Deepdale Community Primary School - Maths Knowledge Organiser

Topic: Addition and Subtraction | Year 5

Key Vocabulary:

operation

add

addition

total

plus

more

increase

altogether

difference between

subtract

less

minus

decrease

take away

how many are left?

exchange

estimate

Inverse

tens boundary

hundreds boundary

Key learning: choose an efficient method

In Year 5 we encourage you to look closely at the numbers in the calculation and make a decision about which method you will use:

**Always start at number 1 and only use a written method if you can't work it out mentally**

1. Do I know the answer? (can I just say it automatically – rapid recall)
2. Can I work it out in my head? (mental method)
3. Do I need to use a jotting? (mental method)
4. Do I need a written method? (column method)

MENTAL METHOD
Key learning: find differences by counting up through the next multiple of 1, 10, 100, or 1000

For example, in the calculation 5003—1960 it is more efficient to count up from 1960 to 5003 in three steps (+40, + 3000, +3) than use a formal written method

5003 – 1960 = 3043
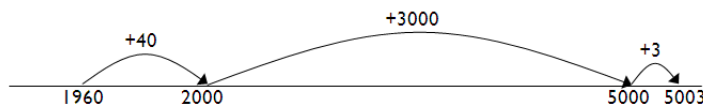
$$\begin{array}{r} {}^{4}{\cancel{5}}{}^{9}{\cancel{0}}{}^{1}03 \\ -\ 1\ 9\ 6\ 0 \\ \hline 3\ 0\ 4\ 3 \end{array}$$

This method requires a lot of exchanging, therefore more opportunities for errors

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MENTAL METHOD

Key learning: add and subtract increasingly large numbers mentally

We can use this method when the numbers involved are multiples of 1000s, 100s, 10s and 1s:

4300 + 1400= **5700**
Partition 1400 into 1000 and 400
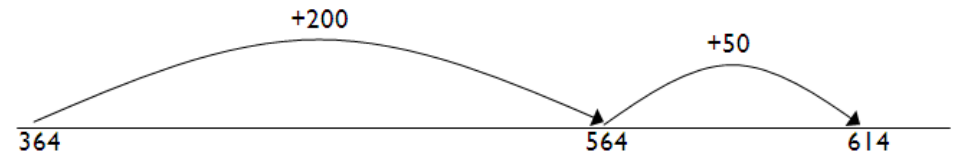4300 + 1000= 5300
5300 + 400 = 5700

3600 - 1200= **2400**
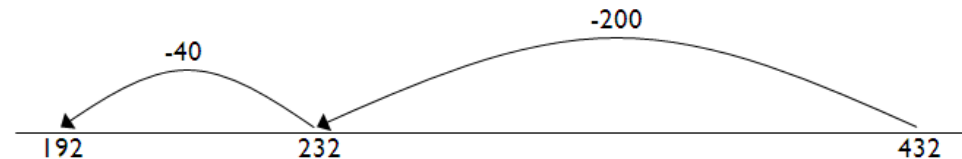Partition 1200 into 1000 and 200
3600 - 1000= 2600
2600 - 200 = 2400

364 + 250 = 614 (shown using a numberline)

364 + 250 = 614 (shown using number sentences)   364 + 200 = 564
564 + 50 = 614

432 – 240 = 192 (shown using a numberline)

432 – 240 = 192 (shown using number sentences)   432 – 200 = 232
232 – 40 = 192

Key learning: **add** whole numbers with more than 4-digit numbers

Column addition:
Starting from the right, add each column in turn. Carry the digits to the next column if the total adds to more than 9:

	TTH	TH,	H	T	O
	3	4,	4	5	3 +
		4,	5	2	7
					0

Carry the 1 to the next column

Include the 1 in your next addition

Complete the calculation

Key learning: **subtract** whole numbers with more than 4-digit numbers

Column subtraction:
Starting from the right, subtract each column in turn:

3 subtract 7 would give us a negative number, so we regroup
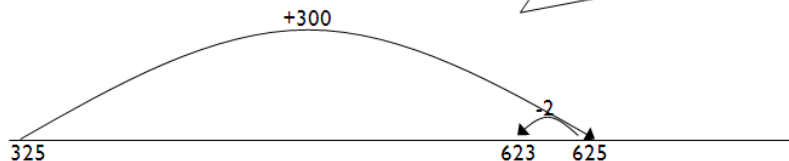
Exchange one lot of 10, so we know have 13-7

Key learning: **add** a multiple of 10 and adjust

This method should be used when adding numbers CLOSE to a multiple of 10.

Example: 325 + 298 = 623 298 is close to 300 so it is more efficient to add 300 then subtract 2

325 + 298 = 623 (shown using a numberline)

We've added three hundred which is two too many, so we need to take two away.

+300

-2

325   623 625

Key learning: **subtract** a multiple of 10 and adjust

This method should be used when subtracting numbers CLOSE to a multiple of 10.

Example: 876 - 397= 479 397 is close to 300 so it is more efficient to add 300 then subtract 2

876 - 397 = 479 (shown using a numberline)

We've subtracted four hundred which is three too many, so we need to add three back.

-400

+3

476   479   876