



Year 6 – Maths – Decimals

Key vocabulary

decimal place
decimal fraction
recurring decimal
equivalent fraction
tenth
sharing
partitioning
exchanging
rounding to 3d.p.
hundredth
thousandth
equal to
remainder
grouping

Links to other learning

Year 5 – Read and write decimal numbers as fractions; Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents; Round decimals with 2 decimal places to the nearest whole number and to 1 decimal place; Read, write, order and compare numbers with up to 3 decimal places; Solve problems involving number up to 3 decimal places; Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per 100', and write percentages as a fraction with denominator 100, and as a decimal fraction.

Key questions

What is 0.02 as a fraction?

Can you convert $\frac{7}{25}$ to a decimal?

Can you multiply 3.72 by 6?

Can you solve 265 divided by 1000? Multiplied by 1000?

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

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

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

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

Fractions to decimals

$$\begin{aligned} \frac{7}{20} &\xrightarrow{\times 5} \frac{35}{100} \text{ or } 0.35 \\ \frac{7}{25} &\xrightarrow{\times 4} \frac{28}{100} \text{ or } 0.28 \\ \frac{7}{50} &\xrightarrow{\times 2} \frac{14}{100} \text{ or } 0.14 \\ \frac{8}{200} &\xrightarrow{\div 2} \frac{4}{100} \text{ or } 0.04 \end{aligned}$$

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Multiplying and Dividing by 10, 100 and 1000

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

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

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

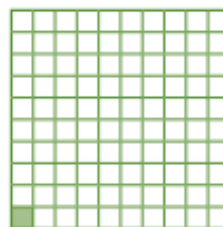
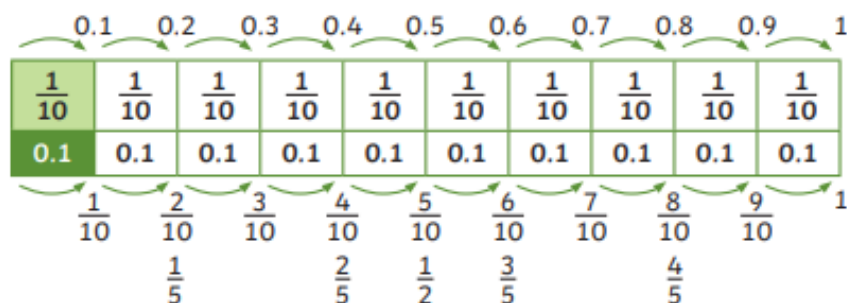
Multiplying Decimals by Integers

	3	4	5
×			3
1	0	3	5
	1	1	

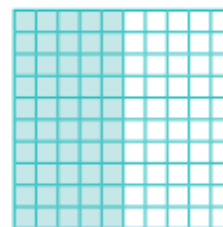
$$3.21 \times 3 = 9.63$$

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

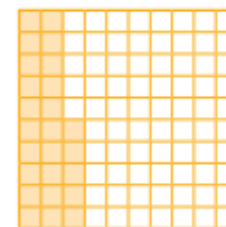
Decimal Numbers as Fractions



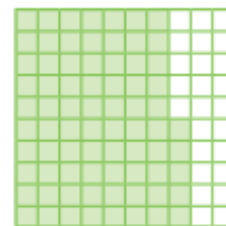
$$\frac{1}{100} = 0.01$$



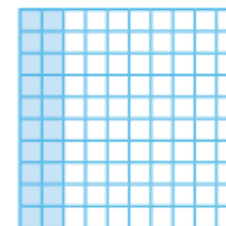
$$\frac{50}{100} = \frac{1}{2} = 0.5$$



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



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



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

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

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

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