

# Year 5 and 6 – Decimals



## Key Vocabulary

<b>Tenths</b>	The first digit to the right of the decimal point; one out of 10 equal parts of a whole.
<b>Hundredths</b>	The second digit to the right of the decimal point; one out of 100 equal parts of a whole.
<b>Thousandths</b>	The third digit to the right of the decimal point; one out of 1000 equal parts of a whole.
<b>Decimal equivalents</b>	These are decimal numbers that are equal in value to a fraction. E.g., $\frac{1}{2} = 0.5$
<b>Rounding</b>	Rounding means making a number simpler but keeping its value close to what it was
<b>Decimal point</b>	It is a point or dot we use to separate the whole number part from the fractional part of a decimal number.
<b>Place value</b>	Place value is the value of each digit in a number. For example, the 5 in 350 represents 5 tens, or 50; however, the 5 in 5,006 represents 5 thousands, or 5,000.
<b>Recurring decimal</b>	Recurring decimals: these have one or more repeating numbers or sequences of numbers after the decimal point, which continue infinitely. E.g., $\frac{1}{3} = 0.333333333$ .
<b>Decimal places</b>	The position of a digit to the right of the decimal point.

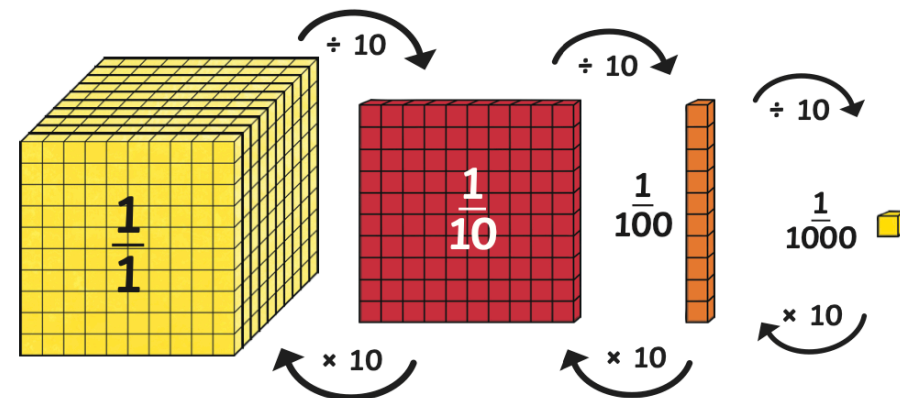
## Place Value

Tens	Ones	tenths	hundredths	thousandths
	1 1 1	0.1 0.1 0.1 0.1	0.01 0.01	0.001 0.001 0.001 0.001 0.001 0.001

$3 + \frac{4}{10} + \frac{2}{100} + \frac{6}{1000} \leftarrow 3.426 \rightarrow 3 + 0.4 + 0.02 + 0.006$

1	2	3	4	5	6	7	8	9
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009

## Tenths, Hundredths and Thousandths



# Year 5 and 6 – Decimals

## Multiplying and dividing by 10, 100 and 1000

Tens	Ones	Tenths	Hundredths	Thousandths
3	8			
	3	8		
3	8			

$\div 10$  (arrow from 8 to 3) and  $\times 10$  (arrow from 3 to 8)

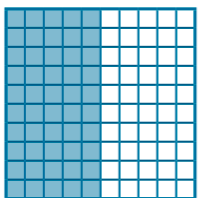
Tens	Ones	Tenths	Hundredths	Thousandths
3	8			
	0	3	8	
3	8			

$\div 100$  (arrow from 8 to 0) and  $\times 100$  (arrow from 0 to 8)

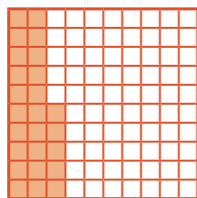
Tens	Ones	Tenths	Hundredths	Thousandths
3	8			
	0	0	3	8
3	8			

$\div 1000$  (arrow from 8 to 0) and  $\times 1000$  (arrow from 0 to 8)

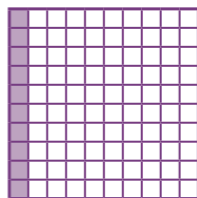
## Fraction, decimal and percentage equivalents



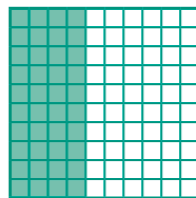
$$50\% = \frac{50}{100} = \frac{1}{2} = 0.5$$



$$25\% = \frac{25}{100} = \frac{1}{4} = 0.25$$



$$10\% = \frac{10}{100} = \frac{1}{10} = 0.1$$



$$40\% = \frac{40}{100} = \frac{2}{5} = 0.4$$

## Rounding decimals

**1** ← 1.1 1.2 1.3 1.4 | 1.5 1.6 1.7 1.8 1.9 → **2**

If the tenths digit is 1, 2, 3 or 4, we round down to the nearest whole number.

If the tenths digit is 5, 6, 7, 8 or 9, we round up to the nearest whole number.

**1.1** ← 1.11 1.12 1.13 1.14 | 1.15 1.16 1.17 1.18 1.19 → **1.2**

If the hundredths digit is 1, 2, 3 or 4, we round down to the nearest tenth.

If the hundredths digit is 5, 6, 7, 8 or 9, we round up to the nearest tenth.

## Multiplying decimals by integers

	3	.	4	5	
×				3	
	1	0	.	3	5
			1	1	

$$3.21 \times 3 = 9.63$$

Ones	tenths	hundredths
1 1 1	0.1 0.1	0.01
1 1 1	0.1 0.1	0.01
1 1 1	0.1 0.1	0.01

## Fractions to Decimals

$$\frac{7}{20} = \frac{35}{100} \text{ or } 0.35$$

$$\frac{7}{25} = \frac{28}{100} \text{ or } 0.28$$

$$\frac{7}{50} = \frac{14}{100} \text{ or } 0.14$$

$$\frac{8}{200} = \frac{4}{100} \text{ or } 0.04$$

## Dividing decimals by integers

	8	.	12	÷	4
	2	.	0	3	
4	8	.	12		

$$6.93 \div 3 = 2.31$$

Ones	tenths	hundredths
1 1	0.1 0.1 0.1	0.01
1 1	0.1 0.1 0.1	0.01
1 1	0.1 0.1 0.1	0.01