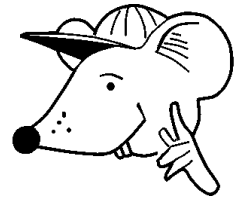


MATHEMATICS



N.S. Yr. 4 P.50

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

Equipment

Paper, pencil, ruler.
Squared paper useful.

MathSphere

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Concepts

The Numeracy project suggests three different ways that children could work out 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 4 children will meet subtraction problems where the tens boundary has to be crossed - 'borrowing,' as it used to be known!

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	
- 75	
5	go from 75 to 80 by adding 5
20	go from 80 to 100 by adding 20
500	go from 100 to 600 by adding 500
40	go from 600 to 640 by adding 40
3	go from 640 to 643 by adding 3
568	by adding the above figures.

Method 2: compensation

This method takes away the amount to make the next whole hundred and then work out mentally how many more to take - not easy to explain!

Example:

643	
- 75	
543	(643 - 100)
+ 25	(since 100 - 75 = 25)
568	

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:

$$\begin{array}{r}
 643 \\
 - 75 \\
 \hline
 \end{array}
 =
 \begin{array}{r}
 600 + 40 + 3 \\
 - \quad 70 + 5 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 6^3\cancel{4}^13 \\
 - 75 \\
 \hline
 \end{array}
 =
 \begin{array}{r}
 600 + 30 + 13 \\
 - \quad 70 + 5 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 5^{\cancel{6}^{13}}\cancel{4}^13 \\
 - 75 \\
 \hline
 \end{array}
 =
 \begin{array}{r}
 500 + 130 + 13 \\
 - \quad 70 + 5 \\
 \hline
 500 + 60 + 8 = 568
 \end{array}$$

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. The only advantage with method 3 is that it can be condensed into a neat, three line sum, as opposed to method one, which takes up quite a lot of space.

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.
$$\begin{array}{r} 452 \\ - 38 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 534 \\ - 27 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 681 \\ - 73 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 922 \\ - 15 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 784 \\ - 39 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 880 \\ - 24 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 277 \\ - 39 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 176 \\ - 28 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 346 \\ - 29 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 567 \\ - 39 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 921 \\ - 17 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 161 \\ - 23 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 876 \\ - 58 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 965 \\ - 49 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 743 \\ - 25 \\ \hline \end{array}$$

16.
$$\begin{array}{r} 760 \\ - 33 \\ \hline \end{array}$$

17.
$$\begin{array}{r} 181 \\ - 56 \\ \hline \end{array}$$

18.
$$\begin{array}{r} 292 \\ - 57 \\ \hline \end{array}$$

19.
$$\begin{array}{r} 373 \\ - 58 \\ \hline \end{array}$$

20.
$$\begin{array}{r} 464 \\ - 49 \\ \hline \end{array}$$

21.
$$\begin{array}{r} 558 \\ - 29 \\ \hline \end{array}$$

22.
$$\begin{array}{r} 776 \\ - 37 \\ \hline \end{array}$$

23.
$$\begin{array}{r} 334 \\ - 26 \\ \hline \end{array}$$

24.
$$\begin{array}{r} 228 \\ - 19 \\ \hline \end{array}$$

Subtraction - crossing the tens boundary

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

1.
$$\begin{array}{r} 561 \\ - 49 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 643 \\ - 28 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 790 \\ - 74 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 832 \\ - 26 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 893 \\ - 65 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 991 \\ - 35 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 386 \\ - 49 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 285 \\ - 37 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 455 \\ - 38 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 675 \\ - 29 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 830 \\ - 18 \\ \hline \end{array}$$

12.
$$\begin{array}{r} 270 \\ - 44 \\ \hline \end{array}$$

13.
$$\begin{array}{r} 985 \\ - 69 \\ \hline \end{array}$$

14.
$$\begin{array}{r} 774 \\ - 55 \\ \hline \end{array}$$

15.
$$\begin{array}{r} 852 \\ - 26 \\ \hline \end{array}$$

16.
$$\begin{array}{r} 871 \\ - 24 \\ \hline \end{array}$$

17.
$$\begin{array}{r} 291 \\ - 62 \\ \hline \end{array}$$

18.
$$\begin{array}{r} 383 \\ - 64 \\ \hline \end{array}$$

19.
$$\begin{array}{r} 482 \\ - 75 \\ \hline \end{array}$$

20.
$$\begin{array}{r} 573 \\ - 28 \\ \hline \end{array}$$

21.
$$\begin{array}{r} 558 \\ - 39 \\ \hline \end{array}$$

22.
$$\begin{array}{r} 776 \\ - 48 \\ \hline \end{array}$$

23.
$$\begin{array}{r} 334 \\ - 18 \\ \hline \end{array}$$

24.
$$\begin{array}{r} 278 \\ - 29 \\ \hline \end{array}$$

Subtraction crossing the hundreds boundary

$$\begin{array}{r} 1. \quad 568 \\ - \quad 74 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 239 \\ - \quad 51 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 126 \\ - \quad 33 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 169 \\ - \quad 75 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 358 \\ - \quad 62 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 137 \\ - \quad 56 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 242 \\ - \quad 81 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 477 \\ - \quad 95 \\ \hline \end{array}$$



Remember to show ALL
your working out on these
sums.

$$\begin{array}{r} 9. \quad 506 \\ - \quad 52 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 604 \\ - \quad 81 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 703 \\ - \quad 22 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 804 \\ - \quad 31 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 527 \\ - \quad 34 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 415 \\ - \quad 33 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 318 \\ - \quad 94 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 217 \\ - \quad 86 \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 808 \\ - \quad 62 \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 909 \\ - \quad 54 \\ \hline \end{array}$$

$$\begin{array}{r} 19. \quad 333 \\ - \quad 81 \\ \hline \end{array}$$

$$\begin{array}{r} 20. \quad 444 \\ - \quad 74 \\ \hline \end{array}$$

Subtraction crossing the hundreds boundary

$$\begin{array}{r} 1. \quad 149 \\ - \quad 63 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 218 \\ - \quad 47 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 346 \\ - \quad 91 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 417 \\ - \quad 33 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 526 \\ - \quad 45 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 602 \\ - \quad 51 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 707 \\ - \quad 73 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 866 \\ - \quad 85 \\ \hline \end{array}$$



Think carefully when there is a nought in the sum - it is easy to make a mistake with these 'noughty' types!

$$\begin{array}{r} 9. \quad 904 \\ - \quad 81 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 106 \\ - \quad 25 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 205 \\ - \quad 13 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 333 \\ - \quad 91 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 357 \\ - \quad 75 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 468 \\ - \quad 34 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 864 \\ - \quad 82 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 975 \\ - \quad 90 \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 642 \\ - \quad 70 \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 348 \\ - \quad 80 \\ \hline \end{array}$$

$$\begin{array}{r} 19. \quad 222 \\ - \quad 40 \\ \hline \end{array}$$

$$\begin{array}{r} 20. \quad 555 \\ - \quad 60 \\ \hline \end{array}$$

Subtraction crossing the tens and hundreds boundary

$$\begin{array}{r} 1. \quad 153 \\ - 75 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 241 \\ - 53 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 332 \\ - 44 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 426 \\ - 39 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 530 \\ - 71 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 720 \\ - 52 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 440 \\ - 63 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 550 \\ - 75 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 803 \\ - 76 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 206 \\ - 38 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 307 \\ - 29 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 602 \\ - 17 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 606 \\ - 68 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 202 \\ - 93 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 105 \\ - 27 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 903 \\ - 46 \\ \hline \end{array}$$



Not so easy when the nought is in the tens column, eh? Depends which way you do it, of course!!

$$\begin{array}{r} 17. \quad 916 \\ - 48 \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad 815 \\ - 96 \\ \hline \end{array}$$

$$\begin{array}{r} 19. \quad 724 \\ - 57 \\ \hline \end{array}$$

$$\begin{array}{r} 20. \quad 656 \\ - 68 \\ \hline \end{array}$$

Subtraction crossing the tens and hundreds boundary

$$\begin{array}{r} 1. \ 264 \\ - \ 88 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \ 352 \\ - \ 77 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \ 443 \\ - \ 66 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \ 531 \\ - \ 55 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \ 420 \\ - \ 61 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \ 610 \\ - \ 43 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \ 330 \\ - \ 52 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \ 440 \\ - \ 64 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \ 702 \\ - \ 87 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \ 106 \\ - \ 49 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \ 206 \\ - \ 37 \\ \hline \end{array}$$

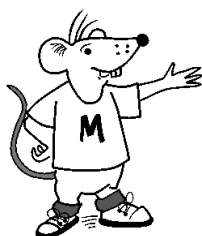
$$\begin{array}{r} 12. \ 501 \\ - \ 28 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \ 505 \\ - \ 76 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \ 303 \\ - \ 24 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \ 206 \\ - \ 18 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \ 804 \\ - \ 56 \\ \hline \end{array}$$



Question 1: It helps me if I say in my head, "4 take away 8, I can't do it..so I have to borrow ten"

$$\begin{array}{r} 17. \ 827 \\ - \ 39 \\ \hline \end{array}$$

$$\begin{array}{r} 18. \ 926 \\ - \ 87 \\ \hline \end{array}$$

$$\begin{array}{r} 19. \ 835 \\ - \ 48 \\ \hline \end{array}$$

$$\begin{array}{r} 20. \ 767 \\ - \ 79 \\ \hline \end{array}$$

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 582 and 47.
2. Find the difference between 63 and 481.
3. How much bigger is 725 than 68 ?
4. How much bigger is 381 than 76 ?
5. Subtract 85 from 222.
6. Subtract 48 from 111.
7. How much smaller is 86 than 234 ?
8. How much smaller is 36 than 113 ?
9. If you have £3.45 and your friend has £2.16, how much more money than your friend have you got?
10. If you started with £5.95 and then bought a toy costing £3.89, how much money would you have left?
11. Take £2.16 from £5.25.
12. Take £4.37 from £8.50.
13. Subtract £2.44 from £6.60
14. Subtract £1.55 from £6.60
15. £8.80 - £3.47

These are not so difficult - but remember to show HOW you got the answer.



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 691 and 56.
2. Find the difference between 72 and 390.
3. How much bigger is 616 than 77 ?
4. How much bigger is 492 than 38 ?
5. Subtract 94 from 131.
6. Subtract 39 from 262.
7. How much smaller is 48 than 102 ?
8. How much smaller is 68 than 303 ?
9. If you have £4.65 and your friend has £3.29, how much more money than your friend have you got?
10. If you started with £9.90 and then bought a toy costing £2.25, how much money would you have left?
11. Take £1.76 from £6.25.
12. Take £5.48 from £7.30.
13. Subtract £3.55 from £8.40
14. Subtract £2.57 from £6.20
15. £7.60 - £2.58

Remember to put the £ sign if you are answering a question with pounds in it.



Answers**Page 4**

1. 414 2. 507 3. 608 4. 907 5. 745 6. 856 7. 238 8. 148
9. 317 10. 528 11. 904 12. 138 13. 818 14. 916 15. 718 16. 727
17. 125 18. 235 19. 315 20. 415 21. 529 22. 739 23. 308 24. 209

Page 5

1. 512 2. 615 3. 716 4. 806 5. 828 6. 956 7. 337 8. 248
9. 417 10. 646 11. 812 12. 226 13. 916 14. 719 15. 826 16. 847
17. 229 18. 319 19. 407 20. 545 21. 519 22. 728 23. 316 24. 249

Page 6

1. 494 2. 188 3. 93 4. 94 5. 296 6. 81 7. 161 8. 382
9. 454 10. 523 11. 681 12. 773 13. 493 14. 382 15. 224 16. 131
17. 746 18. 855 19. 252 20. 370

Page 7

1. 86 2. 171 3. 255 4. 384 5. 481 6. 551 7. 634 8. 781
9. 823 10. 81 11. 192 12. 242 13. 282 14. 434 15. 782 16. 885
17. 572 18. 268 19. 182 20. 495

Page 8

1. 78 2. 188 3. 288 4. 387 5. 459 6. 668 7. 377 8. 475
9. 727 10. 168 11. 278 12. 585 13. 538 14. 109 15. 78 16. 857
17. 868 18. 719 19. 667 20. 588

Page 9

1. 176 2. 275 3. 377 4. 476 5. 359 6. 567 7. 278 8. 376
9. 615 10. 57 11. 169 12. 473 13. 429 14. 279 15. 188 16. 748
17. 788 18. 839 19. 787 20. 688

Page 10

1. 535 2. 418 3. 657 4. 305 5. 137 6. 63 7. 148 8. 77
9. £1.29 10. £2.06 11. £3.09 12. £4.13 13. £4.16 14. £5.05 15. £5.33

Page 11

1. 635 2. 318 3. 539 4. 454 5. 37 6. 223 7. 54 8. 235
9. £1.36 10. £7.65 11. £4.49 12. £1.82 13. £4.85 14. £3.63 15. £5.02