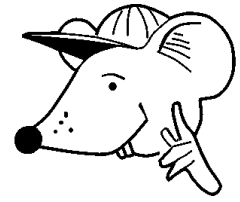




# MATHEMATICS



**N.S. Yr. 4 P.28**

**Use decimal notation.  
Order decimal fractions.**

## Equipment

Paper, pencil, ruler  
Calculator

# MathSphere

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## **Concepts**

In Year 4 children are expected to be able to read and write decimal fractions and understand the importance of the decimal point.

They will begin to work to two decimal places when using familiar measurements, especially money and metric length.

Part of this is recognising in money, for example, that the first number after the point is tenths, which can be thought of as the number of 10p coins. Practical work on this, using real coins, is always very helpful. Avoid only using one figure after the decimal point in the context of money because £4.5 means four pounds fifty and not four pounds and five pence (£4.05)

Number lines are again important in helping children read and order simple decimal fractions eg numbers between 1 and 2.

Calculators can be used for extension work, but only as a tool to display the results of mental arithmetic eg in one step change 5.3 to 5.9.

Much of this work will also re-inforce the language of mathematics - less than, more than, count on, count back etc.

Decimal fractions

The number **3.6** is pronounced '**three point six**'.

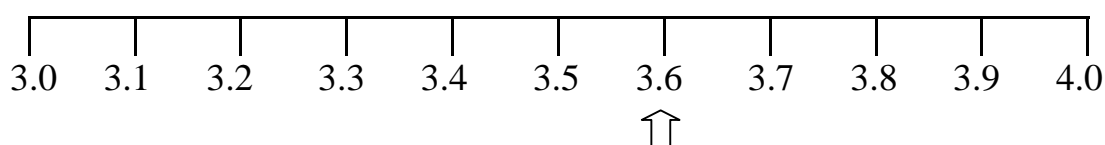
It means three whole ones and 6 tenths of a whole one.

In the chart below write down how you say each of these decimal fractions. The first is done for you.

<b>1.</b> 4.8	Four point eight
<b>2.</b> 2.6	
<b>3.</b> 5.5	
<b>4.</b> 7.9	
<b>5.</b> 3.1	
<b>6.</b> 8.2	

What does 3.6 mean?

The three means three whole ones and the six means six tenths, so 3.6 is a number between 3 and 4. Look at the number line below to see where it comes:

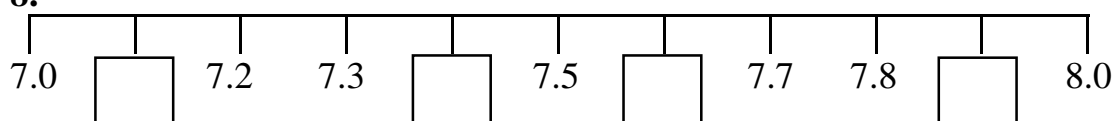


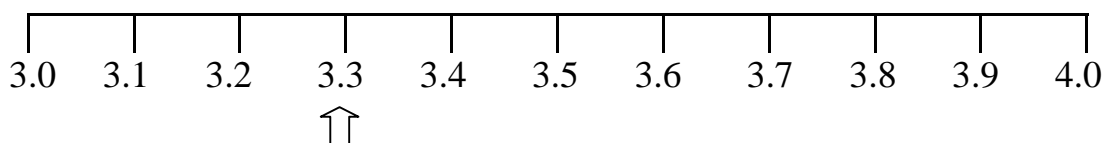
Fill in the missing numbers on the number lines below. Practice counting up and down each time.

**7.**



**8.**

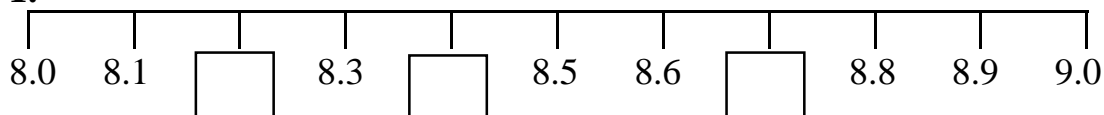


Decimal fractions

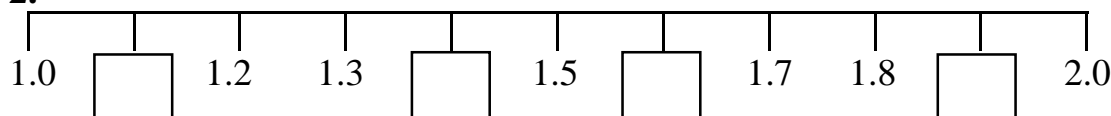
The arrow is pointing at 3.3 We say this, 'three point three'.

Fill in the missing numbers on the number lines below. Practise counting up and down each time.

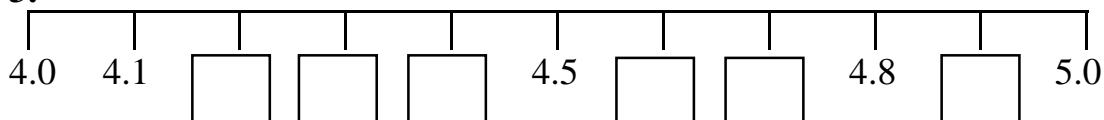
1.



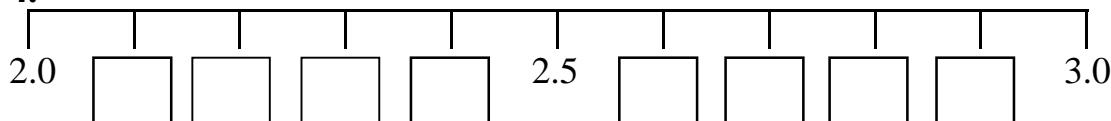
2.



3.



4.



Write these in numbers:

e.g. four point five = 4.5

5. Two point six

6. Seven point eight

7. Five point nine

8. Six point nought

9. Three point one

10. Four point eight

### Decimal fractions

In the number 5.9 the digit 5 represents 5 whole ones, or five units.

In the number 5.9 the digit 9 represents nine tenths or  $\frac{9}{10}$  of a whole one.

The decimal point separates the whole number part from the less than one whole part.

Draw out the chart and write down the value of the digits underlined in the numbers below. The first has been completed for you.

1. 4. <u>6</u>	Six tenths
2. <u>8</u> .4	
3. 7. <u>4</u>	
4. 3. <u>2</u>	
5. <u>8</u> .2	
6. 0. <u>1</u>	

Notice how if there are no whole units we still place a nought at the start: eg 0.1 in words is nought point one.

(It would be easy to mistake .1 as 1 whole one!)

Put these sets of numbers in order, starting with the smallest:

7.    4.9       6.9       0.9       3.9       2.9

8.    3.7       3.1       3.8       3.0       3.2

9.    9.0       0.9       5.9       6.0       9.5

10.   6.6       6.7       6.5       6.0       0.6

### Decimal fractions

In the number 3.7 the digit 3 represents 3 whole ones, or three units.

In the number 3.7 the digit 7 represents seven tenths or  $\frac{7}{10}$  of a whole one.

The decimal point separates the whole number part from the less than one whole part.

Draw out the chart and write down the value of the digits underlined in the numbers below. The first has been completed for you.

1. 3. <u>7</u>	Seven tenths
2. <u>5</u> .4	
3. 8. <u>9</u>	
4. 7. <u>1</u>	
5. <u>6</u> .2	
6. 0. <u>3</u>	

Notice how if there are no whole units we still place a nought at the start: eg 0.4 in words is nought point four.

(It would be easy to mistake .4 as 4 whole ones!)

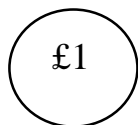
Put these sets of numbers in order, starting with the smallest:

7.    6.3       7.2       7.5       1.9       5.2

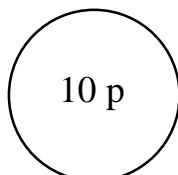
8.    0.4       0.7       0.1       1.5       0.9

9.    1.5       5.1       3.8       8.3       5.5

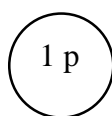
10.   7.6       6.7       8.6       6.8       6.6

Decimal fractions - money

One pound is written £1



Ten pence is written £0.10



One penny is written £0.01

$\pounds 3.45$   
 three units      four tenths      five hundredths

Write down the value of the digit underlined in the table below. The first has been done for you.

1. £2. <u>4</u> 5	Four tenths      or      forty pence
2. £2.3 <u>5</u>	or
3. £ <u>9</u> .86	or
4. £7. <u>7</u> 2	or
5. £6.4 <u>8</u>	or
6. £0. <u>2</u> 9	or

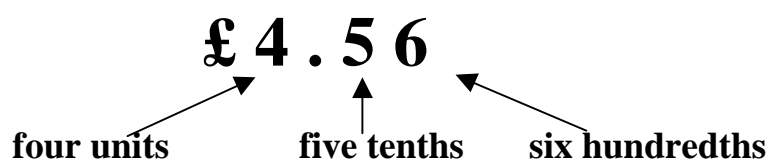
If the amounts below were all in one pence pieces how many would you have:

7. £2.68

8. £4.30

9. £3.12

10. £8.68



Write down the value of the digit underlined in the table below. The first has been done for you.

1. $\pounds 3.\underline{7}8$	Seven tenths	or	seventy pence
2. $\pounds 3.8\underline{2}$		or	
3. $\pounds 9.\underline{6}8$		or	
4. $\pounds 8.8\underline{4}$		or	
5. $\pounds 7.\underline{5}9$		or	
6. $\pounds 0.3\underline{1}$		or	

If the amounts below were all in one pence pieces how many would you have:

7.  $\pounds 3.79$ 8.  $\pounds 5.40$ 9.  $\pounds 4.23$ 10.  $\pounds 9.79$ 11. Which is less:  $\pounds 2.07$  or  $\pounds 2.70$  ?12. Which is more:  $\pounds 3.04$  or  $\pounds 3.40$  ?13. Write 536p in  $\pounds$ .14. Write 639p in  $\pounds$ 15. Which is more:  $\pounds 6.60$  or  $\pounds 6.06$ ?

I think I would like  $\pounds 2.70$ , please!





**Decimals - mixed problems**

Use a calculator to solve these problems. You are only to make one step or operation to solve them.

**Eg change 4.7 to 4.8**

**Type in 4.7**

**Press the + sign**

**Press 0.1 and the equals sign.**

**Write down: Add 0.1**

If you get the wrong answer - TRY AGAIN!

- |                              |                              |
|------------------------------|------------------------------|
| <b>1. Change 3.2 to 3.5</b>  | <b>2. Change 3.6 to 3.9</b>  |
| <b>3. Change 2.0 to 2.7</b>  | <b>4. Change 3.2 to 3.6</b>  |
| <b>5. Change 7.7 to 7.6</b>  | <b>6. Change 4.7 to 4.1</b>  |
| <b>7. Change 8.2 to 8.0</b>  | <b>8. Change 6.6 to 6.0</b>  |
| <b>9. Change 3.6 to 5.6</b>  | <b>10. Change 1.2 to 5.2</b> |
| <b>11. Change 7.7 to 3.7</b> | <b>12. Change 5.6 to 1.6</b> |

Write these amounts in pounds:

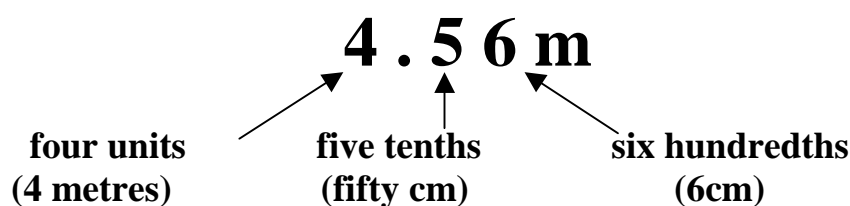
E.g. 456p = £4.56

- |                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|
| <b>13. 234p</b> | <b>14. 345p</b> | <b>15. 456p</b> | <b>16. 567p</b> |
| <b>17. 678p</b> | <b>18. 403p</b> | <b>19. 500p</b> | <b>20. 102p</b> |

How many pence in these amounts?

e.g. £2.45 = 245p

- |                  |                  |                  |                  |                  |
|------------------|------------------|------------------|------------------|------------------|
| <b>21. £3.80</b> | <b>22. £4.09</b> | <b>23. £1.40</b> | <b>24. £0.92</b> | <b>25. £4.05</b> |
|------------------|------------------|------------------|------------------|------------------|



**Remember:** 4 metres = 400 centimetres (cm)

$$4.56 \text{ m} = 4 \text{ metres and } 56 \text{ cm} = 456 \text{ cm}$$

Change these measurements from metres to centimetres:

1. 3.45 m =                      2. 2.67 m =                      3. 6.78 m =

4. 1.04 m =                      5. 2.05 m =                      6. 0.45 m =

Change these measurements from centimetres to metres:

7. 267 cm =                      8. 891 cm =                      9. 438 cm =

10. 109 cm =                      11. 606 cm =                      12. 400 cm =

Work out the following problems:

**13.** John spent 36p on a chocolate bar for himself and then spent £2.46 on an easter egg for his mum. How much did he spend altogether?

**14.** Laura went into town and bought a card for £1.90 and a piece of wrapping paper for 85p. How much did she spend?

**15.** Charlotte bought a book for £6.50 and a packet of crisps for 45p. How much did she spend?

**Decimals**

Change these measurements from metres to centimetres:

- |             |             |             |
|-------------|-------------|-------------|
| 1. 4.56 m = | 2. 3.78 m = | 3. 7.89 m = |
| 4. 2.06 m = | 5. 3.07m =  | 6. 0.29 m = |

Change these measurements from centimetres to metres:

- |              |              |              |
|--------------|--------------|--------------|
| 7. 378 cm =  | 8. 992 cm =  | 9. 549 cm =  |
| 10. 200 cm = | 11. 707 cm = | 12. 501 cm = |

Change these amounts from pounds to pence:

- |             |             |             |
|-------------|-------------|-------------|
| 13. £7.22 = | 14. £9.31 = | 15. £4.44 = |
| 16. £4.07 = | 17. £6.09 = | 18. £2.70 = |

Change these pence to pounds:

- |            |            |            |
|------------|------------|------------|
| 19. 381p = | 20. 189p = | 21. 167p = |
| 22. 402p = | 23. 300p = | 24. 76p =  |

**There are ten millimetres (mm) in one centimetre. 10mm = 1cm**

**2 cm and 3 mm is written 2.3 cm**

**Write these in cm:**

- |                   |                   |                   |
|-------------------|-------------------|-------------------|
| 25. 3 cm and 6 mm | 26. 2 cm and 9 mm | 27. 5 cm and 1 mm |
| 28. 7 cm and 2 mm | 29. 4 cm and 8 mm | 30. 0 cm and 6 mm |

Answers**Page 3**

1. four point eight   2. Two point six   3. Five point five   4. Seven point nine  
5. three point one   6. Eight point two   7. 5.2, 5.4, 5.7   8. 7.1, 7.4, 7.6, 7.9

**Page 4**

1. 8.2, 8.4, 8.7   2. 1.1, 1.4, 1.6, 1.9   3. 4.2, 4.3, 4.4, 4.6, 4.7, 4.9  
4. 2.1, 2.2, 2.3, 2.4, 2.6, 2.7, 2.8, 2.9   5. 2.6   6. 7.8   7. 5.9   8. 6.0   9. 3.1   10. 4.8

**Page 5**

1. sixth tenths   2. eight units   3. four tenths   4. two tenths   5. eight units   6. one tenth  
7. 0.9, 2.9, 3.9, 4.9, 6.9   8. 3.0, 3.1, 3.2, 3.7, 3.8  
9. 0.9, 5.9, 6.0, 9.0, 9.5   10. 0.6, 6.0, 6.5, 6.6, 6.7

**Page 6**

1. seven tenths   2. five units   3. nine tenths   4. one tenth   5. six units   6. three tenths  
7. 1.9, 5.2, 6.3, 7.2, 7.5   8. 0.1, 0.4, 0.7, 0.9, 1.5  
9. 1.5, 3.8, 5.1, 5.5, 8.3   10. 6.6, 6.7, 6.8, 7.6, 8.6

**Page 7**

1. four tenths or forty pence   2. five hundredths or five pence  
3. nine units or nine pounds   4. seven tenths or seventy pence  
5. eight hundredths or eight pence   6. two tenths or twenty pence  
7. 268 p   8. 430 p   9. 312 p   10. 868 p

**Page 8**

1. seven tenths or seventy pence   2. two hundredths or two pence  
3. six tenths or sixty pence   4. four hundredths or four pence  
5. five tenths or fifty pence   6. One hundredth or one pence  
7. 379p   8. 540p   9. 423p   10. 979p   11. £2.07   12. £3.40   13. £5.36   14. £6.39   15. £6.60

**Page 9**

1. add 0.3   2. add 0.3   3. add 0.7   4. add 0.4   5. subtract 0.1   6. subtract 0.6  
7. subtract 0.2   8. subtract 0.6   9. add 2   10. add 4   11. subtract 4   12. subtract 4  
13. £2.34   14. £3.45   15. £4.56   16. £5.67   17. £6.78   18. £4.03  
19. £5.00   20. £1.02   21. 380p   22. 409p   23. 140p   24. 92p   25. 405p

**Page 10**

1. 345 cm   2. 267 cm   3. 678 cm   4. 104 cm   5. 205 cm   6. 45 cm  
7. 2.67 m   8. 8.91 m   9. 4.38 m   10. 1.09 m   11. 6.06 m   12. 4 m  
13. £2.82   14. £2.75   15. £6.95

**Page 11**

1. 456 cm   2. 378 cm   3. 789 cm   4. 206 cm   5. 307 cm   6. 29 cm  
7. 3.78 m   8. 9.92 m   9. 5.49 m   10. 2.00 m   11. 7.07 m   12. 5.01 m  
13. 722p   14. 931p   15. 444p   16. 407p   17. 609p   18. 270p   19. £3.81   20. £1.89  
21. £1.67   22. £4.02   23. £3.00   24. £0.76   25. 3.6 cm   26. 2.9 cm   27. 5.1 cm  
28. 7.2 cm   29. 4.8 cm   30. 0.6 cm