Year 2 Maths Autumn medium Term plan

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition and Subtraction					Measurement: Money		Number: Multiplication and Division	

Number: Place Value

NC Objectives:

- Read and write numbers to at least 100 in numerals and in words.
- Recognise the place value of each digit in a two digit number (tens, ones)
- Identify, represent and estimate numbers using different representations including the number line.
- Compare and order numbers from 0 up to 100; use <, > and = signs.
- Use place value and number facts to solve problems.
- Count in steps of 2, 3 and 5 from 0, and in tens from any number, forward and backward.

Week	Small step	Key Questions	Notes and Guidance	Assessment
	Count objects to 100 and read and write numbers in numerals and words	**Key Questions:** How can you count the cars? Do you have a strategy? What is one more/one less? Which is the largest number? Which number is tricky to write in words? Which numbers sound similar? How are 17 and 70 different? Can you show me?	To build on skills learned in Year 1, children need to be able to count objects to 100 in both numerals and words. Problems should be presented in a variety of ways e.g. numerals, words and images. Variation should challenge children by providing them with missing numbers which are non-consecutive.	
	Represent numbers to 100	How have the beads been grouped? How does this help you count? Which part of the resource represents tens/ones? Which resource do you prefer to use for larger numbers? Which is quickest?	Children need to be able to represent numbers to 100 using a range of concrete materials. Children should also be able to state how a number is	

		Which would take a long time?	made up. For example, they can express 42 as 4 tens and 2 ones or as 42 ones.	
	Tens and ones with a part whole model	Which part do we know? How can we use the whole and part to work out the missing part? Can you use concrete resources/draw something to help you partition? How can you rearrange the counters to help you count the lemon and strawberry cupcakes?	Children partition numbers and should have an understanding of what each digit represents. It is important that children can partition numbers in a variety of ways, not just as tens and ones. For example, 58 is made up of 5 tens and 8 ones or 4 tens and 18 ones, or 20 tens and 38 ones, etc.	
	Tens and ones using addition	What clues are there in the calculations? Can we look at the tens number or the ones number to help us? What number completes the part-whole model? What is the same and different about the calculations? What are the key bits of information? Can you draw a diagram to help you?	Children continue to use a part-whole model to explore how tens and ones can be partitioned and recombined to make a total. This small step will focus on using the addition symbol to express numbers to 100. For example, 73 can be written as $70 + 3 = 73$	
	Use a place value chart	How many tens are there? How many ones are there? What is different about using Base 10 to using place value counters? Can you write any other number sentences about the place value chart?	Children should formally present their work in the correct place value columns to aid understanding of place value. It is important for children to use concrete, pictorial and abstract	

			representations in their place value chart.	
	Compare objects	How can you arrange the objects to make them easy to compare? Do groups of ten help you count? Why? Do groups of ten help you compare? Why?	Comparing objects is introduced once children have a secure understanding of numbers in a place value chart. Children are expected to compare a variety of objects using the vocabulary 'more than', 'less than' and 'equal to' and the symbols $<$, $>$, $=$.	
	Compare numbers	Can you prove your answers using concrete resources? Can you prove your answers by drawing a diagram? Is there more than one answer? Do you need to work the number sentences out to decide which is greater?	Children compare numbers using the language greater than, less than, more than, fewer, most, least and equal to. They are able to use the symbols $<$, $>$and $=$to write number sentences. Children should have access to concrete resources to help them justify their answers.	

	Order objects and numbers	How does the number line help you order the numbers? How does Base 10 prove that your order is correct?	Children order numbers and objects from smallest to greatest or greatest to smallest. They should be encouraged to use concrete or pictorial representations to prove or check their answers. Children use the vocabulary 'smallest' and 'greatest' and may also use the <or >symbols to show the order of their numbers.	
	Count in 2s, 5s and 10s	What do you notice? Are the numbers getting larger or smaller? Are the numbers getting bigger or smaller each time? By how many? Can you spot a pattern? Why is it the odd one out? Can you correct the mistake?	Children count forwards and backwards in 2s, 5s and 10s. It is important that children do not always start from zero, however they should start on a multiple of 2 or 5 when counting in 2s and 5s but can start from any number when counting in 10s. For example when counting in 2s they should not start at 3. Encourage children to look for patterns as they count.	
	Count in 3s	What do you notice? Are the numbers getting larger or smaller? Can you spot a pattern?	Children count forwards and backwards in 3s from any multiple of 3 Encourage children to look for patterns as they count and use resources such as a	

			number track, a counting stick and concrete representations.	
Addition and Subtraction: **NC Objectives:** **•Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100.** **•Add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers.** **•Show that the addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot.** **•Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods.** **•Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.**				
	Fact families – addition and subtraction facts to 20	Can you write all associated number sentences in the fact family? What are the parts? What is the whole? What does each circle represent on the part-whole model? Showing the link between representations, such as part-whole models and bar models can support and deepen the children's understanding.	Children apply their understanding of known addition and subtraction facts within 20 to identify all related facts. This will include an understanding of the relationship between addition and subtraction, and knowing the purpose of the equals sign, as well as the addition and subtraction signs.	
	Check calculations	What resources could you use to check your calculation? Can you check it in more than one way? Why do we need to check our calculation? Is there another way you could represent this?	It is essential that children have the opportunity to discuss and share strategies for checking addition and subtraction calculations. Checking calculations is not restricted to using the	

			inverse. Teachers should discuss using concrete resources, number lines and estimating as part of a wide range of checking strategies.	
	Compare number sentences	What other numbers make the same total? Do we need to calculate the answer to work out the missing symbol? Do you notice a pattern? What would come next?	Children should be encouraged to examine number sentences to find missing values using structure rather than calculation. Using numbers within 20 to explore mathematical relationships will give the children confidence and allow them to spot patterns because they are working within the context of familiar numbers. Children should compare similar calculations using greater than, less than and equal to symbols.	
	Related facts	What is the same? What is different? How does Base 10 help us to see the relationships between the different numbers and calculations? What do you notice about the part-whole models? Is there a relationship between the numbers that are represented?	children should have an understanding of calculations with Similar digits. For example, 2 +5 =7, so 20 +50 =70 This involves both addition and subtraction. It is important to highlight the correct vocabulary and help children to notice what is	

			the same and what is different between Numbers and calculations. 'Tens' and 'ones' should be used to aid understanding using Base 10 can also help the children to see relationships.	
	Bonds to 100	What does the word multiple mean? What does the blue represent? What does the yellow represent? Why is it different to a normal 10 frame? What patterns can you see? How does this help us to make up our own?	Teachers should focus at this stage on multiples of 10 up to and within 100 Links should be made again between single digit bonds and tens bonds. Using a 10 frame to represent 100 would be a useful resource to make this link.	
	Add and subtract 1s	What happens when we add 2? What is the link between adding 1 and adding 2? What about if we want to add 3? How can a bead string help when we are adding 1, 2, 3 etc.? Where will be the best place to start on each number track? Why?	Children should start seeing the pattern when we add and subtract 1 and comment upon what happens. This is the step before finding ten more than or ten less than, as bridging beyond a 10 should not Be attempted yet. The pattern should be highlighted also by adding 2 (by adding another one) and then adding 3.	

	10 more and 10 less	What's the same? What's different? Will you start with 35 or 55? Why? When you look at a hundred square, what do you notice about the numbers that are ten more and ten less than 27? Which direction will your finger move on a hundred square if you are finding ten more/ten less?	Teaching needs to focus on the importance of the tens digit. Using a 100 square, explore with the children what happens to the numbers in the columns. Draw attention to the idea that the tens digit changes While the ones digit remains the same. Children will need to see how the number changes with concrete materials before moving onto more abstract ideas.	
	Add or subtract tens	What is the number sentence that will help us to find the first missing number in the number track? What is the same/different about the next number sentence? Why is there a blank ones box? Which column changes? Which column stays the same?	Children should make use of place value to add and subtract 10s from a given number within 100 The key teaching point again is the importance of the tens digit within the given numbers, and children should be encouraged to see the relationship. For example 64 +20 =84	
	Add 2-digits and 1-digit	Using Base 10, can you partition your numbers? Can we exchange 10 ones for one ten? How many ones do we have? How many tens do we have? Can you draw the Base 10 and show the addition	Before crossing the 10 with addition, children need to have a strong understanding of place value. The idea that ten ones are the same	

		pictorially?	as one ten is essential here. They need to be able to count to 20 and need to be able to partition two-digit numbers in order to add them. They need to understand the difference between one-digit and two-digit numbers and line them up in columns. In order to progress to using the number line more efficiently, children need to be secure in their number bonds.	
	Subtract 1-digit from 2-digits	Are we counting backwards or forwards on the number line? Have we got enough ones to subtract? Can we exchange a ten for ten ones? How can we show the takeaway? Can we cross out The cubes?	Just as with addition, children need to have a strong understanding of place value for subtraction. Children need to be able to count to 20 and need to be able to partition two-digit numbers in order to subtract from them. They need to understand the difference between one -digit and two-digit numbers and line them up in columns. In order to progress to using the number line more efficiently, children need to	

			be secure in their number bonds.	
	Add 2-digit Numbers	Can you partition the number into tens and ones? Can you count the ones? Can you count the tens? Can you show your addition by drawing the Base 10 to help? How could you represent the problem?	This step is an important pre-requisite before children add two-digit numbers with an exchange. Focus on the language of tens and ones and look at different methods to add the numbers including the column method. It is important that teachers always show the children to start with the ones when adding using the column method.	
	Add 2-digit Numbers (2)	Can you represent the ones and tens using Base 10? What is the value of the digits? How many ones do we have altogether? How many tens do we have altogether? Can we exchange ten ones for one ten? What is the sum of the numbers? What is the total? How many have we Got altogether?	Children use Base10 and Partitioning to add together 2-digit numbers including an exchange. They could be encouraged to draw the Base 10 alongside recording any formal column method. They have already seen what happens when there are more than 10 ones and should be confident in exchanging 10 ones for One 10.	
	Subtract with 2-digits	Do we need to make both numbers in the subtraction before we takeaway? Which number do we need to make? The larger	This step is an important step before children start to look at subtraction	

		number or the smaller? What are the numbers worth? Tens or ones? What happens if we have nothing left in a column? Which number do we write?	where they cross a tens boundary. Children need to use concrete materials but also draw images of the Base 10 so they can independently Solve problems. Some children might think that they need to 'build' both numbers in the calculation, unpicking this misconception through modelling and discussion will help develop their understanding.	
	Subtract with 2-digits (2)	Have we got enough ones to take away? Can we exchange one ten for ten ones? How many have we got left? What is the difference between the numbers? Do we always need to subtract the ones first? Why do we always subtract the ones first? Which method is the most efficient to find the difference, subtraction or counting on?	Children use their knowledge that one Ten is The same as ten ones to Exchange when crossing A ten in subtraction . Continue to use concrete manipulatives (such as Base 10) and pictorial representations (such as number lines and part-whole models) to develop the children's understanding. The skill of flexible partitioning is useful here when the children are calculating with exchanges.	

	Bonds to 100 (Tens and Ones)	How many more do we need to make 100? How many tens are in 100? If I have 35, do I need 7 tens and 5 ones to make 100? Explain why. Can you make the number using Base 10? Can you add more Base 10 to the number to make 100?	Here children build on their earlier work on number bonds to 100 with tens together with number bonds to 10 and 20 They use their new knowledge of exchange to find number bonds to 100 with tens and ones. Using hundred squares, Base 10, bead strings etc. will help the children develop their understanding.	
	Add Three 1-digit Numbers	Can we change the order of the numbers to make the calculation easier? Why are we allowed to change the order of the numbers? Which two numbers did you add first? Why? What if you added a different two numbers first, would your answer be the same	children need to use their knowledge of commutativity to find the most efficient and quick way to add the three one-digit numbers. They look for number bonds to 10 to help them add more efficiently.	

Money:

NC Objectives:

- **Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.**
- **Find different combinations of coins that equal the same amounts of money.**
- **Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.**

	Count Money - Pounds	Do the notes have a greater value than the coins? Which is the hardest to count? Which is the easiest? Why? What do you notice about the amounts? Does it matter which side the equals sign is? Count Money Pounds Can you find the total in a different way?	Children will continue counting but this time it will be in pounds, not pence. The £ symbol will be introduced. Children must be aware that both coins and notes are used to represent amounts in pounds. Children will count in £1, £2, £5, £10 and £20s. In this year group, children work within 100, therefore They will not count in £50s.	
	Count Money – Notes & Coins	How did you work out the total amount of money? What strategy did you use to count the money when there is pounds and pence? Explain what to do when the pounds and pence are mixed up.	In this step, children will build on counting by bringing pounds and pence together. Decimal notation is not used until KS2 therefore children will write the total using 'and' e.g. £5 and 30 p rather than £5.30 Children will not count cross £1. They will count the pounds and pence separately before putting them together.	

	Select Money	How do you know you have made 56 p? Is your answer the same as your partner? Can you find any other ways to make this amount? Does it matter if you say pence or pounds first? Does this change the total? Can you show this amount in a different way?	Children select coins to make an amount, from a set of coins given to them. They will use these practically, draw them and write the abstract amounts. They will continue to use both pounds and pence to embed previous learning. Children are continuing to work on recognising money by selecting the correct coins or notes from a wide range.	
	Make the Same Amount	Can the same amount be made using different coins? How did you compare the amounts? How is your way different to a partner? Can you swap a coin/note for others and still make the same amount? What is the smallest amount of coins you can use to make ____?	Children explore The different ways of making the same amount. As before, they will not count pence over into pounds. Examples need to be modelled where pounds and pence are together but children need to continue to be encouraged to count the pounds and pence separately.	
	Compare Money	What do you notice about the amounts you have compared? What's the same? What's different? How do you know who has the most, when they both have 64? Can you add a value that will go in between the	Use <, >or =to compare the amounts. Children compare two different values in either pounds or pence.	

		greatest and the least?	Children will see examples with both pounds and pence, but they will only focus on one of these -the other must be the same e.g. £3 and 10 p >£2 and 10 p where 10 p is the constant. Children recap comparing vocabulary such as greater/less than and use the inequality symbols.	
	Find the Total	How did you find the missing amounts? Share your strategies with a friend. Was your method different to a friend? What is the most efficient method? Why? Can you write a worded question for a friend? What was the greatest amount you found?	Children will build on their knowledge of addition to add money including: •2-digit and 2-digit •2-digit and ones •2-digit and tens •3-single digits Children will be encouraged to use different methods to add the amounts of money, such as count on, partitioning and regrouping.	
	Find the Difference	Which costs more? How do you know? How can you work out how much more? What's the difference? How much less?/How many fewer? What method did you use to work this out?	Children expand their knowledge of addition and subtraction strategies by specifically finding the difference between two amounts. In this step, children should see both counting on and counting back being	

			modelled to them. They need to discuss which is the most efficient for different questions.	
	Find Change	How much does Dora have? How do you know? Can you write a calculation to work out how much she will have left? Why is it important to use the £ or p symbol? What strategy did you use to find the change? Did you use concrete objects to help?	Children build on their subtraction skills by finding change from a given amount. They need to identify amounts from the coins given, write the calculations and choose efficient methods. In this step, children will be introduced to converting £1 to 100 p to be able to subtract from £1. This links to their number bond knowledge to 100.	
	Two-step Problems	Where does the £33 go in the bar model? How can you find the total? Here is a one step problem. Can you think of a second step? Can you write your own two step word problem? Did you use a concrete or pictorial representation to help you?	Children draw together all of the skills they have used in this block and consolidate their previous addition and subtraction learning. Children may need some scaffolding to see the different steps. Bar modelling is really useful to see the parts and wholes, and supports children in choosing the correct calculation.	

Multiplication and Division: **NC Objectives:** **•Recall and use multiplication and division facts for the 2, 5 and 10 timestables, including recognising odd and even numbers.** **•Calculate mathematical statements for multiplicationand division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) sign.** **•Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods and multiplication and division facts, including problems in contexts.** **•Show that the multiplication of two numbers can be done in any order (commutative)and division of one number by another cannot.**				
	Make Equal Groups	How else could you represent these in equal groups? How many ways can you represent this? How have you grouped your items?	Children should be able to make equal groups to demonstrate their understanding of the word 'equal'. With the examples provided to the children, it is important that they are exposed to numerals and words, as well as multiple representations.	
	Add Equal Groups	What do the two 3s represent? Why are we using the addition symbol? How else can we show the equal groups? What is the total?	Children begin to connect equal groups to repeated addition. At this point children have added 3 one digit numbers Together, therefore they can add up to 3 equal groups when each group is any one digit number. If there are more than 3 equal groups, the examples must be limited to 2s, 5s,	

			10s and 3s.	
	The Multiplication Symbol	What does the 3 represent? What does the 6 represent? What does 'lots of' mean? Does 18 =3 ×6 mean the same? How is 6 +6 +6 the same as 3 ×6? How is it different?	Children are introduced to the multiplication symbol for the first time. They should link repeated addition and multiplication together, using stem sentences to support their understanding. They should also be able to interpret mathematical stories and create their Own involving multiplication. The use of concrete resources and pictorial representations is still vital for understanding.	
	Multiplication from Pictures	What does the 4 represent? What does the 3 represent? What does the 12 represent? Can you think of your own story for 3 ×4 =12?	Children will use the multiplication symbol and work out the total from pictures. They should also be able to interpret a multiplication word problem by drawing images to help them solve it. Coins could be used within this small step too.	
	Use Arrays	Here are the 2 lots of 3? Where are the 3 lots of 2?	Children explore arrays to see the commutativity of multiplication facts e.g. 5 ×2 =2 ×5	

		What do you notice? What can we use to represent the eggs? Can you draw an image?	The use of the array could be used to help children calculate multiplication statements. The multiplication symbol and language of 'lots of' should be used interchangeably.	
	The 2 Times- Table	If 16 p is made using 2 p coins, how many coins would there be? How many 2s go into 16? How can the images of the 5 bicycles help you to solve the problems?	Children should be comfortable with the concept of multiplication so they can apply this to multiplication tables. Images, as well as number tracks, should be used to encourage children to count in twos. Resources such as cubes and number pieces are important for children to explore equal groups within the 2 times-table.	
	The 5 Times-Table	If there are 30 petals, how many flowers? Can you count in 5s to 30? How many 5s go into 30? How many 5s go into 35? What does each symbol mean?	Children can already count in 5s from any given umber. They will also have developed understanding of the 2 times-table. This small step is focused on the 5 times table and it is important to include the use of zero. Children should see the =sign at both ends of the calculation to understand	

			that it means ‘equals to’.	
	The 10 Times	What if there were 10 packs of crayons? If there are 50 crayons altogether, how many packets are there? How do you know? How many tens go into 30? Can you count in 10s to 30? What does greater than mean? What does less than mean?	Children have counted in 10s from any given whole number. This small step is focused on the 10 times-table and it is important to include the use of zero. Children should see the =sign at both ends of the calculation to understand what it means.	