





Steps to Success

Date	27.01.21
Subject/s	Maths
Learning Objective 	To convert between fractions, decimals and percentages

SA 	TA 
---	---

Success Criteria 	I know percentages have a denominator of 100		
	I can use place value to write decimals as fractions		
	I can use my knowledge of division to write fractions as decimals		
Support	Independent	Adult Support ()	Group Work

Lockdown learning: DC

Pre-task

Complete the table.

Decimal		Fraction		Percentage
0.35	→	$\frac{35}{100}$	→	35%
0.27	→		→	
0.6	→		→	

Fill in the missing boxes.

0.72 = %

89% = %

6% = %

0.4 = %

Teacher led

Fluency

Teacher led:

What does percentage mean?

Out of hundred.

36%

$$\frac{36}{100}$$

0.36

Percentage %	Fraction —	Decimal 0.
26%	$\frac{26}{100}$	0.26
59%	$\frac{59}{100}$	0.59
2%	$\frac{2}{100}$	0.02
31%	$\frac{31}{100}$	0.31
74%	$\frac{74}{100}$	0.74

If your fractions denominator is 100, then that is how many parts out of 100 you have. This means you can use your numerator as your percentage and decimal.

If you are converting a percentage or a decimal into a fraction, the denominator should be 100.

You might need to simplify it after.

e.g $\frac{75}{100} = \frac{3}{4}$

Percentage %	Fraction —	Decimal 0.
3%	$\frac{3}{100}$	0.03
7%	$\frac{7}{100}$	0.07
50%	$\frac{5}{10}$	0.5
60%	$\frac{6}{10}$	0.6
40%	$\frac{4}{10}$	0.4

Key facts to help you:

Fractions $\frac{\quad}{\quad}$	Decimals .	Percentages %
$\frac{1}{2}$	0.5	50%
$\frac{1}{3}$	0.33	33%
$\frac{1}{4}$	0.25	25%
$\frac{1}{5}$	0.20	20%
$\frac{1}{10}$	0.1 0.10	10%
$\frac{1}{100}$	0.01	1%
$\frac{2}{10}$	0.2	20%
$\frac{5}{10}$	0.5	50%
$\frac{2}{100}$	0.02	2%
$\frac{10}{100}$	0.1	10%

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

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

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

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

Match the fraction to the percentage

$$\frac{63}{100}$$

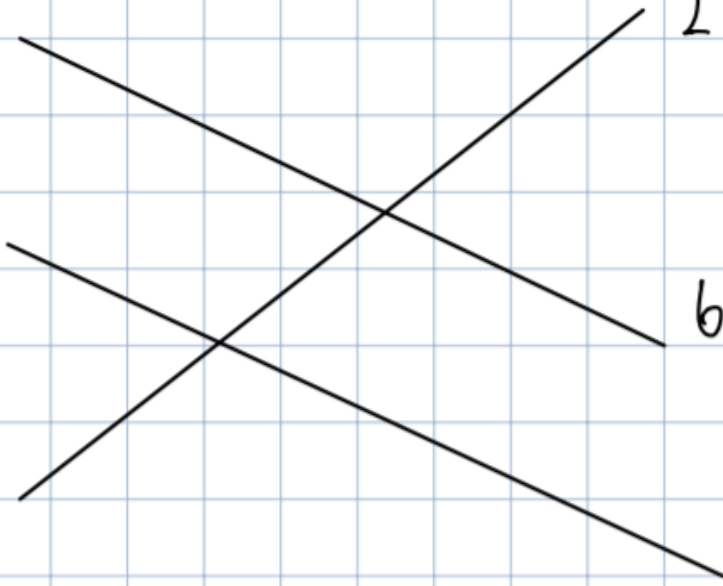
$$\frac{6}{100}$$

$$\frac{25}{100}$$

25%

63%

6%



Fluency A

Write as a fraction:

1) $0.32 =$

2) $0.5 =$

3) $0.7 =$

4) $0.65 =$

5) $25\% =$

6) $8\% =$

7) $20\% =$

8) $47\% =$

Challenge = simplify question 2+5.

Write as decimals:

1) $\frac{75}{100} =$

2) $\frac{71}{100} =$

3) $\frac{9}{100} =$

4) $\frac{4}{10} =$

5) $54\% =$

6) $50\% =$

7) $20\% =$

8) $47\% =$

Converting fractions:

Your denominator must be 100 before you can convert.

$$\frac{7}{10} = \frac{70}{100} \quad 0.7 \quad 70\%$$

Write as a percentage:

1) $\frac{15}{100} =$

2) $\frac{71}{100} =$

3) $\frac{3}{10} =$

4) $\frac{68}{100} =$

5) $0.02 =$

6) $0.1 =$

7) $0.75 =$

8) $0.99 =$

Problem solving and reasoning:

Use it!



In his first Geography test, Mo scored 38%

Explain it!



In the next test he scored $\frac{16}{40}$

Did Mo improve his score?

Explain your answer.

Which month did Eva save the most money?

Use it!



In January, Eva saves $\frac{3}{5}$ of her £20 pocket money.



Explain it!



In February, she saves 0.4 of her £10 pocket money.

In March, she saves 45% of her £40 pocket money.



Problem Solving and Reasoning

Explain it!



Paulo says,



To convert a fraction into a percentage, you just need to put a percent sign next to the numerator.

Is Paulo correct? Explain your answer.

Explain it!



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

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

Who answered more questions correctly?

Explain your answer.

Use it!



Explain it!



Mark thinks that $\frac{18}{100}$ of this grid has been shaded.

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

Who do you agree with?

Explain your reasoning.

Further Challenge

Pizza

Aleena and Haris each have a pizza.

Aleena eats 60% of her pizza.

Haris eats $\frac{3}{5}$ of his pizza.

Who eats more pizza?

How do you know?



Create your own word problem comparing two different amounts using fractions and percentages.

Answers A

1) $\frac{32}{100}$ 2) $\frac{50}{100}$ or $\frac{5}{10}$ or $\frac{1}{2}$

3) $\frac{70}{100}$ or $\frac{7}{10}$ 4) $\frac{65}{100}$

5) $\frac{25}{100}$ or $\frac{1}{4}$ 6) $\frac{8}{100}$

7) $\frac{20}{100}$ or $\frac{2}{10}$ 8) $\frac{47}{100}$

Answers B

1) 0.75 2) 0.71 3) 0.09

4) 0.4 5) 0.54 6) 0.5

7) 0.86 8) 0.9

Answers C

1) 15% 2) 71% 3) 30%

4) 68% 5) 2% 6) 10%

7) 75% 8) 99%

Problem solving and reasoning:

Answers:

Use it!



In his first Geography test, Mo scored 38%

Explain it!



In the next test he scored $\frac{16}{40}$

Did Mo improve his score?

Explain your answer.

Mo improved his score.
 $\frac{16}{40}$ is equivalent to 40% which is greater than his previous score of 38%

Which month did Eva save the most money?

Use it!



In January, Eva saves $\frac{3}{5}$ of her £20 pocket money.



Explain it!






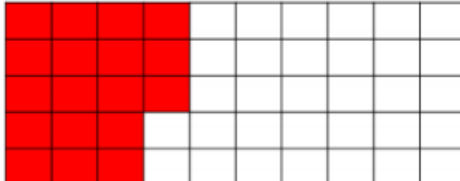


In February, she saves 0.4 of her £10 pocket money.

In March, she saves 45% of her £40 pocket money.



She saved the most money in March.
 Estimates:
 Over £10 in January because $\frac{3}{5}$ is more than half.
 Under £10 in February because she only had £10 to start with and 0.4 is less than half.
 Nearly £20 in March because 45% is close to a half.

Problem Solving and Reasoning		Answers
<p>Explain it!</p>  <p>Paulo says,</p>  <div style="border: 1px solid green; border-radius: 15px; padding: 10px; display: inline-block;"> <p>To convert a fraction into a percentage, you just need to put a percent sign next to the numerator.</p> </div> <p>Is Paulo correct? Explain your answer.</p>	<p>Paulo is incorrect, this only works when the denominator is 100 because percent means per hundred.</p>	
<p>Explain it!</p>  <p>In a Maths test, Tom answered 62% of the questions correctly.</p> <p>Lily answered $\frac{3}{5}$ of the questions correctly.</p> <p>Who answered more questions correctly?</p> <p>Explain your answer.</p>	<p>Tom answered more questions correctly because $\frac{3}{5}$ as a percentage is 60% and this is less than 62%</p>	
<p>Use it!</p>  <p>Explain it!</p>   <p>Mark thinks that $\frac{18}{100}$ of this grid has been shaded.</p> <p>Nisha thinks that 36% of the grid has been shaded.</p> <p>Who do you agree with?</p> <p>Explain your reasoning.</p>	<p>Nisha is correct because the grid is 50 squares not 100 and 18 of them are shaded.</p>	

Further Challenge

Pizza

Aleena and Haris each have a pizza.

Aleena eats 60% of her pizza.

Haris eats $\frac{3}{4}$ of his pizza.

Who eats more pizza?

How do you know?



Create your own word problem comparing two different amounts using fractions and percentages.

Aleena eats 60% of her pizza.

Haris eats 75% of his pizza.

Haris has eaten 15% more pizza.