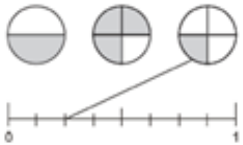
Unit Overview and Guidance

- The exemplification has been taken from the NCETM online 'Resource Toolkit', with additions in order to ensure full coverage.
- Links to the White Rose Maths hubs schemes of work (with questions categorised into the three aims of the national curriculum i.e. fluency, problem solving and reasoning) are hyperlinked to each of the objectives. Many thanks go to the White Rose Maths hub for permission to include their resources.
- The NCETM reasoning questions have also been incorporated into each unit and are identified in pale purple boxes underneath the group of the most relevant objectives.
- The 'big Ideas' sections from the NCETM 'Teaching for Mastery' documents have been included at the start of each unit. Hyperlinks to the full NCETM 'Teaching for Mastery' documents have also been included for easy reference.
- Hyperlinks to NRich activities have also been added to this version. These are found by clicking on the blue buttons like this one 1 at the bottom of relevant objective.
- Some additional content has been added in order to support mixed-aged planning. Any additional content is in *italics*. Occasionally ~~strikethrough~~ has been used to identify when an objective has been altered and this is primarily where an objective has been split between two units.
- Each unit is sub-divided into sections for ease of planning. Sub-categories in this unit are;
    1. Recognising and Finding Fractions
    2. Decimals
    3. Finding and Using Equivalence
    4. Calculating with Fractions, Decimals and Percentages
    5. Solving Problems

	Yr 3	Yr 4	Yr 5	Yr 6
NCETM Teaching for Mastery Questions, tasks and activities to support assessment	**The Big Ideas** Fractions are equal parts of a whole. Equal parts of shapes do not need to be congruent but need to be equal in area. Decimal fractions are linked to other fractions. The number line is a useful representation that helps children to think about fractions as numbers.	**The Big Ideas** Fractions arise from solving problems, where the answer lies between two whole numbers. Fractions express a relationship between a whole and equal parts of a whole. Children should recognise this and speak in full sentences when answering a question involving fractions. For example, in response to the question What fraction of the chocolate bar is shaded? the pupil might say Two sevenths of the whole chocolate bar is shaded. Equivalency in relation to fractions is important. Fractions that look very different in their symbolic notation can mean the same thing.	**The Big Ideas** Representations that may appear different sometimes have similar underlying ideas. For example 1 4, 0·25 and 25% are used in different contexts but are all connected to the same idea.	**The Big Ideas** Fractions express a relationship between a whole and equal parts of a whole. Pupils should recognise this and speak in full sentences when answering a question involving fractions. For example, in response to the question 'What fraction of the journey has Tom travelled?' the pupil might respond, 'Tom has travelled two thirds of the whole journey.' Equivalent fractions are connected to the idea of ratio: keeping the numerator and denominator of a fraction in the same proportion creates an equivalent fraction. Putting fractions in place on the number lines helps understand fractions as numbers in their own right. **The Big Ideas (Ratio and Proportion)** It is important to distinguish between situations with an additive change or a multiplicative change (which involves ratio). For example, if four children have six sandwiches to share and two more children join them, although two more children have been added, the number of sandwiches then needed for everyone to still get the same amount is calculated multiplicatively.
	Teaching for Mastery Year 3	Teaching for Mastery Year 4	Teaching for Mastery Year 5	Teaching for Mastery Year 6

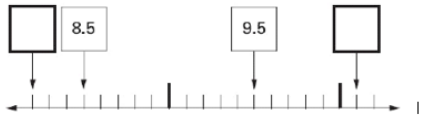
NUMBER: Fractions, Decimals and Percentages (NFD - 7 weeks)

Strand		Yr3	Yr4	Yr5	Yr6
Recognising and Finding Fractions	Recognise and find fractions	**(Y3 objective) recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators** Children should be able to recognise and write unit and non-unit fractions of shapes. **Unit Fractions.** Unit means one. Here are some examples of unit fractions.  **Non-unit fractions.** Unit means one, so non-unit is any number apart from one. Here are some examples of non-unit fractions.  Many (or, rather, more than one of the) parts, of an equally divided whole, is a non-unit fraction. Understand that the number on the bottom of a fraction tells me how many pieces the whole is divided into What fraction of this shape is shaded?  How do you know? Is there another way that you can describe the fraction? • Here are 21 apples. • Put a ring around one third of them.  • *One fifth of 60kg* • *Two fifths of 50 litres* 1 **(Y3 objective) recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators** • Position fractions on a number line; eg. mark fractions such as ½, 3 ½ and 2 3/10 on a number line marked from zero to 5. A fraction of each shape is shaded. Match each fraction to the correct place on the number line. One has been done for you.  1	**recognise mixed numbers and improper fractions and convert from one form to the other. Write mathematical statements >1 as a mixed number** (e.g. ⅖ + ⅘ = ⁶⁄₅ = 1⅕) How many halves in: 1 ½ 3 ½ 9 ½ …? How many quarters in 1 ¼ 2 ¼ 5 ¼ ….? 1	***(Y5 extended) recognise mixed numbers and improper fractions and convert from one form to the other*** $\frac{10}{7} + \frac{13}{7} = 3\frac{2}{7}$ *leading to:* $\frac{7}{5} + \frac{5}{3} = 3\frac{1}{15}$

NUMBER: Fractions, Decimals and Percentages (NFD - 7 weeks)

Recognising and Finding Fractions	NCETM Reasoning	**What comes next?** 6/10, 7/10, 8/10, ….., …. 12/10, 11/10, ….., ….., ….. **True or false?** 2/10 of 20cm = 2cm 4/10 of 40cm = 4cm 3/5 of 20cm = 12cm **Give an example** of a fraction that is less than a half. Now another example that no one else will think of. Explain how you know the fraction is less than a half. (draw an image) **Put in Order** Ben put these fractions in order starting with the smallest. Are they in the correct order? One fifth, one seventh, one sixth **What do you notice?** 1/10 of 10 = 1 2/10 of 10 = 2 3/10 of 10 = 3 Continue the pattern. What do you notice? What about 1/10 of 20? Use this to work out 2/10 of 20, etc **What do you notice?** Find 2/5 of 10 Find 4/10 of 10. What do you notice? Can you write any other similar statements?	**What comes next?** 83/100, 82/100, 81/100, ….., ….., ….. 31/100, 41/100, 51/100, ….., ….., **What do you notice?** 1/10 of 100 = 10 1/100 of 100 = 1 2/10 of 100 = 20 2/100 of 100 = 2 How can you use this to work out 6/10 of 200? 6/100 of 200? **True or false?** 1/20 of a metre= 20cm 4/100 of 2 metres = 40cm **Give an example** of a fraction that is more than a half but less than a whole. Now another example that no one else will think of. Explain how you know the fraction is more than a half but less than a whole. (draw an image) **What do you notice?** Find 4/6 of 24 Find 2/3 of 24 What do you notice? Can you write any other similar statements?	**Give an example** of a fraction that is more than three quarters. Now another example that no one else will think of. Explain how you know the fraction is more than three quarters. **What do you notice?** Find 30/100 of 200 Find 3/10 of 200 What do you notice? Can you write any other similar statements?	**Spot the mistake** Identify and explain mistakes when counting in more complex fractional steps **What do you notice?** One thousandth of my money is 31p. How much do I have? **What do you notice?** 8/5 of 25 = 40 5/4 of 16 = 20 7/6 of 36 = 42 Can you write similar statements?

NUMBER: Fractions, Decimals and Percentages (NFD - 7 weeks)

Decimals	Counting with decimals	**count up and down in tenths;** **recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10** Children should be able to: • Use decimal notation for tenths • Divide single digits or whole numbers by 10 • Explain how finding 1/10 is the same as dividing by 10 Here is part of a number line. Write in the numbers missing from the two empty boxes.  	**count up and down in hundredths; recognise that hundredths arise when dividing an object by a hundred and dividing tenths by ten** What does the digit 6 in 3.64 represent? The 4? What is the 4 worth in the number 7.45? The 5? Continue the count 1.91, 1.92, 1.93, 1.94 ... Suggest a decimal fraction between 4.1 and 4.2 Know how many 10 pence pieces equal £1, how many 1 pence pieces equal £1, how many centimetres make a metre.		
	Compare and Order Decimals		**compare numbers with the same number of decimal places up to two decimal places** Place these decimals on a line from 0 to 2: 0.3, 0.1, 0.9, 0.5, 1.2, 1.9  Which is lighter: 3.5kg or 5.5kg? 3.72kg or 3.27kg? Which is less: £4.50 or £4.05? Put in order, largest/smallest first: 6.2, 5.7, 4.5, 7.6, 5.2, 99, 1.99, 1.2, 2.1 Convert pounds to pence and vice versa. For example: Write 578p in £. How many pence is £5.98, £5.60, £7.06, £4.00? Write the total of ten £1 coins and seven 1p coins (£10.07) Write centimetres in metres. For example, write: 125 cm in metres (1.25 metres)	**read, write, order and compare numbers with up to three decimal places** Write these numbers in order of size, starting with the smallest. 1.01, 1.001, 1.101, 0.11 Put the correct symbol, < or >, in each box. 3.03 ☐ 3.3 0.37 ☐ 0.327 Order these numbers: 0.27 0.207 0.027 2.07 2.7	

NUMBER: Fractions, Decimals and Percentages (NFD - 7 weeks)

Decimals	NCETM Reasoning	**Spot the mistake** six tenths, seven tenths, eight tenths, nine tenths, eleven tenths … and correct it.	**Spot the mistake** sixty tenths, seventy tenths, eighty tenths, ninety tenths, twenty tenths … and correct it. **Missing symbol** Put the correct symbol < or > in each box 3.03 ☐ 3.33 0.37 ☐ 0.32 What needs to be added to 3.23 to give 3.53? What needs to be added to 3.16 to give 3.2?	**Spot the mistake** 0.088, 0.089, 1.0 **What comes next?** 1.173, 1.183, 1.193 **What do you notice?** One tenth of £41, One hundredth of £41, One thousandth of £41 Continue the pattern. What do you notice? 0.085 + 0.015 = 0.1 0.075 + 0.025 = 0.1 0.065 + 0.035 = 0.1 Continue the pattern for the next five number sentences. **True or false?** 0.1 of a kilometre is 1m. 0.2 of 2 kilometres is 2m. 0.3 of 3 Kilometres is 3m 0.25 of 3m is 500cm. 2/5 of £2 is 20p **Missing symbol** Put the correct symbol < or > in each box 4.627 ☐ 4.06 12.317 ☐ 12.31 What needs to be added to 3.63 to give 3.13? What needs to be added to 4.652 to give 4.1?	

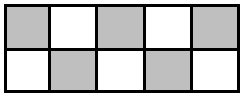
NUMBER: Fractions, Decimals and Percentages (NFD - 7 weeks)

<table>
<tr>
<td rowspan="2">Finding and Using Equivalence</td>
<td>Equivalent Fractions</td>
<td><u>recognise and show, using diagrams, equivalent fractions with small denominators</u>

Children should be able to:

• Identify pairs of fractions that total 1.

• Circle two fractions that have the same value</td>
<td><u>recognise and show, using diagrams, families of common equivalent fractions</u>

Recognise that five tenths ($\frac{5}{10}$) or one half of this diagram is shaded.
 

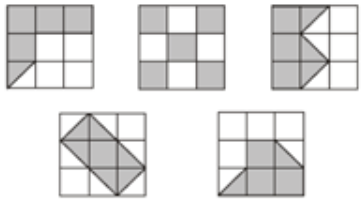
Recognise that two eighths ($\frac{2}{8}$) or one quarter ($\frac{1}{4}$) of the set of buttons is ringed
 

Recognise that one whole is equivalent to two halves, three thirds, four quarters…

For example, build a fraction ‘wall’ using a computer program and then estimate parts.

Recognise patterns in equivalent fractions -

$\frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \frac{4}{8} = \frac{5}{10}$ and similar patterns for - $\frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6}, \frac{1}{10}$

Here are five diagrams. Look at each one. Put a tick (✔) on the diagram is exactly ½ of it is shaded. Put a cross (✗) if it us not.
 
  </td>
<td><u>identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths</u>

Circle the equivalent fractions:
$\frac{7}{100}$ $\frac{100}{7}$ $\frac{2}{5}$ $\frac{40}{100}$

Now find one more example with shapes</td>
<td><u>use common factors to simplify fractions; use common multiples to express fractions in the same denomination</u>

Children should be able to recognise that a fraction such as $\frac{5}{20}$ can be reduced to an equivalent fraction of ¼ by dividing both numerator and denominator by the same number [cancelling]

They should be familiar with identifying fractions in different units. E.g. what fraction is 20 pence of two pounds? Of four pounds etc…</td>
</tr>
<tr>
<td>Compare & Order</td>
<td><u>compare and order unit fractions, and fractions with the same denominators</u>

Children should be able to answer questions like:

Would you rather have 1/3 of 30 sweets or 1/5 of 40 sweets? Why?</td>
<td></td>
<td><u>compare and order fractions whose denominators are all multiples of the same number</u>

Children should be able to circle the two fractions that have the same value, or choose which one is the odd one out and justify their decision.

$\frac{6}{10}, \frac{3}{5}, \frac{18}{20}, \frac{9}{15}$</td>
<td><u>compare and order fractions, including fractions >1</u>

Children should be able to position fractions on a number line; e.g. mark fractions such as $\frac{7}{5}$, $\frac{11}{20}$, $\frac{18}{12}$ on a number line graduated in tenths

Answer questions such as:

What number is half way between 5 ¼ and 5 ½ ?

Which is larger, ⅓ or ⅖? Explain how you know.</td>
</tr>
</table>

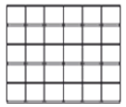
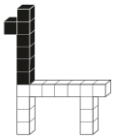
NUMBER: Fractions, Decimals and Percentages (NFD - 7 weeks)

Finding and Using Equivalence	Fractions and Decimals		**recognise and write decimal equivalents of any number of tenths or hundredths** Recognise 0.07 is equivalent to $\frac{7}{100}$ and 6.35 is equivalent to $6\frac{35}{100}$ etc Which of these decimals is equal to $\frac{19}{100}$? 1.9 10.19 0.19 19.1 Write each of these as a decimal fraction: $\frac{27}{100}$ $\frac{3}{100}$ $2\frac{33}{100}$ Write the decimal fraction equivalent to: two tenths and five hundredths; twenty-nine hundredths; fifteen and nine hundredths. **recognise and write decimal equivalents to ¼; ½; ¾** Know that, for example 0.5 is equivalent to ½, 0.25 is equivalent to ¼, 0.75 is equivalent to ¾, 0.1 is equivalent to $\frac{1}{10}$ Particularly in the context of money and measurement. Write the decimal fraction equivalent to: two tenths and five hundredths; twenty-nine hundredths; fifteen and nine hundredths.	**read and write decimal numbers as fractions (e.g. 0.71 = $\frac{71}{100}$)** What decimal is equal to 25 hundredths? Write the total as a decimal: $4 + \frac{6}{10} + \frac{2}{100} =$ Children partition decimals using both decimal and fraction notation, for example, recording 6.38 as $6 + \frac{3}{10} + \frac{8}{100}$ and as 6 + 0.3 + 0.08. **recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents** Recognise that 0.007 is equivalent to $\frac{7}{1000}$ 6.305 is equivalent to $\frac{6305}{100}$	***recognise and write decimal equivalents of any number of tenths or hundredths*** *Recognise 0.07 is equivalent to $\frac{7}{100}$ and 6.35 is equivalent to $6\frac{35}{100}$ etc* *Which of these decimals is equal to $\frac{19}{100}$? 1.9 10.19 0.19 19.1* *Write each of these as a decimal fraction: $\frac{27}{100}$ $\frac{3}{100}$ $2\frac{33}{100}$* ***recognise and write decimal equivalents to ¼; ½; ¾*** *Know that, for example* *0.5 is equivalent to ½, 0.25 is equivalent to ¼, 0.75 is equivalent to ¾, 0.1 is equivalent to $\frac{1}{10}$* *Particularly in the context of money and measurement.* **associate a fraction with division to calculate decimal fraction equivalents (e.g. 0.375) for a simple fraction (e.g. ⅜)** Children should be able to find fractions of numbers and quantities: • What fraction of £1 is 35p, … 170p ? • Write $\frac{23}{100}$ of 4 kilogrammes in grams • What fraction of 1 litre is 413 ml? Convert a fraction to a decimal using known equivalent fractions: • ¼ = 0.25 • ⅖ = 0.4 Explain how much pizza each person would get if they divided 4 pizzas between 5 people, as a fraction and a decimal Circle the two fractions that are equivalent to 0.6. $\frac{6}{10}$ $\frac{1}{60}$ $\frac{60}{100}$ $\frac{1}{6}$

NUMBER: Fractions, Decimals and Percentages (NFD - 7 weeks)

Finding and Using Equivalence

Percentages

		write percentages as a fraction with denominator 100, and as a decimal. Shade 10% of the grid below –  Which is bigger: 65% or ¾? How do you know? What percentage is the same as $\frac{7}{10}$? Explain how you know? What is $\frac{31}{100}$ as a percentage? Which is a better mark in a test: 61%, or 30 out of 50? How do you know?	**recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.** Put a ring around the percentage that is equal to three-fifths – 20% 30% 40% 50% 60% This model is made of 20 cubes. What percentage of the model is made from black cubes? 

NCETM Reasoning

Odd one out. Which is the odd one out in each of these trios? ½ 3/6 5/8 3/9 2/6 4/9 Why?	**Odd one out.** Which is the odd one out in each of these trio? s¾ 9/12 4/6 9/12 10/15 2/3 Why? **Complete the pattern by filling in the blank cells in this table:** $\frac{1}{10}$ | $\frac{2}{10}$ | $\frac{3}{10}$ | $\frac{10}{100}$ | $\frac{20}{100}$ | | $\frac{40}{100}$ 0.1 | | 0.3 | **Another and another** Write a decimal numbers (to one decimal place) which lies between a half and three quarters? … and another, … and another, … **Ordering** Put these numbers in the correct order, starting with the smallest. • ¼ 0.75 5/10 • 4/8 ¾ 1/4	**Odd one out.** Which is the odd one out in each of these collections of 4 fractions? 6/10 3/5 18/20 9/15 30/100 3/10 6/20 3/9 **Put in Order** Imran put these fractions in order starting with the smallest. Are they in the correct order? Two fifths, three tenths, four twentieths How do you know? **Complete the pattern** $\frac{71}{100}$ | $\frac{??}{100}$ | $\frac{??}{100}$ | $\frac{??}{100}$ 0.71 | 0.81 | ??? | ??? **Another and another** Write a fraction with a denominator of one hundred which has a value of more than 0.75? … and another, … and another, … **Ordering** Put these numbers in the correct order, starting with the largest. Explain your thinking 7/10, 0.73, 7/100, 0.073 71%	**Odd one out**. Which is the odd one out in each of these collections of 4 fractions? ¾ 9/12 26/36 18/24 4/20 1/5 6/25 6/30 **Give an example** of a **fraction** that is greater than 1.1 and less than 1.5. Now another example that no one will think of. Explain how you know. **Complete the pattern** $\frac{1}{8}$ | $\frac{2}{8}$ | $\frac{3}{8}$ | $\frac{4}{8}$ 0.375 | ??? | ??? | ??? **Another and another** Write a unit fraction which has a value of less than 0.5? … and another, … and another, … **Ordering** Which is larger, $\frac{1}{3}$ or $\frac{2}{5}$? Explain how you know. Put the following amounts in order, starting with the largest. 23%, 5/8, 3/5, 0.8

NUMBER: Fractions, Decimals and Percentages (NFD - 7 weeks)

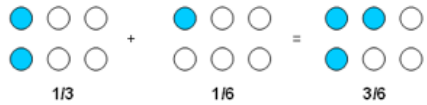
Calculating with Fractions, Decimals and Percentages

Adding and Subtracting Fractions

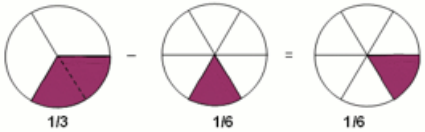
Add/subtract fractions with the same denominator within one whole (e.g. 5/7 + 1/7 = 6/7)

This could also be done by using drawings and in the array form:

For addition:



and for subtraction:



add and subtract fractions with the same denominator

For example:

$\frac{1}{2} + \frac{1}{2}$ $\frac{1}{4} + \frac{3}{4}$ $\frac{3}{8} + \frac{5}{8}$ $\frac{3}{5} + \frac{4}{5} + \frac{1}{5}$

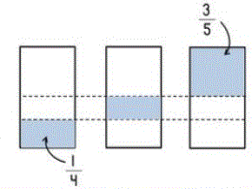
$\frac{6}{7} - \frac{4}{7}$ $\frac{9}{10} + \frac{4}{10} - \frac{3}{10}$

add and subtract fractions with the same denominator and denominators that are multiples of the same number

add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

Here are three identical rectangles. A fraction of each has been shaded.

What fraction of the middle rectangle has been shaded?



Here is a chocolate bar.

William eats 3 pieces and Amber eats 2 pieces.

What fraction of the chocolate bar remains?

Multiplying and Dividing Fractions

multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams

What is $\frac{3}{10}$ of: 50, 20, 100…?

What is $\frac{4}{5}$ of 50, 35, 100….?

multiply simple pairs of proper fractions, writing the answer in its simplest form,

(e.g. ¼ × ½ = ⅛)

Children should be able to:

i] Recognise that ¼ of 12, ¼ x 12 and 12 divided by 4 are equivalent

ii] Use cancellation to simplify the product of a fraction and an integer

eg ⅕ x 15 = 3

⅖ x 15 = 2 x ⅕ x 15 = 2x3 = 6

ii] Work out how many ½s in 15, how many ⅖s in 15, how many 2/5s in 1 etc.

divide proper fractions by whole numbers (e.g. ⅓ ÷ 2 = ⅙)

Children should be able to decide whether they would prefer to share ½ of a pizza with 2 people or ¾ of a pizza with 4 people and explain why.

NUMBER: Fractions, Decimals and Percentages (NFD - 7 weeks)

Calculating with Fractions, Decimals and Percentages	Calculating with Percentages			**recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred'** 30% of 60 is ☐ 30% of ☐ is 60	**solve problems involving the calculation of percentages (e.g. of measures) such as 15% of 360 and the use of percentages for comparison** Find simple percentages of amounts and compare them. For example: • A class contains 12 boys and 18 girls. What percentage of the class are girls? What percentage are boys? 25% of the apples in a basket are red. The rest are green. There are 21 red apples. How many green apples are there? 
	NCETM Reasoning	**What do you notice?** 1/10 + 9/10 = 1 2/10 + 8/10 = 1 3/10 + 7/10 = 1 **Continue the pattern** Can you make up a similar pattern for eighths? The answer is 5/10, what is the question? (involving fractions / operations)	**What do you notice?** 5/5 – 1/5 = 4/5 4/5 – 1/5 = 3/5 **Continue the pattern** Can you make up a similar pattern for addition? The answer is 3/5, what is the question? What do you notice? 11/100 + 89/100 = 1 12/100 + 88/100 = 1 13/100 + 87/100 = 1 Continue the pattern for the next five number sentences	**What do you notice?** ¾ and ¼ = 4/4 = 1 4/4 and ¼ = 5/4 = 1 ¼ 5/4 and ¼ = 6/4 = 1 ½ Continue the pattern up to the total of 2. Can you make up a similar pattern for subtraction? The answer is 1 2/5 , what is the question **Continue the pattern** ¼ x 3 = ¼ x 4 = ¼ x 5 = Continue the pattern for five more number sentences. How many steps will it take to get to 3? 5/3 of 24 = 40 Write a similar sentence where the answer is 56. The answer is 2 ¼ , what is the question Give your top tips for multiplying fractions. Which is more: 20% of 200 or 25% of 180? Explain your reasoning.	**True or false?** 25% of 23km is longer than 0.2 of 20km. Convince me. **Another and another** Write down two fractions which have a difference of 1 2/… and another, … and another, … **Another and another** Write down 2 fractionswith a total of 3 4/5. … and another, … and another, … **Continue the pattern** What do you notice? 1/3 ÷ 2 = 1/6 1/6 ÷ 2 = 1/12 1/12 ÷ 2 = 1/24 Give your top tips for dividing fractions. **What else do you know?** 88% of a sum of money = £242. Make up some other statements. Write real life problems for your number sentences. **Undoing** I think of a number and then reduce it by 15%. The number I end up with is 306. What was my original number? In a sale where everything is reduced by 15% I paid the following prices for three items. What was the original selling price? £255, £850, £4.25

NUMBER: Fractions, Decimals and Percentages (NFD - 7 weeks)

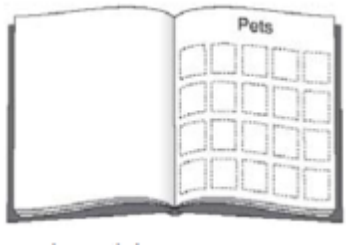
Solving Problems

solve problems that involve all of the above

Children should be able to answer questions like

- 15 grapes are shared equally onto five plates. What fraction of the grapes is on each plate?

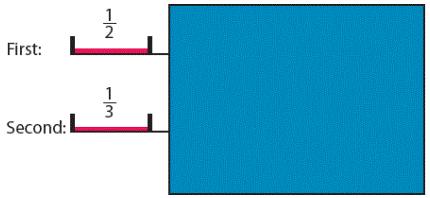
Megan has 20 animal stickers to go on this page –



1/4 of them are dog stickers
1/2 of them are cat stickers
The rest are rabbit stickers

How many rabbit stickers does she have?

Only a fraction of each ribbon is shown. The rest is hidden behind the sheet of paper –



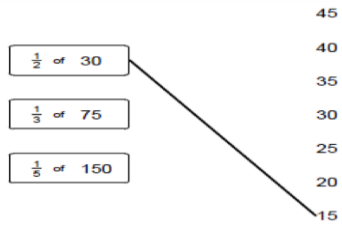
Which ribbon is longer? Explain your reasoning.

solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number

What is one-fifth of twenty-five?

Write the missing number to make this correct.

$$\frac{1}{4} \text{ of } 24 = \frac{1}{2} \text{ of } \square$$



Match each box to the correct number.

1 2 3

solve simple measure and money problems involving fractions and decimals to two decimal places.

These are the prices in a shoe shop

How much more do the boots cost than the trainers? Rosie buys a pair of trainers and a pair of sandals. How much change does she get from £50?

Harry spent one quarter of his savings on a book. What did the book cost if he saved:

£8…£10…£2.40…?

solve problems involving numbers with up to three decimal places

$$\begin{array}{r} 72.8 \\ +\ 54.6 \\ \hline 127.4 \\ \hline 1 \end{array}$$

8 tenths add 6 tenths makes 14 tenths, or 1 whole and 4 tenths. The 1 whole is 'carried' into the units column and the 4 tenths is written in the tenths column.

solve problems which require knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5 and those fractions with a denominator of a multiple of 10 or 25

1

solve problems which require answers to be rounded to specified degrees of accuracy

Children should be able to solve problems such as -

- Four friends win £48,623. The money is to be shared equally between them – how much will each person receive?
- 107 pupils and teachers need to be taken to the theatre. How many 15-seater minibuses will be required?
- How many boxes of 60 nails can be filled from 340 nails?

solve problems involving unequal sharing and grouping using knowledge of fractions and multiples

Children solve problems involving unequal quantities, for example, 'for every egg you need 3 spoons of flour'. Relate fractions to multiplication and division (e.g. 6 ÷ 2 = ½ of 6 = 6 × ½), simplify fractions by cancelling common factors, find fractions of whole-number quantities and solve problems such as:

- What fraction is 18 of 12
- What fraction is 500ml of 400ml?
- What is $^{14}/_{35}$ in its simplest form?
- What is two thirds of 66?
- What is three quarters of 500?

A gardener plants tulip bulbs in a flower bed. For every 3 red bulbs, she plants 4 white bulbs.

If she plants 60 white bulbs, how many red bulbs does she need?

Solving Problems			 A box of four balls costs £2.96. How much does each ball cost? Dean and Alex buy 3 boxes of balls between them. Dean pays £4.50. How much must Alex pay? A full bucket holds 5½ litres  A full jug holds ½ a litre. How many jugs full of water will fill the bucket? Max jumped **2.25 metres** on his **second** try at the long jump. This was **75 centimetres** longer than on his **first** try. How far in **metres** did he jump on his **first** try?		