

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
	● 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



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

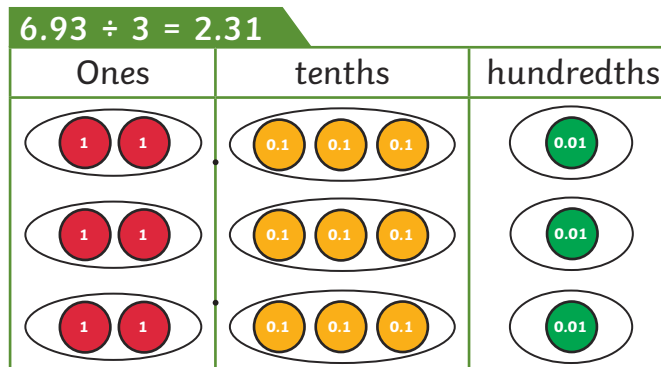
$$\frac{7}{8} = 7 \div 8$$

	0	8	7	5
8	7	0	0	0

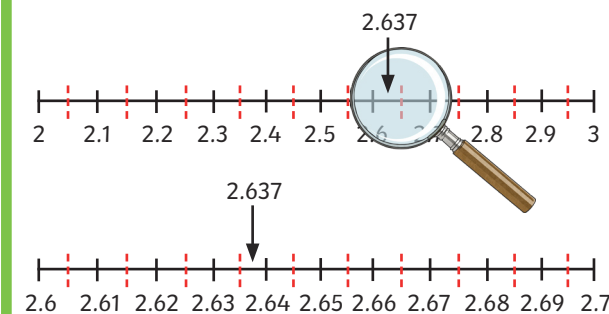
Dividing Decimals by Integers

$$8.12 \div 4$$

	2	0	3
4	8	1	2



Rounding Decimals



2.637 rounded to the nearest tenth is 2.6.
2.637 rounded to the nearest hundredth is 2.64.

Multiplying and Dividing by 10, 100 and 1000

Thousands	Hundreds	Tens	Ones	•	tenths	hundredths	thousandths
			2	•	0	8	
		← × 10	2	•	0	8	
				•	8		
			2	•	0	8	
				•	8		
				•	0	8	

Thousands	Hundreds	Tens	Ones	•	tenths	hundredths	thousandths
		4	3	•	5		
← × 100		4	3	•	5		
4	3	5	0	•			
				•	5		
		4	3	•	5		
				•	5		

Thousands	Hundreds	Tens	Ones	•	tenths	hundredths	thousandths
			1	•	3	5	1
← × 1000			1	•	3	5	1
1	3	5	1	•			
				•	3	5	1
				•	3	5	1
				•	3	5	1

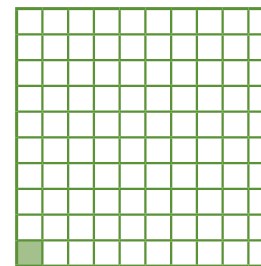
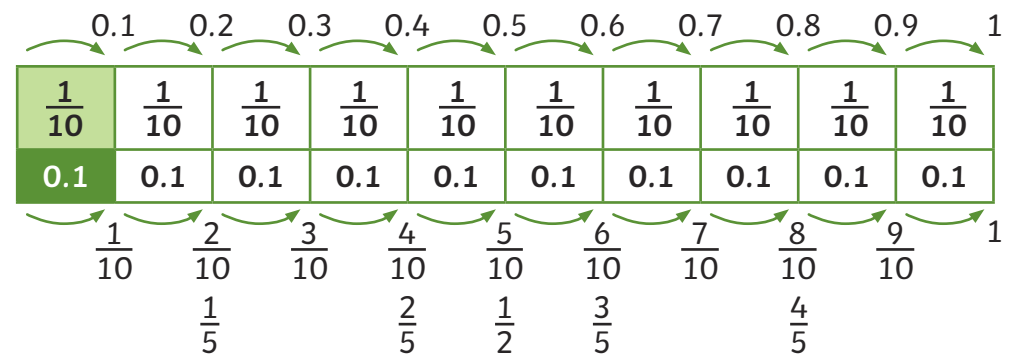
Multiplying Decimals by Integers

	3	.	4	5
×				3
<hr/>				
1	0	.	3	5
	1		1	

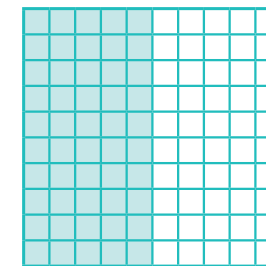
$$3.21 \times 3 = 9.63$$

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

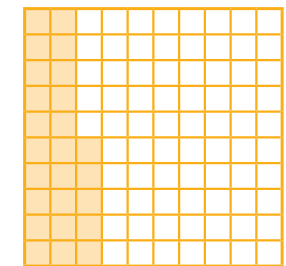
Decimal Numbers as Fractions



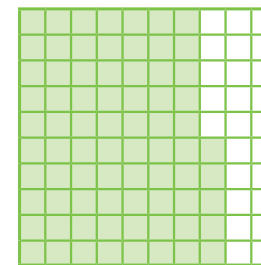
$$\frac{1}{100} = 0.01$$



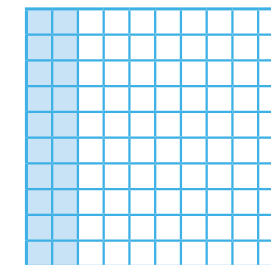
$$\frac{50}{100} = \frac{1}{2} = 0.5$$



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



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



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

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

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

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