

Decimals

Knowledge Organiser

Key Vocabulary	Tenths, Hundredths and Thousandths
tenths	$\frac{0}{10}$ $\frac{1}{10}$ $\frac{2}{10}$ $\frac{3}{10}$ $\frac{4}{10}$ $\frac{5}{10}$ $\frac{6}{10}$ $\frac{7}{10}$ $\frac{8}{10}$ $\frac{9}{10}$ $\frac{10}{10}$
hundredths	 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1
decimal tenths	$\frac{0}{100}$ $\frac{1}{100}$ $\frac{2}{100}$ $\frac{3}{100}$ $\frac{4}{100}$ $\frac{5}{100}$ $\frac{6}{100}$ $\frac{7}{100}$ $\frac{8}{100}$ $\frac{9}{100}$ $\frac{10}{100}$
decimal hundredths	 0 0.01 0.02 0.03 0.04 0.05 0.06 0.07 0.08 0.09 0.1
decimal equivalents	$\frac{0}{1000}$ $\frac{1}{1000}$ $\frac{2}{1000}$ $\frac{3}{1000}$ $\frac{4}{1000}$ $\frac{5}{1000}$ $\frac{6}{1000}$ $\frac{7}{1000}$ $\frac{8}{1000}$ $\frac{9}{1000}$ $\frac{10}{1000}$
part-whole model	0 0.001 0.002 0.003 0.004 0.005 0.006 0.007 0.008 0.009 0.01
rounding	
decimal point	
place value	

Order and Compare Numbers with Three Decimal Places

Ones	Tenths	Hundredths	Thousandths
	$\frac{1}{10}$ $\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$ $\frac{1}{1000}$ $\frac{1}{1000}$
0	.	2	1 3

Ones	Tenths	Hundredths	Thousandths
1		$\frac{1}{100}$ $\frac{1}{100}$	$\frac{1}{1000}$ $\frac{1}{1000}$
1	.	0	2 2

Ones	Tenths	Hundredths	Thousandths
1 1	$\frac{1}{10}$		$\frac{1}{1000}$ $\frac{1}{1000}$ $\frac{1}{1000}$
2	.	1	0 3

Decimal Numbers as Fractions

$0.71 = \frac{71}{100} = \frac{7}{10} + \frac{1}{100}$

$0.37 = \frac{37}{100} = \frac{3}{10} + \frac{7}{100}$

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Multiplying and Dividing by 10, 100 and 1000

Tens	Ones	Tenths	Hundredths	Thousandths
3	8			
	3	8		
3	8			

$\div 10$ (arrow from 38 to 3.8)
 $\times 10$ (arrow from 3.8 to 38)

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

$\div 100$ (arrow from 38 to 0.38)
 $\times 100$ (arrow from 0.38 to 38)

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

$\div 1000$ (arrow from 38 to 0.038)
 $\times 1000$ (arrow from 0.038 to 38)

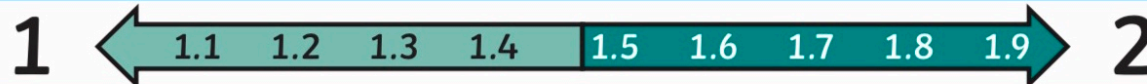
Adding and Subtracting Decimals

$$0.8 + 0.001 = 0.801$$

$$1.031 - 0.23 = 0.801$$

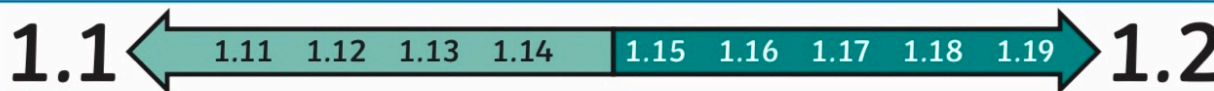
$$0.4005 + 0.4005 = 0.801$$

Rounding Decimals



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

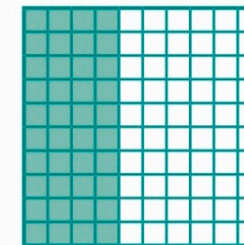
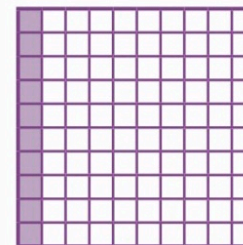
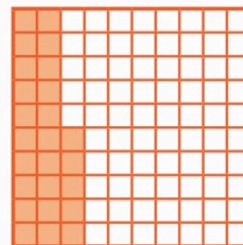
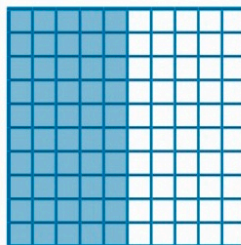
If the tenths digit is 5, 6, 7, 8 or 9, we round up to the nearest whole number.



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.

Percentage and Decimal Equivalents



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

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

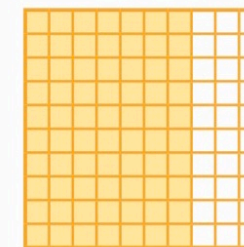
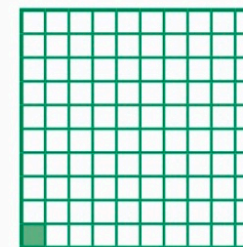
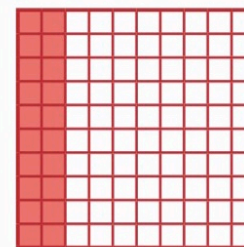
$$10\% = \frac{10}{100} = \frac{1}{10} = 0.1$$

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

Crossing the Whole

$$0.82 + 0.63 = 1.45$$

$$2.531 - 0.6 = 1.931$$



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

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

$$70\% = \frac{70}{100} = \frac{7}{10} = 0.7$$

