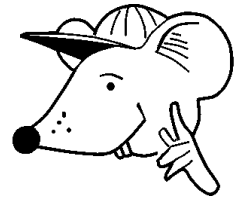


# MATHEMATICS



**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.

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

#### 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.

<b>Example:</b>	<b>643</b>	
	<b>- 264</b>	
	<b>343</b>	<b>643 - 300</b>
	<b>+ 36</b>	<b>300 - 264</b>
	<b>379</b>	

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**

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

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

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

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

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

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

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

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



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

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

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

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

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

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

$$13. \quad 627 - 154$$

$$14. \quad 425 - 161$$

$$15. \quad 716 - 293$$

$$16. \quad 818 - 555$$

$$17. \quad 565 - 293$$

$$18. \quad 572 - 381$$

$$19. \quad 668 - 273$$

$$20. \quad 485 - 193$$

**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**

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

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

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

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

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

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

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

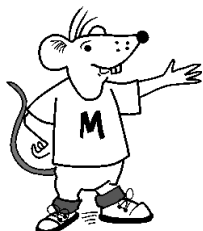
$$\begin{array}{r} 8. \quad 660 \\ - 472 \\ \hline \end{array}$$

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

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

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

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



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**

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

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

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

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

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

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

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

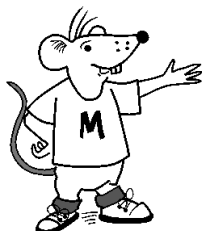
$$\begin{array}{r} 8. \quad 470 \\ - 281 \\ \hline \end{array}$$

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

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

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

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



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:**

$$13. \quad 563 - 277$$

$$14. \quad 420 - 376$$

$$15. \quad 954 - 288$$

$$16. \quad 506 - 239$$

$$17. \quad 487 - 298$$

$$18. \quad 317 - 169$$

$$19. \quad 304 - 166$$

$$20. \quad 505 - 187$$

**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