

# Year 5 – Maths – Decimals

## Key vocabulary

tenths

hundredths

decimal tenths

decimal hundredths

decimal equivalents

part-whole model

rounding

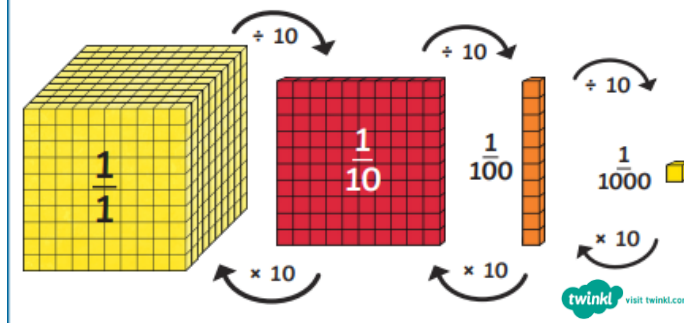
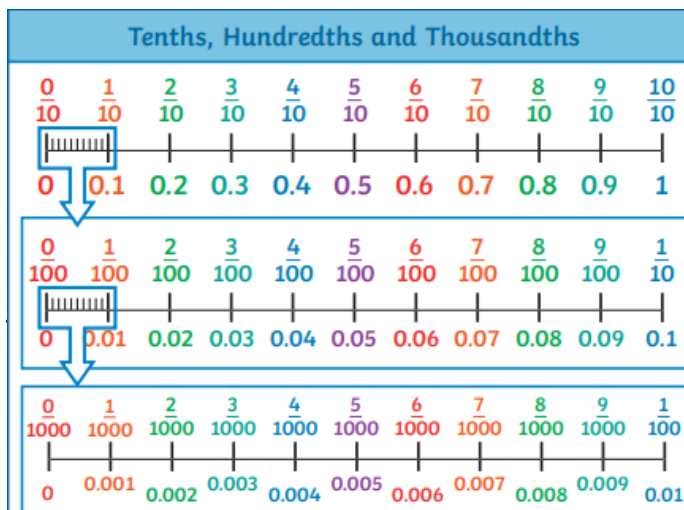
decimal point

place value

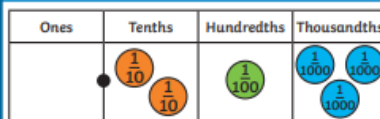
## Links to other learning

**Year 4** – Count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10; Recognise and write decimal equivalents of any number of tenths or hundredths; Recognise and write decimal equivalents; Find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths; Round decimals with 1 decimal place to the nearest whole number; Compare numbers with the same number of decimal places up to 2 decimal places; Solve simple measure and money problems involving fractions and decimals to 2 decimal places.

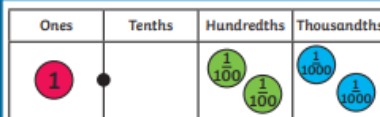
**Year 6** – Associate a fraction with division and calculate decimal fraction equivalents for a simple fraction; Identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places; Multiply one-digit numbers with up to 2 decimal places by whole numbers; Use written division methods in cases where the answer has up to 2 decimal places; Solve problems which require answers to be rounded to specified degrees of accuracy; Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts



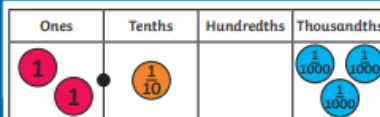
## Order and Compare Numbers with Three Decimal Places



0 . 2 1 3



1 . 0 2 2



2 . 1 0 3

## Decimal Numbers as Fractions

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

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

## Key questions

What is 0.08 as a fraction?

What is 2.7 rounded to the nearest whole number?

What is 0.75 of 300?

Can you solve 185 divided by 100?  
Multiplied by 100?



# Year 5 – Maths – Decimals

## 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)

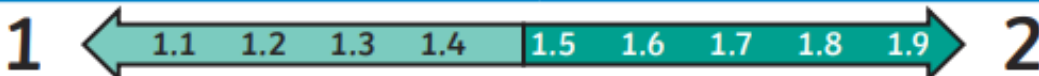
## Adding and Subtracting Decimals

$$0.8 + 0.001 = 0.801$$

$$1.031 - 0.23 = 0.801$$

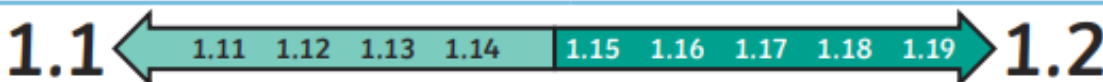
$$0.4005 + 0.4005 = 0.801$$

## Rounding Decimals



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

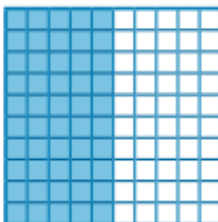
If the tenths digit is 5, 6, 7, 8 or 9, we round up to the nearest whole number.



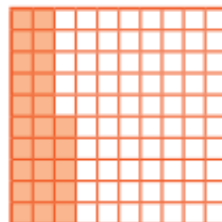
If the hundredths digit is 1, 2, 3 or 4, we round down to the nearest tenth.

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

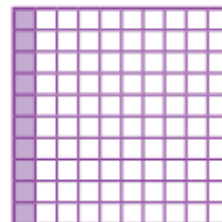
## Percentage and Decimal Equivalents



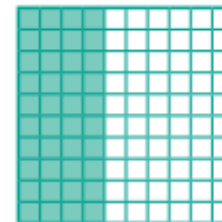
$$50\% = \frac{50}{100} = \frac{1}{2} = 0.5$$



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



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

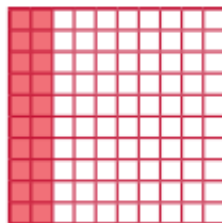


$$40\% = \frac{40}{100} = \frac{2}{5} = 0.4$$

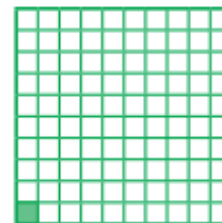
## Crossing the Whole

$$0.82 + 0.63 = 1.45$$

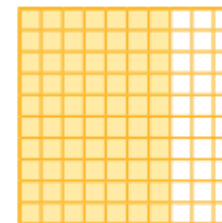
$$2.531 - 0.6 = 1.931$$



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



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



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