



W.C. 1st June

<https://www.bbc.co.uk/bitesize/tags/zncsscw/year-6-lessons/1>

Maths

Dear parents/carers, there is no expectation to complete all the work or print worksheets off - children can work on paper if they want to write it down. Thanks for all your hard work.

Also there is work on **StudyLadder** that we know the children love to use. You can email us on s83year6@st-annes.solihull.sch.uk for the password if your child has forgotten their login.

Purple Mash Look out for the activities: 'Fractions, decimals & percentages'; Common factors, multiples and primes; and the game Fractonio's Pizzeria.

This week there is a **Fluent in 5** at the start of Monday to Thursday for the children to practise their arithmetic.

After watching the videos and having a go at the practice activities, have a go at these activities. Depending on your confidence choose Mild, Medium or Spicy.

Extensions - You may wish to deepen your learning by looking at the Collins Worksheets provided by the BBC too.



Monday

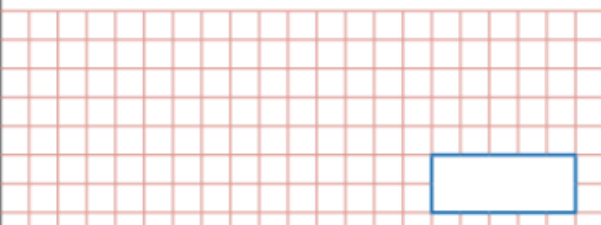
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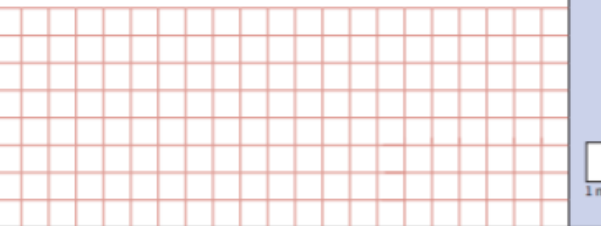
<https://whiterosemaths.com/homelearning/year-6/>

Convert fractions into percentages

Fluent in 5

1	$340 + 290 =$	
		
		☐ 1 mark

2	$194,849 + 3,843,483 =$	
		
		☐ 1 mark

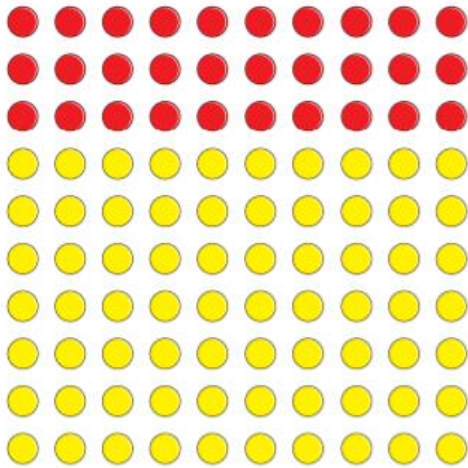
3	$\div 29 = 39$	
		
		☐ 1 mark

4	$660 \div 220 =$	
		
		☐ 1 mark

5	$\frac{4}{5} - \frac{1}{5} =$	
		
		☐ 1 mark

Mild

1



a) What fraction of the array of counters is red?

b) What fraction of the array of counters is yellow?

c) What percentage of the array of counters is red?

 %

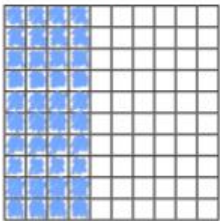
d) What percentage of the array of counters is yellow?

 %

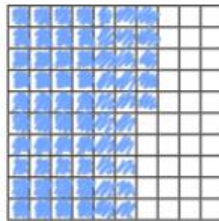
e) What do you notice about the two percentages?

2.

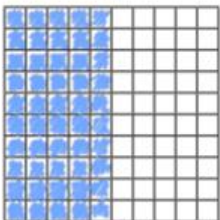
$\frac{40}{100}$



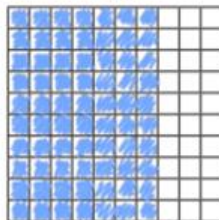
$\frac{65}{100}$



$\frac{1}{2}$



$\frac{7}{10}$



Write the fractions as percentages.

$$\frac{40}{100} = \boxed{} \%$$

$$\frac{65}{100} = \boxed{} \%$$

$$\frac{1}{2} = \boxed{} \%$$

$$\frac{7}{10} = \boxed{} \%$$

3

Fill in the missing numbers.

a) $\frac{9}{10} = \frac{\boxed{}}{100} = \boxed{}\%$

c) $\frac{9}{50} = \frac{\boxed{}}{100} = \boxed{}\%$

b) $\frac{9}{20} = \frac{\boxed{}}{100} = \boxed{}\%$

d) $\frac{9}{25} = \frac{\boxed{}}{100} = \boxed{}\%$

Match equivalent fractions to the correct percentages.

$\frac{5}{10}$

$\frac{90}{100}$

50%

$\frac{9}{10}$

$\frac{30}{100}$

20%

$\frac{2}{10}$

$\frac{50}{100}$

30%

$\frac{3}{10}$

$\frac{20}{100}$

90%

True or false?

 $\frac{6}{10}$ is equivalent to 50%.

Medium

Match equivalent fractions to the correct percentages.

$$\frac{3}{5}$$

$$\frac{5}{100}$$

$$20\%$$

$$\frac{26}{50}$$

$$\frac{60}{100}$$

$$52\%$$

$$\frac{1}{20}$$

$$\frac{20}{100}$$

$$5\%$$

$$\frac{5}{25}$$

$$\frac{52}{100}$$

$$60\%$$



$\frac{1}{10}$ is 10%, so $\frac{1}{20}$ must be 20%.

Explain the mistake that Ron has made.

What is the correct answer?

$$\frac{1}{20} = \boxed{} \%$$

Convert the fractions to percentages.

a) $\frac{1}{4} = \boxed{}$

b) $\frac{1}{5} = \boxed{}$

$$\frac{1}{2} = \boxed{}$$

$$\frac{2}{5} = \boxed{}$$

$$\frac{3}{4} = \boxed{}$$

$$\frac{4}{5} = \boxed{}$$

c) $\frac{16}{20} = \boxed{}$

d) $\frac{45}{50} = \boxed{}$

$$\frac{8}{20} = \boxed{}$$

$$\frac{9}{10} = \boxed{}$$

$$\frac{4}{20} = \boxed{}$$

$$\frac{18}{20} = \boxed{}$$

Competitors in a gym competition need more than 75% to get to the final.

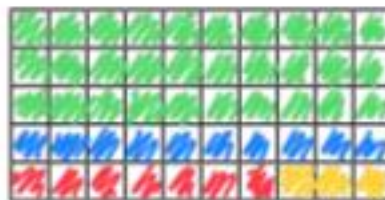
What percentage did each child score?

Ava-Lily	$\frac{38}{50}$
Tyrese	$\frac{8}{20}$
Rochelle	$\frac{18}{25}$

Who gets to the final?

Spicy

- $\frac{3}{5}$ green
- 14% red
- $\frac{4}{20}$ blue
- the rest yellow



What percentage of the grid is yellow?

a) Use each digit card once to make the statements correct.

1

2

3

4

5

$$\frac{\square}{\square} > \square 0\%$$

$$75\% = \frac{\square}{4}$$

$$\frac{3}{\square} < 65\%$$

b) Are there any other solutions?

Match the fractions to the correct percentages.

$$\frac{36}{45}$$

$$75\%$$

$$\frac{66}{75}$$

$$80\%$$

$$\frac{21}{28}$$

$$15\%$$

$$\frac{12}{80}$$

$$88\%$$

Competitors in an art competition need more than 60% to get to the final.
What percentage did each child score?

Amie	$\frac{19}{76}$
Robert	$\frac{24}{32}$
David	$\frac{28}{70}$

Who gets to the final?

True or false?

- a) $\frac{14}{70}$ is equivalent to 25%.

True or false?

- b) $\frac{16}{40}$ is equivalent to 40%.

Tuesday

<https://www.bbc.co.uk/bitesize/tags/zncsscw/year-6-lessons/1>

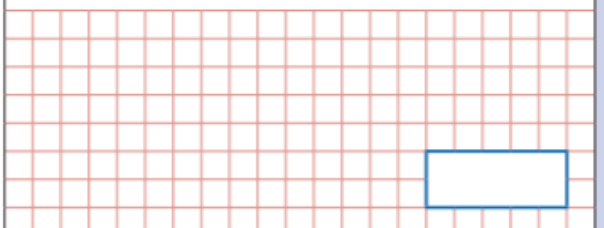
<https://whiterosemaths.com/homelearning/year-6/>

Convert common equivalent fractions, decimals and percentages

Fluent in 5

1	$86.32 + 7.493 =$	
		 1 mark

2	$810 \div 90 =$	
		 1 mark

3	$\frac{2}{3} - \frac{1}{12}$	
		 1 mark

4	$\div 41 = 56$	
		 1 mark

5	$980 + 130 =$	
		 1 mark

Revise

Recall and use equivalences between simple fractions, decimals and percentages

Fractions, decimals and percentages are all different ways of expressing a proportion.

A percentage is a proportion out of one hundred.

The sign % stands for 'per cent' which means 'out of 100'.

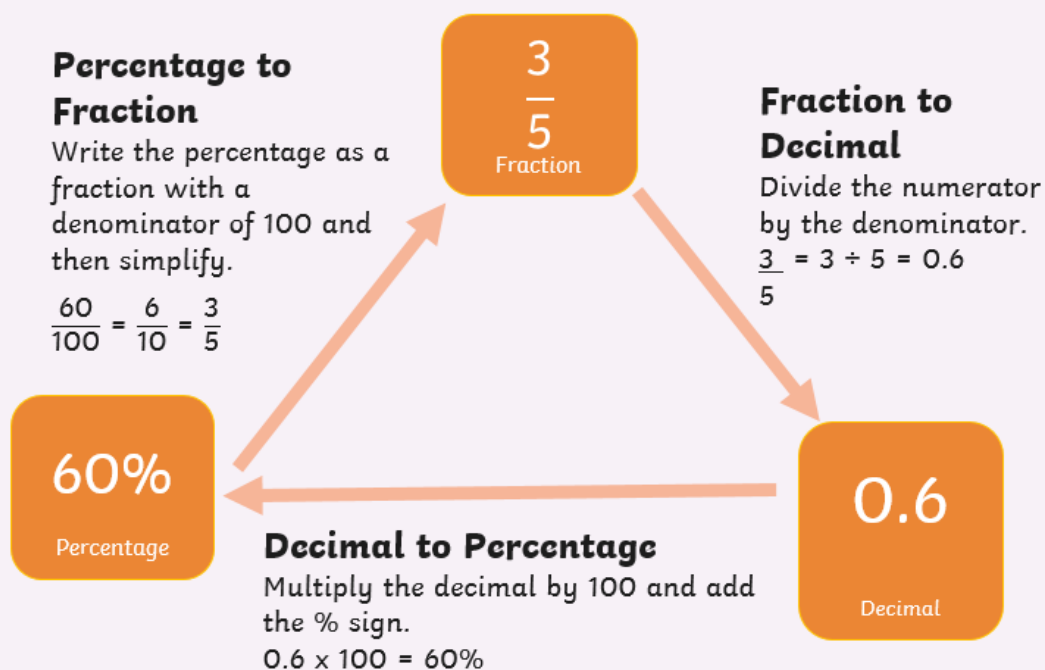
Here are some fraction, percentage and decimal equivalents that we can learn as facts:

Fraction	Percentage	Decimal
$\frac{1}{2}$	50%	0.5
$\frac{1}{4}$	25%	0.25
$\frac{3}{4}$	75%	0.75
$\frac{1}{5}$	20%	0.2
$\frac{1}{10}$	10%	0.1

Revise

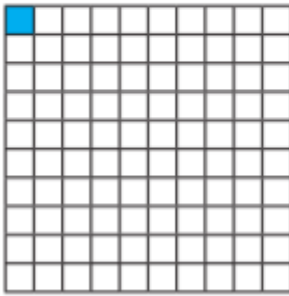
Recall and use equivalences between simple fractions, decimals and percentages

For trickier equivalents, we can use the rules in this diagram to help us:



Mild

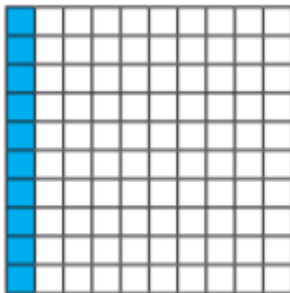
- 1 What fraction, decimal and percentage of each grid is shaded blue?



fraction =

decimal =

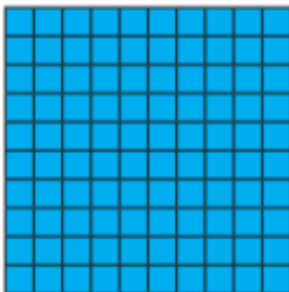
percentage =



fraction =

decimal =

percentage =



fraction =

decimal =

percentage =

- 2 Match the equivalent fractions, decimals and percentages.

$\frac{15}{100}$

0.05

5%

$\frac{1}{20}$

0.5

15%

$\frac{1}{5}$

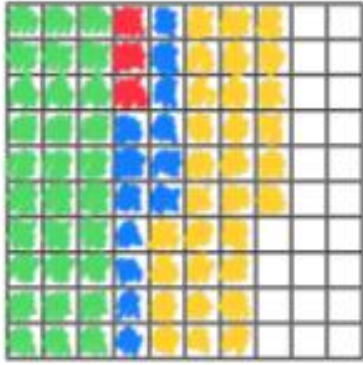
0.2

50%

$\frac{1}{2}$

0.15

20%



- $\frac{3}{10}$ green
- 0.03 red
- 13% blue
- 0.3 yellow

What proportion of the grid is unshaded?

Write your answer as a fraction, decimal and percentage.

fraction = decimal = percentage =

Medium

Complete the table.

Fraction	Decimal	Percentage
	0.21	
		12%
$\frac{2}{10}$		
	0.4	
	0.44	
		4%
$\frac{3}{4}$		
	0.99	

Amir was asked to complete the statement using $<$, $>$ or $=$.

$$14\% \quad \bigcirc \quad 0.4$$



14 is greater
than 4

What mistake has Amir made?

In a Maths test, Tommy answered 62% of the questions correctly.

Rosie answered $\frac{3}{5}$ of the questions correctly.

Who answered more questions correctly?

Explain your answer.

Spicy



My decimal is $\frac{4}{10}$
less than 100%.

0.65



My decimal cannot be
simplified when it is
written as a fraction.

0.57



My decimal is 10%
less than $\frac{3}{4}$

0.61



My decimal is greater
than 60%.

0.6

Use the digit cards to write a decimal greater than $\frac{1}{5}$ but less than 40%.

You may not use a card more than once in each number.

0

1

2

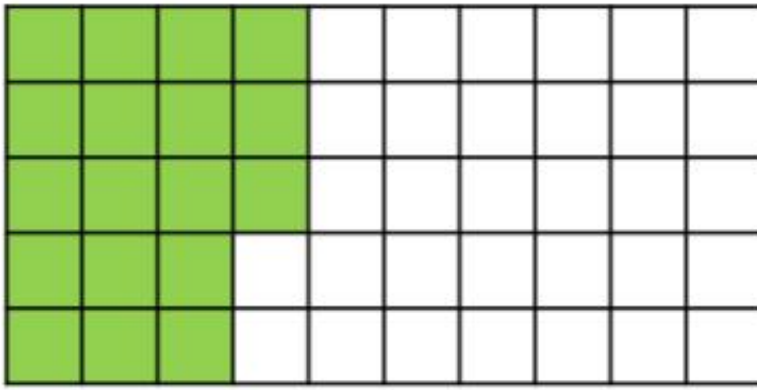
3

4

5

.

How many other answers can you find?



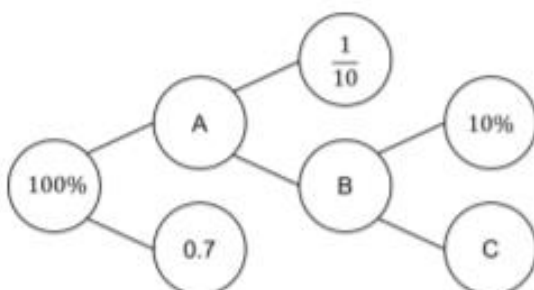
Amir thinks that 18% of the grid has been shaded.

Dora thinks that 36% of the grid has been shaded.

Who do you agree with?

Explain your reasoning.

Complete the part-whole model.
How many different ways can you complete it?



Can you create your own version with different values?

Wednesday

<https://www.bbc.co.uk/bitesize/tags/zncsscw/year-6-lessons/1>

<https://whiterosemaths.com/homelearning/year-6/>

Order and compare fractions, decimals and percentages

Fluent in 5

1	$983,483 - 894,674 =$		 1 mark
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2	$890 + 130 =$	1 mark
---	---	---

3

	8 0
x	7 0

1 mark

4

$$\frac{5}{6} - \frac{1}{3} =$$

1 mark

5

x 3 = 1,788

x 3 = 1,788

1 mark

Mild

1 Write $<$, $>$ or $=$ to complete the statements.

a) 64% 0.46

d) 0.8 80%

b) 0.96 $\frac{97}{100}$

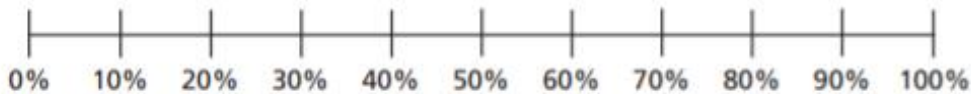
e) 67% $\frac{7}{10}$

c) $\frac{3}{5}$ 35%

f) $\frac{7}{20}$ 0.3

2 Draw arrows to estimate the positions of the fractions, decimals and percentages on the number line.

a) 9% $\frac{9}{10}$ 0.99 19%



b) $\frac{2}{5}$ 0.52 45% 0.2



3 Write the fractions, decimals and percentages in ascending order.

a) $\frac{7}{10}$ $\frac{13}{100}$ 21% 0.9

b) 0.6 61% $\frac{37}{50}$ 0.66

c) 47% 0.89 $\frac{63}{100}$ 12%

Medium

These fractions, decimals and percentages are in descending order.

99% $\frac{89}{100}$ 0.7 0.5 49%

Tick the fractions, decimals and percentages that could fill the gap.

0.78 51% $\frac{3}{5}$ 0.6 $\frac{4}{10}$

Tommy scored $\frac{40}{50}$ on a Maths test.

Aisha got 78% of the test correct.

Aisha thinks she has done better because 78 is greater than 40

Do you agree with Aisha? _____

Explain your answer.

5. In Dolphin class, $\frac{3}{5}$ of the students are 11 years old. 40% are still 10 years old.

Are most children 10 or 11? Explain your answer.

6. In a local gym club, there are three classes: under sevens, 7 to 14s and fourteen plus. 45% of the members are in the under sevens class, $\frac{25}{50}$ in the 7 to 14s and $\frac{1}{20}$ are over 14.

Which is the busiest class? Which has the least members? Explain your answer.

Spicy

Huan, Nijah and Scott each started with a 1-litre bottle of juice.

Huan drank 0.55 litres.

Nijah drank 59% of her juice.

Scott has $\frac{4}{10}$ of his juice left.



Who drank the most? Show your working.

_____ drank the most.

Who drank the least? Show your working.

_____ drank the least.

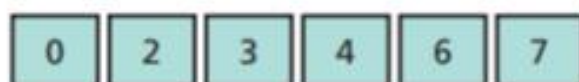
a) Use the digit cards to make the statement correct.



$$0.3 < \frac{\boxed{}}{10} < 80\%$$

How many different solutions can you find?

- b) Use the digit cards to write a percentage greater than $\frac{2}{5}$ but less than 75%.



$$\frac{2}{5} < \boxed{} < 0.75$$

How many different percentages can you find?

9. A marketing firm surveyed teenagers to find the most popular phone colour. The options were white, black, gold, or other.

21% of those asked said white, $\frac{16}{25}$ answered black, 12% said gold and $\frac{3}{100}$ chose the 'other' option.

Put the colours in order of least to most popular. Explain your answer.

10. In a local election, the 5 candidates received their results as follows:

Lynda Clarke $\frac{2}{5}$

Leah Norman $\frac{3}{20}$

Lewis Taylor 5%

Aaminah Khan 35%

Caleb Browne $\frac{1}{20}$

Which order should they read the candidates' names out, so the winner is announced last? Explain your answer.

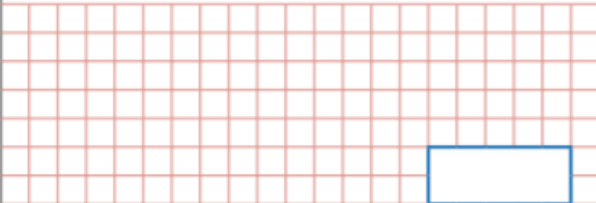
Thursday

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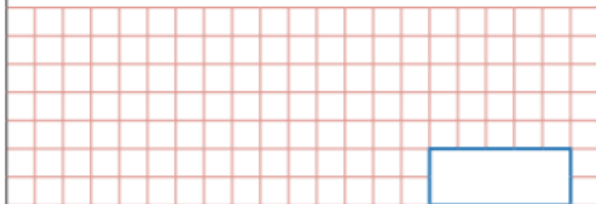
<https://whiterosemaths.com/homelearning/year-6/>

Find percentages of amounts

Fluent in 5

1	$450 + 3,400 =$	
		
		☐ 1 mark

2	$983,493 + 893,983 =$	
		
		☐ 1 mark

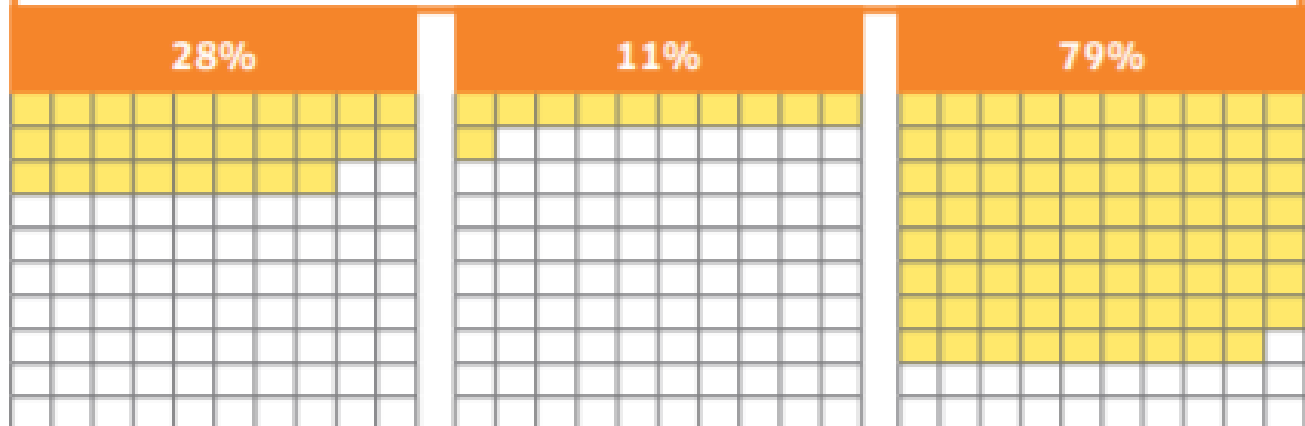
3	$900 \times 300 =$	
		
		☐ 1 mark

4	$? \div 8 = 562$	
		
		☐ 1 mark

5	$\frac{4}{4} - \frac{1}{8} =$	
		
		☐ 1 mark

Finding Percentages of Amounts

The word percent comes from the Latin words **per** and **cent** meaning '**out of every 100**'. The symbol for percent is %.



Use one of these methods to find a percentage of an amount.

Convert to a Decimal

Find 30% of 80

1. Convert the percentage into a decimal.

$$30 \div 100 = 0.3$$

2. Multiply the amount by the decimal.

$$80 \times 0.3 = 24$$

$$30\% \text{ of } 80 = 24$$

Finding 10%

Find 70% of 60

1. Find 10% by dividing the amount by 10.

$$60 \div 10 = 6$$

2. Multiply this answer by the number of tens in the percentage.

$$6 \times 7 = 42$$

$$70\% \text{ of } 60 = 42$$

Finding 1%

Find 18% of 250

1. Find 1% by dividing the amount by 100.

$$250 \div 100 = 2.5$$

2. Multiply this answer by the number of the percentage.

$$2.5 \times 18 = 45$$

$$18\% \text{ of } 250 = 45$$

Mild

- 1 Match the equivalent fractions to the percentages.

$$\frac{1}{2}$$

$$\frac{1}{100}$$

$$\frac{1}{10}$$

$$\frac{1}{4}$$

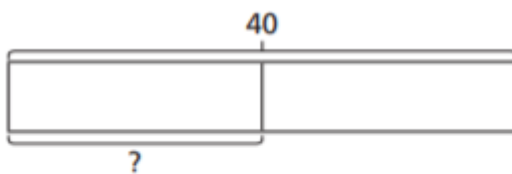
$$25\%$$

$$1\%$$

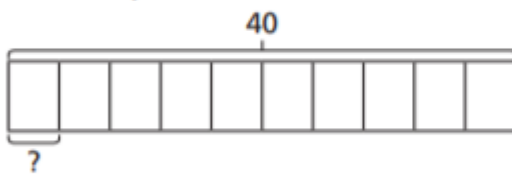
$$50\%$$

$$10\%$$

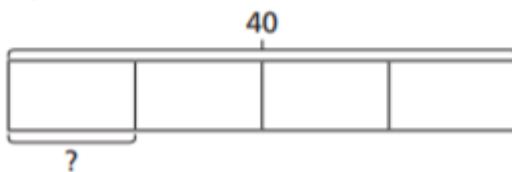
- 2 Match each bar model to the statement it represents.



10% of 40

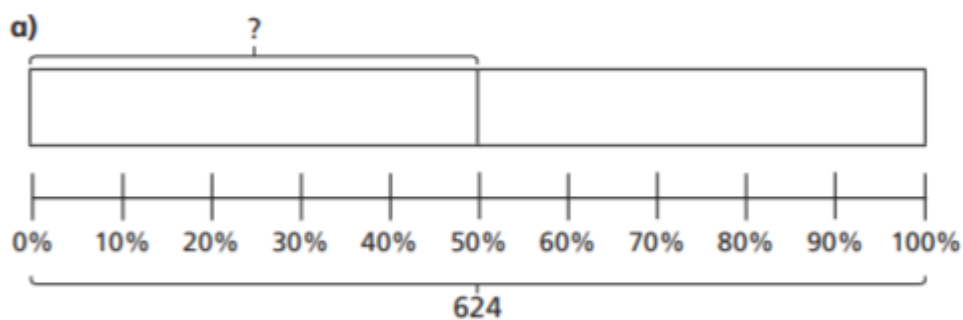


25% of 40

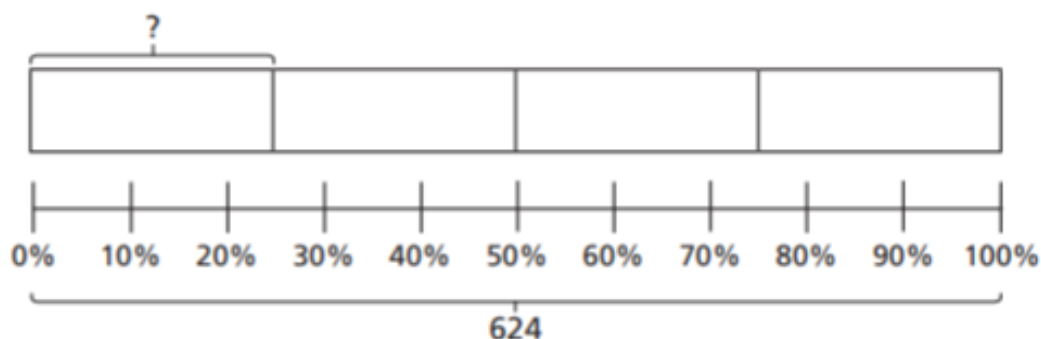


50% of 40

- 3 Use the bar models to help you complete the calculations.



$$50\% \text{ of } 624 = \boxed{}$$



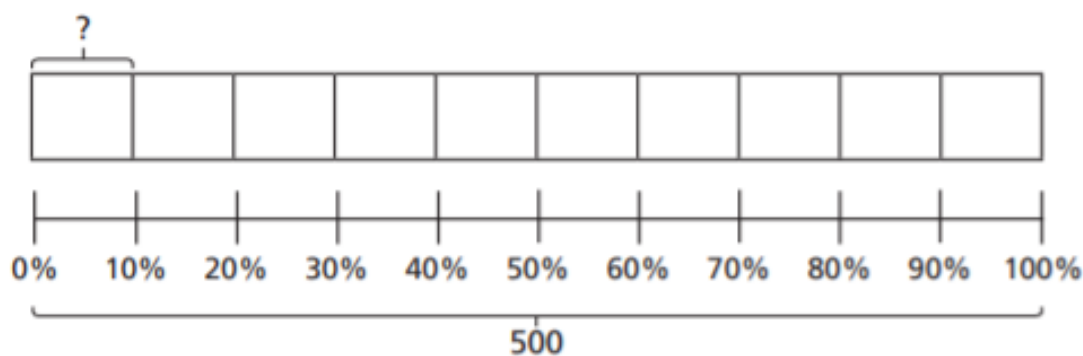
What do you notice about your answers?

b) Use bar models to complete the calculations.

50% of 3,420 =

4

a) Use the bar model to find 10% of 500



b) Use your answer to part a) to help you complete the calculations.

20% of 500 =

70% of 500 =

90% of 500 =

60% of 500 =

30% of 500 =

100% of 500 =

Medium

Complete the calculations.

a) 50% of 3,000 =

c) 10% of 3,000 =

50% of 1,500 =

10% of 1,500 =

50% of 500 =

10% of 500 =

b) 25% of 3,000 =

d) 1% of 3,000 =

25% of 1,500 =

1% of 1,500 =

25% of 500 =

1% of 500 =

Workers in a toy factory aim to pack 2,560 boxes each day.

At 10:00 am they have completed 25% of their target.

a) How many boxes have they packed?

By midday they have packed 50% of their target.

At 2:00 pm they have packed another 10% of their target.

b) How many more boxes do they need to pack to meet the daily target?

They need to pack more boxes.

Two-Step Word Problems Percentage of Amounts

1. A farmer harvests 850kg of parsnips. 30% go to the local market and 50% go to a local supermarket. What mass of parsnips are left?

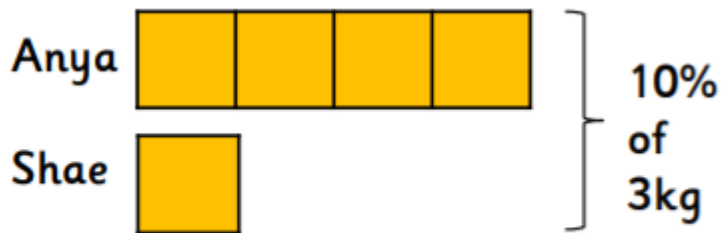
2. A plumber has 150m of pipes. The plumber uses 20% fitting a central heating system, and then 25% of what is left to fit a bathroom. How much pipe does the plumber use to fit the bathroom?

3. A library has 2500 books. 40% of the books are fiction. How many books are not fiction books?

4. A cyclist rides 460 miles each week in training. She covers 30% of the miles in one ride. How many miles are left after 1 ride?

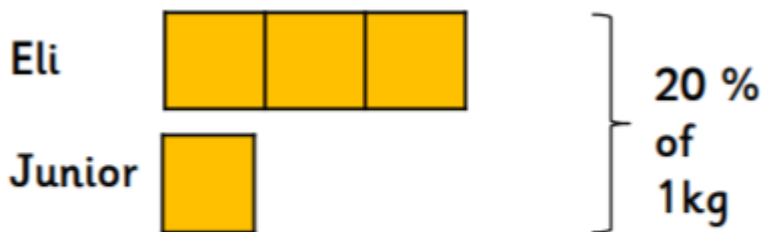
Spicy

Anya and Shae shared 10% of a 3kg bar of chocolate. Shae ate a quarter of the amount that Anya ate. How much did they each eat?



How much less did Amit eat than June?

Eli and Junior shared 20% of a 1kg bar of chocolate. Junior ate a third of the amount that Eli ate. How much did they each eat?



How much less did Junior eat than Eli?

Use the table below,

50% of 250	10% of 20	1% of 350
25% of 836	20% of 240	75% of 480
10% of 345	1% of 1,800	50% of 2300

- What's the biggest total you can make using only 3 amounts?
- What's the smallest total you can make using 3 amounts?
- Can you make exactly 336? How?

Sienna and Bhodi both sold buns at the fayre. They sold chocolate, ginger, cranberry and blueberry flavours.

Sienna's sales were 15% ginger, 25% chocolate, 10% cranberry and 50% blueberry.

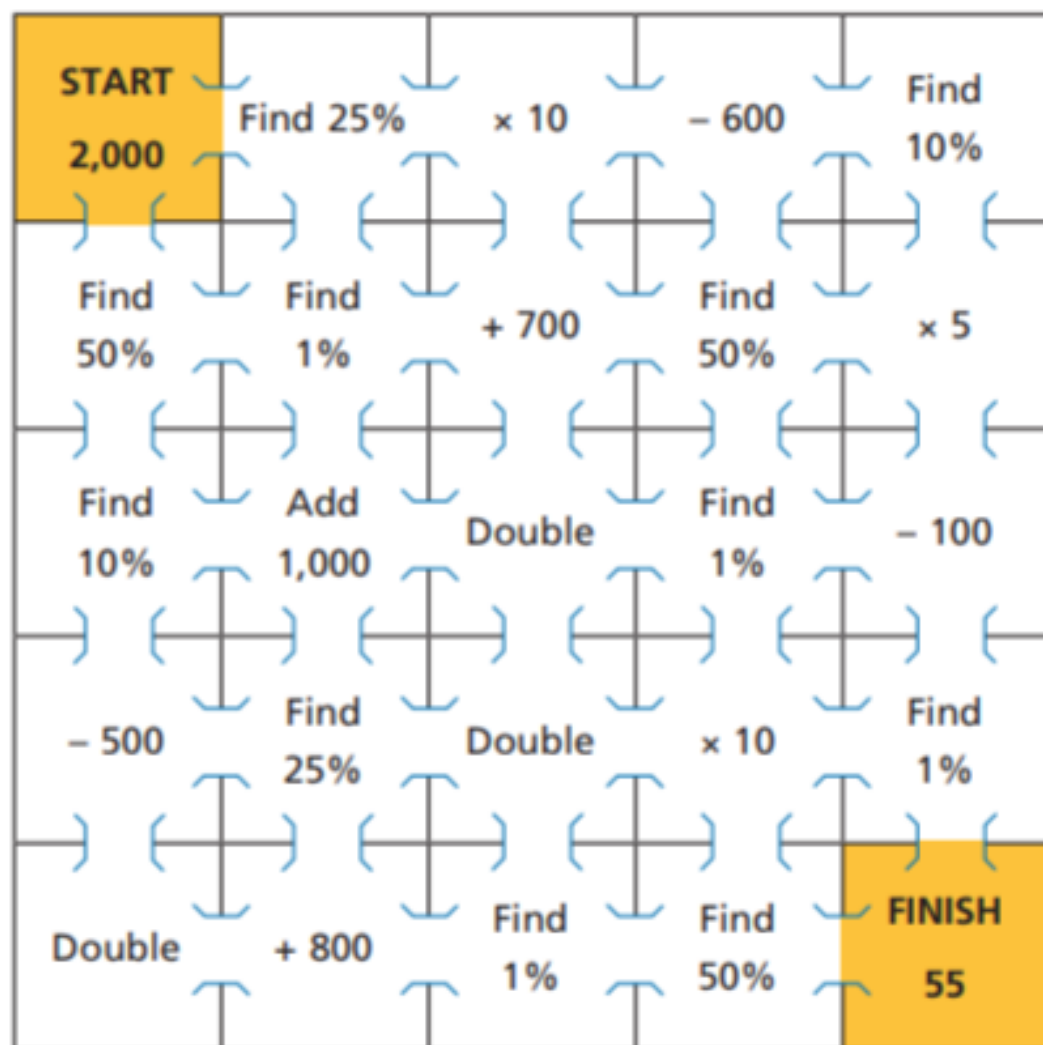
Bhodi's sales were 5% ginger, 10% chocolate, 15% cranberry and 70% blueberry. Bhodi sold 180 buns in total.

Sienna and Bhodi sold 39 ginger buns between them.

How many of each flavour did Sienna sell?

How many did she sell altogether?

Follow the steps to find a way through the maze.



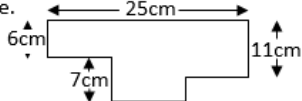
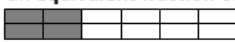
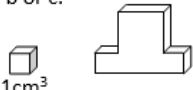
Friday

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Challenge Day!

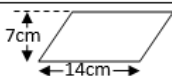
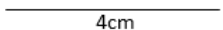
Key Skills

Mild

A: Place Value, Add and Subtract		B: Multiply, Divide and Fractions		C: Measure and Problem Solving	
1. What is the value of the 8 in this number? 7,186,354	5:1	11. Which is a common factor of 14 and 35? 2 3 5 7 14	5:8	21. Ben managed to eat $\frac{4}{5}$ of his pizza.	5:19
2. Write one million, five thousand, three hundred and nineteen in digits.	5:1	12. Is 39 a prime number ? How do you know?	5:9	Tom managed to eat 75% of his pizza. Who ate the most?	
3. Round 596,147 to the nearest thousand .	5:2	13. 329 x 13	5:10	22. How many millilitres are there in 0.42 litres ?	5:20
4. What is the missing number? 924 1,024 1,224	5:2	14. 321.5 ÷ 100	5:11		
5. What temperature is 9 degrees less than 0 degrees Celsius?	5:3	15. What is 9² ?	5:12	23. Calculate the perimeter of this shape. 	5:21
6. What number is represented by these Roman Numerals? CCCXIII	5:4	16. $\frac{4}{7} + \frac{3}{14} =$	5:13		
7. 237,675 – 24,700 =	5:5	17. Find an equivalent fraction of $\frac{2}{6}$. 	5:14	24. Estimate the volume of this shape. Write a, b or c. a. 8 cm ³ . b. 12 cm ³ . c. 16 cm ³ . 	5:22
8. 41,380 + 19,805 =	5:5	18. Write $\frac{19}{7}$ as a mixed number .	5:15		
9. Complete this sum without written working. 12,300 + 4,200 =	5:6	19. $\frac{5}{6} \times 36 =$	5:16	25. Sarah started a test at 12.45pm . The test is 105 minutes long. What time does Sarah finish her test?	5:23
10. I buy 2 CDs costing £7.45 each. How much change do I get from £20?	5:7	20. Round 0.97 to 1 decimal place.	5:17		
Total (A)		Total (B)		Total (C)	
Test Total (A+B+C)		R (0-9)	Y (10-19)	G (20-25)	

Key Skills

Medium and Spicy

A: Place Value, Add, Subtract, Multiply and Divide		B: Fractions, Ratio, Proportion and Algebra		C: Measure and Geometry	
1. Write two million, six hundred and twelve thousand and thirty in digits.	6:1	11. Which is the smallest fraction? $\frac{1}{3}$, $\frac{4}{9}$ or $\frac{11}{27}$	6:7	21. How many miles are about equal to 12 kilometres ?	6:18
2. What is the value of the 7 in this number? 5,273,914	6:1	12. $\frac{7}{10} + \frac{4}{15} =$	6:8	22. Give the length and width of two rectangles that have an area of 12m ² .	6:20
3. Round 8.427 to 2 decimal places.	6:1	13. Simplify your answer. $\frac{6}{10} \times \frac{3}{4} =$	6:9	24. Find the area of this parallelogram . 	6:21
4. Write the largest possible crowd. Attendance: 5,000 (to the nearest thousand)	6:2	14. 1.78 x 1000	6:10	24. Calculate the volume of a cube with a 10cm side length. 	6:22
5. 2,486 x 62	6:3	15. 3.56 x 7	6:11	25. Draw this triangle accurately below: Use a ruler and a protractor. 	6:23
6. 1,273 ÷ 19	6:3	16. Write this decimal as a fraction and a percentage . 0.8	6:12		
7. Which is a common multiple of 22 and 33? 99 66 44 11 2	6:4	17. Find 65% of 180.	6:13		
8. Which factor of 25 is also a prime number ?	6:4	18. In a class of 20 pupils, $\frac{2}{5}$ are girls. How many boys are there?	6:14		
9. 15 + 5 x 7	6:5	19. How much will a 9 minute call cost? Call charge: 15p +12p per minute.	6:15		
10. I have £10. I buy 3 coffees at £1.80 each. How much do I have left?	6:6	20. What is the 10th term of this sequence? 11, 14, 17, 20, 23, ...	6:16		
Total (A)		Total (B)		Total (C)	
Test Total (A+B+C)		R (0-9)	Y (10-19)	G (20-25)	