Fractions: Percentage Power

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.	Success Criteria: I can recognise the per cent symbol. I can write the percentage that a diagram represents. I can represent a percentage with a diagram.	Resources: Lesson Pack Whiteboards and pens
I can recognise and write percentages.	Key/New Words: Percentage, per cent, %, per hundred, fraction, equivalent.	Preparation: Blank Hundred Squares - one per child Differentiated Percentage Colouring Activity Sheets - one per child

It will be helpful if children have a good understanding that hundredths arise when dividing an object by one hundred and **Prior Learning:** dividing tenths by ten. Learning Sequence Fraction Action! Challenge the children to find fractions that fit the comparison statements shown on the Lesson Presentation. Tell Me: Elicit what children already understand about per cent using the symbol shown on the Lesson Presentation. Identify that per means 'for each' or 'out of' and cent means 'one hundred' so per cent means 'for each hundred' or 'out of one hundred'. Percentage Diagrams: On whiteboards, children write the percentage that is coloured in on each of the diagrams shown on the Lesson Presentation. Then, they use the Blank Hundred Squares to shade the diagrams to the percentages shown. Share the different ways children have coloured in the grids. Extend to shape diagrams split into tenths or quarters and how these diagrams can represent multiples of 10% and 25%. Percentage Colouring: Children complete the differentiated Percentage Colouring Activity Sheets to show they can recognise and write percentages. Children write the The questions begin with The shapes are split into shapes split into 100 a mixture of 100, 4, 5, percentage of each shape that is coloured pieces and move on to 10 or 200 pieces. in, then colour shapes shapes split into 4, 5 or to represent given 10 pieces. percentages. The shapes are all squares split into 100 equal pieces. Diving into Mastery: Schools using a mastery approach may prefer to use the following as an alternative activity. 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. Children complete fluency problems which involve understanding the language 'number of parts per hundred' in relation to percentages. They compare different representations of percentages which show different numbers of parts per hundred. Children explore answering reasoning problems involving percentages, including true or false questions and comparing 100 squares with missing sections. Children use problem solving skills in order to answer an open-ended task that involves a greater depth of thinking when understanding percentages and numbers of parts per 100. Matching Hundredths: Discuss how percentages can be written as fractions with a denominator of one hundred. Practise identifying equivalent percentages and fractions by finding the matching pairs shown on the Lesson Presentation and then writing the equivalents for the unmatched answers.

Exploreit

Collectit: Children collect examples of places where percentages are used (e.g. food packaging, discount offers).

Representit: Children use base ten resources to represent given percentages. The hundred square represents one whole, the tens sticks represent 10% and the ones cubes represent 1%.



Fractions

Maths | Year 5 | Fractions | Understanding Percentages | Lesson 1 of 2: Percentage Power



Percentage Power



Aim

• I can recognise and write percentages.

Success Criteria

- I can recognise the per cent symbol.
- I can write the percentage that a diagram represents.
- I can represent a percentage with a diagram.

Fraction Action!

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0

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Write down a fraction that fits this statement:

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Tell Me

'Per cent' relates to 'number of parts per hundred'.

%



Percentage Diagrams





Use your **Blank Hundred Squares**. Shade in a grid to show:



Percentage Diagrams

Here is a grid made of four equal squares. What **percentage** of the grid does each square represent?

There are **50** parts per hundred shaded, which is equivalent to **50%**

25%





Diving into Mastery

Dive in by completing your own activity!





Matching Hundredths



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				Delive	ered By:		Suppo	ort:	
Success Criteria	Me	Friend	Teacher	т	РРА	S	I	AL	GP
I can recognise the per cent symbol.				Notes	/Eviden	ce			
I can write the percentage that a diagram represents.									
I can represent a percentage with a diagram.									
Next Steps									
J									
J									

т	Teacher	I	Independent
PPA	Planning, Preparation and Assessment	AL	Adult Led
S	Supply	GP	Guided Practice

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Next Steps	I	1	1	1					
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Blank Hundred Squares

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91 out of 100

Gingerbread

91%

9



- 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?

 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.





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.







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





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



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.

<u> </u>					
<u> </u>					

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



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



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

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Percentage Colouring



Colour in the squares to represent the percentages shown.



Percentage Colouring Answers



7

Percentage Colouring



Percentage Colouring Answers



Percentage Colouring





Percentage Colouring Answers



Avery Template: Name Badge Label, 8 per sheet I Compatible Products: 15395, 25395, 42395, 45395, 48395, 5395, 8395, 88395, 85395.

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