Decimals

Knowledge Organiser

Key Vocabulary

- tenths
- hundredths
- decimal tenths
- decimal hundredths
- decimal equivalents
- part-whole model
- rounding
- decimal point
- place value

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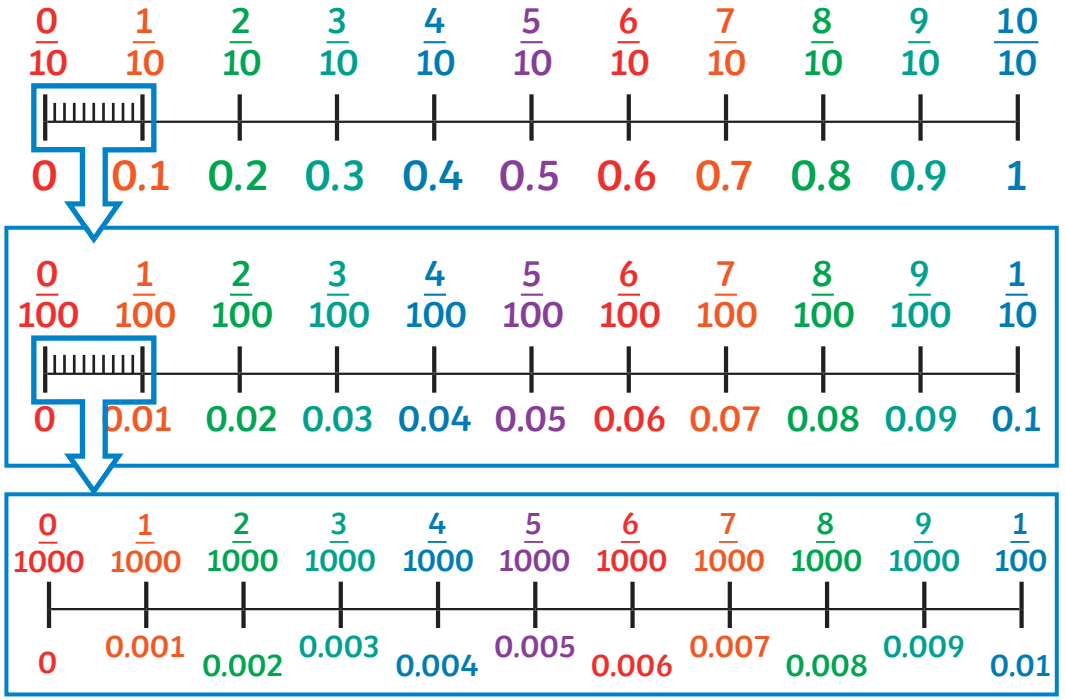
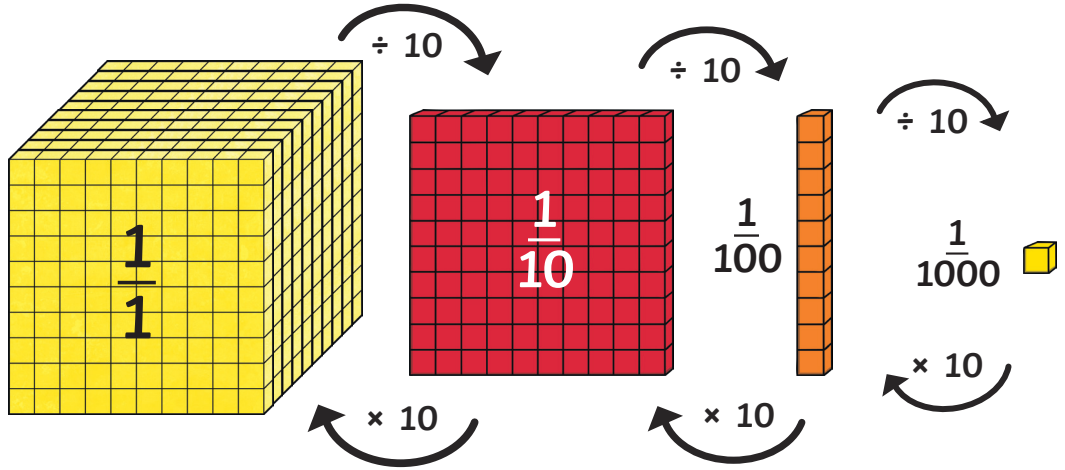
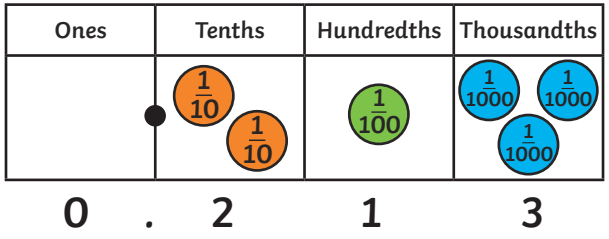
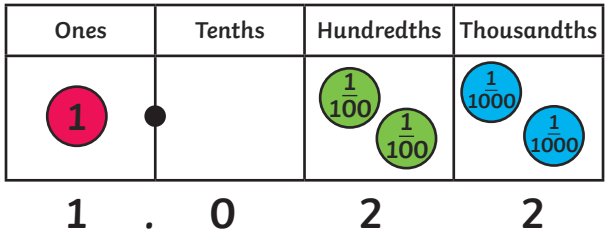
Tenths, Hundredths and Thousandths

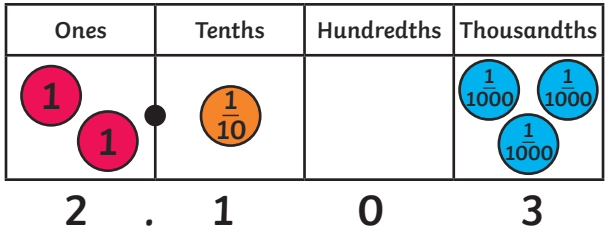




Order and Compare Numbers with Three Decimal Places







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			

÷ 10 (3 8 → 3 8)

× 10 (3 8 → 3 8)

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

÷ 100 (3 8 → 0 3 8)

× 100 (0 3 8 → 3 8)

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

÷ 1000 (3 8 → 0 0 3 8)

× 1000 (0 0 3 8 → 3 8)

Adding and Subtracting Decimals

0.8 + 0.001 = 0.801

1.031 - 0.23 = 0.801

0.4005 + 0.4005 = 0.801

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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.

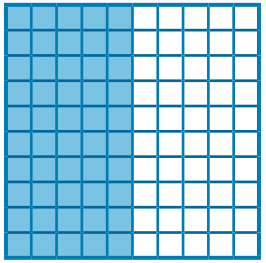
If the tenths digit is 5, 6, 7, 8 or 9, we round up to the nearest whole number.

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

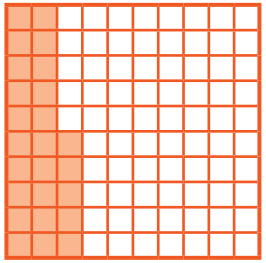
If the hundredths digit is 1, 2, 3 or 4, we round down to the nearest tenth.

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

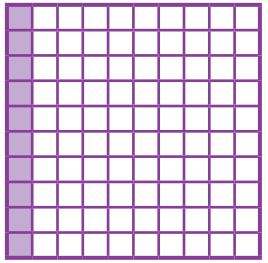
Percentage and Decimal Equivalents



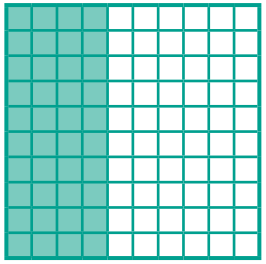
$50\% = \frac{50}{100} = \frac{1}{2} = 0.5$



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



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

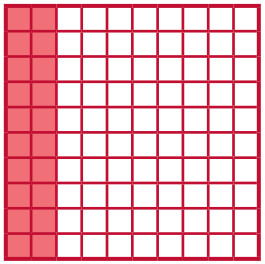


$40\% = \frac{40}{100} = \frac{2}{5} = 0.4$

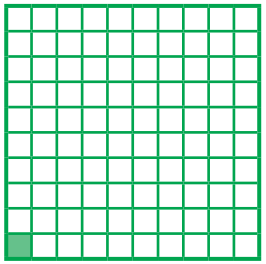
Crossing the Whole

0.82 + 0.63 = 1.45

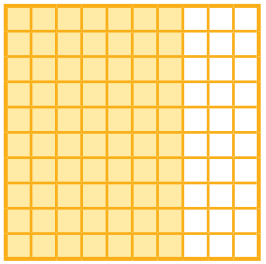
2.531 - 0.6 = 1.931



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



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



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