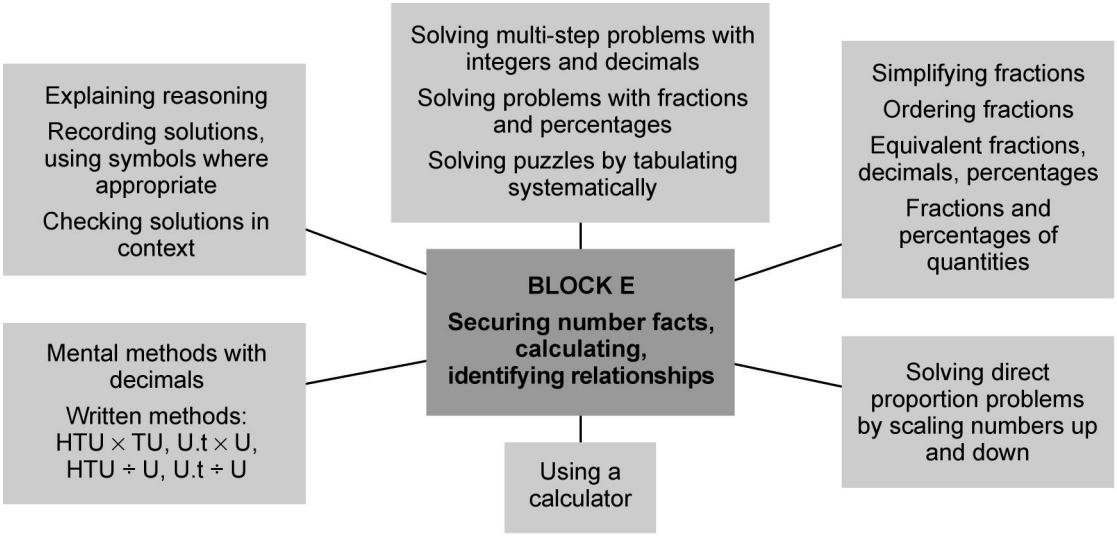
Year 6: Block E — Three 3-week units

Securing number facts, calculating, identifying relationships



Objectives End-of-year expectations (key objectives) are highlighted	Units 1	 2	 3
• Tabulate systematically the information in a problem or puzzle; identify and record the steps or calculations needed to solve it, using symbols where appropriate; interpret solutions in the original context and check their accuracy	✓	✓	✓
• Explain reasoning and conclusions, using words, symbols or diagrams as appropriate	✓	✓	
• Solve multi-step problems, and problems involving fractions, decimals and percentages; choose and use appropriate calculation strategies at each stage, including calculator use	✓		✓
• Use knowledge of place value and multiplication facts to 10 × 10 to derive related multiplication and division facts involving decimals (e.g. 0.8 × 7, 4.8 ÷ 6)	✓		✓
• Use efficient written methods to add and subtract integers and decimals, to multiply and divide integers and decimals by a one-digit integer, and to multiply two-digit and three-digit integers by a two-digit integer	✓		✓
• Use a calculator to solve problems involving multi-step calculations	✓	✓	✓
• Express a larger whole number as a fraction of a smaller one (e.g. recognise that 8 slices of a 5-slice pizza represents $^{8}/_{5}$ or $1\,^{3}/_{5}$ pizzas); simplify fractions by cancelling common factors; order a set of fractions by converting them to fractions with a common denominator	✓	✓	✓
• Express one quantity as a percentage of another (e.g. express £400 as a percentage of £1000); find equivalent percentages, decimals and fractions		✓	✓

Objectives End-of-year expectations (key objectives) are highlighted	Units		
	1	2	3
• Relate fractions to multiplication and division (e.g. 6 ÷ 2 = ½ of 6 = 6 × ½); express a quotient as a fraction or decimal (e.g. 67 ÷ 5 = 13.4 or $13\frac{2}{5}$); find fractions and percentages of whole-number quantities (e.g. $\frac{5}{8}$ of 96, 65% of £260)	✓	✓	✓
• Solve simple problems involving direct proportion by scaling quantities up or down	✓	✓	✓

Speaking and listening objectives for the block

Objectives	Units		
	1	2	3
• Participate in a whole-class debate using the conventions and language of debate, including Standard English	✓		
• Understand and use a variety of ways to criticise constructively and respond to criticism		✓	
• Use a range of oral techniques to present persuasive arguments			✓

Opportunities to apply mathematics in science

Activities		Units		
		1	2	3
6b	Micro-organisms: When undertaking activities using yeast, e.g. bread making, calculate and compare proportions of ingredients	✓		
6c	More about dissolving: When dissolving different types of sugars, calculate the mass which dissolves per litre or millilitre		✓	
6h	Enquiry in environmental and technological contexts: When investigating dandelion growth, calculate proportion in different habitats			✓

Key aspects of learning: focus for the block

Enquiry	**Problem solving**	**Reasoning**	Creative thinking
Information processing	Evaluation	Self-awareness	**Managing feeling**
Social skills	**Communication**	Motivation	Empathy

Vocabulary

problem, solution, calculator, calculate, calculation, jotting, equation, operation, symbol, inverse, answer, method, strategy, explain, predict, reason, reasoning, pattern, relationship

add, subtract, multiply, divide, sum, total, difference, plus, minus, product, quotient, remainder, multiple, common multiple, factor, divisor, divisible by

decimal fraction, decimal place, decimal point, percentage, per cent (%)

fraction, proper fraction, improper fraction, mixed number, numerator, denominator, unit fraction, equivalent, cancel

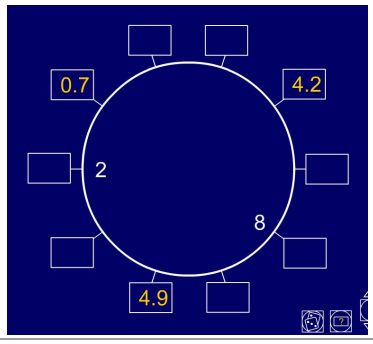
proportion, ratio, in every, for every, to every

Building on previous learning

Check that children can already:

- solve one- and two-step problems involving whole numbers and decimals
- use understanding of place value to multiply and divide whole numbers and decimals by 10, 100 or 1000
- use efficient written methods to add and subtract whole numbers and decimals with up to two decimal places, to multiply HTU × U and TU × TU, and to divide TU ÷ U
- find equivalent fractions
- understand percentage as the number of parts in every 100, and express tenths and hundredths as percentages
- use sequences to scale numbers up or down
- find simple fractions of percentages of quantities

Unit 6E1 — 3 weeks

Objectives *Children's learning outcomes in italic*	**Assessment for learning**
• Tabulate systematically the information in a problem or puzzle; identify and record the steps or calculations needed to solve it, using symbols where appropriate; interpret solutions in the original context and check their accuracy *I can record the calculations needed to solve a problem and check that my working is correct*	What could you draw to help you solve this? Does your answer make sense? How do you know you have identified the maximum number of intersections for 5 streets? Explain how making a table could help you to solve this problem. Parveen has the same number of 20p and 50p coins. She has £7.00. How many of each coin does she have?
• Explain reasoning and conclusions, using words, symbols or diagrams as appropriate *I can talk about how I solve problems*	[Give children a completed table, e.g. for the number of handshakes made between a given number of people.] What does this table represent? How would you explain this table to other children?
• Solve multi-step problems, and problems involving fractions, decimals and percentages; choose and use appropriate calculation strategies at each stage, including calculator use *I can work out problems involving fractions, decimals and percentages using a range of methods*	Find another way of expressing: 175% $33\frac{1}{3}\%$ $1\frac{1}{4}$ Explain how you would solve these problems. Would you use a calculator? Why or why not? 185 people go to the school concert. They pay £1.35 each. How much ticket money is collected? Programmes cost 15p each. Selling programmes raises £12.30. How many programmes are sold?
• Use knowledge of place value and multiplication facts to 10 × 10 to derive related multiplication and division facts involving decimals (e.g. 0.8 × 7, 4.8 ÷ 6) *I can use place value and my tables to work out multiplication and division facts for decimals*	What multiplication table does this image represent? How do you know? What other numbers will you see in the boxes outside? 
• Use efficient written methods to add and subtract integers and decimals, to multiply and divide integers and decimals by a one-digit integer, and to multiply two-digit and three-digit integers by a two-digit integer *I can use efficient written methods to add, subtract, multiply and divide whole numbers and decimals*	What do you expect the mean length to be? Why? Make up an example of a calculation involving decimals that you would do in your head, and one that you would do on paper. Write in the missing digit. The answer does not have a remainder. $3\overline{)\square\,8}$ $\quad 2\;6$
• Use a calculator to solve problems involving multi-step calculations *I can, when needed, use a calculator to solve problems*	Here is a set of instructions on cards for using a calculator to solve a problem. Put the cards in the correct order. What is the answer to the problem? Is it a sensible answer? Write in the missing number: 50 ÷ ☐ = 2.5

Objectives *Children's learning outcomes in italic*	Assessment for learning
• Express a larger whole number as a fraction of a smaller one (e.g. recognise that 8 slices of a 5-slice pizza represents $\frac{8}{5}$ or $1\frac{3}{5}$ pizzas); simplify fractions by cancelling common factors; order a set of fractions by converting them to fractions with a common denominator *I can write a large whole number as a fraction of a smaller one, simplify fractions and put them in order of size*	What clues did you look for to cancel these fractions to their simplest form? How do you know when you have the simplest form of a fraction? Karen makes a fraction using two number cards. She says, 'My fraction is equivalent to $\frac{1}{2}$. One of the number cards is 6' What could Karen's fraction be? Give both possible answers.
• Relate fractions to multiplication and division (e.g. $6 \div 2 = \frac{1}{2}$ of $6 = 6 \times \frac{1}{2}$); express a quotient as a fraction or decimal (e.g. $67 \div 5 = 13.4$ or $13\frac{2}{5}$); find fractions and percentages of whole-number quantities (e.g. $\frac{5}{8}$ of 96, 65% of £260) *I can find fractions and percentages of whole numbers*	Harry said: 'To calculate 10% of a quantity you divide it by 10, so to find 20% of a quantity you must divide by 20.' What is wrong with Harry's statement? Explain how you would solve this problem: There are 24 coloured cubes in a box. Three quarters of the cubes are red, four of the cubes are blue and the rest are green. How many green cubes are in the box? One more blue cube is put into the box. What fraction of the cubes in the box is blue now?
• Solve simple problems involving direct proportion by scaling quantities up or down *I can scale up or down to solve problems*	Two rulers cost 80 pence. How much do three rulers cost? Here is a recipe for pasta sauce. **Pasta sauce** 300 g tomatoes 120 g onions 75 g mushrooms Josh makes the pasta sauce using 900 g of tomatoes. What weight of onions should he use? What weight of mushrooms? A recipe for 3 portions requires 150 g flour and 120 g sugar. Desi's solution to a problem says that for 2 portions he needs 80 g flour and 100 g sugar. What might Desi have done wrong? Work out the correct answer.
• Participate in a whole-class debate using the conventions and language of debate, including Standard English *I can take part in a debate*	How might we set about solving this problem on percentages? What ideas do you have? What are the advantages and disadvantages of multiplying the two numbers like this? Could you use a more efficient method?

Learning overview

Children recall multiplication and division facts and use these to **derive related facts** involving decimals, such as 8×0.9 or $3 \div 0.6$. They count on and back, for example in steps of 0.3, relating the steps to the 3 times-table. They use their knowledge of number facts, relationships between numbers and relationships between operations to solve problems and puzzles such as:

Find two numbers with a product of 899.

Solve $3.2 \div y = 0.4$.

Using all the digits 2, 4, 5 and 8, place one in each box in the calculation $\square\square\square \div \square$ to make the smallest possible answer.

Write in the missing number: $32.45 \times \square = 253.11$

Children use **efficient written methods** to add, subtract, multiply and divide integers and decimal numbers. They calculate the answer to HTU ÷ U or U.t ÷ U to one or two decimal places, and solve problems such as:

Find the total length of three pieces of wood with lengths 167 cm, 2.8 m and 1008 mm.

Find 78% of 14.8 m.

A tree trunk is 6.5 metres long. Frank cuts the tree trunk into four equal lengths. How long is each length?

Children choose methods to solve these problems efficiently, and consider the accuracy of the answer in the context of the problem.

Children **tabulate information**, working systematically, to help them to solve problems and explain their conclusions. For example, they explore a problem such as:

In a village where all the roads are straight, every time two streets intersect a street lamp is required. Investigate the number of street lamps required for 2 streets, 3 streets, 4 streets, … What is the minimum and maximum number of lamps needed for 5 streets? n streets?

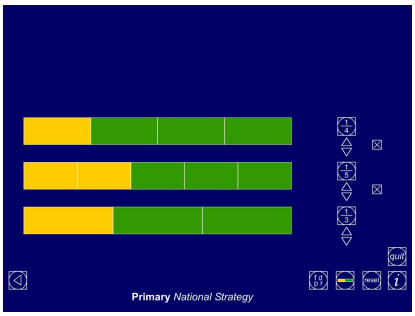
They **explain their methods and reasoning, using symbols** where appropriate.

Children **express a quotient as a fraction**, for example 19 ÷ 8 = $2\frac{3}{8}$ or 3 ÷ 4 = $\frac{3}{4}$, simplifying the fraction where appropriate. They solve problems, giving their answers as a fraction, for example:

Share 9 pizzas equally between 4 people.

Divide a 28 m length of wood into 6 equal pieces.

Children express a larger whole number as a fraction of a smaller one using practical contexts or diagrams. For example, they compare a bag containing 10 grapes and a bag containing 25 grapes, grouping the 25 grapes into groups of 10 (with a group of 5) to establish that the larger bag contains $2\frac{1}{2}$ times as many grapes as the smaller bag. They **simplify fractions by cancelling** and use equivalent fractions to **compare one fraction with another**. For example, they use fraction strips to show that $\frac{1}{3}$ lies between $\frac{1}{4}$ and $\frac{2}{5}$.



Children find **fractions and simple percentages of amounts**, identifying the appropriate steps towards finding the answer. They solve problems involving fractions and percentages, using calculators where appropriate, and identifying and recording the calculations needed. For example:

A class contains 12 boys and 18 girls. What fraction of the class are boys? What percentage of the class are girls?

25% of the apples in a basket are red. The rest are green. There are 21 red apples. How many green apples are there?

Children build on their understanding of direct proportion to solve, for example:

This cup holds 40 ml. How many cups can I pour from a $\frac{1}{2}$ litre bottle?

They represent this problem as 40 ml × ☐ = 500 ml.

They scale numbers up or down by converting recipes for, say, 6 people to recipes for 2 people:

In a recipe for 6 people you need 120 g flour and 270 ml of milk. How much of each ingredient does a recipe for 2 people require?

Unit 6E2 3 weeks

Objectives *Children's learning outcomes in italic*	**Assessment for learning**
• Tabulate systematically the information in a problem or puzzle; identify and record the steps or calculations needed to solve it, using symbols where appropriate; interpret solutions in the original context and check their accuracy *I can record the calculations needed to solve a problem and check that my working is correct*	Compare your table or diagram with those of others around you. Discuss the different representations you have used. Which do you think is more effective? Explain how making a table could help you to solve this problem. 30 children are going on a trip. It costs £5 including lunch. Some children take their own packed lunch. They pay only £3. The 30 children pay a total of £110. How many children take their own packed lunch?
• Explain reasoning and conclusions, using words, symbols or diagrams as appropriate *I can talk about how I solve problems*	Give me a sentence that explains the general rule. Can you write that algebraically (using symbols)?
• Use a calculator to solve problems involving multi-step calculations *I can work out problems involving fractions, decimals and percentages using a range of methods*	Sam used a calculator to work out 15% of £40, and got the answer of £5.50. How would you have tackled this problem? What might Sam have done wrong? Explain how to use your calculator to solve this problem: 50 000 people visited a theme park in one year. 15% of the people visited in April and 40% of the people visited in August. How many people visited the park in the rest of the year? Write in the missing digit: □92 ÷ 14 = 28
• Express a larger whole number as a fraction of a smaller one (e.g. recognise that 8 slices of a 5-slice pizza represents $\frac{8}{5}$ or $1\frac{3}{5}$ pizzas); simplify fractions by cancelling common factors; order a set of fractions by converting them to fractions with a common denominator *I can write a larger whole number as a fraction of a smaller one, simplify fractions and put them in order of size*	What fraction of 6 is 3? What fraction of 6 is 6? What fraction of 9 is 6? What fraction of 90 is 60? Write a fraction that is larger than $\frac{2}{7}$. Which is larger: $\frac{1}{3}$ or $\frac{2}{5}$? Explain how you know.
• Relate fractions to multiplication and division (e.g. 6 ÷ 2 = $\frac{1}{2}$ of 6 = 6 × $\frac{1}{2}$); express a quotient as a fraction or decimal (e.g. 67 ÷ 5 = 13.4 or $13\frac{2}{5}$); find fractions and percentages of whole-number quantities (e.g. $\frac{5}{8}$ of 96, 65% of £260) *I can find fractions and percentages of whole numbers*	What is $\frac{1}{3}$ of 9, 12, 15, …? How did you work it out? What is the answer to $\frac{1}{3}$ × 15? To 15 × $\frac{1}{3}$? How did you work it out? What is fifty per cent of £20? What is two thirds of 66? What is three quarters of 500?

Objectives *Children's learning outcomes in italic*	Assessment for learning
• Express one quantity as a percentage of another (e.g. express £400 as a percentage of £1000); find equivalent percentages, decimals and fractions *I can work out a quantity as a percentage of another and find equivalent percentages, decimals and fractions*	What is twenty out of forty as a percentage? Make up some more questions like this for me to answer. You must tell me whether I am right or wrong. What percentage of £8 is £2? What percentage of £4 is £16? Tell me two amounts where one is 25% of the other. Now give me two amounts where one is 5% of the other. What about 40%? Put a ring around the fraction which is equivalent to forty per cent. $\frac{1}{40}$ $\frac{40}{60}$ $\frac{4}{10}$ $\frac{1}{4}$ $\frac{1}{400}$
• Solve simple problems involving direct proportion by scaling quantities up or down *I can solve problems using ratio and proportion*	A recipe for 3 people needs 75 g of butter. How much butter do you need for 2 people? 8 people? Explain how you would solve these problems. Peanuts cost 60p for 100 grams. What is the cost of 350 grams of peanuts? Raisins cost 80p for 100 grams. Jack pays £2 for a bag of raisins. How many grams of raisins does he get?
• Understand and use a variety of ways to criticise constructively and respond to criticism *I can respond positively to the ideas of others and offer my own ideas*	Suggest ways in which Peter could improve his method for finding 5% of a quantity. Look at this recipe for 2 people. Mary has suggested a way of finding the quantities needed for 5 people. Her method is more efficient than your method. Try to use Mary's method to adapt this recipe for 3 people for 4 people.

Learning overview

Children **solve problems** in different contexts. They identify and record the calculations needed, **interpreting** the solutions back in the original context and checking their accuracy. They **use symbols** where appropriate to **explain their reasoning**. For example, they work out how many different flights there would be connecting 2, 3 and 4 airports if each airport is connected by return flights. They sketch a diagram to help to make sense of the problem. They tabulate information and look for patterns. They predict how many flights will be needed for 5 airports, then 6, then 10, testing their predictions. They find a general rule and express it in words, then using symbols.

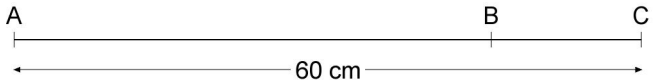
Children relate fractions to multiplication and division. They express 18 as $1\frac{1}{2}$ of 12, or 500 ml as $\frac{5}{4}$ of 400 ml. They simplify fractions by cancelling common factors. They divide the numerator and the denominator of, say, $\frac{14}{35}$ by 7 to **simplify** it to $\frac{2}{5}$. They **order fractions** by converting them to fractions with a common denominator or by using a calculator to find the decimal equivalents. For example, they order $\frac{3}{5}$, $\frac{2}{3}$ and $\frac{7}{15}$ by converting them to a common denominator. Alternatively, they use a calculator to change the fractions to decimals, rounding the decimals as necessary, and considering the position of the decimals on the number line. Children use similar strategies to find a fraction that lies between two given fractions, such as between $\frac{2}{3}$ and $\frac{4}{5}$. They investigate problems such as: *Which would you rather have: $\frac{7}{9}$ or $\frac{4}{5}$ of the prize money in the school raffle?*

Children identify **equivalent fractions**, decimals and percentages. They recognise that $\frac{1}{10}$ = 10% and $\frac{1}{5}$ = 20%, so $\frac{3}{5}$ = 60%. They shade given percentages of shapes by thinking of the percentage as a fraction. They work out, say, that 45 out of 60 is equivalent to $\frac{3}{4}$ or 75%, so that 45 is 75% of 60. They find fractions and percentages of whole-number quantities.

Children use the vocabulary of **ratio** and **proportion** to describe the relationships between two quantities. They work out the required quantities for a recipe for 7 people when given the quantities for 2 people. They study repeating bead patterns such as 3 red, 2 blue, 3 red, 2 blue, … and work out how many blue beads are needed for 15 red beads. They solve problems such as:

Two letters have a total weight of 120 grams. One letter weighs twice as much as the other. Write the weight of the heavier letter.

The distance from A to B is three times as far as from B to C. The distance from A to C is 60 centimetres. Calculate the distance from A to B.



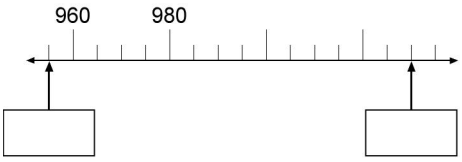
There is 60 g of rice in one portion. How many portions are there in a 3 kg bag of rice?

A packet contains 1.5 kilograms of guinea pig food. Remi feeds her guinea pig 30 grams of food each day. How many days does the packet of food last?

There are 45 children at the gym club. There are 2 boys for every 3 girls. How many boys are at the gym club?

Unit 6E3 3 weeks

Objectives *Children's learning outcomes in italic*	Assessment for learning
• Tabulate systematically the information in a problem or puzzle; identify and record the steps or calculations needed to solve it, using symbols where appropriate; interpret solutions in the original context and check their accuracy *I can record the calculations needed to solve a problem and check that my working is correct*	When have you seen symbols used in everyday life? When would you use them to explain a calculation? What is your first step going to be in solving this puzzle? Explain how making a table could help you to solve this problem. Here are five number cards. A A A B B A and B stand for two different whole numbers. The sum of all the numbers on all five cards is 30. What could be the values of A and B?
• Solve multi-step problems, and problems involving fractions, decimals and percentages; choose and use appropriate calculation strategies at each stage, including calculator use *I can work out problems involving fractions, decimals and percentages using a range of methods*	Give me an example of a percentage increase that you would find: entirely in your head using jottings using a written method using a calculator using a combination of these strategies.
• Use knowledge of place value and multiplication facts to 10 × 10 to derive related multiplication and division facts involving decimals (e.g. 0.8 × 7, 4.8 ÷ 6) *I can use place value and my tables to work out multiplication and division facts*	Ten times a number is 86. What is the number? Divide 4.2 by 6. If you know 42 ÷ 6 = 7, what else do you know? What number multiplied by 8 equals 4.8? How else could you make an answer of 4.8? What is half of 6.3?
• Use efficient written methods to add and subtract integers and decimals, to multiply and divide integers and decimals by a one-digit integer, and to multiply two-digit and three-digit integers by a two-digit integer *I can use standard written methods to add, subtract, multiply and divide whole numbers and decimals*	Explain how you will work out the answer to this problem without using a calculator. Shenaz buys a pack of 24 cans of cola for £6.00.  What is the cost of each can?
• Use a calculator to solve problems involving multi-step calculations *I can work out problems involving fractions, decimals and percentages using a calculator*	What steps would you take to work out these problems? Some children do a sponsored walk. Jason is sponsored for £1.25 for each lap. He does 23 laps. How much money does he raise? Lynne wants to raise £200 She is sponsored for £6.50 for each lap. What is the least number of whole laps she must do? A calculator shows 19.428 571 42… What answer would you give if it related to pounds, metres, litres, hours? Write in the missing digits: 323 × □7 = 15 18□

Objectives *Children's learning outcomes in italic*	Assessment for learning
• Express a larger whole number as a fraction of a smaller one (e.g. recognise that 8 slices of a 5-slice pizza represents $\frac{8}{5}$ or $1\frac{3}{5}$ pizzas); simplify fractions by cancelling common factors; order a set of fractions by converting them to fractions with a common denominator *I can write a large whole number as a fraction of a smaller one and simplify fractions and put them in order of size*	What do the fractions $\frac{6}{9}$, $\frac{14}{21}$ and $\frac{18}{27}$ have in common? Arrange these numbers in order: $1\frac{3}{4}$, $\frac{15}{8}$, 1.6 with a calculator without a calculator. Which way of working do you prefer? Why?
• Relate fractions to multiplication and division (e.g. 6 ÷ 2 = $\frac{1}{2}$ of 6 = 6 × $\frac{1}{2}$); express a quotient as a fraction or decimal (e.g. 67 ÷ 5 = 13.4 or $13\frac{2}{5}$); find fractions and percentages of whole-number quantities (e.g. $\frac{5}{8}$ of 96, 65% of £260) *I can find fractions and percentages of whole numbers*	The result of dividing one number by another is $4\frac{3}{4}$. What were the two numbers? Are there any other possibilities? Explain the steps you would take to find 35% of an amount without a calculator. How would you find 35% of an amount using a calculator? Three-quarters of a number is 48. What is the number? What is twenty per cent of sixty pounds? What is two percent of three hundred?
• Express one quantity as a percentage of another (e.g. express £400 as a percentage of £1000); find equivalent percentages, decimals and fractions *I can work out a quantity as a percentage of another and find equivalent percentages, decimals and fractions*	Organise these numbers into two or more groups, giving reasons for your grouping: 40%, 125%, 0.4, $\frac{5}{4}$, $\frac{2}{5}$, 1.25. Add at least one more fraction to each of your groups. Circle the two fractions that are equivalent to 0.6. $\frac{6}{10}$ $\frac{1}{60}$ $\frac{60}{100}$ $\frac{1}{6}$ Write in the missing numbers. 30% of 60 is ☐. 30% of ☐ is 60.
• Solve simple problems involving direct proportion by scaling quantities up or down *I can solve problems using ratio and proportion*	Six cakes cost one pound eighty. How much do ten cakes cost? Here is part of a number line. Write the two missing numbers in the boxes.  In a country dance there are 3 boys and 2 girls in every line.  42 boys take part in the dance. How many girls take part? For a different dance there are 45 children. How many boys are there?
• Use a range of oral techniques to present persuasive arguments *I can discuss mathematical ideas and persuade others*	Let's discuss ideas for solving this problem. What links can you see between fractions and ratios?

Learning overview

Children draw on their knowledge of multiplication and division facts and of place value to **work out mentally calculations involving fractions, decimals or percentages**. They use jottings where appropriate to respond to questions such as:

Subtract nought point seven five from six.

Estimate the value of nine point two multiplied by two point nine.

Multiply eight point seven by two.

What is one half added to three quarters?

What is three fifths of forty pounds?

What is fifty per cent of twenty pounds?

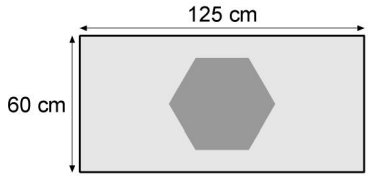
What is ninety-nine per cent of two hundred?

Children consolidate and extend their use of **efficient written methods.** They use standard column procedures to add and subtract integers and decimals, and to multiply two- and three-digit integers by a one- or two-digit integer; they extend division to dividing three-digit by two-digit integers.

Children understand **equivalence** and simplify fractions to their **lowest form**. They **compare** and **order fractions**, **decimals** and **percentages.**

They continue to identify and record the calculations needed to solve problems. They **interpret** solutions in the original context and check their accuracy. They use symbols where appropriate to **explain their reasoning** and conclusions. Children **solve multi-step problems** by breaking each problem down into steps, identifying and recording the calculation needed for each step. They decide whether to use a written method or a calculator to solve problems such as:

20% of the area of this flag is blue. What area of the flag is blue?



A shop has a sale offering a 20% discount. A cooker normally costs £362. How much will it cost in the sale?

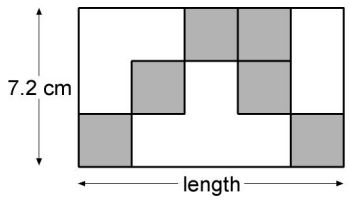
A 250 g box of washing powder costs £1.48. A 1.1 kg box of the same washing powder costs £7. Which box is the better value for money?

50 000 people visited a theme park in one year. 15% of the people visited in April and 40% of the people visited in August. How many people visited the park in the rest of the year?

What is the total cost of 3 spades at £9.55 each and 2 buckets at £4.73 each?

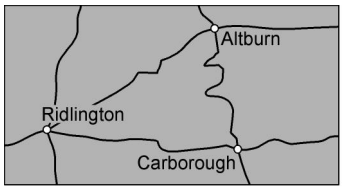
Children use the **vocabulary of ratio and proportion** to describe the relationships between two quantities. They begin to use ratio notation. For example, from the knowledge that orange paint is made from 3 tins of red paint to 2 tins of yellow paint, children write the ratio of red paint to yellow paint as 3 : 2, They work out, say, that if they have 21 tins of red paint that they will need 14 tins of yellow paint to make orange paint. They solve problems such as:

Here is a rectangle with six identical shaded squares inside it. The width of the rectangle is 7.2 centimetres. Calculate the length of the rectangle.



Not actual size

This map has a scale of 1 cm to 6 km.



The road from Ridlington to Carborough measured on the map is 6.6 cm long. What is the length of the road in kilometres?

Sapna makes a fruit salad using bananas, oranges and apples. For every one banana, she uses two oranges and three apples. Sapna uses 24 fruits. How many oranges does she use?

Cheddar cheese costs £7.50 for 1 kg. Marie buys 200 grams of cheddar cheese. How much does she pay?

Cream cheese costs £3.60 for 1 kg. Robbie buys a pot of cream cheese for 90p. How many grams of cream cheese does he buy?