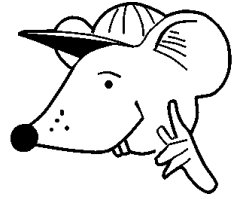


MATHEMATICS



N.S. Yr. 6 P.35

**Understanding addition and its relationship
to subtraction.**

Equipment

Paper, pencil

MathSphere

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Concepts

Children will continue to meet a variety of vocabulary associated with addition. These include:

More, add, sum, total, altogether, increase, equals, sign, inverse.

These words should be very familiar to the child but still need to be used as often as possible, especially when speaking about what to do, how to do it, etc.

Developing on previous work, they need to understand that
 $986 + 4\,289$ is the same as $4\,289 + 986$

(this is called the commutative law, but children do not need to know the word!)

and that:

$(523 + 25) + 91$ can be worked out in several different orders

e.g. **$523 + (25 + 91)$** will give the same answer as the above order.
(the associative law)

It is important that children have real confidence with adding two digit numbers (e.g. 78 and 87) and that they have a variety of strategies or approaches, depending on the numbers involved - sometimes it is easier to start with the tens, but not always. Constant practice, usually not on paper, of these tens and units additions will make larger mental addition much easier. The mental arithmetic work at this level is quite challenging, including the addition of thousands!

It is expected that children will use mental methods wherever possible - NOT to write the sum down. On three digit numbers they could well only use mental strategies.

Children are also expected to understand that subtraction is the opposite of addition and that it can be used to check addition questions.

Where calculators are used the child should make an estimate of the answer first, especially when the calculation involves decimals.

Addition

Without using a pencil and paper method, work the answers out to these three number addition problems:

1. $36 + 44 + 10$ 2. $38 + 42 + 40$ 3. $37 + 53 + 20$ 4. $69 + 27 + 51$

5. $69 + 21 + 55$ 6. $72 + 38 + 63$ 7. $51 + 29 + 40$ 8. $18 + 42 + 36$

9. $36 + 44 + 16$ 10. $54 + 46 + 21$ 11. $36 + 42 + 14$ 12. $35 + 29 + 45$

Remember: $338 + 247$ is the same as $247 + 338$.

So we can write:

$$338 + 247 = 247 + 338$$

They both come to 585.

In the same way:

$$417 + 239 = 239 + 417$$

Fill in the gap in the sums below:

13. $6\,350 + 2\,470 = 2\,470 + \boxed{}$

14. $3\,095 + 2\,870 = \boxed{} + 3\,095$

15. $7\,303 + 4\,489 = \boxed{} + 7\,303$

16. $4\,170 + 9\,867 = 9\,867 + \boxed{}$

Easy - but remember
it when you have lists
to add up - in any
order!



Addition

Without using a pencil and paper method, work the answers out to these three number addition problems:

(You may like to time yourself, to see how quickly you can do these!)

1. $148 + 34 + 26$ **2.** $185 + 23 + 57$ **3.** $16 + 280 + 14$ **4.** $162 + 55 + 38$

5. $141 + 38 + 22$ **6.** $172 + 41 + 18$ **7.** $119 + 11 + 60$ **8.** $65 + 21 + 125$

9. $28 + 41 + 132$ **10.** $53 + 52 + 135$ **11.** $61 + 35 + 104$ **12.** $103 + 24 + 43$

Reminder: $4\ 122 + 3\ 255$ is the same as $3\ 255 + 4\ 122$.

So we can write:

$$4\ 122 + 3\ 255 = 3\ 255 + 4\ 122$$

They both come to 7 377.

In the same way:

$$6\ 789 + 5\ 432 = 5\ 432 + 6\ 789$$

Fill in the gap in the sums below:

13. $2\ 480 + 21 + 365 = 21 + \boxed{} + 365$

14. $81 + 82 + 802 = 82 + 81 + \boxed{}$

15. $2\ 389 + 376 + 99 = 376 + 2\ 389 + \boxed{}$

Did you remember to look at units for numbers that add up to ten?



Addition of decimals

Work the answers to these sums in your head - only write the answer down.

1. $£2.47 + £3.53 =$

2. $£3.74 + £7.21 =$

3. $£1.25 + £3.75 =$

4. $£2.88 + £9.12 =$

5. $£5.42 + £8.08 =$

6. $£7.07 + £6.60 =$

7. $£4.28 + £6.76 =$

8. $£9.34 + £2.39 =$

9. $£2.85 + £4.76$

In many shops the prices of goods are set at figures like £4.99

The shopkeepers think that this makes it sound much less than £5.

The easiest way to add £4.99 to a number is to add £5 and then take away a penny e.g.

$$£8.45 + £4.99 \rightarrow £8.45 + £5 = £13.45 \quad £13.45 - 0.01 = £13.44$$

so £8.45 + £4.99 is £13.44

Add £4.99 to these amounts:

10. $£7.45$

11. $£6.60$

12. $£3.99$

13. $£7.11$

14. $£3.21$

15. $£9.82$

16. $£0.97$

17. $£4.84$

Add £9.99 to these amounts:

18. $£12.60$

19. $£15.77$

20. $£10.01$

21. $£15.82$

I'd add £10
first and
then.....



Addition of decimals

Work the answers to these sums in your head - only write the answer down.

1. $£3.47 + £4.64 =$

2. $£4.85 + £8.32 =$

3. $£2.36 + £4.84 =$

4. $£3.99 + £8.01 =$

5. $£4.31 + £9.09 =$

6. $£6.66 + £5.45 =$

7. $£4.37 + £5.85 =$

8. $£8.45 + £1.48 =$

9. $£1.92 + £5.88$

In many shops the prices of goods are set at figures like **£5.99**

The shopkeepers think that this makes it sound much less than **£6**.

The easiest way to add **£5.99** to a number is to add **£6** and then take away a penny e.g.

$$£2.76 + £5.99 \rightarrow £2.76 + £6 = £8.76 \quad £8.76 - £0.01 = £8.75$$

so $£2.76 + £5.99$ is **£8.75**

Add **£5.99** to these amounts:

10. $£8.35$

11. $£7.70$

12. $£2.99$

13. $£8.22$

14. $£4.31$

15. $£0.93$

16. $£1.11$

17. $£7.78$

Add **£9.99** to these amounts:

18. $£25.30$

19. $£31.70$

20. $£20.02$

21. $£26.63$

Funny how you
subtract sometimes
even when you're
adding!



Addition

When we work out answers in our head we often do them in a different way than on paper.

E.g.

$$125 + 236$$



I find it easier if I start with the HUNDREDS and TENS.

120 and 230 make 350

Add on 6 makes 356

Count on 5 more to make 361

125 add 236 makes 361.

Try to work all these out in your head. Only put the answer down on paper - do not do any working out on paper.

1. $218 + 582$

2. $276 + 153$

3. $333 + 247$

4. $222 + 170$

5. $228 + 160$

6. $264 + 148$

7. $418 + 159$

8. $261 + 130$

9. $155 + 265$

10. $462 + 571$

11. $195 + 543$

12. $378 + 143$

13. $220 + 176$

14. $523 + 217$

15. $341 + 244$

16. $264 + 147$

17. $219 + 350$

18. $148 + 262$

19. $365 + 229$

20. $276 + 137$

Addition

When we work out answers in our head we often do them in a different way than on paper.

E.g.

$$239 + 421$$



I find it easier starting with the bigger number, add the hundreds, then the tens then the units...

$$421 + 200 = 621 \quad 621 + 30 = 651$$

$$651 + 9 = 660 \text{ easy eh!}$$

Try to work all these out in your head. Only put the answer down on paper - do not do any working out on paper.

1. $265 + 274$

2. $286 + 245$

3. $263 + 157$

4. $249 + 171$

5. $270 + 161$

6. $267 + 137$

7. $234 + 180$

8. $285 + 149$

9. $266 + 168$

10. $287 + 137$

11. $269 + 165$

12. $250 + 164$

13. $242 + 183$

14. $270 + 201$

15. $249 + 130$

16. $298 + 147$

17. $250 + 162$

18. $299 + 134$

19. $271 + 140$

20. $282 + 177$

Addition

Answer the questions below. Work out the sums in your head and only write down the answer. Watch out for decimals!

- | | |
|----------------------|----------------------|
| 1. 470 add 520 | 2. 480 add 530 |
| 3. 410 add 920 | 4. 780 add 270 |
| 5. add 55.5 to 75.2 | 6. add 6.27 to 2.39 |
| 7. add 3.46 to 4.44 | 8. add 3.10 to 2.50 |
| 9. 56 add 42 add 27 | 10. 48 add 22 add 34 |
| 11. 27 add 39 add 59 | 12. 88 add 27 add 8 |



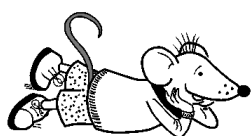
Set yourself a time target for the next section. 2 minutes? 5 minutes? What do you think?

13. What is the sum of £45.50 and £2.66?
14. What is the total of £7.93 and £2.87 ?
15. How many altogether are 388 and 580 ?
16. Increase 631 by 529.
17. What is the total of 84, 71 and 42 ?
18. Increase 521 by 79.
19. How many altogether are 54, 43 and 32 ?
20. What is the total of 654 and 321 ?

Addition

Answer the questions below. Work out the sums in your head and only write down the answer.

- | | |
|----------------------|----------------------|
| 1. 582 add 2 400 | 2. 632 add 5 333 |
| 3. 872 add 9 033 | 4. 455 add 8 327 |
| 5. add 389 to 1 522 | 6. add 740 to 2 238 |
| 7. add 525 to 1 434 | 8. add 582 to 4 111 |
| 9. 38 add 64 add 58 | 10. 49 add 19 add 25 |
| 11. 66 add 72 add 29 | 12. 77 add 52 add 38 |



I think these are very tricky!

13. What is the sum of 2 800 and 1 600 ?
14. What is the total of 3 500 and 1 290 ?
15. How many altogether are 1 400 and 3 880 ?
16. Increase 83 by 188.
17. What is the total of 146, 78 and 65 ?
18. Increase 309 by 1 209.
19. How many altogether are 124, 252 and 400 ?
20. What is the total of 1 250 and 2 250?

Mental Addition

Fill in the boxes with the correct number to make these questions correct:

1. $459 + 276 = \boxed{}$

2. $325 + 189 = \boxed{}$

3. $\boxed{} + 124 = 1\,000$

4. $\boxed{} + 418 = 1\,000$

5. $233 + \boxed{} = 1\,000$

6. $121 + \boxed{} = 1\,000$

These are about as hard
as they get - in your
head!

Who's got a hard head?



7. What is the sum of 470, 215 and 66 ?

8. Add 771 to 259.

9. How many altogether are 122, 33 and 122 ?

10. Increase 841 by 159.

11. What is the total of 222 and 778 ?

12. Find the total of 326, 134 and 49.

Mental Addition

Fill in the boxes with the correct number to make these questions correct:

1. $1\,470 + 1\,890 =$

2. $2\,450 + 6\,099 =$

3. $+ 660 = 1\,300$

4. $+ 503 = 1\,400$

5. $470 +$ $= 1\,890$

6. $510 +$ $= 2\,500$

Sometimes it's easier to subtract to work out the answer to an addition problem - strange eh!



7. What is the sum of 2 500, 316 and 600 ?

8. Add 1 980 to 1 120.

9. How many altogether are 302, 99 and 21 ?

10. Increase 6 450 by 1 342.

11. What is the total of 6 600 and 7 700 ?

12. Find the total of 54, 78 and 900.

Mental addition using decimals

Work the answers to these problems in your head:

1. $1.35 + 3.81 =$

2. $2.56 + 3.68 =$

3. $5.82 + 2.91 =$

4. $6.83 + 6.47 =$

5. $0.02 + 3.70 =$

6. $9.08 + 8.18 =$

7. $6.56 + 0.28 =$

8. $6.42 + 4.38 =$

Don't worry about the decimal point. Treat it as any other addition, but remember to include the point in your answer.



Put in the missing decimal to make these sums add up to 1 :

9. $0.16 + \boxed{} = 1$

10. $0.33 + \boxed{} = 1$

11. $0.21 + \boxed{} = 1$

12. $0.48 + \boxed{} = 1$

Put in the missing decimal to make these sums add up to 10 :

13. $2.55 + \boxed{} = 10$

14. $5.68 + \boxed{} = 10$

15. $3.76 + \boxed{} = 10$

16. $0.84 + \boxed{} = 10$

Mental addition using decimals

Work the answers to these problems in your head:

1. $3.18 + 7.29 =$

2. $3.37 + 8.45 =$

3. $3.59 + 4.60 =$

4. $5.74 + 6.88 =$

5. $0.97 + 3.08 =$

6. $8.19 + 8.29 =$

7. $4.37 + 1.43 =$

8. $8.54 + 4.55 =$

I usually start with the units, then add on the tenths and then the hundredths- how do you do these?



Put in the missing decimal to make these sums add up to 1 :

9. $0.33 + \boxed{} = 1$

10. $0.44 + \boxed{} = 1$

11. $0.22 + \boxed{} = 1$

12. $0.88 + \boxed{} = 1$

Put in the missing decimal to make these sums add up to 10 :

13. $3.62 + \boxed{} = 10$

14. $7.15 + \boxed{} = 10$

15. $5.25 + \boxed{} = 10$

16. $3.91 + \boxed{} = 10$

Answers**Page 3**

1. 90 2. 120 3. 110 4. 147 5. 145 6. 173 7. 120 8. 96 9. 96
10. 121 11. 92 12. 109 13. 6 350 14. 2 870 15. 4 489 16. 4 170

Page 4

1. 208 2. 265 3. 310 4. 255 5. 201 6. 231 7. 190 8. 211
9. 201 10. 240 11. 200 12. 170 13. 2 480 14. 802 15. 99

Page 5

1. £6 2. £10.95 3. £5 4. £12 5. £13.50 6. £13.67 7. £11.04 8. £11.73
9. £7.61 10. £12.44 11. £11.59 12. £8.98 13. £12.10 14. £8.20 15. £14.81
16. £5.96 17. £9.83 18. £22.59 19. £25.76 20. £20 21. £25.81

Page 6

1. £8.11 2. £13.17 3. £7.20 4. £12 5. £13.40 6. £12.11 7. £10.22 8. £9.93
9. £7.80 10. £14.34 11. £13.69 12. £8.98 13. £14.21 14. £10.30 15. £6.92
16. £7.10 17. £13.77 18. £35.29 19. £41.69 20. £30.01 21. £36.62

Page 7

1. 800 2. 429 3. 580 4. 392 5. 388 6. 412 7. 577 8. 391 9. 420 10. 1 033
11. 738 12. 521 13. 396 14. 740 15. 585 16. 411 17. 569 18. 410 19. 594 20. 413

Page 8

1. 539 2. 531 3. 420 4. 420 5. 431 6. 404 7. 414 8. 434 9. 434 10. 424
11. 434 12. 414 13. 425 14. 471 15. 379 16. 445 17. 412 18. 433 19. 411 20. 459

Page 9

1. 990 2. 1 010 3. 1 330 4. 1 050 5. 130.7 6. 8.66 7. 7.9 8. 5.6
9. 125 10. 104 11. 125 12. 123 13. £48.16 14. £10.80 15. 968 16. 1 160
17. 197 18. 600 19. 129 20. 975

Page 10

1. 2 982 2. 5 965 3. 9 905 4. 8 782 5. 1 911 6. 2 978 7. 1 959
8. 4 693 9. 160 10. 93 11. 167 12. 167 13. 4 400 14. 4 790
15. 5 280 16. 271 17. 289 18. 1 518 19. 776 20. 3 500

Page 11

1. 735 2. 514 3. 876 4. 582 5. 767 6. 879
7. 751 8. 1 030 9. 277 10. 1 000 11. 1 000 12. 509

Answers**Page 12**

1. 3 360 **2.** 8 549 **3.** 640 **4.** 897 **5.** 1 420 **6.** 1 990
7. 3 416 **8.** 3 100 **9.** 422 **10.** 7 792 **11.** 14 300 **12.** 1 032

Page 13

1. 5.16 **2.** 6.24 **3.** 8.73 **4.** 13.30 **5.** 3.72 **6.** 17.26 **7.** 6.84 **8.** 10.80
9. 0.84 **10.** 0.67 **11.** 0.79 **12.** 0.52 **13.** 7.45 **14.** 4.32 **15.** 6.24 **16.** 9.16

Page 14

1. 10.47 **2.** 11.82 **3.** 8.19 **4.** 12.62 **5.** 4.05 **6.** 16.48 **7.** 5.80 **8.** 13.09
9. 0.67 **10.** 0.56 **11.** 0.78 **12.** 0.12 **13.** 6.38 **14.** 2.85 **15.** 4.75 **16.** 6.09