Mathematics Year 4 Spring Term

Block 1 Multiplication and Division B	
Step 1 Factor pairs	In this small step, children are introduced to factors for the first time. They learn that when they multiply two whole numbers to give a product, both the numbers that they multiplied together are factors of the product. For example, 3 × 5 = 15, so 3 and 5 are factors of 15. 3 and 5 are also referred to as a "factor pair" of 15 They then generalise this further to conclude that a factor of a number is a whole number that divides into it exactly. Children create arrays using counters to develop their understanding of factor pairs. It is important for children to work systematically when finding the factor pairs of a number in order to ensure that they find all the factors. For example, when finding factor pairs of 12, begin with 1 × 12, then 2 × 6, 3 × 4. At this stage, children should recognise that they have already used 4 in the previous calculation, therefore all factor pairs have been identified.
Step 2 Use factor pairs	In this small step, children build on their knowledge of factor pairs from the previous step as they use them to write equivalent calculations. For example, as 3 and 4 are a factor pair of 12, this means that 5 × 12 is equivalent to 5 × 3 × 4 or 5 × 4 × 3 Children explore equivalent calculations using different factors pairs, and then practise calculating with them to identify which factor pair produces the easiest calculation to complete mentally. The calculation that is deemed easiest will vary for different children, as they are likely to focus on using the times-tables they are most confident with.
Step 3 Multiply by 10	In this small step, children explore multiplying by 10. They need to be able to visualise making a number 10 times the size and understand that "10 times the size" is the same as "multiply by 10". Children use their understanding that 1 ten is 10 times the size of 1 one and 1 hundred is 10 times the size of 1 ten to support them with this step. A place value chart is useful to show this. They recognise that when multiplying by 10 the digits move one place value column to the left and zero is needed as a placeholder in the now blank column. While children may notice a zero is always used as a placeholder when multiplying a whole number by 10, it is important that they do not develop the misconception that they just add a zero to multiply by 10, as this will cause confusion when multiplying decimals in later learning.
Step 4 Multiply by 100	Building on the previous step, children learn to multiply whole numbers by 100, understanding that this is the same as multiplying by 10 and then multiplying by 10 again. They need to be able to visualise making a number 100 times the size and understand that "100 times the size" is the same as "multiply by 100". Children use a place value chart, counters and base 10 to explore what happens to the values of the digits when multiplying by 100. Encourage children to recognise that when multiplying whole numbers by 100, the digits move two place value columns to the left and zeros are needed as placeholders in the now blank columns. As with multiplying by 10 in the previous step, it is important that they do not develop the misconception that they just add two zeros to multiply by 100, as this will cause confusion when multiplying decimals by 100.
Step 5 Divide by 10	In this small step, children divide whole numbers by 10, with questions that only have whole number answers. They need to be able to visualise making a number one-tenth the size and understand that "one-tenth the size" is the same as "dividing by 10". Children use concrete resources and a place value chart to see the link between dividing by 10 and the position of the digits of a number before and after the calculation. They recognise that when dividing by 10, the digits move one place value column to the right. They begin to understand that multiplying by 10 and dividing by 10 are the inverse of each other. Children may notice that in all the examples they see, they need to "remove the zero" to find the answer. Ensure that they do not generalise this too far and use it as their method, as this will cause issues in later learning when looking at decimals.

Step 6 Divide by 100	In this small step, children build on their understanding of dividing by 10 and notice the link between dividing by 10 and dividing by 100. They need to be able to visualise making a number one-hundredth the size and understand that "one-hundredth the size" is the same as "dividing by 100". Children use concrete resources and a place value chart to see the link between dividing by 100 and the position of the digits before and after the calculation. They realise that when dividing by 100, the digits move two place value columns to the right. They begin to understand that multiplying by 100 and dividing by 100 are the inverses of each other. Money is a good real-life context for this small step, as exchanging, for example, pounds for pence can be used for the concrete stage.
Step 7 Related facts-multiplication and division	In this small step, children bring together the skills learnt so far in this block as they explore calculations related to known facts. Children explore scaling facts by 10 and 100, for example using the fact that 4 × 7 = 28 to derive 4 × 70 = 280 and 4 × 700 = 2,800. They then look at this relationship with division, for example using 12 ÷ 3 = 4 to derive 120 ÷ 3 = 40 and 1,200 ÷ 3 = 400. Care should be taken to ensure that children do not also think that 12 ÷ 30 = 40. This is a good opportunity to remind children that multiplication is commutative, but division is not. A range of representations are used to make the link between multiples of 1, 10 and 100 that will be familiar to children from previous steps in this block and in Year 3
Step 8 Informal written methods for multiplication	In this small step, children use a variety of informal written methods to multiply a 2-digit number by a 1-digit number. Children follow a clear progression of methods and representations to support their understanding. They begin by using place value charts to recognise multiples of a number and make the link to repeated addition. The use of base 10 encourages children to partition the tens and ones and unitise the tens, laying the foundations for later work. Part-whole models are used to illustrate the informal method of partitioning. Children use number lines, along with their knowledge of multiplying by 10. For example, to work out 32 × 4 they count along a number line to show 10 × 4 + 10 × 4 + 10 × 4 + 2 × 4. They may also use their knowledge of factor pairs from earlier in the block to multiply.
Step 9 Multiply a 2-digit number by a 1-digit number	In this small step, children progress from multiplying using informal written methods to the formal written method. The short multiplication method is introduced for the first time, initially in an expanded form and then in the formal short single-line form. Children first do calculations where there are no exchanges, then move on to one and two exchanges. Place value counters in place value charts are used to illustrate the structure of the short multiplication by presenting the concrete model alongside the formal written method. Concrete manipulatives alongside abstract calculations are particularly useful to support children's understanding of exchanges.
Step 10 Multiply a 3-digit number by a 1-digit number	Following on from the previous step, children extend the formal written method to multiplying a 3-digit number by a 1-digit number. They continue to use the short multiplication method, but now with more columns. Children need to be secure with the previous step before moving on to this one. Place value counters in place value charts are again used to model the structure of the formal method, allowing children to gain a greater understanding of the procedure, particularly where exchanges are needed. They continue to use the counters to exchange groups of 10 ones for 1 ten and also exchange 10 tens for 1 hundred and 10 hundreds for 1 thousand. This is mirrored by the positioning of the exchanged digit in the formal written method. The focus here is on the short written method, but the expanded method could be used to support understanding for children who need it.
Step 11 Divide a 2-digit number by a 1-digit number	In this small step, children use their division facts from the Autumn term to build on their knowledge of dividing a 2-digit number by a 1-digit number from Year 3 Initially, children carry out divisions where the tens and ones are both divisible by the number being divided by without any remainders, for example 96 ÷ 3 and 84 ÷ 4. They then move on to calculations where they need to exchange between tens and ones, for example 96 ÷ 4. Place value counters are used to explore the sharing structure of division. Children do not need to use the formal short division method at this stage and may use informal jottings or representations such as a part-whole model to record their working instead.
Step 12 Divide a 2-digit number by a 1-digit number	In this small step, children continue to explore dividing a 2-digit number by a 1-digit number, but in this step the focus is on calculations with remainders. Children encountered remainders in Year 3, so this concept is not new but it may need reinforcing. Using place value counters to illustrate the sharing structure of division helps children to see what is meant by the remainder. Such representations should highlight the fact that the remainder can never be greater than the number they are dividing by.

Step 13 Divide a 3-digit number by a 1-digit number	In this small step, children continue to develop their understanding of division by extending from dividing 2-digit numbers in the previous two steps to dividing 3-digit numbers. Place value counters are again used to represent the calculations, so that children can make sense of exchanges that are needed to complete the division. Part-whole models are also used to show how flexible partitioning can support the process of division by looking for multiples of the number being divided by. The step starts with divisions that do not leave a remainder, before progressing to divisions with remainders. By the end of this step, children should have a good understanding of division that will support them when they move on to the formal written method in Year 5.
Step 14 Correspondence problems	In this small step, children consolidate their understanding of correspondence problems from Year 3, using multiplication to work out the number of possible combinations of sets of items. Children use a range of representations and contexts to support them. Using tables helps to encourage children to adopt a systematic approach to finding all of the possible combinations in a given context. Children then generalise to make the link between the number of possibilities for each item and using multiplication to find the total number of combinations. Once confident with finding all possible combinations for two sets of items children may begin to explore finding all possible combinations for three sets of items.
Step 15 Efficient multiplication	In this small step, children consolidate their knowledge and understanding of multiplication and begin to make decisions regarding the most efficient or appropriate methods to use in a range of contexts. Children look at times-tables facts, building strategies for finding unknown facts that will support them to strengthen their fluency of times-tables. They then examine a range of strategies for multiplying a 2-digit number by a 1-digit number. Finally, they use arrays to explore multiplicative structure, in particular the associative law and distributive law.
Block 2 Length and Perimeter	
Step 1 Measure in km and m	In previous years, children measured lengths using metres (m) and centimetres (cm). In this small step, children are introduced to kilometres and the abbreviation ”km”. Children should understand that kilometres are greater than metres and are used to measure greater distances. The focus of this step is to partition measurements into the number of kilometres and metres and make links with addition. Bar models and part-whole models can be used to explore this relationship and to support children with their understanding. The fact that 1 km = 1,000 m can be discussed, but conversions are not explicitly covered until the next step. It is useful to make connections with real-life contexts, so that children are aware when different types of units are used.
Step 2 Equivalent lengths (km and m)	In Year 3, children converted between metres and centimetres, and between centimetres and millimetres. In this small step, children use the fact that 1 km is equal to 1,000 m to derive related facts using numbers up to 10,000 Children make links to counting in 1,000s as covered in their earlier learning on place value. Bar models, part-whole models and double number lines are useful representations to explore the connections between the two units and to support children with conversions. Children learnt to multiply and divide by 10 and 100 in the previous block and could extend their thinking to multiply and divide by 1,000; if this is not appropriate, they could count up and down in 1,000s instead.
Step 3 Perimeter on a gird	In Year 3, children were introduced to the idea of perimeter by measuring and calculating the perimeter with labelled side lengths. In this small step, children explore perimeter further with a focus on rectilinear shapes, where all sides meet at right angles. These rectilinear shapes will be drawn on squared grids, mainly centimetre squared grids. Encourage children to label the lengths of the sides if needed, and to mark off each side as they add the lengths together. Looking at a variety of shapes enables children to compare their perimeters. They also explore drawing different shapes with a specified perimeter. They continue to consider rectilinear shapes only and do not look at diagonal lengths.
Step 4 Perimeter of a rectangle	In this small step, children focus on calculating the perimeter of rectangles using the side lengths, rather than counting the squares. Rectangles are first presented on squared grids as they have been seen previously. Children should be encouraged to label the side lengths on the rectangles and discuss anything they notice as they work through some examples. They can then progress to looking at rectangles that are not presented on squared grids but with all four sides labelled, before finally exploring rectangles with only one length and width given. Children explore different methods for working out the perimeter of rectangles, such as adding double the length to double the width, and doubling the sum of the length and the width.

Step 5 Perimeter of rectilinear shapes	This small step continues to build children's understanding of perimeter by exploring more rectilinear shapes, both with and without grids. Children know that a rectilinear shape has straight lines that meet at right angles. In this step, it is useful for children to measure the perimeter practically before they find the perimeter of a shape on a grid or from a shape with all side lengths labelled. When calculating, children should mark the sides they have already counted to avoid duplication or omission. At this stage, children do not need to calculate unknown side lengths as this will be covered in the next step.
Step 6 Find missing lengths in rectilinear shapes	In this small step, children continue to look at rectilinear shapes, focusing on finding missing side lengths. Children explore the relationship between the sides of a rectilinear shape, rather than finding the perimeter. They start by using addition to find the missing side lengths, then using subtraction and finally using both operations to find more than one missing side length. Part-whole models may be useful here. Children may find it helpful to draw the shapes and measure them, enabling them to notice that the opposite sides of the shapes are related. They could cut pieces of string or thin strips of paper to see which parts of a side correspond to another side.
Step 7 Calculate the perimeter of rectilinear shapes	Building on the previous step, children move on to calculating the perimeter of rectilinear shapes where they first need to find the missing length(s). This could involve addition or subtraction depending on the information given in the question. Children identify equivalent sides and, after calculating any unknown lengths, annotate the shape, ensuring that every side is labelled. This helps to prevent errors or omissions when calculating the perimeter. Children also work backwards from a given perimeter to work out an unknown side length.
Step 8 Perimeter of regular polygons	Building on the previous step, children move on to calculating the perimeter of rectilinear shapes where they first need to find the missing length(s). This could involve addition or subtraction depending on the information given in the question. Children identify equivalent sides and, after calculating any unknown lengths, annotate the shape, ensuring that every side is labelled. This helps to prevent errors or omissions when calculating the perimeter. Children also work backwards from a given perimeter to work out an unknown side length.
Step 9 Perimeter of polygons	In this small step, children learn the word "irregular" to describe polygons that are not regular. Show children a range of irregular shapes to help them to identify that either the lengths or angles, or both, are not all equal. In this step, children are exposed to examples of polygons in which the lengths are equal but angles are not, and this is an important discussion point. Children continue to add the side lengths together to find the perimeter. Encourage children to use number bonds to add related sides (for example, 4 cm + 6 cm = 10 cm) when working out the perimeter, as this will make calculating more efficient. They also use symmetry and properties of shapes to label lengths that are not given to help them calculate perimeters of shapes that are partially labelled. Children should still label and mark sides as they are working out perimeters to help avoid errors.
Block 3 Fractions	
Step 1 Understand the whole	Children begin this block by understanding the whole. They covered this in Year 3, but may need to recap the part-whole relationship of fractions. Children use diagrams to identify how many equal parts a shape has been split into and move on to thinking about how many more parts are needed to make the whole. They use the denominator to identify how many equal parts a whole has been divided into. For example, for the fraction 3/7, the whole has been split into 7 equal parts because the denominator is 7. Children explain whether a fraction is a small (for example, 1/10) or large (for example, 9/10) part of the whole. The learning from this step will be built upon when looking at fractions greater than 1 and also decimals later in the year.
Step 2 Count beyond 1	In this small step, children build on their knowledge of the whole to explore fractions greater than 1 In Year 3, children counted forwards and backwards in fractions within 1 and this is now extended to fractions greater than 1. Number lines are a useful representation, particularly alongside other pictorial representations such as bar models, to support children in counting in fractions. Children first count in unit fractions, using their knowledge that a fraction with the same numerator and denominator can be written as 1. Once comfortable counting forwards and backwards in unit fractions across whole number boundaries, they count in non-unit fractions. In this step, children count in mixed numbers only, as improper fractions are covered later in the block. It is vital, therefore, that children are secure with the fact that when the numerator is equal to the denominator then the fraction is equivalent to 1.

Step 3 Partition a mixed number	In this small step, children further develop their understanding of mixed numbers. Children explore partitioning mixed numbers in different ways – a skill that will be vital for later steps in this block. The key focus is to ensure that children can confidently partition a mixed number into its whole and fractional parts. Part-whole models and bar models are key representations that allow children to see how a mixed number is being partitioned. Once confident with this form of partitioning, children partition a mixed number into a whole number and a mixed number (for example, 3 1/4 = 2 + 1 1/4) or a mixed number and a fraction (for example, 2 and 3/4 = 2 and 1/4 + 2/4).
Step 4 Number lines with mixed numbers	In this small step, children build on their learning from Step 2 in this block, developing a deeper understanding of how mixed numbers are represented on a number line. Children label the fractions on any given number line by identifying the number of intervals between each of the whole numbers. A common mistake is counting the number of divisions between consecutive integers. For example, a number line split into quarters has three dividing lines between each integer, so children may conclude that the number line is counting in thirds. Children estimate the positions of mixed numbers on blank number lines. To support this, it is important that children understand which integer a mixed number is closer to, and the mixed number's relationship to the point halfway between the two wholes either side of it.
Step 5 Compare and order mixed numbers	In this small step, children compare and order mixed numbers. Before comparing mixed numbers, it may be appropriate to compare proper fractions to revise the understanding that, when the denominators are the same, the greater the numerator, the greater the fraction. Diagrams, bar models and number lines are effective tools when comparing fractions and mixed numbers. Children compare mixed numbers where the whole number is different, recognising that the greater the whole number, the greater the mixed number. They then compare mixed numbers where the whole number is the same. Once children are secure in comparing mixed numbers, they can move on to putting them in order
Step 6 Understand improper fractions	Children should now be confident with the idea that fractions can be greater than 1 and have experienced these as mixed numbers. In this small step, they write them as improper fractions – a fraction where the numerator is greater than or equal to the denominator. From previous learning, children know that when the numerator is equal to the denominator, the fraction is equal to 1 whole. That knowledge is extended to exploring other integers using knowledge of times-tables. For example, if children know that 3/3 is equal to 1, they can repeat groups of 3/3 to see that 6/3 = 2 and 9/3 = 3. They then explore the improper fractions that lie between whole numbers. Bar models and number lines support this understanding. At this point, children do not need to formally convert between improper fractions and mixed numbers, but they may begin to explore the relationships between them by plotting both on a number line.
Step 7 Convert mixed numbers to improper fractions	Having now been introduced to both mixed numbers and improper fractions, in this small step children convert a mixed number into an improper fraction. At this stage, children explore this concept predominantly through the use of pictorial representations and concrete manipulatives such as interlocking cubes. Bar models and number lines are useful representations to allow children to see the links between mixed numbers and improper fractions. Children use their times-tables knowledge to find the improper fraction equivalent to the integer part of a mixed number before adding on any remaining fractional parts.
Step 8 Convert improper fractions to mixed numbers	In the previous step, children converted mixed numbers to improper fractions. In this small step, they convert the other way, from improper fractions to mixed numbers. At this stage, children explore this concept predominantly through the use of pictorial representations and concrete manipulatives, for example counters and bar models, linking back to work done on division with remainders in Spring Block 1. Children use their times-tables knowledge to find the integer part of a mixed number, with the remainder as the fractional part. The learning from this step will be revisited and built on in Year 5.
Step 9 Equivalent fractions on a number line	In Year 3, children used number lines to find equivalent fractions within 1 and this knowledge is now extended to numbers beyond 1 The focus of this step is on using number lines to find equivalent fractions by looking at fractions that are in line with each other (equal in value), rather than using more abstract methods of multiplicative reasoning. Drawing bars of unequal length or lining them up incorrectly are common mistakes with this method, so it is vital to highlight that integer values should always be in line with each other. Children look at multiple number lines, double number lines and splitting up existing number lines into smaller parts. They may explore equivalence of both mixed numbers and improper fractions.

Step 10 Equivalent fraction families	In this small step, children develop their understanding of equivalent fractions, both within 1 and greater than 1, mainly through exploring bar models. Building on learning from Year 3, children begin by finding equivalent fractions by splitting up models into smaller parts in a range of different ways. The key learning point is that as long as each of the existing parts are split equally into the same number of smaller parts, then the fractions will be equivalent. A common misconception is that children believe they can only split up existing parts into two equal sections, which limits the number of equivalent fractions that they will find. Children begin to use fraction walls to help create equivalent fraction families. Although not the key focus, once children are comfortable finding equivalent fractions within 1, they may begin to find equivalent fractions greater than 1.
Step 11 Add two or more fractions	Building from Year 3, in this small step children add two or more fractions with the same denominator. They add proper fractions in this step and then add fractions and mixed numbers in the next step. Children start by folding strips of paper and shading the equal parts. They transfer this knowledge to using diagrams and bar models to add two fractions, before progressing to adding more than two fractions. Children also explore adding by using a number line and counting on. Addition with totals greater than 1 is covered in this step, but first ensure that children are secure in adding fractions within 1. Encourage children to convert improper fractions to mixed numbers, although this is not essential in this step.
Step 12 Add fractions and mixed numbers	In this small step, children combine knowledge of adding two or more fractions with their understanding of mixed numbers to add fractions and mixed numbers. Children start by adding fractions to whole numbers and, when this is secure, add mixed numbers and fractions. Bar models and number lines are useful tools to illustrate this process. Number lines are especially helpful when crossing a whole. Children look at two methods: partitioning the fraction to add to the next whole number, then adding the remaining fraction to the whole number, and adding the fractions separately, then adding the total to the whole number.
Step 13 Subtract two fractions	In this small step, children subtract two fractions with the same denominator. They should link this to adding fractions with the same denominator, realising that when the denominators are the same, they need to subtract the numerators. Children start by folding paper and then link this to diagrams and bar models. Encourage children to explore all the different structures of subtraction: taking away, partitioning and difference. The questions in this step only explore subtracting from proper and improper fractions. Subtraction from whole numbers and mixed numbers are covered later in the block.
Step 14 Subtract from whole amounts	This small step links the previous step and the next step together, helping children to make links between subtracting fractions and subtracting mixed numbers and fractions. Children need to know how many equal parts are equivalent to the whole and how this relates to whole numbers greater than 1. They use bar models and explore subtracting from the whole, initially when it is written as a fraction, for example 9/9 , rather than 1. They subtract from whole numbers greater than 1, comparing subtracting the fraction from one of the wholes with using improper fractions. Number lines are also used in this step, and children explore the difference between taking away and finding the difference.
Step 15 Subtract from mixed numbers	In this small step, children subtract from mixed numbers. This step only covers subtracting a whole or a fraction from a mixed number; this will be developed in more detail and extended to subtracting mixed numbers from mixed numbers in Year 5 Children are introduced to these subtractions using bar models and number lines. Firstly, they explore what happens when they subtract a whole number from a mixed number, and then a fraction that does not cross a whole from a mixed number. Once this is secure, children complete subtractions that cross a whole number, exploring different methods.
Block 4 Decimals A	
Step 1 Tenths as fractions	In Year 3, children were introduced to unit and non-unit fractions and learnt to compare and order these. They also explored dividing 100 into 10 equal parts on a number line, so they should already be familiar with the idea of tenths. In this small step, children explore the idea of a tenth as a fraction. Children explore tenths through different representations of 1 whole split into ten equal parts, including place value counters, straws, counters on a ten frame and bead strings. Number lines are another useful representation of tenths as fractions, and are covered again in a later step. At this stage, children explore tenths as fractions only – the concept of tenths as decimals is introduced later in the block.
Step 2	Now that children have an understanding of tenths as fractions, they move on to looking at them as decimals. This is the first time that children have encountered decimal numbers and the decimal point. Model making, drawing and writing decimal numbers, showing that the decimal point is used to

Tenths as decimals	separate whole numbers from decimals. Children look at a variety of representations of tenths as decimals, up to the value of 1 whole. This leads to adding the tenths column to a place value chart for children to see how tenths fit with the rest of the number system and to understand the need for the decimal point. This will be developed further in the next step, which explores decimal numbers beyond 1 whole.
Step 3 Tenths on a place value chart	In this small step, children continue to explore the tenths column in a place value chart, extending their previous learning to include numbers greater than 1 It is important that children understand that 10 tenths are equivalent to 1 whole, and therefore 1 whole is equivalent to 10 tenths. Children use this knowledge when counting both forwards and backwards in tenths. When counting forwards, children should know that 1 comes after 0.9, and when counting backwards that 0.9 comes after 1. Links can be made to the equivalence of 10 ones and 1 ten to support understanding.
Step 4 Tenths on a number line	In this small step, children extend their understanding of tenths by exploring them on a number line. Number lines help children to see the relationship between tenths and whole numbers. They find missing decimal numbers in a sequence, deepening their understanding of the value of 1 tenth. The sequences initially go up and down in steps of 1 tenth and then in varying intervals, including crossing the whole. Seeing this modelled on a number line helps children with their understanding. From their learning in the fractions block earlier in Year 4, children should be able to see fractions greater than 1 as mixed numbers, but for this step the numbers will be kept as decimals.
Step 5 Divide a 1-digit number by 10	In this small step, children divide a 1-digit number by 10, resulting in a decimal number with 1 decimal place. To begin with, they see that the number is shared into 10 equal parts. This can be shown by exchanging each place value counter worth 1 for ten 0.1 counters. They recognise that when using a place value chart, they move all of the digits one place to the right when dividing by 10. Any misconceptions around "tricks" that work for this step, such as moving the decimal point to the beginning of the number or adding "zero point" in front of the word should be addressed at this stage. This will help to prevent errors later on, when children progress to dividing 2-digit numbers by 10 and then move on to dividing by 100 and dividing by decimals.
Step 6 Divide a 2-digit number by 10	In this small step, children divide 2-digit numbers by 10, building on their learning from the previous step. Counters on a place value chart are a good resource for this concept. Children make the number using counters, then move all the counters one place to the right. The key learning is that both digits of the number move in the same direction by the same number of places. The digits are together before dividing and are still together after dividing. Children may think that certain "tricks" always work, such as placing a decimal point between the digits. Reinforce with children that this does not always work and so is not a method they should rely on. Also discuss that if a multiple of 10 is divided by 10, then nothing is needed in the tenths column, for example 50 ÷ 10 = 5, not 5.0
Step 7 Hundredths as fractions	In this small step, children build on their previous learning of tenths as they begin to explore hundredths. They learn that a hundredth is 1 whole split into 100 equal parts. This idea can be explored using a variety of representations, including hundred squares, bead strings, Rekenreks and number lines. Place value charts representing hundredths are introduced in a later step. Children relate this learning to the previous steps by understanding that 1 tenth is equivalent to 10 100 . They partition hundredths into tenths and hundredths, for example 21/100 is made up of 2/10 and 1/100 , or 1/10 and 11/100
Step 8 Hundredths as decimals	Now that children have an understanding of hundredths as fractions, in this small step they explore hundredths as decimals. Representations such as hundred squares, Rekenreks and bead strings continue to be used to help understanding, and in this step 0.01 decimal place value counters are also introduced. Children explore the idea that ten 0.01s are equivalent to 0.1, meaning that decimal numbers can be partitioned into tenths and hundredths, for example 0.12 = 0.1 + 0.02. When confident with this, they also explore flexible partitioning of numbers, for example 0.23 = 0.2 + 0.03 or 0.1 + 0.13. Encourage children to think back to the learning from the previous step and to make links between hundredths as fractions and hundredths as decimals.
Step 9 Hundredths on a place value chart	In this small step, children continue to explore hundredths as decimals by looking at the hundredths column in a place value chart. Children should be confident with the understanding that 10 hundredths make up 1 tenth. Exchanging ten 0.01 counters for one 0.1 counter in a place value chart will help to reinforce this understanding. It is important that children understand that 0.1 is greater than 0.09 even though 1 is less than 9. This can be

	seen when putting both numbers in a place value chart and considering the value of each column. Children use place value counters to flexibly partition decimal numbers involving tenths and hundredths. Discuss with children why no zero placeholder is needed in the hundredths column if there are no digits after the tenths, for example 1.5, not 1.50.
Step 10 Divide a 1 or 2-digit number by 100	Building on their learning from the multiplication and division block and the earlier steps in this block, in this small step children divide 1-and 2-digit numbers by 100 Children should build numbers using place value counters and use exchanges to support their understanding. Once confident working with place value counters, they could move to using place value charts and recognise that dividing a number by 100 moves all the counters two places to the right. Exploring the difference between moving two places for 100 and one place for 10 is important at this stage.