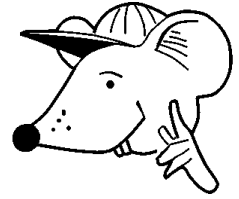


# MATHEMATICS



**N.S. Yr. 6 P.37**

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

## Equipment

Paper, pencil, ruler

# MathSphere

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## **Concepts**

Children should be able to read, write and understand the following words:

*Take away, subtract, how many are left?, how much less?, difference between, how much more?, how many more to make?, decrease, inverse.... and the minus sign (-)*

They should know that:

Subtraction is the same as taking away, finding the difference between and complementary addition.

Subtraction is non-commutative.

When a larger number is subtracted from a smaller number, the answer is negative.

Subtracting a number from another makes it smaller.

Subtracting zero makes no difference to a number.

Subtraction is the inverse of addition.

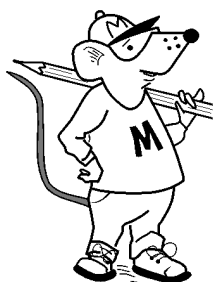
They should have good mental strategies for solving subtraction problems with simple numbers.

Can you say which of these are **true** and which are **false**?



1.  $456 - 243 = 243 - 456$
2.  $539 + 885 = 885 + 539$
3.  $734 - 895 = 895 - 734$
4. 978 subtract 673 is the same as 673 subtract 978.
5. 736 add 855 is the same as 855 add 736.
6. 2 456 subtract 1 658 is the same as 1 658 subtract 2 456.
7.  $638 - 967$  gives a negative answer.
8.  $6\,785 - 8\,534$  gives a positive answer.
9. Four hundred and sixty subtract forty two gives a negative answer.
10.  $7.86 - 6.74$  gives a positive answer.
11. If you subtract a positive number from a smaller number, the answer is always negative.
12.  $5.9 - 2.3 + 2.3 = 5.9$
13.  $9.8 - 12$  gives a positive answer.
14.  $12 - 9.8$  gives a positive answer.

Can you say which of these are **true** and which are **false**?



1.  $295 - 178 = 178 - 295$
2.  $957 + 567 = 567 + 957$
3.  $834 - 736 = 736 - 834$
4. 596 subtract 428 is the same as 428 subtract 596.
5. 984 add 565 is the same as 565 add 984.
6. 5 763 subtract 3 733 is the same as 3 733 subtract 5 763.
7.  $845 - 224$  gives a negative answer.
8.  $7\,453 - 3\,622$  gives a positive answer.
9. Five hundred and thirty subtract fifty eight gives a positive answer.
10.  $9.56 - 3.84$  gives a positive answer.
11. If you subtract a positive number from a larger number, the answer is always negative.
12.  $4.1 - 3.7 + 3.7 = 4.1$
13.  $13.7 - 10$  gives a positive answer.
14.  $28.5 - 54.8$  gives a positive answer.

Subtraction is the **inverse** (opposite) of addition and addition is the **inverse** of subtraction.

We can use this to **check our work**.

If we do the sum **7.8 - 4.2** and get **3.6**, we can check our answer by adding **3.6** and **4.2** to see if we get **7.8**.

Clever stuff!



Use this idea to calculate these sums and then **check your answers by adding**. The first one has been done for you.

1.  $9.6 - 4.5$  Answer = 5.1 Check  $4.5 + 5.1 = 9.6$  ✓

2.  $8.7 - 6.2$

3.  $4.9 - 3.9$

4.  $7.8 - 3.5$

5.  $5.6 - 2.9$

6.  $6.7 - 5.8$

7.  $2\,584 - 1\,755$

8.  $1\,633 - 562$

Calculate the answers to these sums and then **check your answers by adding**.  
The first one has been done for you.

1.  $4.5 - 1.8$  Answer = 2.7 Check  $1.8 + 2.7 = 4.5$  ✓

2.  $8.7 - 5.7$

3.  $5.7 - 3.4$

4.  $7.4 - 3.7$

5.  $12.8 - 6.8$

6.  $5\,243 - 4\,045$

7.  $45.8 - 12.6$

8.  $875 - 463$

9.  $79.5 - 53.9$

10.  $47.8 - 13.7$

11.  $45.8 - 3.7$

12.  $27.4 - 16.6$

13.  $8.9 - 3.9$

14.  $5.67 - 4.83$

15.  $12.7 - 6.6$

16.  $45.9 - 19.7$

17.  $10 - 9.7$

18.  $20 - 8.6$

Checking your work is always very important. Many people have made dangerous mistakes because they did not check their work.

This is one way to check your subtraction sums are correct.



Here are some problems with words. They are not difficult, but you should work them out in your head as quickly as you can and be prepared to tell your teacher or parent how you did them.



For example: Subtract **4.7** from **9.5**

I could **take away 4** first to get **5.5** and then take away **0.7** to get **4.8**.

I could subtract **5** and then add **0.3** back on.

I could subtract **4.7** from **9.7** and then subtract **0.2**.



1. What is **3.6** take away **1.6** ?
2. Subtract **1.7** from **2.8**.
3. Take **5.8** from **10**.
4. What is **3.3** less **1.8** ?
5. What is **49.4** subtract **8.6** ?
6. Subtract **3.6** from **5.2** .

You did so well on those, we thought you would like some more!



1. How many is **430** less **78** ?
2. What must Divvy add to **364** to make **390** ?
3. How many more is **634** than **567** ?
4. What must Multy add to **360** to make **568** ?
5. If I have **345** picture cards and lose **154** of them, how many do I have now?
6. Decrease **573** by **160**.
7. I add a secret number to **377** and get **488**. What was the secret number?
8. Subby had **534** marbles. He sold **254** of them. How many did he have left?
9. What must I take from **588** to leave **333** ?
10. What must I take from **4 000** to leave **2 340** ?
11. Find ten pairs of numbers that have a difference of **354**.
12. Find ten pairs of numbers that have a difference of **777**.



1. If you know that the difference between **7.2** and **9.4** is **2.2**,  
can you immediately write down ten other pairs of numbers that have the same difference?
2. If you know that the difference between **12.7** and **15.3** is **2.6**,  
can you immediately write down ten other pairs of numbers that have the same difference?

3. Calculate these answers as quickly as you can in your head.

a)  $5.3 - 3.8 = \square$     b)  $6.8 - \square = 5.6$     c)  $\square - \text{hexagon} = 8.7$   
d)  $9.6 - 4.2 = \square$     e)  $7.5 - \square = 3.6$     f)  $\square - \text{hexagon} = 3.6$   
g)  $8.6 - 3.8 = \square$     h)  $8.2 - \square = 2.3$     i)  $\square - \text{hexagon} = 5.6$

4. Calculate these answers by jotting down your calculations.

a)  $12.8 - 5.8 = \square$     b)  $6.8 - \square = 3.4$     c)  $\square - \text{hexagon} = 4.1$   
d)  $4.8 - 2.9 = \square$     e)  $6.8 - \square = 3.6$     f)  $\square - \text{hexagon} = 5.1$   
g)  $15.7 - 7.9 = \square$     h)  $6.3 - \square = 2.4$     i)  $\square - \text{hexagon} = 5.7$

5. Calculate these answers by laying out your sums in a formal way.

a)  $56.71 - 34.83 = \square$     b)  $34.83 - \square = 13.85$     c)  $\square - \text{hexagon} = 2.47$   
d)  $78.68 - 45.73 = \square$     e)  $56.42 - \square = 41.29$     f)  $\square - \text{hexagon} = 23.83$   
g)  $79.45 - 68.42 = \square$     h)  $15.00 - \square = 7.88$     i)  $\square - \text{hexagon} = 11.11$

1. If you know that the difference between **573** and **785** is **212**, can you immediately write down ten other pairs of numbers that have the same difference?
2. If you know that the difference between **6 834** and **9 583** is **2 749**, can you immediately write down ten other pairs of numbers that have the same difference?
3. Calculate these answers as quickly as you can in your head.

a)  $763 - 74 = \square$     b)  $725 - \square = 72$     c)  $\square - \text{hexagon} = 56$

d)  $724 - 99 = \square$     e)  $857 - \square = 83$     f)  $\square - \text{hexagon} = 62$

g)  $265 - 11 = \square$     h)  $925 - \square = 46$     i)  $\square - \text{hexagon} = 96$

4. Calculate these answers using a number line or number square.

a)  $945 - 285 = \square$     b)  $954 - \square = 77$     c)  $\square - \text{hexagon} = 37$

d)  $755 - 276 = \square$     e)  $273 - \square = 36$     f)  $\square - \text{hexagon} = 57$

g)  $788 - 72 = \square$     h)  $372 - \square = 46$     i)  $\square - \text{hexagon} = 85$

5. Calculate these answers as quickly as you can using a pencil and paper.

a)  $167.45 - 34.87 = \square$     b)  $321.64 - \square = 63.92$     c)  $\square - \text{hexagon} = 4.65$

d)  $185.45 - 23.46 = \square$     e)  $211.21 - \square = 89.25$     f)  $\square - \text{hexagon} = 12.43$

g)  $362.53 - 73.54 = \square$     h)  $583.46 - \square = 26.35$     i)  $\square - \text{hexagon} = 58.35$

**Answers****Page 3**

1. False   2. True   3. False   4. False   5. True   6. False   7. True  
8. False   9. False   10. True   11. True   12. True   13. False   14. True

**Page 4**

1. False   2. True   3. False   4. False   5. True   6. False   7. False  
8. True   9. True   10. True   11. False   12. True   13. True   14. False

**Page 5**

1. 5.1   2. 2.5   3. 1.0   4. 4.3   5. 2.7   6. 0.9  
7. 829   8. 1 071

**Page 6**

1. 2.7   2. 3.0   3. 2.3   4. 3.7   5. 6.0   6. 1 198   7. 33.2  
8. 412   9. 25.6   10. 34.1   11. 42.1   12. 10.8   13. 5.0   14. 0.84  
15. 6.1   16. 26.2   17. 0.3   18. 11.4

**Page 7**

1. 2.0   2. 1.1   3. 4.2   4. 1.5   5. 40.8   6. 1.6

**Page 8**

1. 352   2. 26   3. 67   4. 208   5. 191   6. 413   7. 111  
8. 280   9. 255   10. 1 660   11. and   12. Any ten pairs that have a difference of 354 and 777 respectively.

Answers**Page 9**

**1./2.** Any ten pairs that have a difference of 2.2/2.6. Encourage thinking in patterns.

Eg. add the same amount to each number. So  $9.4 - 7.2 = 2.2$

Therefore  $9.5 - 7.3 = 2.2$

$9.6 - 7.4 = 2.2$  etc.

**Or:**

$19.4 - 17.2 = 2.2$

$29.4 - 27.2 = 2.2$  etc

- 3.** a) 1.5    b) 1.2    c) any suitable pairs  
d) 5.4    e) 3.9    f) any suitable pairs  
g) 4.8    h) 5.9    i) any suitable pairs

- 4.** a) 7.0    b) 3.4    c) any suitable pairs  
d) 1.9    e) 3.2    f) any suitable pairs  
g) 7.8    h) 3.9    i) any suitable pairs

- 5.** a) 21.88    b) 20.98    c) any suitable pairs  
d) 32.95    e) 15.13    f) any suitable pairs  
g) 11.03    h) 7.12    i) any suitable pairs

**Page 10**

**1/2.** Any ten pairs that have a difference of 212/2 749. Again, encourage children to think in patterns.

Eg. add the same amount to each number. So  $785 - 573 = 212$

Therefore  $885 - 673 = 212$

$985 - 773 = 212$  etc.

**Or:**

$785.2 - 573.2 = 212$

$785.4 - 573.4 = 212$  etc

- 3.** a) 689    b) 653    c) any suitable pairs  
d) 625    e) 774    f) any suitable pairs  
g) 254    h) 879    i) any suitable pairs

- 4.** a) 660    b) 877    c) any suitable pairs  
d) 479    e) 237    f) any suitable pairs  
g) 716    h) 326    i) any suitable pairs

- 5.** a) 132.58    b) 257.72    c) any suitable pairs  
d) 161.99    e) 121.96    f) any suitable pairs  
g) 288.99    h) 557.11    i) any suitable pairs