



# Decimals

### Knowledge

- Three decimal places
- Decimals as fractions
- Fractions to decimals

### Skills

- Multiply by 10, 100 and 1000
- Divide by 10, 100 and 1000
- Multiply decimals by integers
- Divide decimals by integers
- Division to solve problems

### Vocabulary

Decimal place, decimal fraction, equivalent, recurring, tenth, share, exchanging, round to 3 d.p, hundredth, thousandth

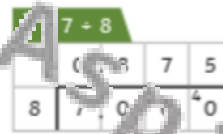
### Fractions to Decimals

To convert fractions to decimals the denominator must be made 100.

$$\frac{7}{20} = \frac{35}{100} \text{ or } 0.35$$

$$\frac{8}{200} = \frac{4}{100} \text{ or } 0.04$$

When the denominator is not a factor or multiple of 100 then you divide the numerator by the denominator.



### Place Value to 3 dp

Tens	Ones	tenths	hundredths	thousandths
	1 1 1	0.1 0.1 0.1	0.01	0.001 0.001 0.001

### Multiplying Decimals by Integers

$$\begin{array}{r} 345 \\ \times 3 \\ \hline 1035 \end{array}$$

$$3.21 \times 3 = 9.63$$

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

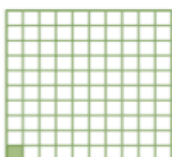
### Dividing Decimals by Integers

$$\begin{array}{r} 8.12 \div 4 \\ 2.03 \end{array}$$

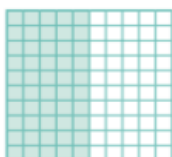
$$8.12 \div 4 = 2.03$$

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

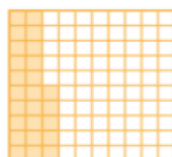
### Decimal Numbers as Fractions



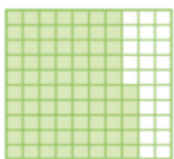
$$\frac{1}{100} = 0.01$$



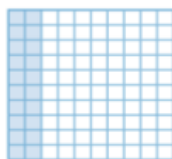
$$\frac{50}{100} = \frac{1}{2} = 0.5$$



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



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



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

### Multiplying and Dividing by 10, 100 and 1000

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
			2	0	8	
		$\times 10$	20	8		
			2	0	8	

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
		4	3	5		
$\times 100$	4	3	5			
	4	3	5			

Thousands	Hundreds	Tens	Ones	tenths	hundredths	thousandths
			1	3	5	1
$\times 1000$	1	3	5	1		
	1	3	5	1		