

## Lesson 2 – Place Value (Decimals)

### Starter

- 1) Write down a five digit number with a 6 as the thousands digit.
- 2) Write down a 6 digit number with a 2 as the hundreds digit
- 3) Write down the biggest 5 digit even number you could make with these numbers: 8, 2, 5, 6, 3
- 4) Using the digits 3, 4, 5, 6, 7, how many different 5 digit numbers could you make that are between 30000 and 40000?

### Starter Answers

- 1) 45678      2) 128637      3) 86532      4) 24

If we split a whole into **ten** parts, we would call these **tenths**.  
If we split a whole into one **hundred** parts, we call these **hundredths**.  
If we split a whole into one **thousand** parts, we call these **thousandths**.  
You can visualise this using this interactive [link](#) from Maths Pad.

We can also use **place value grids** for numbers with decimal digits.

1000	100	10	1	●	0.1	0.01	0.001	0.0001	0.00001
Thousands	Hundreds	Tens	Ones	●	tenths	hundredths	thousandths	ten-thousandths	hundred-thousandths
				●					

### Example 1

- a) Write down the value of the 6 in the number 0.6078      **6 tenths**
- b) Write down the value of the 5 in the number 0.345      **5 thousandths**
- c) Write down the value of the 7 in the number 0.8987      **7 ten-thousandths**

### NOTE:

We can think of the number 0.12 in two ways.

We could say it is **one tenth** and **two hundredths**.

Alternatively, we could say it is **twelve hundredths**. This is because a tenth is split into ten hundredths, so we have a tenth plus two extra hundredths.

### Example 2

Fill in the gaps:

- 1) Thirty hundredths is the same as \_\_\_\_ tenths
- 2) 0.24 is \_\_\_\_ tenths and \_\_\_\_ hundredths
- 3) 0.24 is \_\_\_\_ hundredths
- 4) 0.102 is \_\_\_\_ tenths and \_\_\_\_ thousandths
- 5) 0.102 is \_\_\_\_ thousandths

## Answers

- 1) Thirty hundredths is the same as 3 tenths
- 2) 0.24 is 2 tenths and 4 hundredths
- 3) 0.24 is 24 hundredths
- 4) 0.302 is 3 tenths and 2 thousandths
- 5) 0.302 is 302 thousandths

## Example 3

Write the number 3.458 in words.

Three ones, four tenths, five hundredths and eight thousandths

## Leading and Trailing Zeros

Sometimes, zeros can be removed from numbers without changing the value of the number.

The number 0.560000 is the same as the number 0.56. The unnecessary zeros are called **trailing zeros**.

The number 00056 is the same as the number 56. The unnecessary zeros at the front are called **leading zeros**.

The number 0.56007 does not have any unnecessary zeros. We need the zero at the start to tell us that there are no units. We also need the zeros in the middle as we have 7 hundred-thousandths at the end.

## Example 4

Cross off the unnecessary zeros in each of these numbers:

- 1) 00079
- 2) 018
- 3) 0.0045
- 4) 0.70
- 5) 0.4050

## Answers:

- 1) ~~000~~79
- 2) ~~0~~18
- 3) 0.0045
- 4) 0.7~~0~~
- 5) 0.405~~0~~