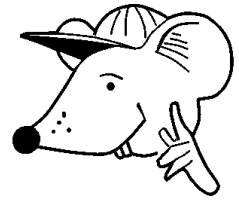


# MATHEMATICS



**N.S. Yr. 5 P.29**

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

## Equipment

Paper, pencil, ruler  
Calculator

# MathSphere

© MathSphere P.O. Box 1234 Worthing BN13 2UJ [www.mathsphere.co.uk](http://www.mathsphere.co.uk)

## Concepts

In Year 5 children are expected to be able to read and write decimal fractions to two decimal places and understand the importance of the decimal point.

Number lines where children can count up and down in tenths and hundredths are still important.

Part of this work is recognising in money, for example, that the first digit after the point is tenths, which can be thought of as the number of 10p, and the second digit after the point is hundredths, or the number of one pence.

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 and length because £4.5 means four pounds fifty and not four pounds and five pence (£4.05).

In a similar way 5.5 m means 5 metres and 50 cm ( not 5 m and 5 cm).

Calculators may be used, but only as a tool to display the results of mental arithmetic e.g. in one step change 5.32 to 5.39 . In questions such as this the calculator is of no help if the child does not understand place value.

Some of the hardest work involves adding or subtracting using mixed units e.g. 1.4 litres + 300 millilitres. Children will need a secure grasp of the decimal system in order to answer these correctly.

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 **3.65** is pronounced '**three point six five**'.

Note: you do not say 'three point sixty five'.

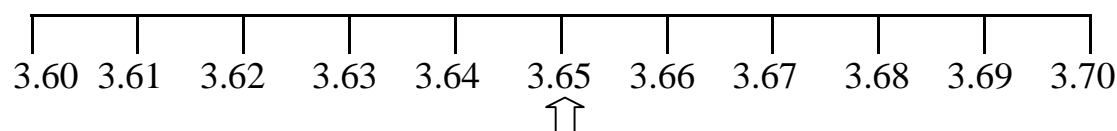
It means three whole ones, 6 tenths of a whole one and 5 hundredths of a whole one.

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

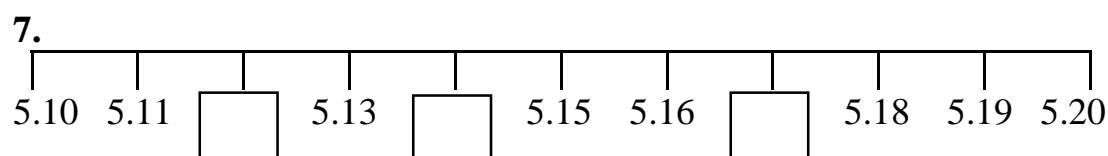
<b>1.</b> 5.63	Five point six three
<b>2.</b> 6.24	
<b>3.</b> 5.55	
<b>4.</b> 7.96	
<b>5.</b> 6.12	
<b>6.</b> 8.92	

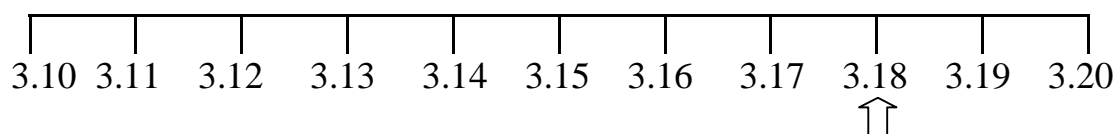
What does 3.65 mean?

The three means three whole ones and the six means six tenths, so 3.6 is a number between 3 and 4. Then the five means five hundredths, which means it is a number between 3.6 and 3.7 Look at the number line below to see where it comes:



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

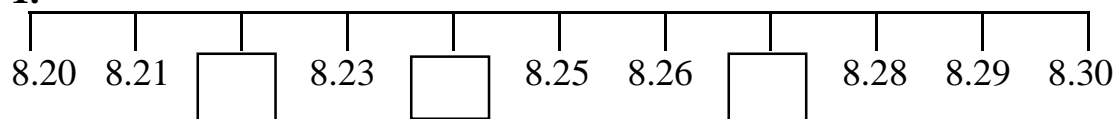


Decimal fractions

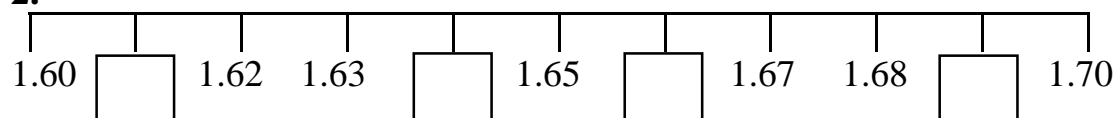
The arrow is pointing at 3.18 We say this, 'three point one eight'.

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

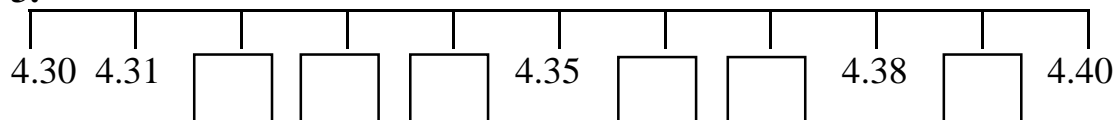
1.



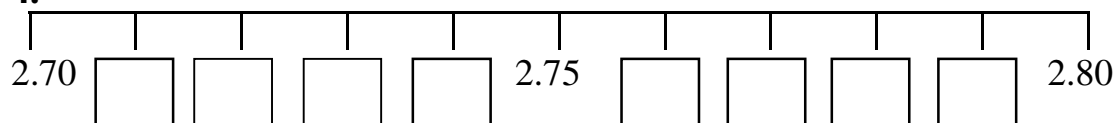
2.



3.



4.



Write these in numbers:

e.g. four point five two = 4.52

5. Three point six three

6. One point eight five

7. Nine point nine eight

8. Six point nought two

9. Three point one seven

10. Five point eight six

Decimal fractions

In the number 5.92 the digit 5 represents 5 whole ones, or five units.

In the number 5.92 the digit 9 represents nine tenths or  $\frac{9}{10}$

In the number 5.92 the digit 2 represents two hundredths or  $\frac{2}{100}$

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>6</u> 2	Six tenths
2. <u>7</u> .49	
3. 7.4 <u>2</u>	
4. 3. <u>2</u> 2	
5. <u>8</u> .72	
6. 0. <u>1</u> 0	

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. 4.39    6.39    0.39    3.39    2.39

8. 3.75    3.51    3.58    3.50    3.27

9. 9.80    0.89    5.89    6.80    9.85

10. 6.16    6.17    6.15    6.10    0.16

**Decimal fractions**

In the number 3.75 the digit 3 represents 3 whole ones, or three units.

In the number 3.75 the digit 7 represents seven tenths or  $\frac{7}{10}$

In the number 3.75 the digit 5 represents five hundredths or  $\frac{5}{100}$

The decimal point separates the whole numbers 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. 7.9 <u>1</u>	One hundredth
2. <u>5</u> .46	
3. 8.4 <u>9</u>	
4. 7. <u>1</u> 8	
5. 6.2 <u>4</u>	
6. 0.0 <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!)

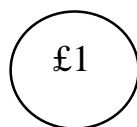
Put these sets of numbers in order, starting with the smallest:

7. 5.32 5.02 5.05 5.09 5.03

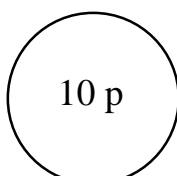
8. 0.40 0.70 0.10 0.50 0.90

9. 5.15 5.51 5.58 8.55 5.05

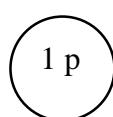
10. 7.26 7.27 8.26 6.28 6.26

**Decimal fractions - money**

One pound is written £1



Ten pence is written £0.10



One penny is written £0.01

**£ 5 . 7 8**

five units
seven tenths
eight hundredths

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

1. £3. <u>4</u> 5	Four tenths	or	forty pence
2. £3.4 <u>6</u>		or	
3. £0. <u>9</u> 7		or	
4. £8.8 <u>2</u>		or	
5. £ <u>7</u> .59		or	
6. £0. <u>1</u> 9		or	

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

7. £3.03

8. £4.40

9. £4.23

10. £9.79

### Decimals

Place these decimals on a line from 0 to 1:

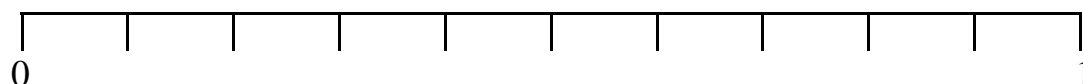
1. 0.4

2. 0.6

3. 0.7

4. 0.9

5. 0.3



Place these numbers on a 2.10 to 2.20 number line:

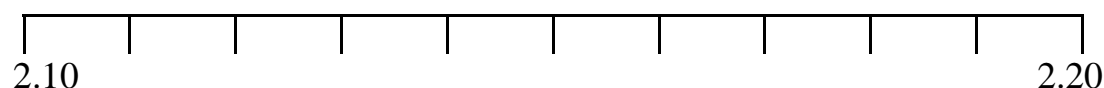
6. 2.15

7. 2.13

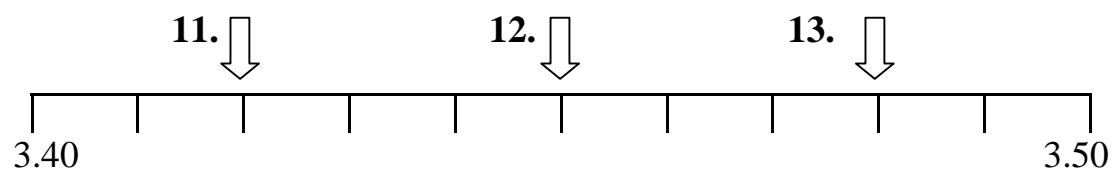
8. 2.11

9. 2.19

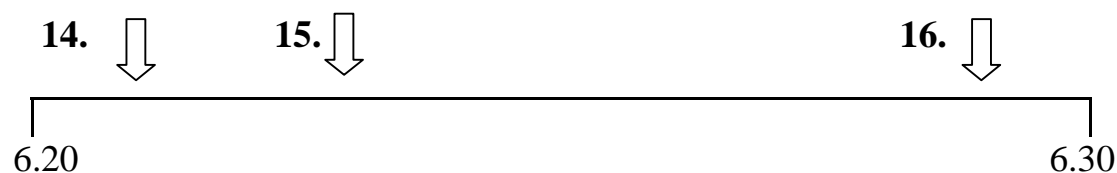
10. 2.16



Estimate the number that the arrow is pointing to on these questions:



Estimate the number that the arrow is pointing to on these questions:



17. Write down a number between 7 and 8.

18. Write down a number between 4 and 5.



**Decimals - mixed problems**

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

**E.g. change 5.33 to 5.39**

**type in 5.33**

**press the + sign**

**press 0.06 and the equals sign.**

**Write down: Add 0.06**

If you get the wrong answer, don't worry - TRY AGAIN!

**1. Change 3.12 to 3.15**

**2. Change 3.06 to 3.09**

**3. Change 2.10 to 2.17**

**4. Change 3.20 to 3.60**

**5. Change 7.71 to 7.61**

**6. Change 4.27 to 4.21**

**7. Change 8.12 to 8.10**

**8. Change 6.64 to 6.74**

**9. Change 3.26 to 5.26**

**10. Change 1.42 to 5.42**

**11. Change 7.07 to 7.27**

**12. Change 5.06 to 1.06**

Write these measurements in km:

Remember 1 000 m = 1 km

eg 2 345 m = 2.345 km

**13. 2 468 m**

**14. 1 357 m**

**15. 1 245 m**

**16. 467 m**

**17. 3 030 m**

**18. 4 005 m**

**19. 267 m**

**20. 76 m**

Write these measurements in litres:

Remember 1 000 ml = 1 litre

eg 9 753 ml = 9.753 litres

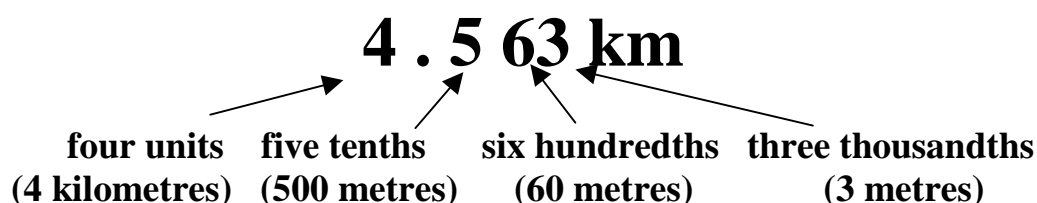
**21. 8 642 ml**

**22. 6 487 ml**

**23. 1 904 ml**

**24. 4 581 ml**

**25. 356 ml**



**Remember: 4 kilometres = 4 000 metres**

**4.563 km = 4 kilometres and 563 metres = 4 563 metres**

Change these measurements from kilometres to metres:

( Remember, there are 100 cm in a metre. )

1. 2.457 km =                      2. 6.967 km =                      3. 7.728 km =

4. 4.004 km =                      5. 5.005 km =                      6. 0.405 km =

Change these measurements from centimetres to metres:

7. 3 607 cm =                      8. 9 091 cm =                      9. 5 038 cm =

10. 2 090 cm =                      11. 7 006 cm =                      12. 8 000 cm =

Work out the following problems:

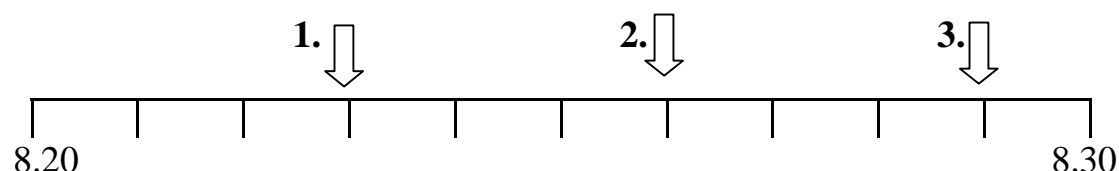
**13.** Paul poured 1.3 litres of water into a jug and then added a further 400 ml. How much did he pour in altogether?

**14.** Joe was making a huge cake. He put in 1.2 kg of flour and then added 500g of sugar. How much did these ingredients weigh?

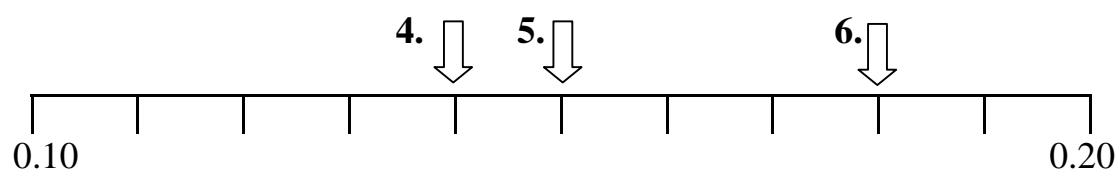
**15.** Jason ran 1.4 km in ten minutes. Jack then took over and ran a further 700 metres. How far did they run altogether?

**Decimals**

Estimate the numbers that the arrows are pointing to:



Estimate the numbers that the arrows are pointing to:



Change these measurements from kilometres to metres:

7. 5.536 km =

8. 4.278 km =

9. 8.809 km =

10. 3.066 km =

11. 4.017 km =

12. 0.129 km =

Change these measurements from metres to kilometres:

13. 4 748 m =

14. 5 492 m =

15. 6 749 m =

16. 3 100 m =

17. 8 071 m =

18. 6 011 m =

19. Write 4 centimetres in metres.

20. Write 4 metres in kilometres.

21. Write 6 millilitres in litres.

22. Write 8 grams in kilograms.

**Answers****Page 3**

1. five point six three    2. six point two four    3. five point five five  
4. seven point nine six    5. six point one two    6. eight point nine two    7. 5.12, 5.14, 5.17

**Page 4**

1. 8.22, 8.24, 8.27    2. 1.61, 1.64, 1.66, 1.69    3. 4.32, 4.33, 4.34, 4.36, 4.37, 4.39  
4. 2.71, 2.72, 2.73, 2.74, 2.76, 2.77, 2.78, 2.79  
5. 3.63    6. 1.85    7. 9.98    8. 6.02    9. 3.17    10. 5.86

**Page 5**

1. sixth tenths    2. seven units    3. Two hundredths    4. Two tenths    5. eight units  
6. one tenth    7. 0.39, 2.39, 3.39, 4.39, 6.39    8. 3.27, 3.50, 3.51, 3.58, 3.75  
9. 0.89, 5.89, 6.80, 9.80, 9.85    10. 0.16, 6.10, 6.15, 6.16, 6.17

**Page 6**

1. one hundredth    2. five units    3. nine hundredths    4. one tenth    5. four hundredths  
6. three hundredths    7. 5.02, 5.03, 5.05, 5.09, 5.32    8. 0.10, 0.40, 0.50, 0.70, 0.90  
9. 5.05, 5.15, 5.51, 5.58, 8.55    10. 6.26, 6.28, 7.26, 7.27, 8.26

**Page 7**

1. four tenths or forty pence    2. six hundredths or six pence  
3. nine tenths or ninety pence    4. Two hundredths or two pence  
5. seven units or seven pounds    6. One tenth or ten pence  
7. 303 p    8. 440 p    9. 423 p    10. 979 p

**Page 8**

11. 3.42    12. 3.45    13. 3.48    14. 6.21    15. 6.23    16. 6.29  
17. any number between 7.0 and 8.0    18. any number between 4.0 and 5.0

**Page 9**

1. add 0.03    2. add 0.03    3. add 0.07    4. add 0.40    5. subtract 0.10    6. subtract 0.06  
7. subtract 0.02    8. add 0.10    9. add 2    10. add 4    11. add 0.20    12. subtract 4  
13. 2.468 km    14. 1.357 km    15. 1.245 km    16. 0.467 km    17. 3.030 km    18. 4.005 km  
19. 0.267 km    20. 0.076 km    21. 8.642 l    22. 6.487 l    23. 1.904 l    24. 4.581 l    25. 0.356 l

**Page 10**

1. 2 457 m    2. 6 967 m    3. 7 728 m    4. 4 004 m    5. 5 005 m    6. 405 m  
7. 36.07 m    8. 90.91 m    9. 50.38 m    10. 20.90 m    11. 70.06 m    12. 80 m  
13. 1.7 litres or 1 700ml    14. 1.7 kg or 1 700 g    15. 2.1 km or 2 100 m

**Page 11**

1. 8.23    2. 8.26    3. 8.29    4. 0.14    5. 0.15    6. 0.18  
7. 5 536m    8. 4 278 m    9. 8 809 m    10. 3 066 m    11. 4 017 m    12. 129 m  
13. 4.748 km    14. 5.492 km    15. 6.749 km    16. 3.1 km    17. 8.071 km    18. 6.011 km  
19. 0.04 m    20. 0.004 km    21. 0.006 ml    22. 0.008 kg