

M1b: Can read, write and order numbers up to 3 decimal places

Commissioned by The PiXL Club Ltd.
July 2018

This resource is strictly for the use of member schools for as long as they remain members of The PiXL Club. It may not be copied, sold nor transferred to a third party or used by the school after membership ceases. Until such time it may be freely used within the member school.

All opinions and contributions are those of the authors. The contents of this resource are not connected with nor endorsed by any other company, organisation or institution.

PiXL Club Ltd endeavour to trace and contact copyright owners. If there are any inadvertent omissions or errors in the acknowledgements or usage, this is unintended and PiXL will remedy these on written notification

Review previous learning

Answer in your books

1. $\frac{3}{8} + \frac{4}{8} =$

5. $\frac{4}{5} + \frac{2}{4} =$

2. $\frac{7}{9} - \frac{2}{9} =$

6. $\frac{1}{3} + \frac{2}{7} =$

3. $\frac{2}{10} + \frac{5}{10} + \frac{5}{10} =$ $=$

7. $\frac{2}{3} - \frac{3}{8} =$

4. $\frac{11}{12} - \frac{5}{12} - \frac{2}{12} =$

8. $\frac{4}{5} - \frac{1}{3} =$

Vocabulary: Reading, writing and ordering numbers

decimal
decimal point
compare
ascending
descending



Teacher's Note:
See 'Vocabulary Shorts' resource below for
ideas and games to develop and embed
vocabulary.

[Vocabulary Shorts](#)

Can read, write and order numbers up to 3 decimal places

We can use this chart to see that the number 32.457 is made up of:

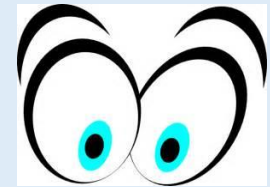
3 tens, 2 ones, 4 tenths (or $\frac{4}{10}$ or 0.4), 5 hundredths (or $\frac{5}{100}$ or 0.05) and 7 thousandths (or $\frac{7}{1000}$ or 0.007).

Thousands (1000)	Hundreds (100)	Tens (10)	Ones (1)	•	Tenths $(\frac{1}{10})$	Hundredths $(\frac{1}{100})$	Thousandths $(\frac{1}{1000})$
		3	2	.	4	5	7

This number is read or written in words as **thirty two point four five seven.**

Can read, write and order numbers up to 3
decimal places

Reading and writing decimals



Read

21.098

We are sometimes given **decimal numbers**
written in **words** and we have to read,
understand the number and write it in **figures**.

This number is read or written in words as
twenty one point zero nine eight.

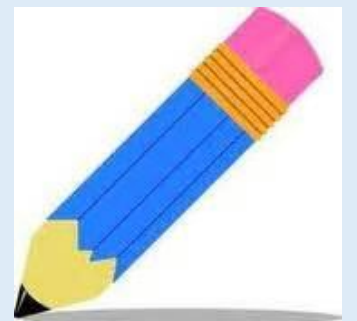
Can read, write and order numbers up to 3
decimal places

Reading and writing decimals

Your turn

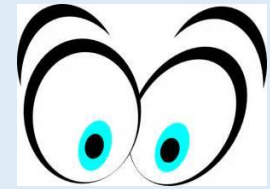
In your books Write the following numbers in figures:

- 1. sixty two point three six five**
- 2. thirty point two zero eight**
- 3. eighty eight point two zero seven**



Can read, write and order numbers up to 3
decimal places

Reading and writing decimals



We will sometimes be asked questions to show that we understand **place value**. Let's look at an example:

Write this total as a **decimal**:

$$4 + \frac{4}{10} + \frac{2}{100} =$$

Let's use a **place value chart** to help us...

Can read, write and order numbers up to 3 decimal places

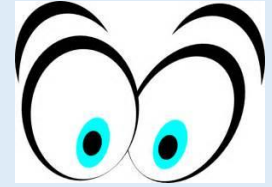
$$4 + \frac{4}{10} + \frac{2}{100} =$$

We can see from our place value chart that this number will be **4.42**

Thousands (1000)	Hundreds (100)	Tens (10)	Ones (1)	•	Tenths $(\frac{1}{10})$	Hundredths $(\frac{1}{100})$	Thousandths $(\frac{1}{1000})$
			4	.	4	2	

Can read, write and order numbers up to 3
decimal places

Reading and writing decimals



Write a number in the box to make this correct:

$$7.645 = 7 + 0.6 + \square + 0.005$$

We know that the number 7.645 is 7 ones, 6 tenths,
4 hundredths and 5 thousandths or:

$$7.645 = 7 + 0.6 + 0.04 + 0.005$$

Therefore the missing number is **0.04**.

Can read, write and order numbers up to 3 decimal places

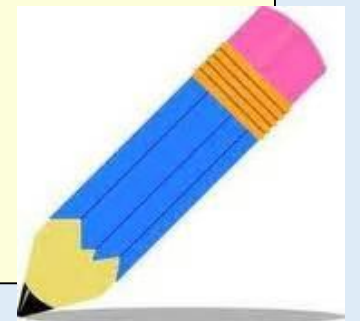
Your turn

Write a number in the box to make these correct:

A. $2.136 = 2 + 0.1 + \square + 0.006$

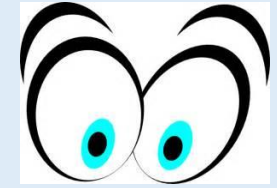
B. $4.25 = 4 + 0.2 + \square$

C. $5.555 = 5 + \square + 0.05 = 0.005$



Can read, write and order numbers up to 3 decimal places

Ordering decimals



For example, we can use this chart to see that the number 32.457 is made up of:
3 tens, 2 ones, 4 tenths (or $\frac{4}{10}$), 5 hundredths (or $\frac{5}{100}$) and 7 thousandths (or $\frac{7}{1000}$).

We can use this understanding of **place value** to help us **order** decimal numbers.

Thousands (1000)	Hundreds (100)	Tens (10)	Ones (1)	•	Tenths $(\frac{1}{10})$	Hundredths $(\frac{1}{100})$	Thousandths $(\frac{1}{1000})$
		3	2	.	4	5	7

Can read, write and order numbers up to 3 decimal places

Ordering decimals

Put these numbers in order from smallest to largest:

5.51

3.75

7.35

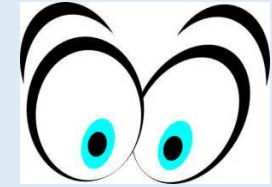
5.73

3.77

Let's work on this question together...

Can read, write and order numbers up to 3 decimal places

Ordering decimals



Put these numbers in order from smallest to largest:

5.51

3.75

7.35

5.73

3.77

To answer this question, let's start by looking at the ones. There are two numbers which have the smallest number of ones: 3.75 and 3.77

Let's first look at 3.75:

3.75



7 tenths

5 hundredths

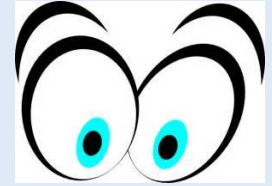
3 ones

3.77 also has 3 ones and 7 tenths but has **7 hundredths**.

Therefore 3.75 is **smaller** than 3.77

Can read, write and order numbers up to 3 decimal places

Ordering decimals



Put these numbers in order from smallest to largest:

5.51

3.75

7.35

5.73

3.77

If we now compare **5.51** and **5.73** in the same way, we can immediately see that **5.51** is **smaller**. Both numbers have 5 ones but **5.51** has **5 tenths** and **5.73** has **7 tenths**. Therefore, **5.51** is smaller.

The decimal numbers in order from smallest to largest will be:

3.75

3.77

5.51

5.73

7.35

Can read, write and order numbers up to 3 decimal places

Your turn

Put these decimal numbers in order from **smallest to largest**:

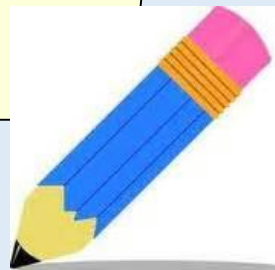
A. 4.28 4.23 4.26 4.19

B. 7.21 5.02 2.10 3.67 2.01

Put these decimal numbers in order from **largest to smallest**:

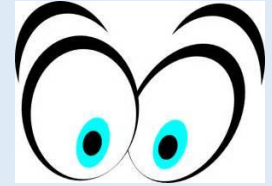
C. 2.01 0.99 2.10 3.09 0.93

D. 5.21 7.98 5.11 7.89 6.09



Can read, write and order numbers up to 3
decimal places

Ordering decimals



Let's now try to order decimal numbers which include
thousandths digits.

Put the numbers below in order from **largest** to **smallest**:

7.6

7.675

7.67

7.556

6.776

Let's work on this
question together.

To **order** these decimals, let's first put them all
in the correct column in the place value table...

First, let's put all the numbers into the correct column on our place value chart.

7.6

7.675

7.67

7.556

6.776

Writing them in the correct **columns** will help us **compare** the **size** of the numbers.

Thousands (1000)	Hundreds (100)	Tens (10)	Ones (1)	●	Tenths $(\frac{1}{10})$	Hundredths $(\frac{1}{100})$	Thousandths $(\frac{1}{1000})$
			7	.	6		
			7	.	6	7	5
			7	.	6	7	
			7	.	5	5	6
			6	.	7	7	6

Now we are ready to put them in **order**...

Put the numbers below in order from **largest** to **smallest**:

7.6

7.675

7.67

7.556

6.776

Remember, the question asks us to order from **largest** to **smallest**. Sometimes, it is easier to start with the **smallest** numbers and then write the numbers in **reverse**. So, starting with comparing the ones, it is clear that **6.776** will be the **smallest** number as that is the only number which hasn't got 7 ones. We know therefore that 6.776 will come last on our list.

Thousands (1000)	Hundreds (100)	Tens (10)	Ones (1)	.	Tenths $(\frac{1}{10})$	Hundredths $(\frac{1}{100})$	Thousandths $(\frac{1}{1000})$
			6	.	7	7	6

Put the numbers below in order from **largest** to **smallest**:

7.6 **7.675** **7.67** **7.556** **6.776**

To find the largest of the remaining numbers, let's first look down the **tenths** column. The top three numbers have **6** in the **tenths column** but **7.556** only has **5** in the **tenths column**. Therefore, 7.556 is smaller and will be the next smallest number on our list.

Thousands (1000)	Hundreds (100)	Tens (10)	Ones (1)	•	Tenths $(\frac{1}{10})$	Hundredths $(\frac{1}{100})$	Thousandths $(\frac{1}{1000})$
			7	.	5	5	6
			6	.	7	7	6

Put the numbers below in order from **largest** to **smallest**:

7.6 **7.675** **7.67** **7.556** **6.776**

We now need to compare the remaining numbers: 7.6, 7.675 and 7.67

We have already seen that the three numbers have **7 ones** and **6 tenths**. We therefore now need to look at the **hundredths** column. **7.675** and **7.67** both have **7** in the **hundredths column** but **7.6** has **nothing** in the **hundredths** column. In other words, **7.6** has **0 hundredths** and is **smaller** than 7.675 and 7.67.

Thousands (1000)	Hundreds (100)	Tens (10)	Ones (1)	•	Tenths $(\frac{1}{10})$	Hundredths $(\frac{1}{100})$	Thousandths $(\frac{1}{1000})$
			7	.	6		
			7	.	5	5	6
			6	.	7	7	6

Put the numbers below in order from **largest** to **smallest**:

7.6

7.675

7.67

7.556

6.776

Lastly, if we compare 7.675 and 7.67, we can see that **7.675 is larger** because **7.675 has 5 thousandths** but **7.67 has 0 thousandths**.

Thousands (1000)	Hundreds (100)	Tens (10)	Ones (1)	•	Tenths $(\frac{1}{10})$	Hundredths $(\frac{1}{100})$	Thousandths $(\frac{1}{1000})$
			7	.	6	7	5
			7	.	6	7	
			7	.	6		
			7	.	5	5	6
			6	.	7	7	6

Can read, write and order numbers up to 3 decimal places

The list of decimals in order from **largest to smallest** is:

7.675 **7.67** **7.6** **7.556** **6.776**

Another method is to write each of the numbers out **with the same number of decimal places** to show that there is nothing in these place value columns:

7.675 7.67**0** 7.6**00** 7.556 6.776

(You may find it easier to write the list from smallest to largest first and then reverse the order of the numbers.)

Can read, write and order numbers up to 3 decimal places

Your turn

Put these decimal numbers in order from **smallest to largest**:

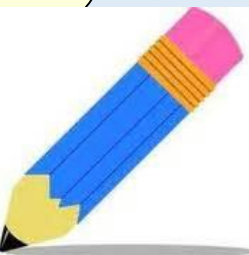
A. 3.867 3.857 2.604 1.989

B. 0.89 1.099 0.829 1.09

Put these decimal numbers in order from **largest to smallest**:

C. 0.076 0.70 0.607 0.067

D. 9.80 8.901 0.18 8.109



Problem solving

Kyle runs the 200m in 25.7 seconds.
Harry runs 12 seconds slower than Kyle.
What time did Harry run the 200m in?



Problem solving

Ben completed the 100m sprint in 17.58 seconds.

Levi completed it in 17.409 seconds.

Robert completed it in 17.582 seconds.

Who came first, second and third?

