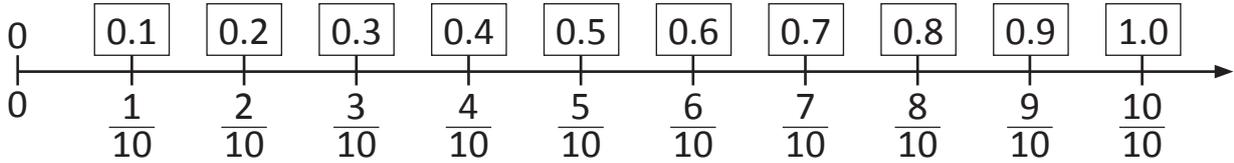


Fractions, decimals and percentages – writing tenths as decimals

Tenths are written as decimals like this:



1 Shade the fraction strips so each one matches the fraction or the decimal:

a 0.7

--	--	--	--	--	--	--	--	--	--

b $\frac{4}{10}$

--	--	--	--	--	--	--	--	--	--

c 0.5

--	--	--	--	--	--	--	--	--	--

2 Order each set of fractions and decimals from smallest to largest:

a $0.8, 0.2, \frac{4}{10}, \frac{9}{10}$

b $\frac{9}{10}, 0.1, 1.0, \frac{5}{10}$

3 Show the place value of these decimals by writing them in the table:

		Units		Tenths
a	0.6		•	
b	2.7		•	
c	5.1		•	



Units		Tenths
3	•	8

The decimal point signals the place value of numbers smaller than 1.
This number is 3 and $\frac{8}{10}$ or 3 and 0.8.

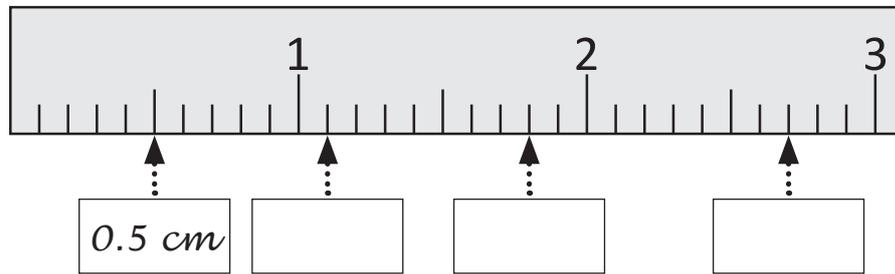
4 Connect the matching fractions and decimals:

$\frac{4}{10}$	0.6
$1\frac{2}{10}$	0.7
$\frac{6}{10}$	1.2
$\frac{7}{10}$	0.4

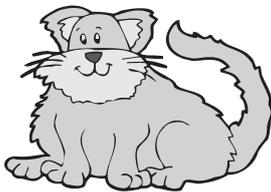
$\frac{7}{10}$	3.5
$4\frac{3}{10}$	0.9
$\frac{9}{10}$	4.3
$3\frac{5}{10}$	0.7

Fractions, decimals and percentages – writing tenths as decimals

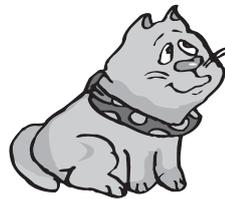
- 5 Label this section of a ruler as centimetres in decimals. The first box has been done for you. (Note this diagram has been enlarged so you can see the lines clearly.)



- 6 These 3 cats were the finalists in the Fattest Cat Competition. Fill in the blanks below:



Felix – 12.2 kg



Leroy – 11.9 kg



Mosley – 11.5 kg

- a _____ is heavier than _____ by $\frac{3}{10}$ of a kilogram.
- b _____ is heavier than _____ by $\frac{4}{10}$ of a kilogram.
- c _____ is lighter than _____ by $\frac{7}{10}$ of a kilogram.

- 7 Write the mass of each cat and < or > to make the sentence true.

a Felix Leroy

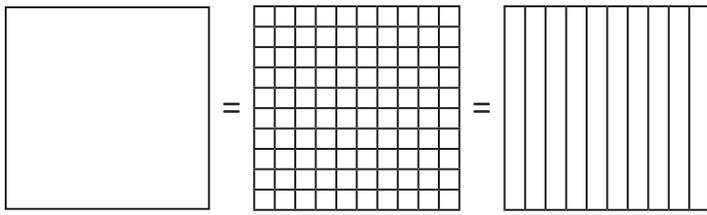
b Mosley Felix

- 8 The combined weight of which two cats is 23.7 kg?

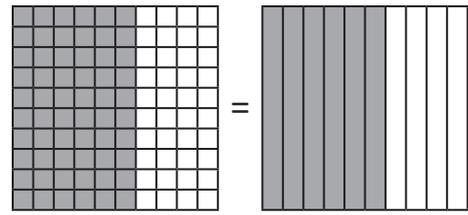
_____ and _____



Fractions, decimals and percentages – writing tenths as decimals



1 whole 100 hundredths 10 tenths

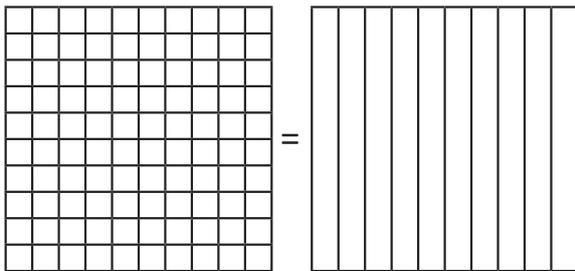


$\frac{60}{100}$ is the same amount as $\frac{6}{10}$.

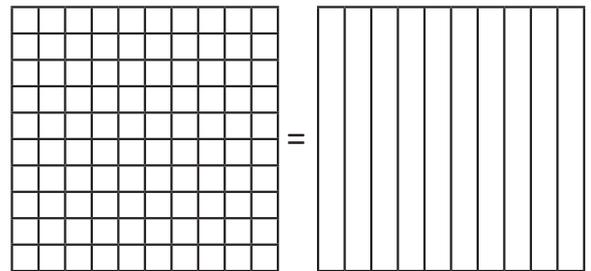
We can divide a whole into one hundred parts. These are called hundredths. Hundredths are made up of 10 lots of tenths.

1 Show how these amounts are the same:

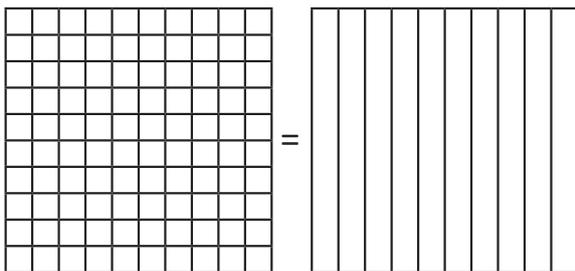
a $\frac{80}{100}$ is the same amount as $\frac{8}{10}$.



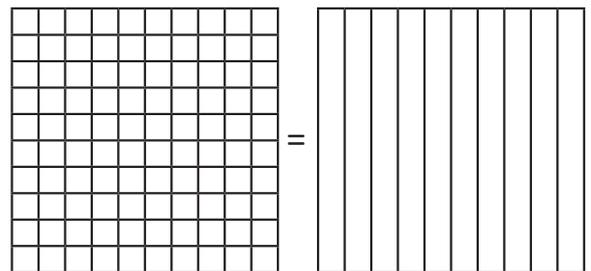
b $\frac{20}{100}$ is the same amount as $\frac{2}{10}$.



c $\frac{30}{100}$ is the same amount as $\frac{3}{10}$.

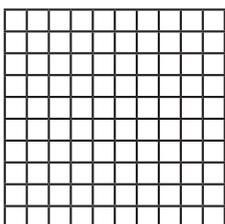


d $\frac{70}{100}$ is the same amount as $\frac{7}{10}$.

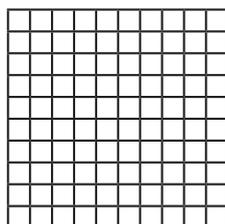


2 Shade these amounts on the hundred grids:

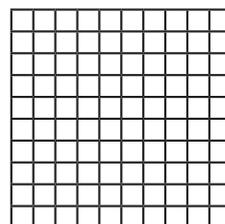
a $\frac{5}{10}$



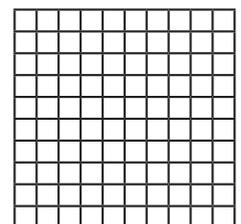
b $\frac{9}{10}$



c $\frac{10}{10}$

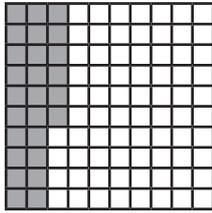


d $\frac{1}{10}$



Fractions, decimals and percentages – relating tenths, hundredths and decimals

This diagram shows 26 hundredths shaded or $\frac{26}{100}$.



Fractions can be written as decimals.
As a decimal, this amount is written as:

Units	Tenths	Hundredths
0	2	6

3 Complete this table to show the amounts as tenths, hundredths and decimals:

a

Tenths	<input type="text"/>	
Hundredths	<input type="text"/>	
Decimals	<input type="text"/>	

b

Tenths	<input type="text"/>	
Hundredths	<input type="text"/>	
Decimals	<input type="text"/>	

c

Hundredths	<input type="text"/>	
Decimals	<input type="text"/>	

d

Hundredths	<input type="text"/>	
Decimals	<input type="text"/>	

1.5 is same as 1.50.



THINK

4 Show the place value of these decimals by writing them in the table:

	Hundreds	Tens	Units		Tenths	Hundredths
a	2.6			•		
b	3.76			•		
c	112.6			•		
d	45.67			•		

Fractions, decimals and percentages – relating tenths, hundredths and decimals

5 Shade the fractions on the grid and show them as hundredths and decimals:

a $\frac{1}{2}$

= $\frac{\boxed{}}{100} = \boxed{0.}$

b $\frac{1}{4}$

= $\frac{\boxed{}}{100} = \boxed{0.}$

c $\frac{1}{5}$

= $\frac{\boxed{}}{100} = \boxed{0.}$

d $\frac{1}{10}$

= $\frac{\boxed{}}{100} = \boxed{0.}$

6 Express these common fractions as hundredths and as decimals:

a $\frac{1}{2} = \frac{\boxed{}}{100} = \boxed{0.}$

b $\frac{4}{5} = \frac{\boxed{}}{100} = \boxed{0.}$

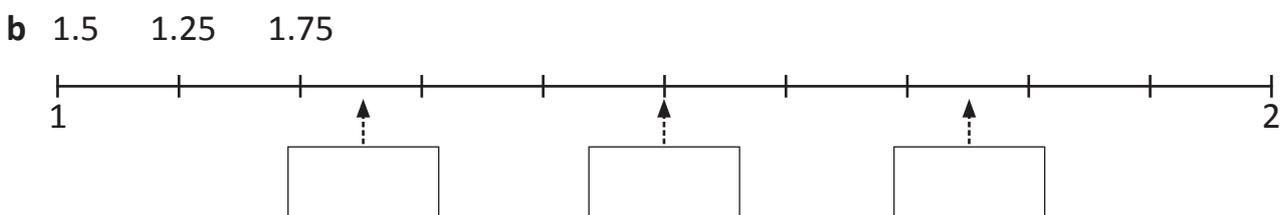
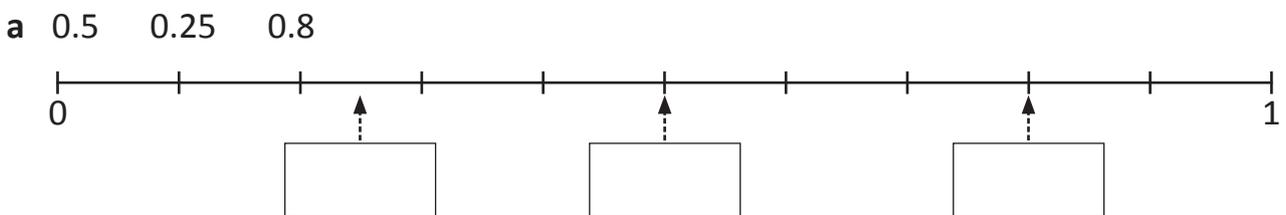
c $\frac{4}{10} = \frac{\boxed{}}{100} = \boxed{0.}$

d $\frac{3}{4} = \frac{\boxed{}}{100} = \boxed{0.}$

e $\frac{2}{4} = \frac{\boxed{}}{100} = \boxed{0.}$

f $\frac{5}{10} = \frac{\boxed{}}{100} = \boxed{0.}$

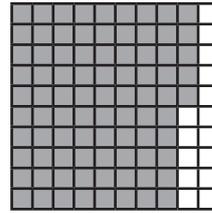
7 Show where the decimals fit on the number lines:



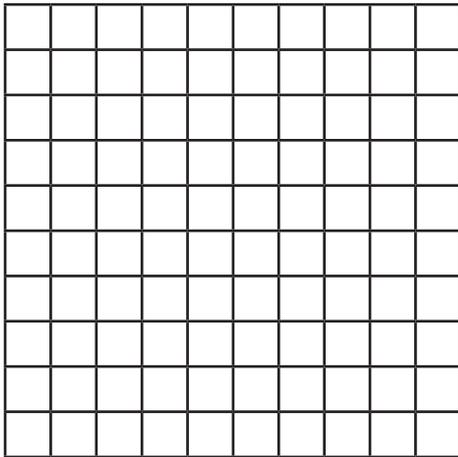
Fractions, decimals and percentages – introducing percentages

A percentage is an amount out of 100.

$$\frac{85}{100} = 85\%$$



1 Colour this hundred square according to the directions:



a 8% green

b 10% pink

c 15% brown

d 20% orange

e 12% yellow

f 20% red

g Leave the rest blank.

What percentage is this?

2 The most commonly used percentage amounts are in the table below. Complete the table and shade a hundredth grid for each amount. The first one has been done for you.

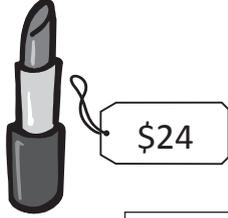
	a	b	c	d	e
Percentage	50%	25%	10%	75%	20%
Hundredths	$\frac{50}{100}$				
Decimal	0.5				
Fraction	$\frac{1}{2}$				
Hundredth grid					

Fractions, decimals and percentages – introducing percentages

3 Often you can see percentages in shops when it is sale time. Work out the sale price of these items:

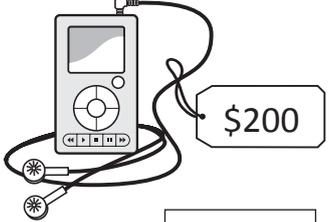


a  Sale price:

b  Sale price:

c  Sale price:

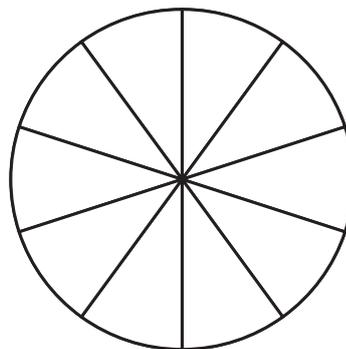
d  Sale price:

e  Sale price:

4 Pie charts are used to show information clearly and are often colour coded. Complete the pie charts according to the information. Each whole pie chart is 100% and each segment is 10%. Choose a colour for each bit of information.

a 100 people were surveyed about their favourite weekend activities.

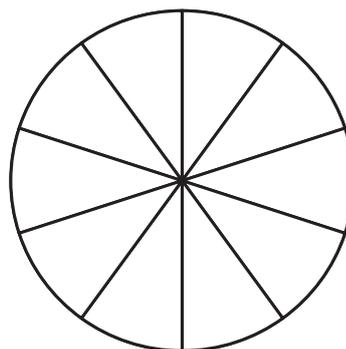
- Go to a restaurant 30%
- Go to the beach 10%
- See a movie 20%
- Go shopping 20%
- Play sport 20%



A percentage is an amount out of 100, so $\frac{60}{200}$ would be the same as $\frac{30}{100}$.

b 200 people were surveyed about their favourite food.

- Pizza 80
- Hamburgers 40
- Pasta 60
- Curry 20



THINK



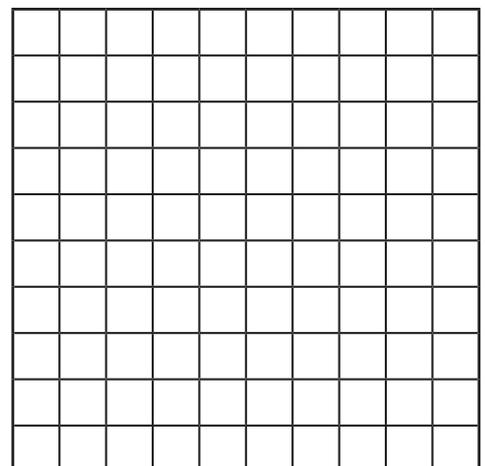
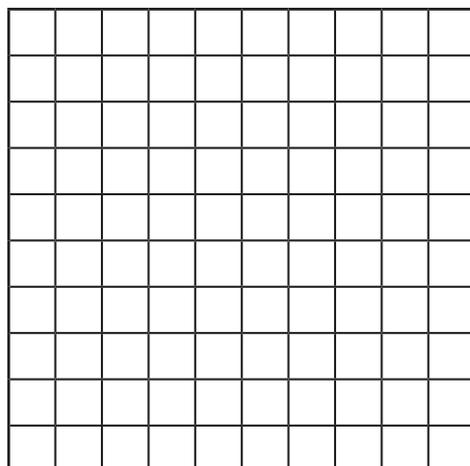
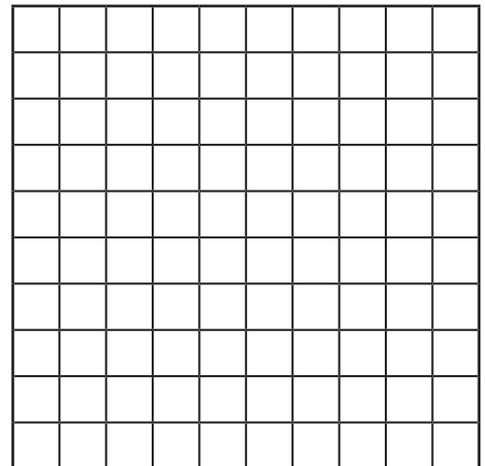
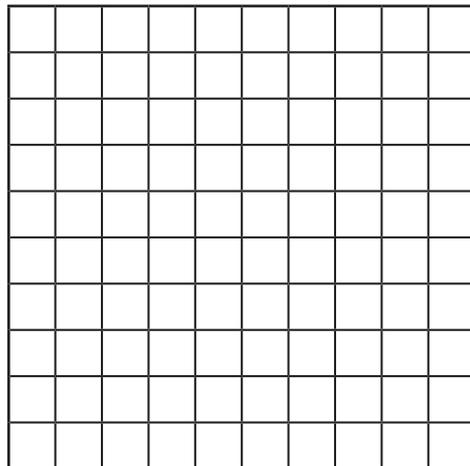
This is a game for 2 players. Each player will need a copy of this page and a copy of the playing cards on page 32.



The object of this game is to be the first player to colour a whole grid. Each player cuts out the playing cards. The 2 players join the cards and shuffle them. There will be 48 cards. Lay 4 cards out in a row, ensuring both players can see them. The rest of the cards go face down in a pile.

Player 1 takes a card from the row of 4 and colours in that amount on one of their hundred grids. Then they put that card at the bottom of the pile and replace it with one from the top of the pile. Player 2 repeats this process.

Players take turns until 1 player has filled in 100 hundredths or 1 whole. (If you go over 100 hundredths or 1 whole, it does not count as a win. You must reach exactly 1 whole.) There are 4 grids so play the best out of 4.





$\frac{30}{100}$	20%	$\frac{50}{200}$	0.08
0.35	0.17	0.4	$\frac{10}{200}$
$\frac{6}{10}$	10%	0.19	0.05
0.6	$\frac{1}{10}$	$\frac{15}{100}$	1%
$\frac{12}{100}$	2%	0.15	$\frac{4}{200}$
$\frac{20}{200}$	0.8	0.2	5%