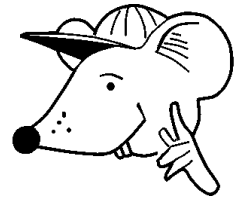


MATHEMATICS



N.S. Yr. 5 P.51

**Develop and refine written methods
for subtraction, building on mental methods**

Equipment

Paper, pencil, ruler.
Squared paper useful.

MathSphere

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Concepts

In Year 5 the children can build upon the different ways that the Numeracy Strategy suggests for subtraction problems on paper. Each of these ways should build on their knowledge of mental strategies. All are equally good, but some are more 'traditional' than others and are more likely to be familiar processes to adults.

A key to all three methods is that the sum is set out in columns and that units should line up under units, tens under tens and so on.

In Year 5 children will meet subtraction problems where the tens and hundreds boundary has to be crossed.

Method 1: counting up

This is called "counting up" and is a method very similar to mental subtraction which children are used to, whereby they count on to the next ten, hundred etc.

Example:	643		leading to:	643
	- 264			- 264
	36	go from 264 to 300		36
	300	go from 300 to 600		343
	43	go from 600 to 43		379
	379	by adding the above figures.		

Method 2: subtracting hundreds and compensating

This method works by taking away to the nearest hundred above and then adding the difference to compensate. The child needs to be very confident with mental subtraction from whole hundreds.

Example:	643	
	- 264	
	343	643 - 300
	+ 36	300 - 264
	379	

ConceptsMethod 3: decomposition

The more traditional method whereby if the units to be subtracted are larger than the original number then one ten is 'borrowed' from the tens column.

Example:

$$\begin{array}{r} 643 \\ - 264 \\ \hline \end{array} = \begin{array}{r} 600 + 40 + 3 \\ - 200 + 60 + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 6^3 4^1 3 \\ - 264 \\ \hline \end{array} = \begin{array}{r} 600 + 30 + 13 \\ - 200 + 60 + 4 \\ \hline \end{array}$$

$$\begin{array}{r} 5^3 6^{13} 4^1 3 \\ - 264 \\ \hline \end{array} = \begin{array}{r} 500 + 130 + 13 \\ - 200 + 60 + 4 \\ \hline 300 + 70 + 9 = 379 \end{array}$$

It is clear from all these methods that the child needs to have a good understanding of place value and what is happening to the numbers, especially with method 3.

It is suggested that the child is shown more than one of these methods and becomes secure in understanding and using at least one.

Subtraction - crossing the tens boundary

Please use pencil and paper methods of working out for all these:

1.
$$\begin{array}{r} 673 \\ - 458 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 756 \\ - 269 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 822 \\ - 617 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 147 \\ - 39 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 893 \\ - 446 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 770 \\ - 635 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 388 \\ - 269 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 287 \\ - 168 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 457 \\ - 139 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 765 \\ - 627 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 836 \\ - 427 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 272 \\ - 154 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 471 \\ - 128 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 693 \\ - 254 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 380 \\ - 155 \\ \hline \end{array}$$

16.
$$\begin{array}{r} 471 \\ - 243 \\ \hline \end{array}$$

Work out the answers to the following subtraction sums, using pencil and paper methods, showing all working out:

17. $723 - 318$

18. $258 - 139$

19. $473 - 156$

20. $381 - 165$

Subtraction - crossing the tens boundary

Please use pencil and paper methods of working out for all these:

1.
$$\begin{array}{r} 784 \\ - 237 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 867 \\ - 348 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 443 \\ - 136 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 258 \\ - 129 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 881 \\ - 553 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 992 \\ - 784 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 491 \\ - 207 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 398 \\ - 149 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 517 \\ - 208 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 852 \\ - 707 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 927 \\ - 509 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 360 \\ - 223 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 582 \\ - 134 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 741 \\ - 325 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 470 \\ - 251 \\ \hline \end{array}$$

16.
$$\begin{array}{r} 350 \\ - 112 \\ \hline \end{array}$$

Work out the answers to the following subtraction sums, using pencil and paper methods, showing all working out:

17. $632 - 406$

18. $167 - 128$

19. $382 - 177$

20. $987 - 468$

Subtraction crossing the hundreds boundary

1.
$$\begin{array}{r} 428 \\ - 163 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 514 \\ - 262 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 635 \\ - 291 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 715 \\ - 244 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 836 \\ - 572 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 924 \\ - 173 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 206 \\ - 133 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 307 \\ - 234 \\ \hline \end{array}$$



Remember to line up units with units etc. or you will be way out!!

9.
$$\begin{array}{r} 409 \\ - 163 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 708 \\ - 444 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 603 \\ - 222 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 504 \\ - 313 \\ \hline \end{array}$$

Set out the next 8 in exactly the same way as those above:

13. $627 - 154$

14. $425 - 161$

15. $716 - 293$

16. $818 - 555$

17. $565 - 293$

18. $572 - 381$

19. $668 - 273$

20. $485 - 193$

Subtraction crossing the hundreds boundary

1.
$$\begin{array}{r} 258 \\ - 185 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 327 \\ - 194 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 457 \\ - 261 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 529 \\ - 141 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 415 \\ - 223 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 503 \\ - 112 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 804 \\ - 433 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 644 \\ - 253 \\ \hline \end{array}$$



Remember to check your answers by adding - I'm sure that you always do this, don't you?

9.
$$\begin{array}{r} 806 \\ - 333 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 305 \\ - 222 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 604 \\ - 444 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 907 \\ - 555 \\ \hline \end{array}$$

Set out the next 8 in exactly the same way as those above:

13. $517 - 263$

14. $536 - 184$

15. $823 - 362$

16. $939 - 458$

17. $715 - 163$

18. $684 - 292$

19. $305 - 122$

20. $468 - 271$

Subtraction crossing the tens and hundreds boundary

$$\begin{array}{r} 1. \quad 453 \\ - 375 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 241 \\ - 164 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 332 \\ - 153 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 421 \\ - 238 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 310 \\ - 172 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 520 \\ - 143 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 220 \\ - 134 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 660 \\ - 472 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 601 \\ - 523 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 207 \\ - 148 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 304 \\ - 156 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 806 \\ - 228 \\ \hline \end{array}$$



You need to set the next lot of sums out yourself - just like the ones above.

$$13. \quad 724 - 187$$

$$14. \quad 425 - 296$$

$$15. \quad 712 - 473$$

$$16. \quad 820 - 357$$

$$17. \quad 604 - 278$$

$$18. \quad 573 - 387$$

$$19. \quad 208 - 139$$

$$20. \quad 555 - 477$$

Subtraction crossing the tens and hundreds boundary

$$\begin{array}{r} 1. \ 375 \\ - 187 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \ 463 \\ - 294 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \ 812 \\ - 146 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \ 642 \\ - 453 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \ 530 \\ - 186 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \ 350 \\ - 277 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \ 260 \\ - 173 \\ \hline \end{array}$$

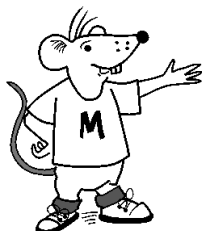
$$\begin{array}{r} 8. \ 470 \\ - 281 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \ 406 \\ - 228 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \ 207 \\ - 119 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \ 305 \\ - 217 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \ 401 \\ - 144 \\ \hline \end{array}$$



Do you know more than one way of working these out on paper? If so, why don't you try different ways?

Set out the next 8 so that you show all your working out:

$$13. \ 563 - 277$$

$$14. \ 420 - 376$$

$$15. \ 954 - 288$$

$$16. \ 506 - 239$$

$$17. \ 487 - 298$$

$$18. \ 317 - 169$$

$$19. \ 304 - 166$$

$$20. \ 505 - 187$$

Using pencil and paper methods to answer subtraction problems

Answer all the questions below using pencil and paper methods. It is very important that you show all your working out.

1. Find the difference between 1 345 and 258.
2. Find the difference between 2 360 and 292.
3. How much bigger is 1 782 than 594 ?
4. How much bigger is 2 745 than 677 ?
5. Subtract 154 from 1 220.
6. Subtract 375 from 1 461.
7. How much smaller is 361 than 1 750 ?
8. How much smaller is 218 than 1 409 ?
9. If you have £7.62 and your friend has £3.76, how much more money have you got than your friend?
10. If you started with £8.17 and then bought a C.D. costing £5.49, how much money would you have left?
11. 63.5 km - 6.7 km
12. 94.5 km - 7.9 km
13. Subtract 34.8 km from 67.3 km
14. Subtract £1.66 from £4.50
15. £5.51 - £2.98

Remember to line up the decimal points underneath each other.



Using pencil and paper methods to answer subtraction problems

Answer all the questions below using pencil and paper methods. It is very important that you show all your working out.

1. Find the difference between 2 456 and 188.
2. Find the difference between 3 470 and 191.
3. How much bigger is 2 843 than 554 ?
4. How much bigger is 3 856 than 977 ?
5. Subtract 268 from 1 313.
6. Subtract 489 from 1 611.
7. How much smaller is 472 than 1 633 ?
8. How much smaller is 325 than 1 411 ?
9. If you have £9.22 and your friend has £4.35, how much more money have you got than your friend?
10. If you started with £9.30 and then bought a game costing £6.25, how much money would you have left?
11. 72.1 km - 9.7 km
12. 65.6 km - 7.7 km
13. Subtract 43.9 km from 72.5 km
14. Subtract £2.77 from £8.40
15. £7.73 - £3.86

Jim, did your sister help you with your homework?
No, miss, she did it all!



Answers**Page 4**

1. 215 2. 487 3. 205 4. 108 5. 447 6. 135 7. 119 8. 119
9. 318 10. 138 11. 409 12. 118 13. 343 14. 439 15. 225 16. 228
17. 405 18. 119 19. 317 20. 216

Page 5

1. 547 2. 519 3. 307 4. 129 5. 328 6. 208 7. 284 8. 249
9. 309 10. 145 11. 418 12. 137 13. 448 14. 416 15. 219 16. 238
17. 226 18. 39 19. 205 20. 519

Page 6

1. 265 2. 252 3. 344 4. 471 5. 264 6. 751 7. 73 8. 73
9. 246 10. 264 11. 381 12. 191 13. 473 14. 264 15. 423 16. 263
17. 272 18. 191 19. 395 20. 292

Page 7

1. 73 2. 133 3. 196 4. 388 5. 192 6. 391 7. 371 8. 391
9. 473 10. 83 11. 160 12. 352 13. 254 14. 352 15. 461 16. 481
17. 552 18. 392 19. 183 20. 197

Page 8

1. 78 2. 77 3. 179 4. 183 5. 138 6. 377 7. 86 8. 188
9. 78 10. 59 11. 148 12. 578 13. 537 14. 129 15. 239 16. 463
17. 326 18. 186 19. 69 20. 78

Page 9

1. 188 2. 169 3. 666 4. 189 5. 344 6. 73 7. 87 8. 189
9. 178 10. 88 11. 88 12. 257 13. 286 14. 44 15. 666 16. 267
17. 189 18. 148 19. 138 20. 318

Page 10

1. 1 087 2. 2 068 3. 1 188 4. 2 068 5. 1 066 6. 1 086 7. 1 389 8. 1 191
9. £3.86 10. £2.68 11. 56.8km 12. 86.6km 13. 32.5km 14. £2.84 15. £2.53

Page 11

1. 2 268 2. 3 279 3. 2 289 4. 2 879 5. 1 045 6. 1 122 7. 1 161 8. 1 086
9. £4.87 10. £3.05 11. 62.4km 12. 57.9km 13. 28.6km 14. £5.63 15. £3.87