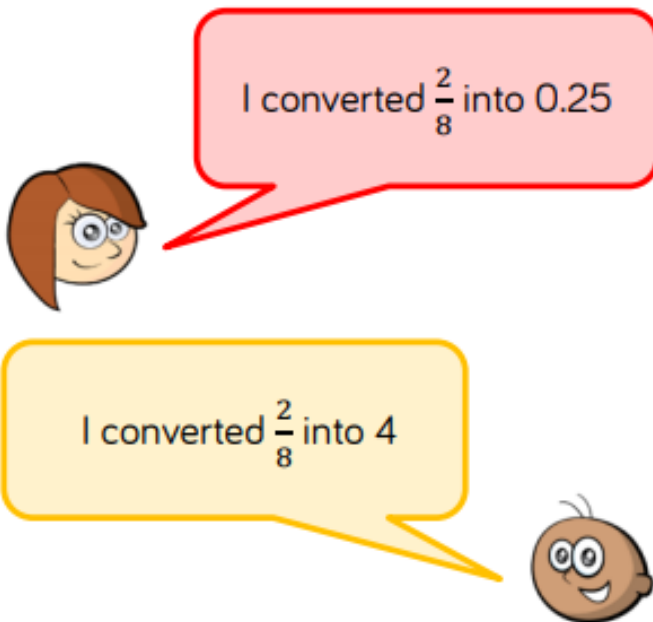


18.01.21 Fractions to decimals (2)

Reasoning and problem solving—Maths extension

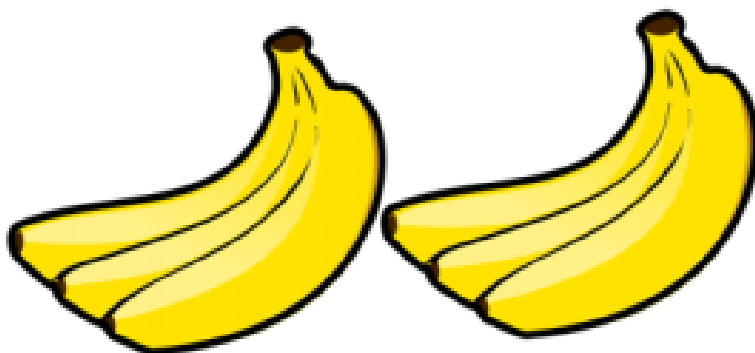
Answer and reason the questions below to deepen your mathematical understanding. Once complete, self-mark using the answer sheet.

- 1) Rosie and Tommy have both attempted to convert $\frac{2}{8}$ into a decimal.



Who is correct?
Prove it.

- 2) Mo shares 6 bananas between some friends.



Each friend gets 0.75 of a banana.

How many friends does he share the bananas with?

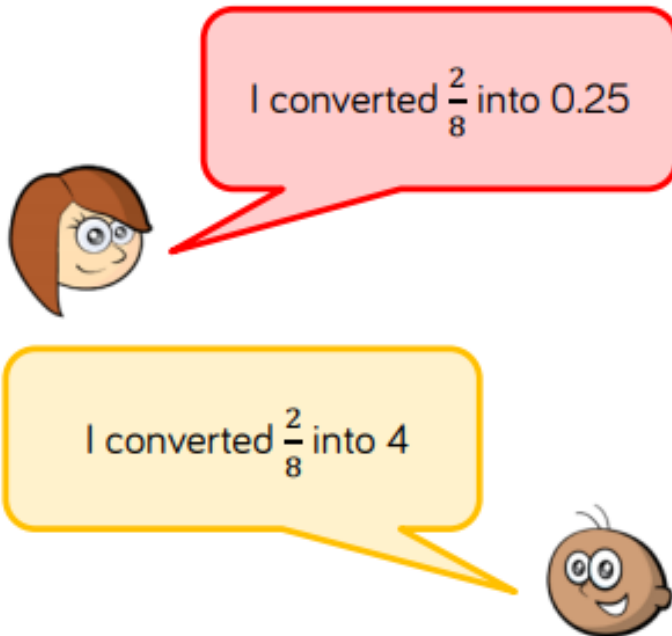
Show your method.

Answers can be found on the next page.

18.01.21 Reasoning and problem solving—Maths extension

ANSWER SHEET

- 1) Rosie and Tommy have both attempted to convert $\frac{2}{8}$ into a decimal.



Who is correct?
Prove it.

Rosie is correct
and Tommy is
incorrect.

Tommy has
divided 8 by 2
rather than 2
divided by 8 to
find the answer.

- 2) Mo shares 6 bananas between some friends.



Each friend gets 0.75 of a banana.

How many friends does he share the
bananas with?
Show your method.

Mo shares his 6
bananas between
8 friends because
6 divided by 8
equals 0.75

Children may show
different methods:

Method 1: Children add
0.75 until they reach 6.
This may involve
spotting that 4 lots of
0.75 equals 3 and then
they double this to find
8 lots of 0.75 equals 6

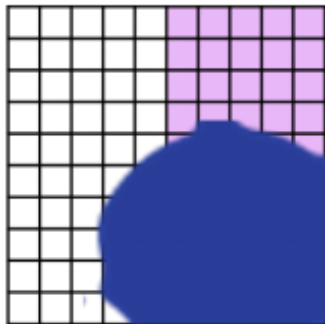
Method 2: Children use
their knowledge that
0.75 is equivalent to $\frac{3}{4}$
to find the equivalent
fraction of $\frac{6}{8}$

19.01.21 Understand percentages

Reasoning and problem solving—Maths extension

Answer and reason the questions below to deepen your mathematical understanding. Once complete, self-mark using the answer sheet.

- 1) Oh no! Dexter has spilt ink on his hundred square.



Complete the sentence stems to describe what percentage is shaded.

It could be...

It must be...

It can't be...

-
- 2) Mo, Annie and Tommy all did a test with 100 questions. Tommy got 6 fewer questions correct than Mo.

Name	Score	Percentage
Mo	56 out of 100	
Annie		65%
Tommy		

Complete the table.

How many more marks did each child need to score 100%?

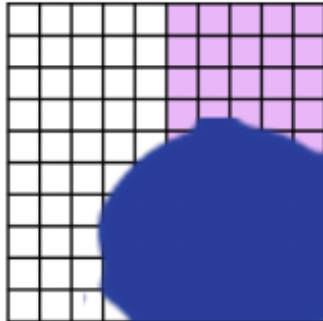
-
- 3) Dora and Amir each have 100 sweets.
Dora eats 65% of hers. Amir has 35 sweets left.
Who has more sweets left?

Answers can be found on the next page.

19.01.21 Reasoning and problem solving—Maths extension

ANSWER SHEET

- 1) Oh no! Dexter has spilt ink on his hundred square.



Complete the sentence stems to describe what percentage is shaded.

It could be...

It must be...

It can't be...

Some possible answers:

It could be 25%

It must be less than 70%

It can't be 100%

- 2) Mo, Annie and Tommy all did a test with 100 questions. Tommy got 6 fewer questions correct than Mo.

Name	Score	Percentage
Mo	56 out of 100	
Annie		65%
Tommy		

Complete the table.

How many more marks did each child need to score 100%?

56%

65 out of 100

50 out of 100

50%

Mo needs 44

Annie needs 35

Tommy needs 50

- 3) Dora and Amir each have 100 sweets. Dora eats 65% of hers. Amir has 35 sweets left. Who has more sweets left?

Neither. They both have an equal number of sweets remaining.

20.01.21 Fractions to percentages

Reasoning and problem solving—Maths extension

Answer and reason the questions below to deepen your mathematical understanding. Once complete, self-mark using the answer sheet.

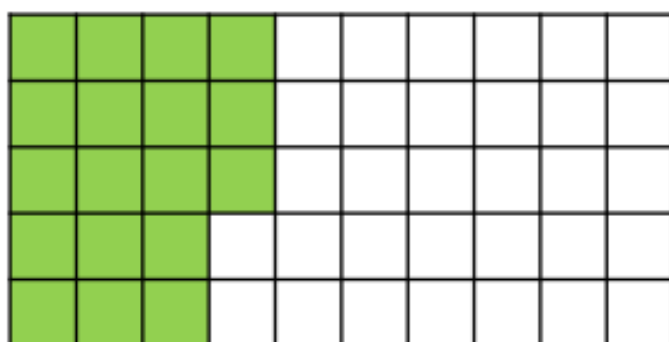
- 1) In a Maths test, Tommy answered 62% of the questions correctly.

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

Who answered more questions correctly?

Explain your answer.

2)



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.

Answers can be found on the next page.

20.01.21 Reasoning and problem solving—Maths extension

ANSWER SHEET

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

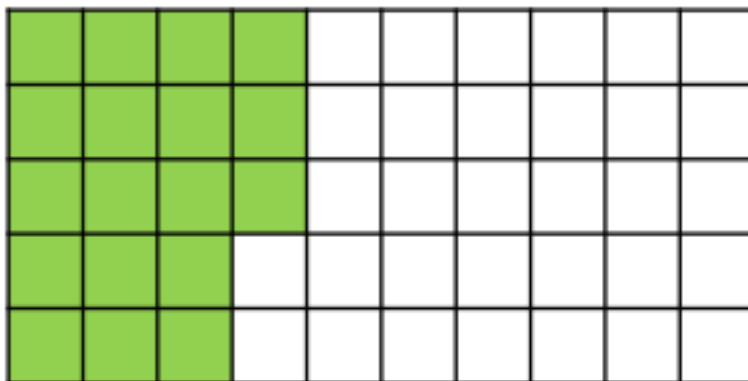
Rosie answered $\frac{3}{5}$ of the questions correctly.

Who answered more questions correctly?

Explain your answer.

Tommy answered more questions correctly because $\frac{3}{5}$ as a percentage is 60% and this is less than 62%

2)



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.

Dora is correct

because $\frac{18}{50} = \frac{36}{100}$

21.01.21 Equivalent FDP (Fractions, Decimals and Percentages)

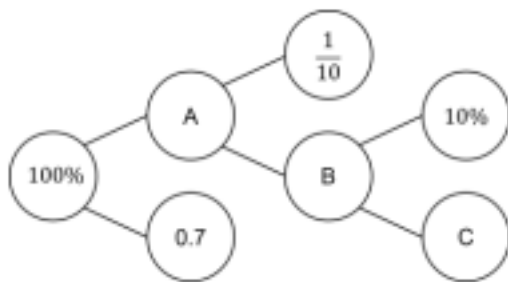
Reasoning and problem solving—Maths extension

Answer and reason the questions below to deepen your mathematical understanding. Once complete, self-mark using the answer sheet.

- 1) Amir says 0.3 is less than 12% because 3 is less than 12

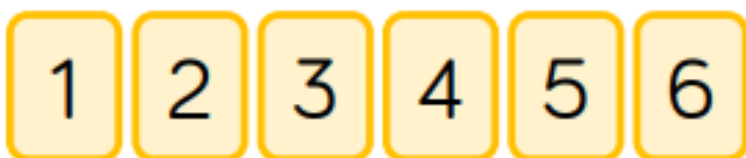
Explain why Amir is wrong.

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



Can you create your own version with different values?

-
- 3) How many different fractions can you make using the digit cards?



How many of the fractions can you convert into decimals and percentages?

21.01.21 Reasoning and problem solving—Maths extension

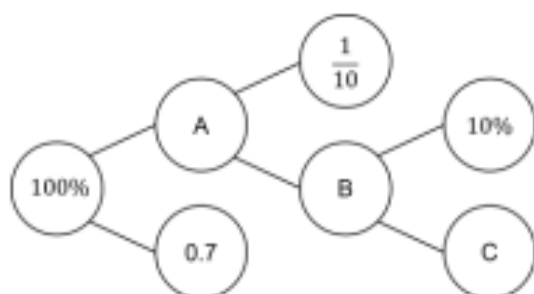
ANSWER SHEET

- 1) Amir says 0.3 is less than 12% because 3 is less than 12

Explain why Amir is wrong.

Amir is wrong because 0.3 is equivalent to 30%

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



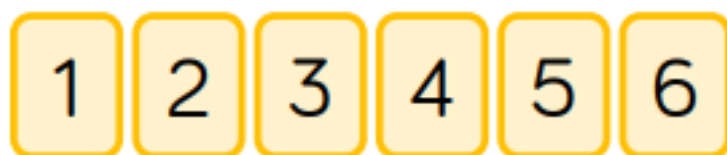
Can you create your own version with different values?

$$A = 0.3, 30\% \text{ or } \frac{3}{10}$$

$$B = 0.2, 20\%, \frac{2}{10} \text{ or } \frac{1}{5}$$

$$C = 0.1, 10\% \text{ or } \frac{1}{10}$$

- 3) How many different fractions can you make using the digit cards?



How many of the fractions can you convert into decimals and percentages?

Possible answers:

Children make a range of fractions.

They should be able to convert

$$\frac{1}{2}, \frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{1}{5}, \frac{2}{5}, \frac{3}{5}$$

and $\frac{4}{5}$ into decimals and percentages.

22.01.21 Order FDP (Fractions, Decimals and Percentages)

Reasoning and problem solving—Maths extension

Answer and reason the questions below to deepen your mathematical understanding. Once complete, self-mark using the answer sheet.

- 1) In his first Geography test, Mo scored 38%

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

Did Mo improve his score?

Explain your answer.

-
- 2) Which month did Eva save the most money?

Estimate your answer using your knowledge of fractions, decimals and percentages.

Explain why you have chosen that month.

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



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

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



Answers can be found on the next page.

22.01.21 Reasoning and problem solving—Maths extension

ANSWER SHEET

1)

In his first Geography test, Mo scored 38%

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%

2) Which month did Eva save the most money?

Estimate your answer using your knowledge of fractions, decimals and percentages.

Explain why you have chosen that month.

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



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.