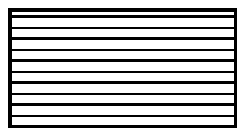
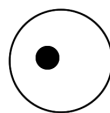


Fractions • Decimals • Percentages



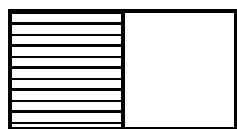
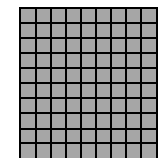
1

one-whole



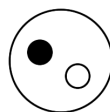
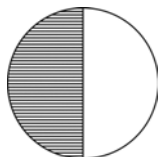
1

100%



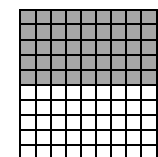
$\frac{1}{2}$

one-half

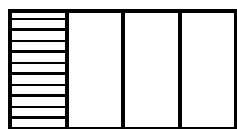


0.5

50%

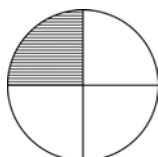


divide by 2



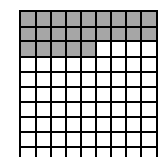
$\frac{1}{4}$

one-quarter

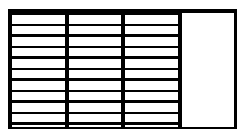


0.25

25%

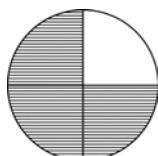


divide by 4



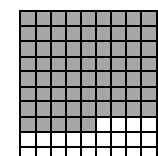
$\frac{3}{4}$

three-quarters

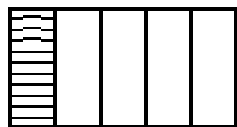


0.75

75%



divide by 4
then
multiply by 3



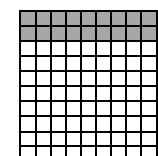
$\frac{1}{5}$

one-fifth

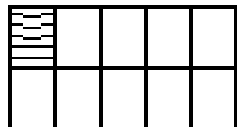


0.2

20%

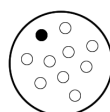
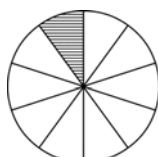


divide by 5



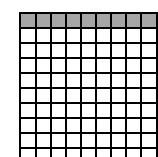
$\frac{1}{10}$

one-tenth

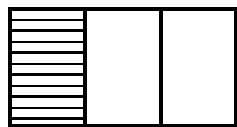


0.1

10%

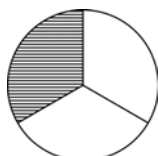


divide by 10



$\frac{1}{3}$

one-third



0. $\dot{3}$

$33\frac{1}{3}\%$

divide by 3

Everyday examples of **Fractions • Decimals • Percentages**

1

1

100%

one-whole



1 year



(1 beat)

$\frac{1}{2}$

0.5

50%

one-half



6 months



$\left(\frac{1}{2}\right)$ beat

$\frac{1}{4}$

0.25

25%

one-quarter



3 months



$\left(\frac{1}{4}\right)$ beat

$\frac{3}{4}$

0.75

75%

three-quarters



9 months

$\frac{1}{5}$

0.2

20%

one-fifth



$\frac{1}{10}$

0.1

10%

one-tenth



$\frac{1}{3}$

0. $\dot{3}$

$33\frac{1}{3}\%$

one-third



4 months

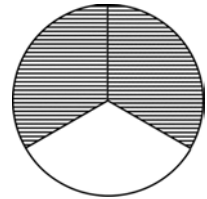
Fractions

When a whole is divided into equal parts, fractions are formed.

A simple fraction has 2 parts: $\frac{\text{numerator}}{\text{denominator}}$

$\frac{2}{3}$

- ← The numerator is 2.
It tells us how many equal parts we have.
- ← The denominator is 3.
It tells us how many **equal** parts the whole has been divided into.



Decimals

A decimal point is used to separate the whole number from the decimal or fraction part.

The number 428.307 means:

| hundreds | tens | units | . | tenths | hundredths | thousandths | | | | |
|----------------|------|---------------|-----|--------------|------------|-------------------------|-----|--------------------------|-----|---------------------------|
| 4 | 2 | 8 | . | 3 | 0 | 7 | | | | |
| 4×100 | $+$ | 2×10 | $+$ | 8×1 | $+$ | $3 \times \frac{1}{10}$ | $+$ | $0 \times \frac{1}{100}$ | $+$ | $7 \times \frac{1}{1000}$ |
| 400 | $+$ | 20 | $+$ | 8 | $+$ | $\frac{3}{10}$ | $+$ | 0 | $+$ | $\frac{7}{1000}$ |

Percentages

A percentage is a fraction with a denominator of 100.

$$8\% = \frac{8}{100} = 0.08$$

Conversions

Fractions to decimals

by changing the denominator

$$\frac{2}{5} = \frac{4}{10} = 0.4$$

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

by dividing the numerator by the denominator

$$\frac{3}{8} = 3 \div 8 = 0.375$$

$$\frac{2}{9} = 2 \div 9 = 0.222\dots = 0.\dot{2}$$

Fractions to percentages

create an equivalent fraction with a denominator of 100

$$\frac{13}{20} \times \frac{5}{5} = \frac{65}{100} = 65\%$$

Decimals to fractions

write the decimal using place value

$$0.16 = \frac{16}{100} = \frac{4}{25}$$

Decimals to percentages

multiply the decimal by 100%

$$0.27 \times 100\% = 27\%$$

$$0.085 \times 100\% = 8.5\%$$

Percentages to fractions

write as a fraction out of 100 and simplify

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

Percentages to Decimals

Divide the percentage by 100

$$72\% \div 100 = 0.72$$

Teaching strategies

<http://bit.ly/teachingfdp>