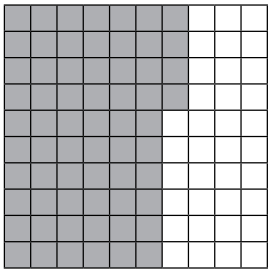
1) a) There are **12** parts per 100 shaded.
There is **12**% shaded.

b) There is 64% shaded.



2) Shape B will show 100%, with 25 more parts per hundred shaded.

3) Smallest to largest is: b (3%), a (30%), c (31%), d (34%)

4) Between 85-89 of the squares should be shaded.

1) a) False
b) True

2) a) True. As there are 47 squares coloured, this means between 45% and 50% of the squares are shaded.

b) False. If I shaded another 12 squares this would mean that 59% of the squares would have been shaded, not 60%.

3) a) Various combinations are possible. Ensure all answers add to 100%.

- orange (75%) + red (25%)
- pink (10%) + yellow (15%) + orange (75%)
- green (40%) + pink (10%) + blue (50%)

4) Answers vary. Example answers shown:

- blue (50%) + yellow (15%) + black (5%) + purple (30%)
- red (25%) + yellow (15%) + blue (50%) + pink (10%)

1) Piece A could not have been from Dylan's square as we can see that approximately 69 of the pieces are not red and therefore Dylan could have only coloured in the remaining 31% of this square.

Piece B could have been from Dylan's square as we can see that approximately 31 pieces are not red. This means that Dylan could have coloured in 65 of the other 69 pieces.

Piece C could have been from Dylan's square as we can see that approximately 24 pieces are not red. This means that Dylan could have coloured 65 of the other 76 pieces.

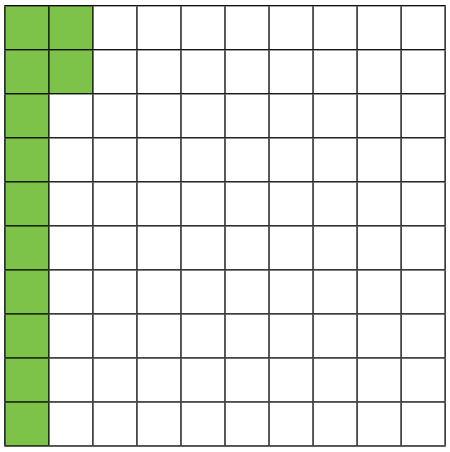
Piece D could not have been from Dylan's square as we can see that at least 50 of the squares are not red so Dylan could only colour in the remaining 50%.

2)

	Number sold	Percentage	Number left
Chocolate buns	**86 out of 100**	**86%**	14
Flapjack	**53 out of 100**	53%	**47**
Gingerbread	91 out of 100	**91%**	**9**

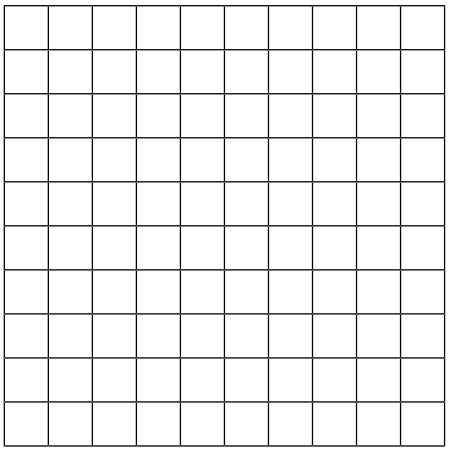
3) Both children have the same number of stickers.

1) Complete the statements and colour in the 100 square correctly.



a) There are _____ parts per 100 shaded.

There is _____% shaded.

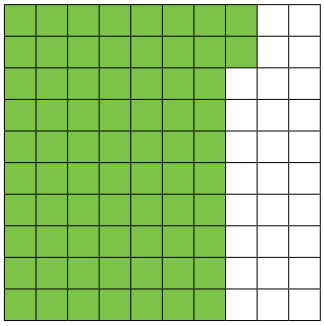


b) There are 64 parts per 100 shaded.

There is _____% shaded.

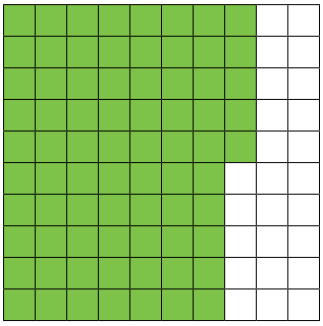
2) Which square would show 100% if I shaded another 25 parts per hundred?

a)



_____

b)



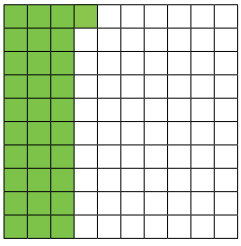
_____

3) Number the representations of percentages below from smallest to largest.

a)

b) 3%

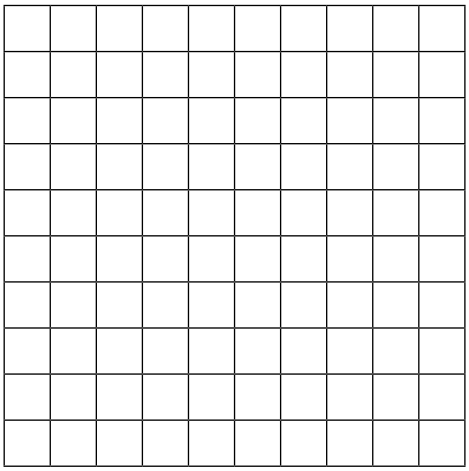
c)



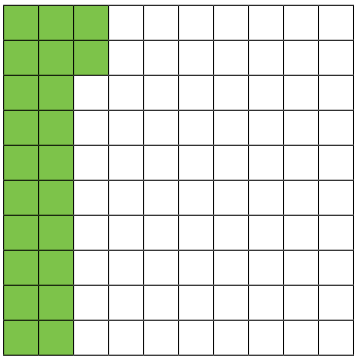
d) 34 parts per 100

4) Colour in this 100 square so that it matches this statement:

Between 84 parts per 100 and 90% of this 100 square are shaded.



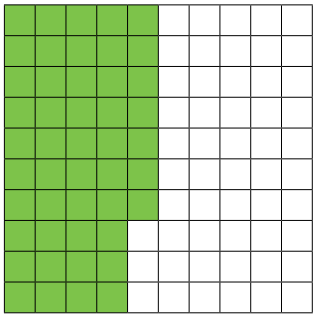
1) True or False?



a) 24% is shaded. _____

b) There are 22 parts per 100 shaded. _____

2) True or false? Explain your answer fully.



a) The percentage of squares shaded is between 45 parts per 100 and 50%.

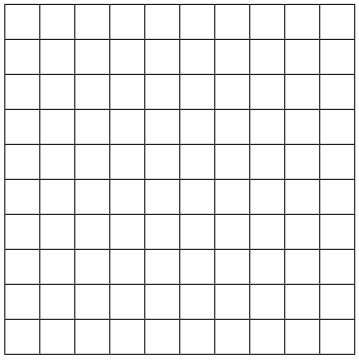
_____

b) If I shaded another 12 squares I will have shaded 60% of the 100 square.

_____

3) Isaac colours in 100% of this square in different colours. He is only allowed to use colours in the percentage amounts given below:

25% = red	15 parts per hundred = yellow
75% = orange	10 parts per hundred = pink
40% = green	50 parts per hundred = blue
5% = black	30 parts per hundred = purple



a) Find different ways that Isaac could colour in the whole 100 square using only 2 or 3 different colours. Give three examples.

_____

_____

_____

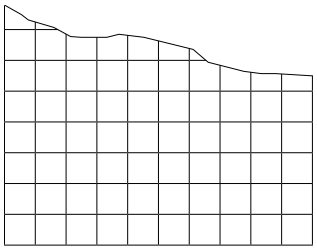
b) Find a way of colouring in 100% of the square that uses exactly 4 colours. Can you find more than one answer?

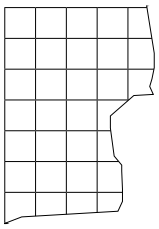
_____

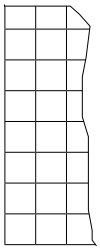
_____

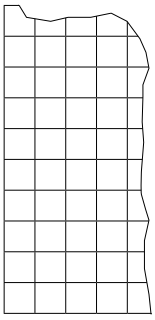
_____

1) By shading whole squares, Dylan had coloured red 65% of a 100 square before it got torn. Which of these torn pieces could have been from Dylan's 100 square? Which could not? Explain your answers fully.

a) 

b) 

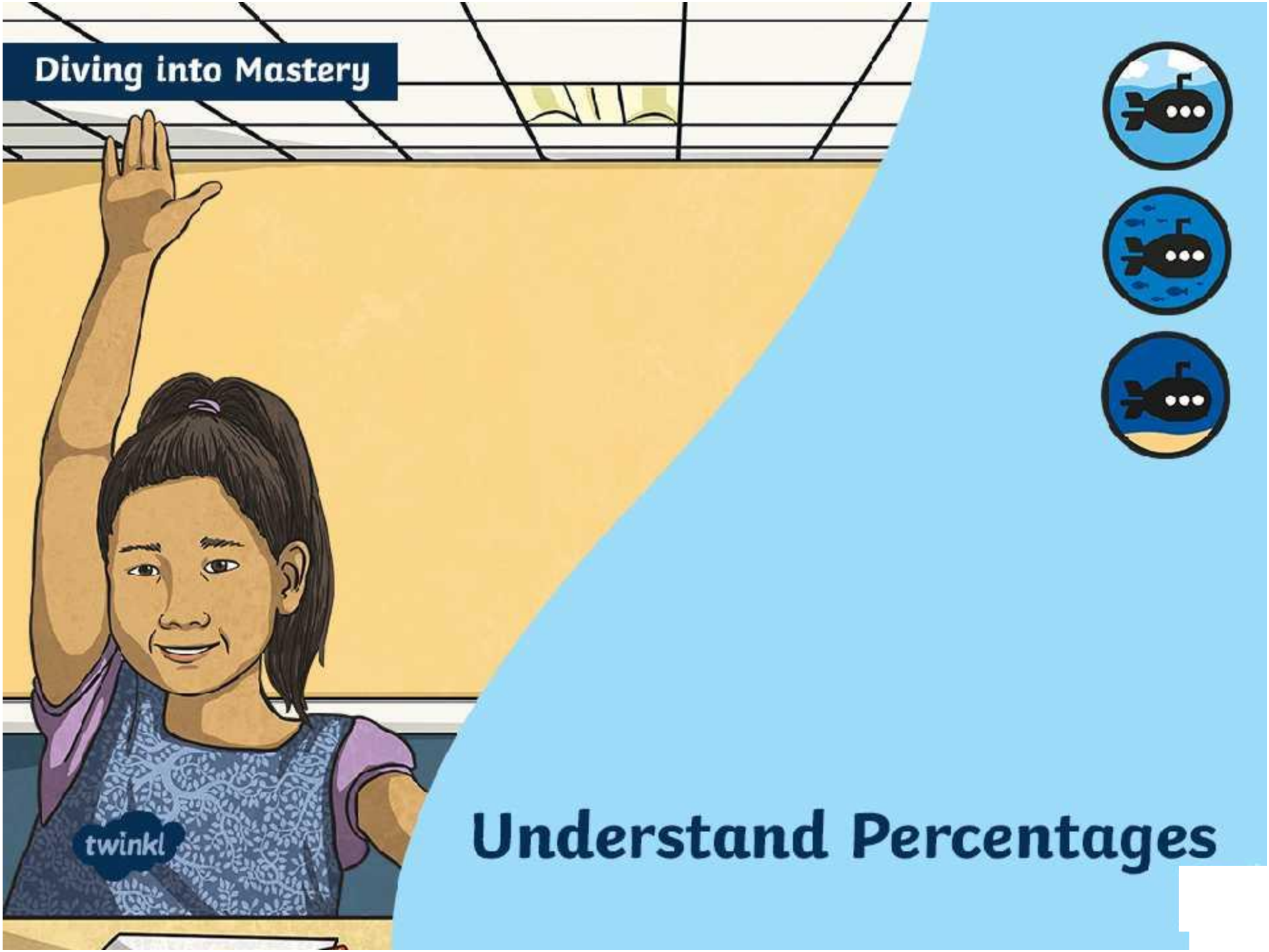
c) 

d) 

2) At the bake sale, the children made 100 of each item to sell. Complete the table.

	Number sold	Percentage	Number left
Chocolate buns			14
Flapjack		53%	
Gingerbread	91 out of 100		

3) Sticker books have spaces for 100 stickers. Bruno has filled in 71% of his book. Josie has 29 spaces left. Who has the most stickers? Explain your answer.


Diving into Mastery
twinkl
Understand Percentages

Diving into Mastery Guidance for Educators

Each activity sheet is split into three sections, diving, deeper and deepest, which are represented by the following icons:

Diving

Deeper

Deepest

These carefully designed activities take your children through a learning journey, initially ensuring they are fluent with the key concept being taught; then applying this to a range of reasoning and problem-solving activities.

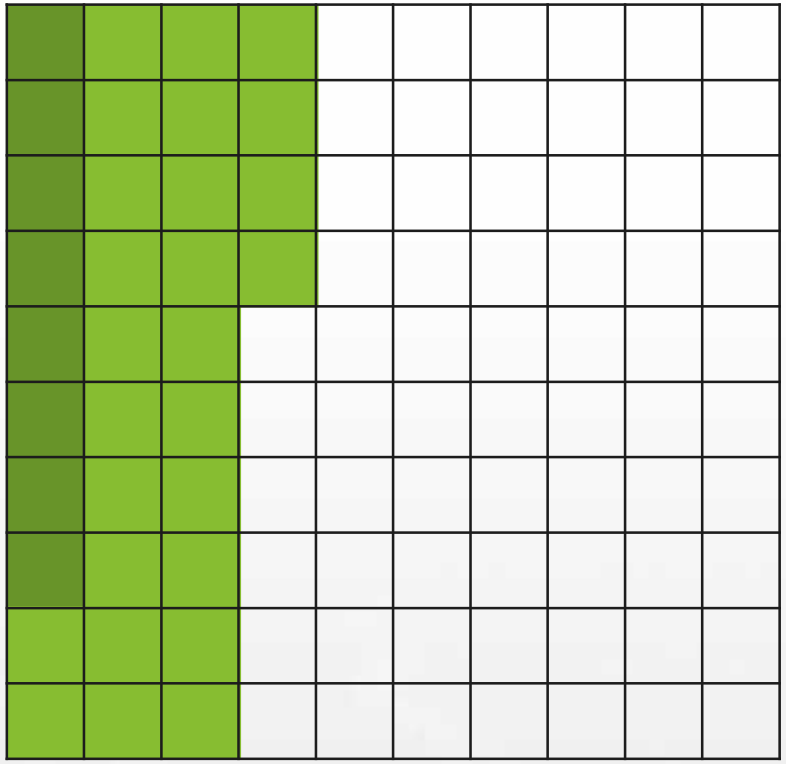
These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.

Aim

- Recognise the per cent symbol and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal.

Understand Percentages | **Diving**

Complete the statements about the 100 square.



There are 34 parts per 100 shaded.

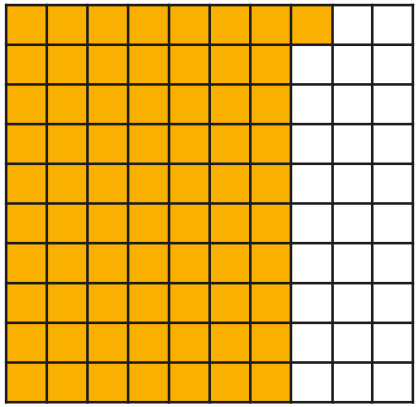
34% is shaded.

Understand Percentages | **Diving**

Put these percentages in order, from the smallest to the largest value percentage represented.

c) 7%

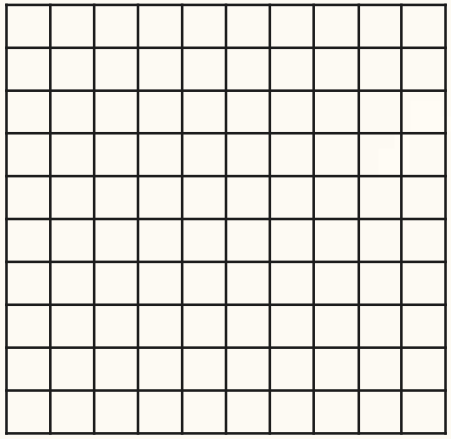
d) 

b) 

a) 73 parts per 100

Understand Percentages | **Deeper**

Ben colours in the whole of this 100 square using different colours.



He is only allowed to use colours in the percentage amounts given below:

45% = red	10 parts per hundred = yellow
25% = green	60 parts per hundred = pink
55% = black	20 parts per hundred = blue
35% = orange	5 parts per hundred = purple

Find a way of colouring in 100% of the square that uses exactly 4 colours. Can you find more than one answer?

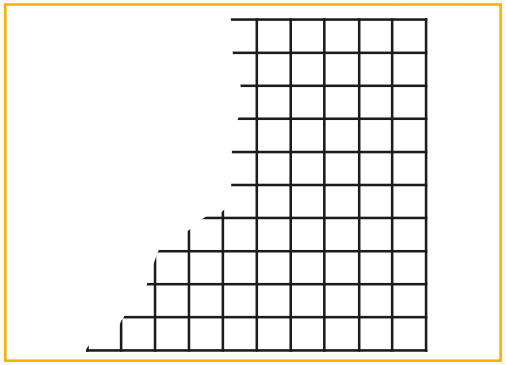
Answers vary. example answers shown:

- blue (20%) + green (25%) + red (45%) + yellow (10%)
- pink (60%) + green (25%) + yellow (10%) + purple (5%)
- pink (60%) + orange (35%) + purple (5%)
- red (45%) + black (55%)

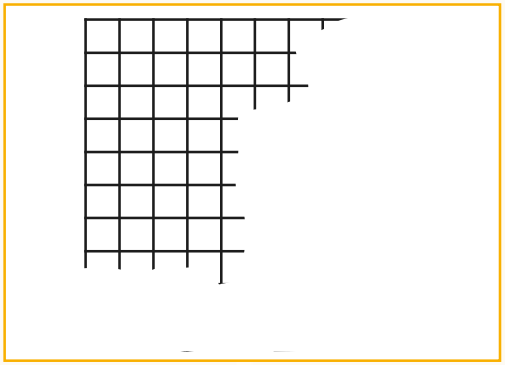
Understand Percentages | **Deepest**

Before it got torn, Jack had coloured blue 45% of a 100 square.

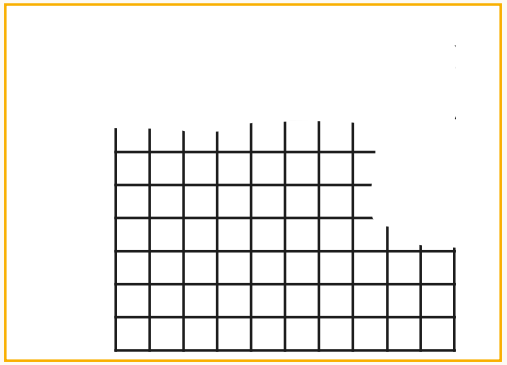
Which of these torn pieces could have been from Jack's 100 square? Which could not? Explain your answers fully.



This could not be part of Jack's square: we can see that 73 out of 100 squares are still white, which means that only 27% of the square could have been coloured blue.



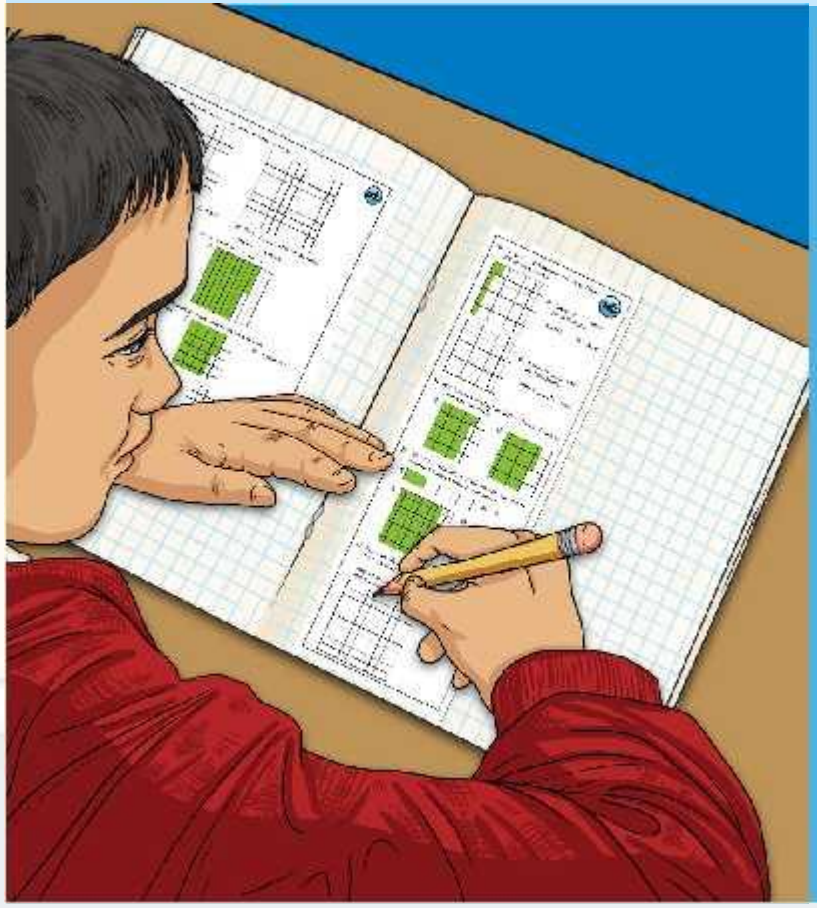
This could have been part of Jack's square: we can see that 50 squares are still white. So out of the 50 missing squares, 45 could be blue.

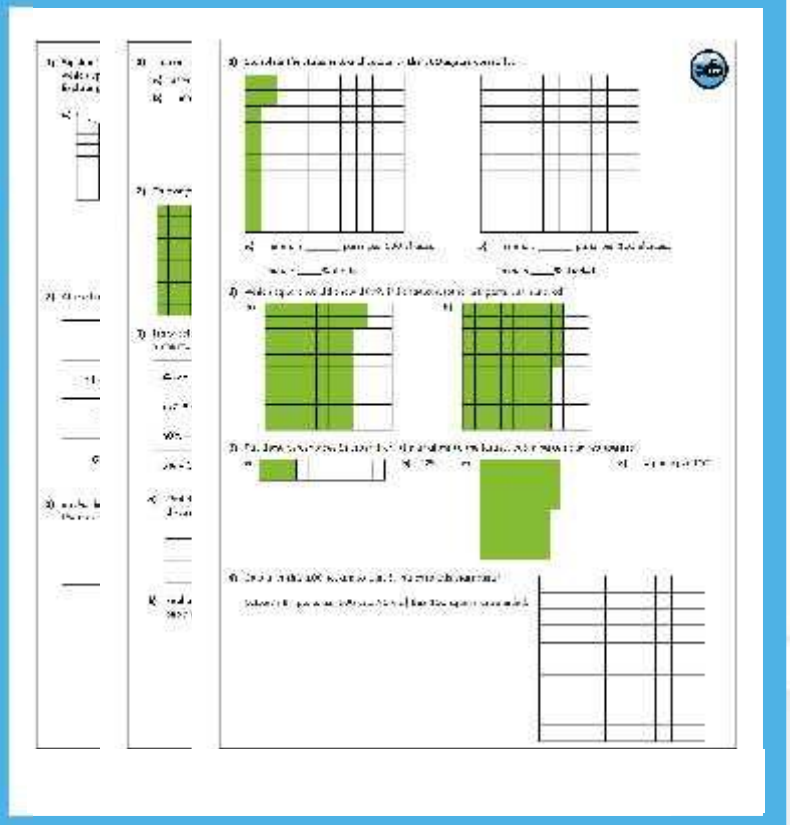


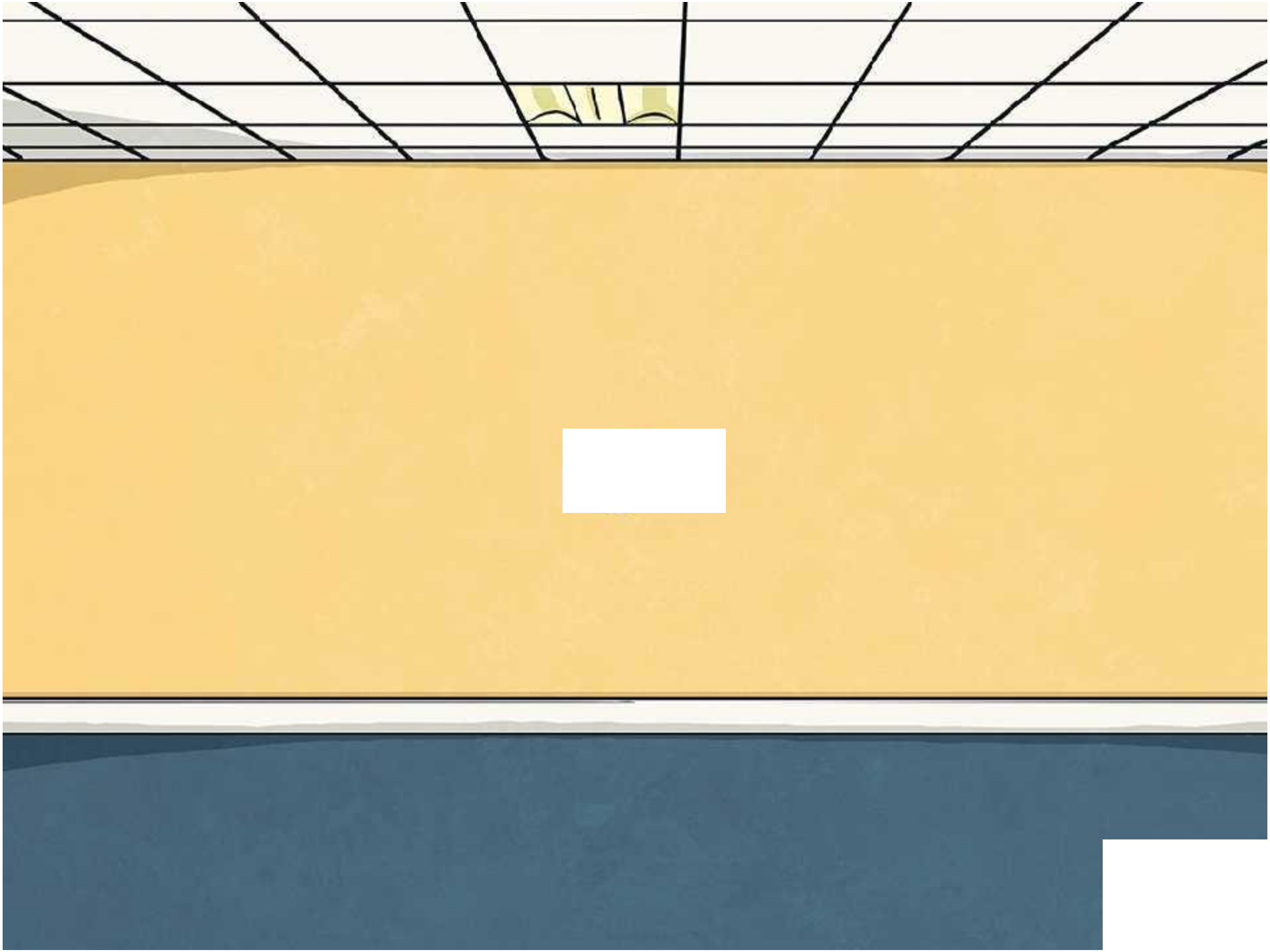
This could not be part of Jack's square: we can see that 64 squares are still white which means that a maximum of 36% could have been coloured blue.

Understand Percentages

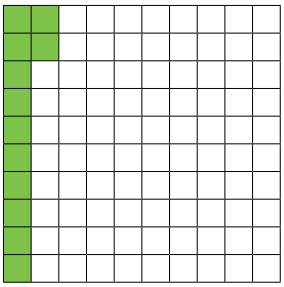
Dive in by completing your own activity!





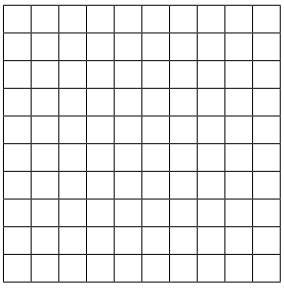


1) Complete the statements and colour in the 100 square correctly.



a) There are _____ parts per 100 shaded.

There is _____% shaded.

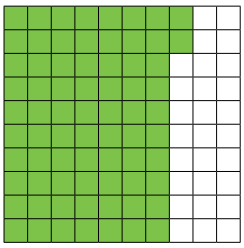


b) There are 64 parts per 100 shaded.

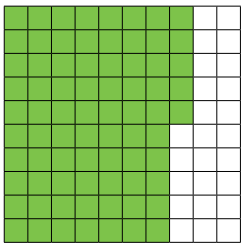
There is _____% shaded.

2) Which square would show 100% if I shaded another 25 parts per hundred?

a)



b)

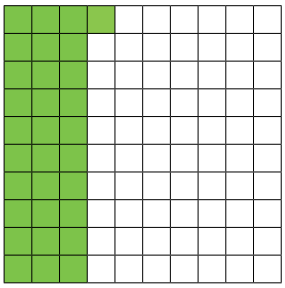


3) Put these percentages in order, from the smallest to the largest value percentage represented.

a)

b) 3%

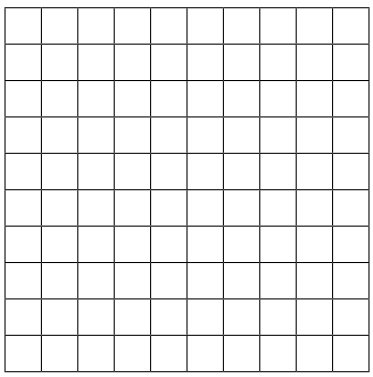
c)



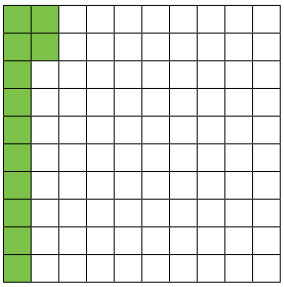
d) 34 parts per 100

4) Colour in this 100 square so that it matches this statement:

Between 84 parts per 100 and 90% of this 100 square are shaded.

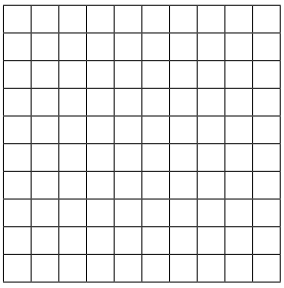


1) Complete the statements and colour in the 100 square correctly.



a) There are _____ parts per 100 shaded.

There is _____% shaded.

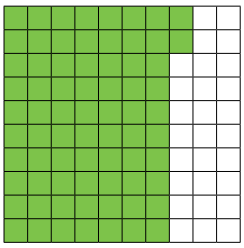


b) There are 64 parts per 100 shaded.

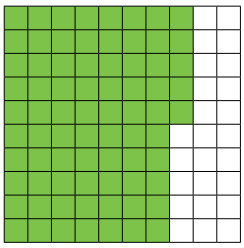
There is _____% shaded.

2) Which square would show 100% if I shaded another 25 parts per hundred?

a)



b)

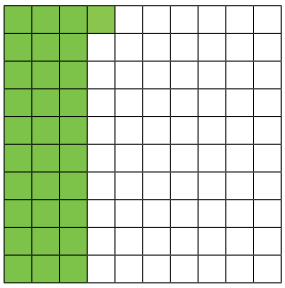


3) Put these percentages in order, from the smallest to the largest value percentage represented.

a)

b) 3%

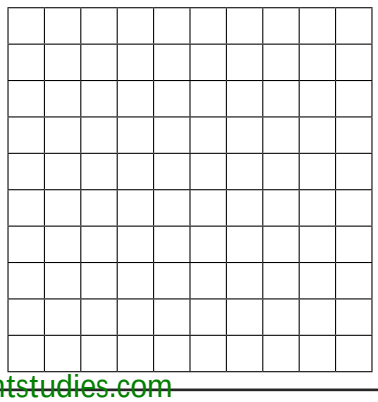
c)



d) 34 parts per 100

4) Colour in this 100 square so that it matches this statement:

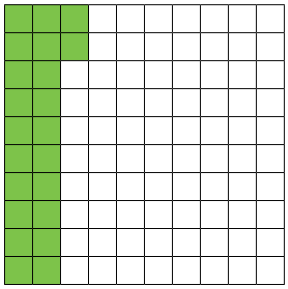
Between 84 parts per 100 and 90% of this 100 square are shaded.



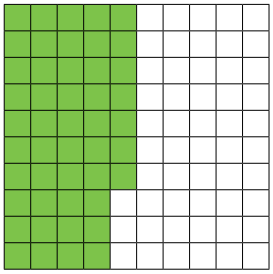
1) True or False?

a) 24% is shaded.

b) There are 22 parts per 100 shaded.



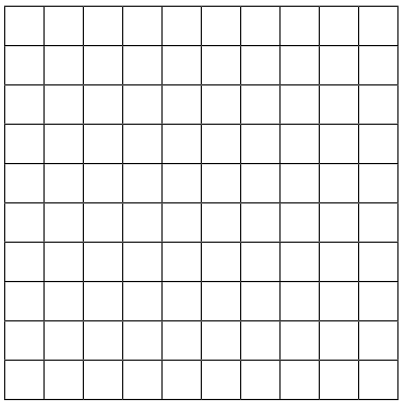
2) True or false? Explain your answer fully.



a) The percentage of squares shaded is between 45 parts per 100 and 50%.

b) If I shaded another 12 squares I will have shaded 60% of the 100 square.

3) Isaac colours in 100% of this square in different colours. He is only allowed to use colours in the percentage amounts given below:



25% = red	15 parts per hundred = yellow
75% = orange	10 parts per hundred = pink
40% = green	50 parts per hundred = blue
5% = black	30 parts per hundred = purple

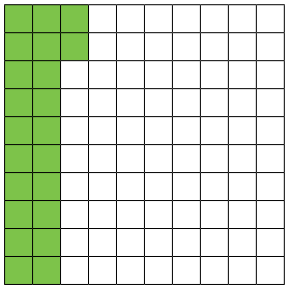
a) Find different ways that Isaac could colour in the whole 100 square using only 2 or 3 different colours. Give three examples.

b) Find a way of colouring in 100% of the square that uses exactly 4 colours. Can you find more than one answer?

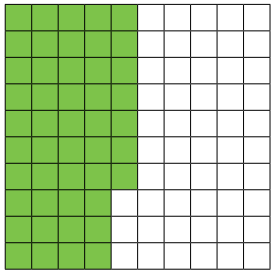
1) True or False?

a) 24% is shaded.

b) There are 22 parts per 100 shaded.



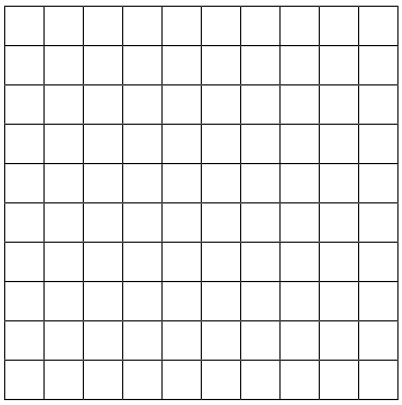
2) True or false? Explain your answer fully.



a) The percentage of squares shaded is between 45 parts per 100 and 50%.

b) If I shaded another 12 squares I will have shaded 60% of the 100 square.

3) Isaac colours in 100% of this square in different colours. He is only allowed to use colours in the percentage amounts given below:

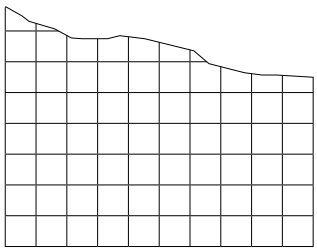


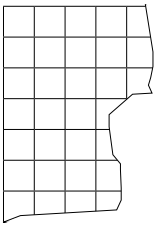
25% = red	15 parts per hundred = yellow
75% = orange	10 parts per hundred = pink
40% = green	50 parts per hundred = blue
5% = black	30 parts per hundred = purple

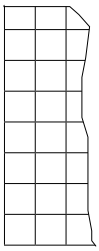
a) Find different ways that Isaac could colour in the whole 100 square using only 2 or 3 different colours. Give three examples.

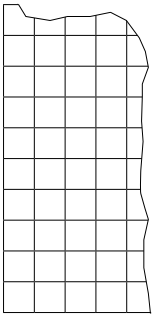
b) Find a way of colouring in 100% of the square that uses exactly 4 colours. Can you find more than one answer?

1) By shading whole squares, Dylan had coloured red 65% of a 100 square before it got torn.
Which of these torn pieces could have been from Dylan's 100 square? Which could not?
Explain your answers fully.

a) 

b) 

c) 

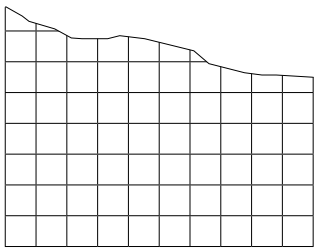
d) 

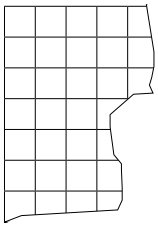
2) At the bake sale, the children made 100 of each item to sell. Complete the table.

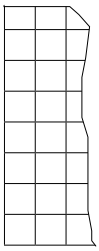
	Number sold	Percentage	Number left
Chocolate buns			14
Flapjack		53%	
Gingerbread	91 out of 100		

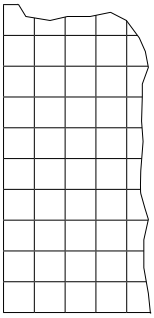
3) Sticker books have spaces for 100 stickers. Bruno has filled in 71% of his book. Josie has 29 spaces left. Who has the most stickers?
Explain your answer.

1) By shading whole squares, Dylan had coloured red 65% of a 100 square before it got torn.
Which of these torn pieces could have been from Dylan's 100 square? Which could not?
Explain your answers fully.

a) 

b) 

c) 

d) 

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