

Percentages made easy

Per cent means “out of 100”. $18\% = 18$ out of every $100 = \frac{18}{100}$.

The building blocks

100% the whole

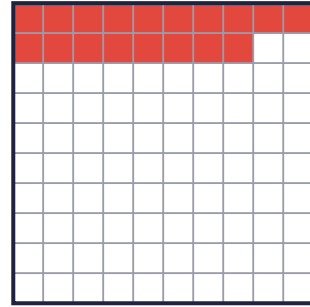
50% divide by 2 (half)

25% divide by 4 (a quarter)

10% divide by 10

5% half of 10%

1% divide by 100



18 squares out of 100 = 18%

1. Build it from blocks

35% of 240
 $= 10\% + 10\% + 10\% + 5\%$
 $= 24 + 24 + 24 + 12 = 84$

2. Use a fraction

75% of 36 $= \frac{3}{4}$ of 36
 $36 \div 4 = 9$
 $9 \times 3 = 27$

3. Multiply, then ÷

100

18% of 18
 $18 \times 18 = 324$
 $324 \div 100 = 3.24$

The swap trick

A% of B = B% of A.
 8% of 25 = 25% of 8 = 2

Ages 11+

Increase/decrease: work out the %, then add it or take it away.

As a %: $\text{part} \div \text{whole} \times 100$.

% change: $\text{difference} \div \text{start} \times 100$.

Fractions, decimals and percentages

$\frac{1}{2} = 0.5 = 50\%$ $\frac{1}{4} = 0.25 = 25\%$ $\frac{3}{4} = 0.75 = 75\%$ $\frac{1}{5} = 0.2 = 20\%$

$\frac{1}{10} = 0.1 = 10\%$ $\frac{1}{100} = 0.01 = 1\%$

Colour the percentage

Colour the right number of squares in each 100 square.

Name _____ Date _____ Score _____ / 6

Colour **49%**

Colour **32%**

Colour **90%**

Colour **60%**

Colour **37%**

Colour **72%**

 Remember: each small square is 1%. A whole row of 10 squares is 10%.

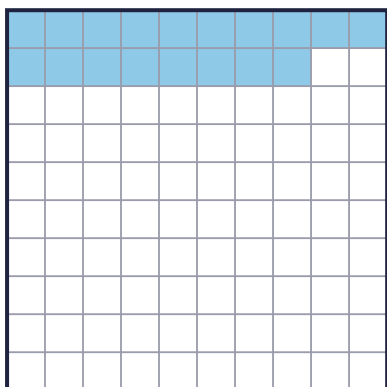
What percentage is shaded?

Count the shaded squares. Write the amount as a percentage, a fraction out of 100 and a decimal.

Name _____

Date _____

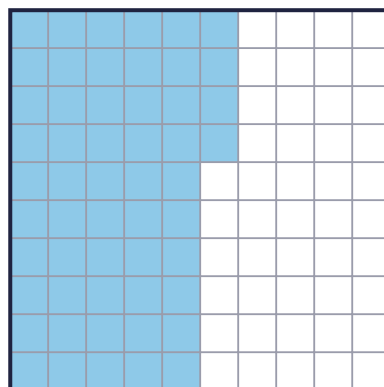
Score _____ / 18



_____ per cent

_____ fraction

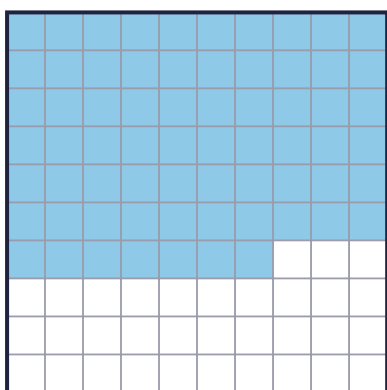
_____ decimal



_____ per cent

_____ fraction

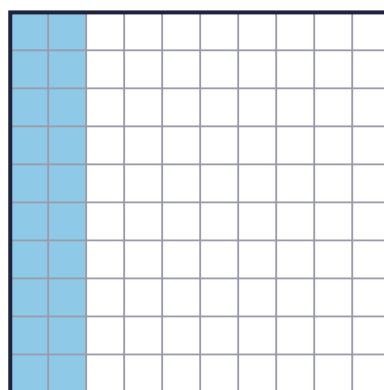
_____ decimal



_____ per cent

_____ fraction

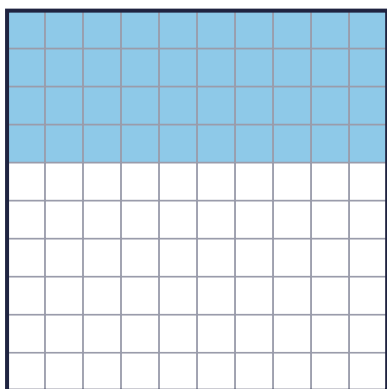
_____ decimal



_____ per cent

_____ fraction

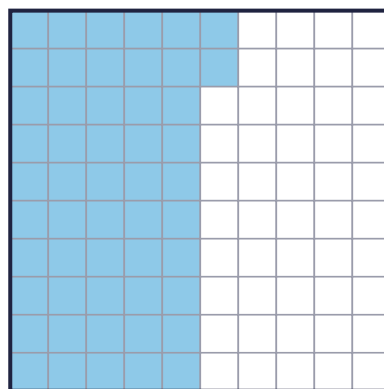
_____ decimal



_____ per cent

_____ fraction

_____ decimal



_____ per cent

_____ fraction

_____ decimal

Fractions, decimals and percentages

Each row shows one amount. Fill in the two missing ways of writing it.

Name _____ Date _____ Score _____ / 24

Fraction	Decimal	Percentage
$\frac{1}{20}$	_____	_____
_____	0.99	_____
_____	_____	80%
$\frac{1}{100}$	_____	_____
_____	0.6	_____
_____	_____	40%
$\frac{1}{2}$	_____	_____
_____	0.7	_____
_____	_____	37%
$\frac{17}{100}$	_____	_____
_____	0.03	_____
_____	_____	2%

Fraction, decimal, percentage snap

Cut out the cards. Each amount is written three ways: find the sets of three, or play snap and pairs.

Name _____

Date _____

0.2	20%	40%	90%
0.7	$\frac{4}{5}$	$\frac{2}{5}$	0.4
80%	5%	$\frac{9}{10}$	$\frac{7}{10}$
70%	$\frac{1}{2}$	$\frac{1}{20}$	$\frac{3}{10}$
50%	0.5	0.3	0.8
30%	0.9	0.05	$\frac{1}{5}$

What's the mystery picture?

Work out each sum. Find the answer in the key and colour the square that colour.

2  yellow4  dark blue8  red9  orange12  leave white

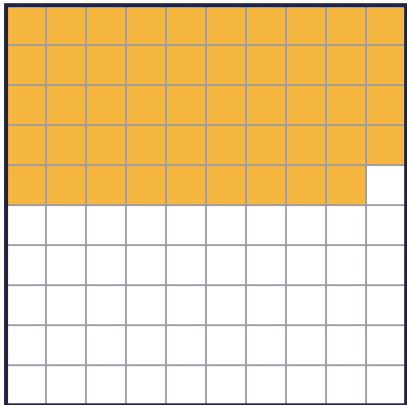
50% of 8	50% of 8	25% of 16	10% of 40	10% of 40	25% of 16	10% of 40	50% of 8	50% of 8	20% of 20	50% of 8	50% of 8	20% of 60	50% of 8
10% of 40	25% of 48	20% of 20	50% of 8	25% of 16	20% of 20	10% of 40	20% of 20	20% of 20	25% of 16	10% of 40	25% of 16	25% of 16	20% of 20
10% of 40	20% of 20	20% of 20	25% of 16	25% of 16	50% of 18	20% of 45	50% of 18	25% of 36	25% of 16	20% of 20	20% of 20	25% of 16	10% of 40
10% of 40	25% of 16	10% of 40	20% of 20	10% of 90	50% of 18	50% of 18	50% of 18	10% of 90	20% of 45	20% of 20	50% of 8	10% of 40	50% of 8
10% of 40	10% of 40	50% of 8	25% of 36	25% of 36	50% of 16	20% of 45	20% of 45	50% of 18	20% of 45	50% of 18	50% of 8	10% of 40	50% of 8
10% of 40	25% of 8	25% of 8	25% of 36	50% of 18	10% of 90	20% of 45	20% of 45	50% of 18	20% of 45	10% of 90	25% of 8	20% of 10	10% of 40
20% of 10	25% of 8	25% of 8	25% of 8	20% of 10	50% of 4	25% of 8	25% of 8	25% of 8	10% of 20	20% of 10	25% of 8	20% of 10	25% of 8
50% of 8	25% of 16	10% of 20	20% of 45	20% of 45	10% of 80	10% of 80	50% of 16	20% of 40	20% of 45	10% of 90	10% of 20	10% of 40	25% of 16
10% of 40	50% of 8	50% of 8	10% of 90	20% of 45	10% of 90	50% of 18	50% of 18	50% of 18	25% of 36	50% of 18	20% of 20	10% of 40	20% of 20
50% of 8	50% of 8	20% of 20	25% of 16	50% of 18	20% of 45	25% of 36	20% of 45	20% of 45	50% of 18	25% of 16	50% of 8	50% of 8	10% of 40
10% of 40	25% of 16	50% of 8	50% of 8	50% of 8	50% of 18	25% of 36	25% of 36	10% of 90	10% of 40	10% of 40	10% of 40	10% of 40	20% of 20
10% of 40	50% of 8	20% of 20	50% of 8	10% of 40	10% of 40	10% of 40	10% of 40	10% of 40	25% of 16	10% of 40	25% of 48	50% of 8	50% of 8
50% of 8	25% of 16	50% of 24	20% of 20	50% of 8	10% of 40	20% of 20	50% of 8	10% of 40	20% of 20	10% of 40	10% of 40	50% of 8	20% of 20
25% of 16	20% of 20	25% of 16	25% of 16	20% of 20	25% of 16	25% of 16	20% of 60	25% of 16	50% of 8	25% of 16	10% of 40	10% of 40	10% of 40
20% of 20	50% of 8	20% of 20	25% of 16	20% of 20	20% of 20	10% of 40	10% of 40	20% of 20	20% of 20	25% of 16	25% of 16	25% of 16	10% of 40
20% of 20	20% of 60	25% of 16	10% of 40	25% of 16	20% of 20	10% of 40	10% of 40	50% of 8	10% of 40	20% of 20	10% of 40	50% of 24	20% of 20

Colour the percentage

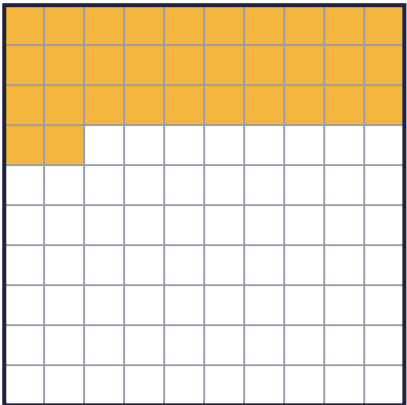
Answers are shown in red.

Name _____ Date _____

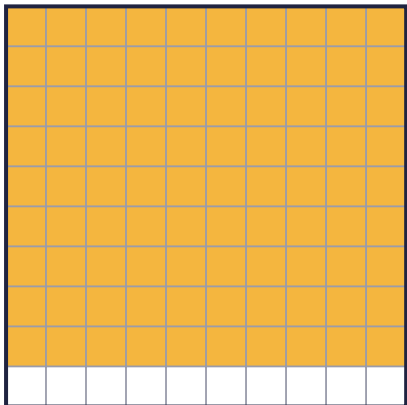
Colour **49%**



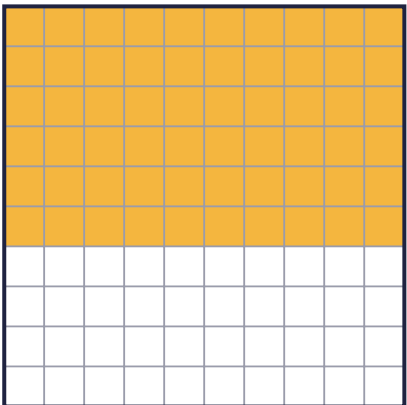
Colour **32%**



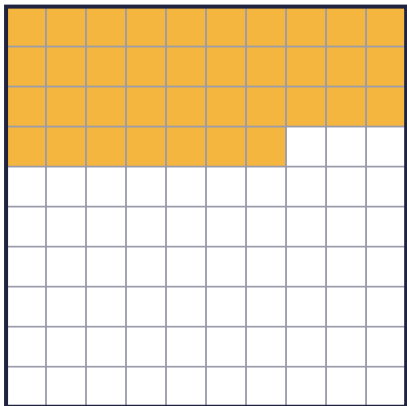
Colour **90%**



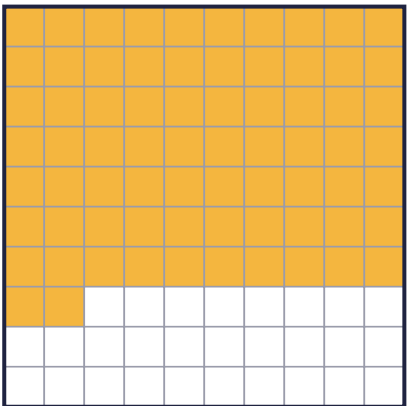
Colour **60%**



Colour **37%**



Colour **72%**

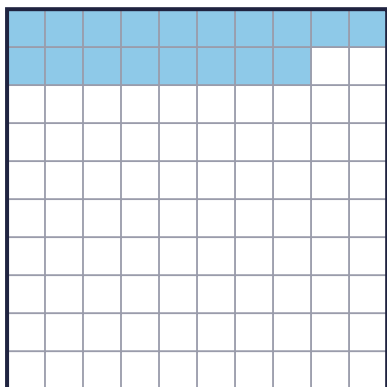


Remember: each small square is 1%. A whole row of 10 squares is 10%.

What percentage is shaded?

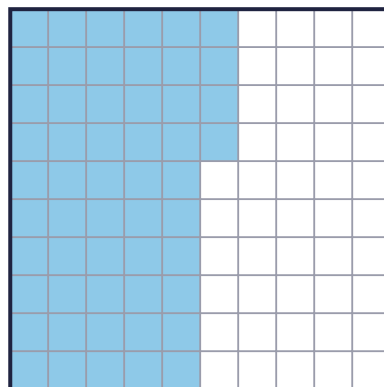
Answers are shown in red.

Name _____ Date _____



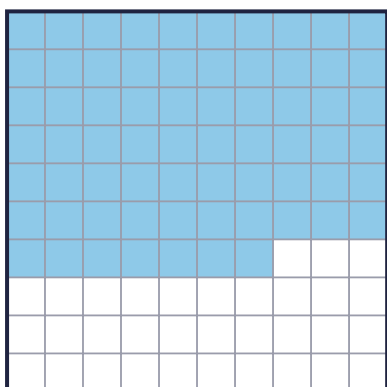
18% **18/100** **0.18**

per cent fraction decimal



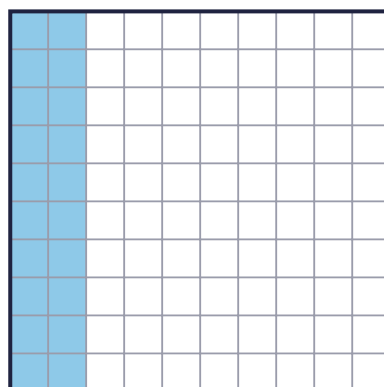
54% **54/100** **0.54**

per cent fraction decimal



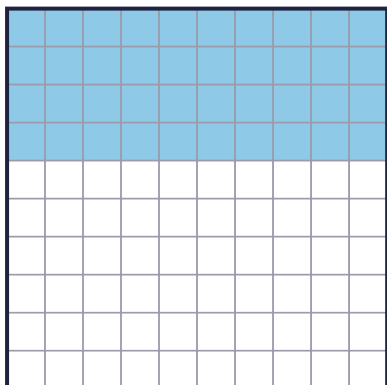
67% **67/100** **0.67**

per cent fraction decimal



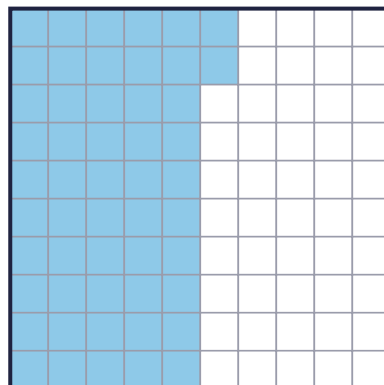
20% **20/100** **0.2**

per cent fraction decimal



40% **40/100** **0.4**

per cent fraction decimal



52% **52/100** **0.52**

per cent fraction decimal

Fractions, decimals and percentages

Answers are shown in red.

Name _____ Date _____

Fraction	Decimal	Percentage
$\frac{1}{20}$	<u>0.05</u>	<u>5%</u>
<u>$\frac{99}{100}$</u>	0.99	<u>99%</u>
<u>$\frac{4}{5}$</u>	<u>0.8</u>	80%
$\frac{1}{100}$	<u>0.01</u>	<u>1%</u>
<u>$\frac{3}{5}$</u>	0.6	<u>60%</u>
<u>$\frac{2}{5}$</u>	<u>0.4</u>	40%
$\frac{1}{2}$	<u>0.5</u>	<u>50%</u>
<u>$\frac{7}{10}$</u>	0.7	<u>70%</u>
<u>$\frac{37}{100}$</u>	<u>0.37</u>	37%
$\frac{17}{100}$	<u>0.17</u>	<u>17%</u>
<u>$\frac{3}{100}$</u>	0.03	<u>3%</u>
<u>$\frac{1}{50}$</u>	<u>0.02</u>	2%

It's a ringed planet!

Here's how the finished picture looks.

2  yellow 4  dark blue 8  red 9  orange

12  leave white

50% of 8	50% of 8	25% of 16	10% of 40	10% of 40	25% of 16	10% of 40	50% of 8	50% of 8	20% of 20	50% of 8	50% of 8	20% of 60	50% of 8
10% of 40	25% of 48	20% of 20	50% of 8	25% of 16	20% of 20	10% of 40	20% of 20	20% of 20	25% of 16	10% of 40	25% of 16	25% of 16	20% of 20
10% of 40	20% of 20	20% of 20	25% of 16	25% of 16	50% of 18	20% of 45	50% of 18	25% of 36	25% of 16	20% of 20	20% of 20	25% of 16	10% of 40
10% of 40	25% of 16	10% of 40	20% of 20	10% of 90	50% of 18	50% of 18	50% of 18	10% of 90	20% of 45	20% of 20	50% of 8	10% of 40	50% of 8
10% of 40	10% of 40	50% of 8	25% of 36	25% of 36	50% of 16	20% of 45	20% of 45	50% of 18	20% of 45	50% of 18	50% of 8	10% of 40	50% of 8
10% of 40	25% of 8	25% of 8	25% of 36	50% of 18	10% of 90	20% of 45	20% of 45	50% of 18	20% of 45	10% of 90	25% of 8	20% of 10	10% of 40
20% of 10	25% of 8	25% of 8	25% of 8	20% of 10	50% of 4	25% of 8	25% of 8	25% of 8	10% of 20	20% of 10	25% of 8	20% of 10	25% of 8
50% of 8	25% of 16	10% of 20	20% of 45	20% of 45	10% of 80	10% of 80	50% of 16	20% of 40	20% of 45	10% of 90	10% of 20	10% of 40	25% of 16
10% of 40	50% of 8	50% of 8	10% of 90	20% of 45	10% of 90	50% of 18	50% of 18	50% of 18	25% of 36	50% of 18	20% of 20	10% of 40	20% of 20
50% of 8	50% of 8	20% of 20	25% of 16	50% of 18	20% of 45	25% of 36	20% of 45	20% of 45	50% of 18	25% of 16	50% of 8	50% of 8	10% of 40
10% of 40	25% of 16	50% of 8	50% of 8	50% of 8	50% of 18	25% of 36	25% of 36	10% of 90	10% of 40	10% of 40	10% of 40	10% of 40	20% of 20
10% of 40	50% of 8	20% of 20	50% of 8	10% of 40	10% of 40	10% of 40	10% of 40	10% of 40	25% of 16	10% of 40	25% of 48	50% of 8	50% of 8
50% of 8	25% of 16	50% of 24	20% of 20	50% of 8	10% of 40	20% of 20	50% of 8	10% of 40	20% of 20	10% of 40	10% of 40	50% of 8	20% of 20
25% of 16	20% of 20	25% of 16	25% of 16	20% of 20	25% of 16	25% of 16	20% of 60	25% of 16	50% of 8	25% of 16	10% of 40	10% of 40	10% of 40
20% of 20	50% of 8	20% of 20	25% of 16	20% of 20	20% of 20	10% of 40	10% of 40	20% of 20	20% of 20	25% of 16	25% of 16	25% of 16	10% of 40
20% of 20	20% of 60	25% of 16	10% of 40	25% of 16	20% of 20	10% of 40	10% of 40	50% of 8	10% of 40	20% of 20	10% of 40	50% of 24	20% of 20