
	100	+ 80 +	2 = 182

Important information

Friendly subtraction calculations do not cross the 10s or 100s boundary.
For example; 576 - 523 or 687 + 351

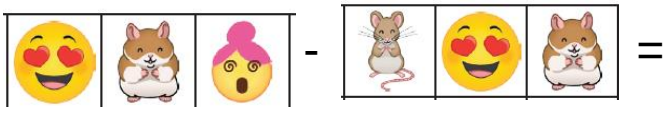
Unfriendly subtraction calculations cross the 10s or 100s boundary.
For example; 75**7** + 43**9** (not enough ones) or 6**3**2 - 2**6**4 (not enough tens)
When it is unfriendly, you will need to exchange the 10s or the 100s.

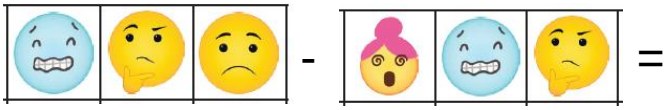
1) Sort the following calculations into friendly and unfriendly.
748 - 536 = 514 - 352 = 873 + 315 = 689 - 274 =

Friendly	Unfriendly

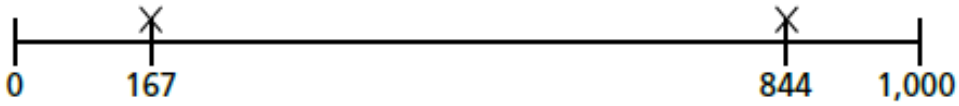
2) Solve these unfriendly Emoji code-breaking calculations in your book, **using the expanded column method**.

a) =

b)  =

c)  =

3) Two points are marked on a number line.



What is the difference between the two points?

4) Find the missing numbers.

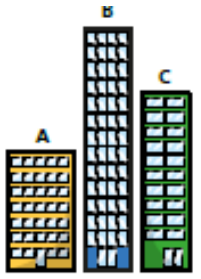
a) 179 + ☐ = 595

b) 718 – ☐ = 348

5) Here are 3 buildings.

- A is 150 m tall
- B is 317 m taller than A
- C is 223 m shorter than B

How much taller is C than A?



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6) Create your own word problem for the calculation below then solve it.

£626 - £345

Lesson 4 - Add and subtract numbers with three digits.

Important information

Friendly calculations do not cross the 10s or 100s boundary.
For example; 326 + 543 or 457 - 321

Unfriendly calculations cross the 10s or 100s boundary.
For example; 257 + 439 (crosses the 10s boundary) or 682 + 264 (crosses the 100s boundary)
For example; 652 - 237 (involves exchanging the 10s) or 732 - 361 (involves exchanging the 100s)

1) Sort the following calculations into friendly and unfriendly.

318 + 267 =	654 - 138 =	283 + 362 =	674 - 254 =
728 - 361 =	234 + 365 =	837 - 412 =	641 - 430 =

Friendly	Unfriendly

Don't forget to RUCSAC

2) Ben's dad drives 267 miles to work and then he drives 267 miles home again. How many miles does he drive altogether?

3) A school has a target of raising £475 for a local charity. So far, they have raised £147. How much more is there to raise to reach the target?

4) A school prints 482 letters for parents. 159 letters are given out on Wednesday and 178 are given out on Thursday. Hany many letters are left to give out on Friday?

5) Write your own addition worded problem for this bar model then solve it.

382	453

6) Write your own subtraction worded problem for this bar model then solve it.

423	
179	

Challenge: Can you check each of your calculations using the **inverse operation**?