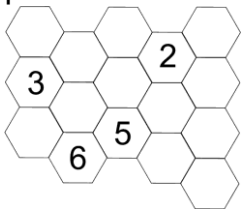
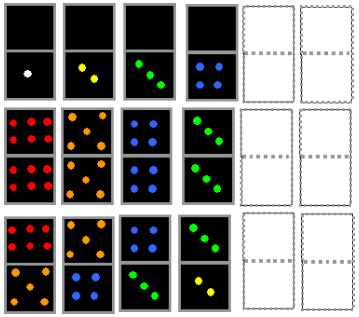
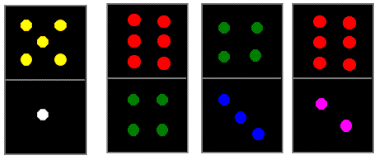
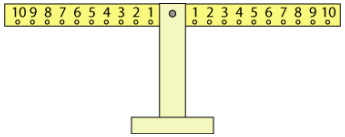
Anston Greenlands Primary School – Long Term Maths Curriculum

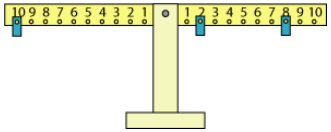
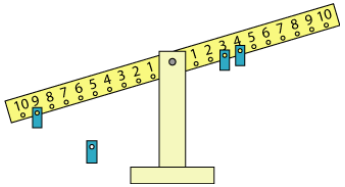
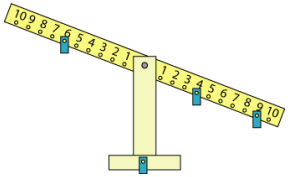
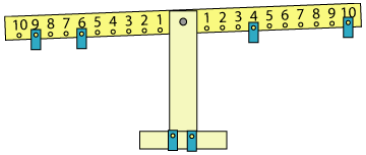
Year 2 2022-2023

Term 1

Objectives	Approximate number of lessons (70 total)	Investigations/variation	Context
use place value and number facts to solve problems recognise the place value of each digit in a two-digit number (tens, ones) identify, represent and estimate numbers to 100 using different representations, including the number line compare and order numbers from 0 up to 100; use <, > and = signs read and write numbers to at least 100 in numerals and in words count in steps of 2, 3, and 5 from 0, and in tens from any	10	Read, write, represent, partition, compare and order numbers to 100 Explore patterns including, odds and evens, tens and ones **Investigation 1 -** count in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward **Buzzy Bee** Buzzy Bee was building a honeycomb. She decided to decorate the honeycomb with a pattern using numbers. Can you discover Buzzy's pattern and fill in the empty cells for her?  	Set on a fruit and veg stall – put in groups of ones, tens etc. Link to veg grown in Grandad's garden

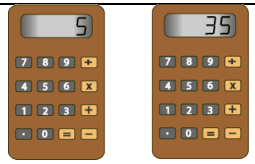
number, forward and backward		**Investigation 2** - compare and order numbers from 0 up to 100; use <, > and = signs **Next Domino** Which comes next in each pattern of dominoes? 	
recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot add and subtract numbers using concrete objects,	10	Apply number bonds to add and subtract Represent and explain addition and subtraction of two 2-digit numbers. Add three 1-digit numbers **Investigation 1 -** recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 4 Dom	

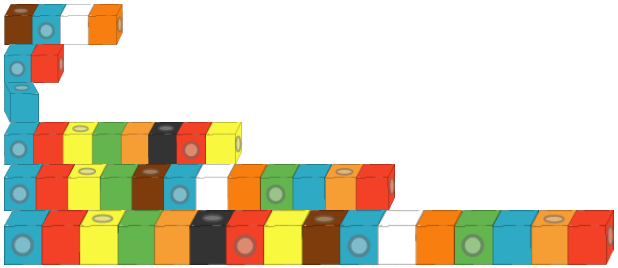
pictorial representations, and mentally, including: a two-digit number and ones; a two-digit number and tens; two two-digit numbers; adding three one-digit numbers		Use these four dominoes to make a square that has the same number of dots on each side.  **Investigation 2 -** add and subtract numbers 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 **Number Balance** This is a number balance.  It is also called a 'balance bar' or an 'equaliser'. It has weights:  These are hung below the numbers. It balances equal numbers, for example like this:	

		 Where would you need to hang the weight to make the one below balance?  What about this one?  If you had to use two weights and make the one below balance, where could you put them?  How many different ways can you make it balance with two weights?	

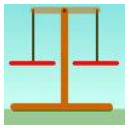
recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods	10	Introduction to bar models as a representation Create, label and sketch bar models **Investigation 1** - recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems **Secret Number** This is a game for two players and a simple calculator. Annie and Ben are playing. Annie puts her secret number into the calculator without showing Ben. Annie then asks Ben, "What do you want to add?" Ben tells Annie the number he wants to add. "I want to add four." Annie presses the 'add' button and then the four button. The calculator now shows '4'. Annie gives the calculator to Ben.  Ben presses the 'equals' button and the	Problems involving dragon fruits and veg in garden

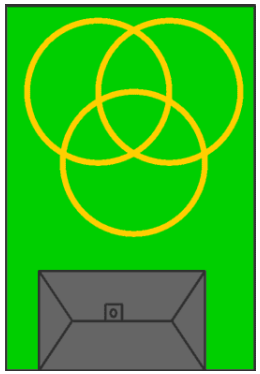
		calculator gives the answer '10'.  What was Annie's secret number? How do you know? You could play this with a friend. If you work out your friend's secret number correctly, it is your turn to put in a secret number of your own. You could score a point for every one you get right. A multiplication version of the game might go like this: Charlie puts in a secret number and asks Dana, "What do you want to multiply it by?" Dana replies, "Multiply it by 5." Charlie puts in 'times' and '5' and hands the calculator to Dana. When Dana presses the 'equals' button the calculator shows '35'.	

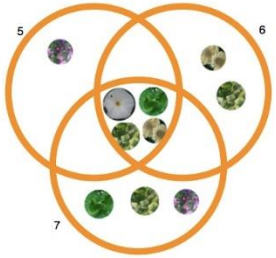
		 Dana now has to work out Charlie's secret number. What was it? How do you know? Investigation 2 - solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures; applying their increasing knowledge of mental and written methods **Noah**  Noah saw 12 legs walk by into the ark. How many creatures could he have seen? How many different answers can you find? Can you explain how you found out these answers?	

choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm) to the nearest appropriate unit, using rulers and scales compare and order length and record the results using >, < and = apply knowledge of numbers to 100 to read scales to the nearest appropriate standard unit in the context of length (m/cm)	10	Draw and measure lengths in centimetres **Investigation 1 – Making longer, making shorter** First, Ahmed used interlocking cubes to make a rod four cubes long:  How many cubes did he need to make a rod twice the length of that one? How many cubes did he need to make one three times the length? How many cubes did he need to make one four times the length? How many cubes did he need to make a rod half the length of his first one? How many cubes did he need to make a rod a quarter of the length of his first one? These rods are the ones Ahmed made:  Which one is twice the length of Ahmed's first rod?	Pantomime

		Which one is three times the length? Which one is four times the length? Which one is half the length of his first rod? Which one is a quarter of the length of his first rod? Which one is the same length as his first rod? **Investigation 2 – Order, order!** Use <, > and = to compare and order lengths in metres and centimetres Have a look at the sets of four quantities below. Can you rank them in order from smallest to largest? To help you decide, you may need to find extra information or carry out some experiments. Can you convince us that your order is right? **Time**  Taken to travel to school For mustard and cress to grow from seeds Taken to eat a biscuit Between your 6th and 7th birthdays	

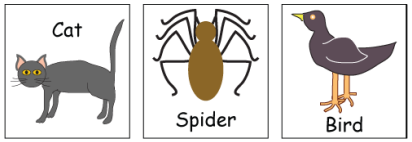
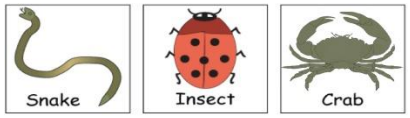
		 **Distance** You could jump up in the air You can kick a football You can run in half a minute Length of a bug  **Mass** Of a blown-up balloon Of a bar of chocolate Of a loaf of bread Of your teacher **Investigation 3 – compare the cups** For this challenge, you will need lots of different cups. This picture shows some:  Which might you choose if you wanted a lot to drink? Why? Which one would you choose if you did not want a lot to drink? Why? Could you arrange the cups in a line from the one that holds the most liquid to the one that holds the least liquid? How will you test whether you are right?	

interpret and construct simple pictograms, tally charts, block diagrams and simple tables ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity ask and answer questions about totalling and comparing categorical data	5	Represent and interpret: pictograms, block diagrams, tables and tally charts. Investigation 1 - **Plants** Uncle Raj has three children. Next year, when they've had their birthdays, Naomi will be 5, Alex will be 6 and Chris will be 7. The family has decided on something rather unusual for part of their presents. All three children have their birthday in the late spring and since they are keen on gardening they are going to buy some plants for the garden, one for each year they have been alive. Here is the plan of their house and garden: 	Plants in the garden

		You notice that there are three circular paths that cross over each other. Each child is to have a circle but there will be some bits that are shared, around the middle. When the time comes, the four of them go off to the garden centre to choose the plants. They do not have a lot of money so they're looking for special offers. They find a very special offer which gives a good discount if you buy ten plants altogether. The three children say that that is no good because they need more than ten. But Uncle Raj realises they can manage with only ten. They go to the cafe and have some cool drinks, and Uncle Raj draws a plan of the three paths and puts little marks to show the plants. Here is his idea:  	

		The children are fascinated to see that Naomi has 1 and shares 4, Alex has 2 and shares 4 and Chris has 3 and shares 4. They think that's rather cool and it saves them a lot of money. So they finish their drinks and off they go to buy their ten plants. Well now it's your turn to have a go and find some different solutions. REMEMBER:- You must use exactly ten plants (no more, no less) REMEMBER:- The circles must contain 5, 6 and 7 plants (no more, no less). As you try, you may find that you are developing a system for getting the next one. If so, we'd love to hear about it. You might like to try to find them all, and write about all the things you notice about each solution.	
calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs solve problems involving multiplication and division, using materials, arrays,	15	Calculate the times tables of 2, 5, and 10 by skip counting Relate the 2 times table to doubling Explore representations of multiplication and division Commutativity **Investigation 1**	Find the dragons

repeated addition, mental methods, and multiplication and division facts, including problems in contexts show that multiplication of two numbers can be done in any order (commutative) and division of one number by another cannot recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers		**Number detective** Calling all detectives! You will need to think creatively, use your reasoning skills and your problem solving strategies to find the mystery number from the list below.  • The number has two digits. • Both of the digits are even. • The digit in the tens place is greater that the digit in the ones place. • The ones digit is not in the three times table. • The tens digit is not double the ones digit. • The sum of the two digits is a multiple of five. 18 86 120 42 46 64 80 8 22 83	

		Investigation 2 Pairs of legs How many legs does each of these three creatures have? How many pairs is that? How do you know?  What about these three creatures?  You could download a set of these cards to cut out. Can you match the animal to the number of pairs of legs it has? Did you know that legs on living creatures always come in pairs? **Investigation 3 - Double or halve?** This is a game for two players	

		How to play: • Decide on a target number. This is the total that both players are trying to make. • Player 1 throws the dice. S/he can choose whether to double the number shown or halve the number shown. • Player 2 throws the dice. In the same way, s/he can choose whether to double the number shown or halve the number shown. Player 2 adds his/her number onto Player 1's number to make a running total. • Play continues like this with each player rolling the dice, halving or doubling the number and adding the result onto the running total. • The winner is the player who reaches the agreed target exactly. Here are some questions to think about: Must each player always take a turn? Does it matter if you go first or second? Are there any particularly good numbers to choose as your target?	