

Decimals

Knowledge Organiser

Key Vocabulary

decimal place

decimal fraction

recurring decimal

equivalent fraction

tenth

sharing

partitioning

exchanging

rounding to 3d.p.

hundredth

thousandth

equal to

remainder

grouping

Place Value

Tens	Ones	tenths	hundredths	thousandths
				

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

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

Fractions to Decimals

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

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

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

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

When the denominator is not a factor or multiple of 100

$$\frac{7}{8} = 7 \div 8$$

	0	8	7	5
8	7	0	0	0

Dividing Decimals by Integers

$$8.12 \div 4$$

	2	0	3
4	8	1	¹ 2

$$6.93 \div 3 = 2.31$$

Ones	tenths	hundredths
		
		
		

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Multiplying and Dividing by 10, 100 and 1000

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
			2	0	8	
		$\times 10$	2	0	8	
			2	0	8	
			2	0	8	

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
		4	3	5		
$\times 100$	4	3	5	0		
		4	3	5		
		4	3	5		

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
			1	3	5	1
$\times 1000$	1	3	5	1		
			1	3	5	1
			1	3	5	1

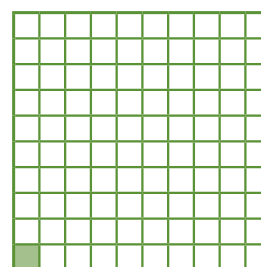
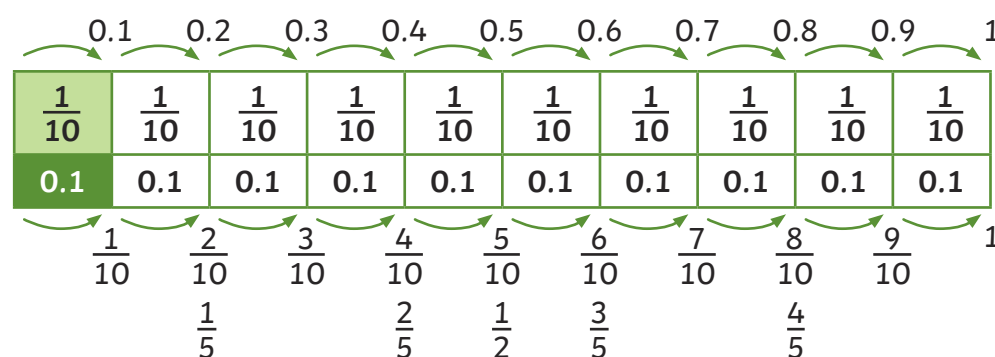
Multiplying Decimals by Integers

	3	4	5
$\times$			3
1	0	3	5
1	1		

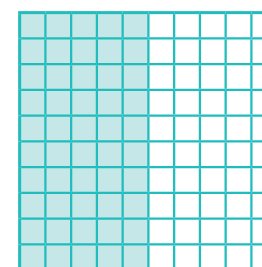
$$3.21 \times 3 = 9.63$$

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

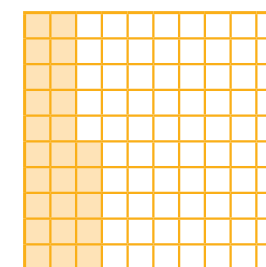
Decimal Numbers as Fractions



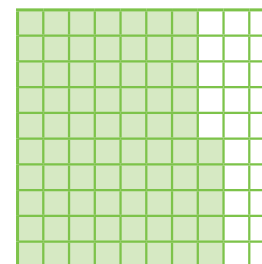
$$\frac{1}{100} = 0.01$$



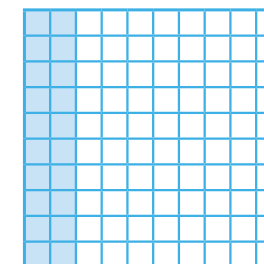
$$\frac{50}{100} = \frac{1}{2} = 0.5$$



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



$$\frac{75}{100} = \frac{3}{4} = 0.75$$



$$\frac{20}{100} = \frac{1}{5} = 0.2$$

$$\frac{1}{3} = 0.33$$

$$\frac{1}{8} = 0.125$$

$$\frac{1}{1000} = 0.001$$